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What You Can Learn From the African Hadza Tribe

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STORY AT-A-GLANCE -

- The Hadza tribe are among the best still-living representations of the way humans have lived for tens of thousands of years. They're nomadic hunter-gatherers whose diet is primarily meat-based
- Chronic disease is rare among the Hadza, who remain vital well into old age
- The Hadza primarily eat meat, including organ meats and connective tissue, tubers, berries, and fruit and honey from the baobab tree. As such their diet is relatively low to moderate in fiber
- Raw honey contains nitric oxide metabolites that are converted back to nitric oxide when consumed. Research shows honey increases nitric oxide and total nitrite concentrations and improves endothelial function. Heating decreases the nitric oxide metabolites in the honey
- There's an intrinsic happiness that spontaneously arises when you engage in certain types of behaviors, and topping that list is the regular immersion in the natural world

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In this interview, Dr. Paul Saladino, author of "The Carnivore Code" — a book on nose-to-tail animal-based eating — reviews what it means to be healthy at the most foundational level and shares his findings from a recent trip to Africa where he visited the Hadza

tribe, who are among the best still-living representations of the way humans have lived for tens of thousands of years.

Like the !Kung tribe in Botswana, the Hadza live a hunter-gatherer life amidst the encroachment of modernized society.

> *"I see the Hadza as a time machine. They're like a time capsule,"* Saladino says. *"They do not suffer chronic disease like we do in Western society, and that alone makes them infinitely fascinating. They do not suffer cancers like we suffer cancers.*
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> *They do not suffer autoimmune disease, which is a huge spectrum of disease, and they do not suffer depression, mental illness, skin issues. They do not suffer dementia anywhere near the rates that we do. They age with grace. This is called squaring of the morbidity curve.*
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> *If you look at a graph of their vitality across the lifespan, it is essentially flat and then drops off very quickly at the end. It's like a square. They lose their vitality within the last few weeks of life, but until they're 70 or 80 years old, they are vital individuals."*

If we look at Western society, the morbidity curve has a very different look. It's like a ramp that steadily declines. In the Western world, people lose vitality consistently throughout life. This doesn't happen in native hunter-gatherer societies, primarily because they do not suffer from the debilitation of chronic disease.

The Hadza Diet

Saladino primarily wanted to find out how the Hadza eat, what foods they prioritize and how it affects their health. Other investigators have analyzed the Hadza diet, but he wanted to confirm it for himself. For example, one 2009 study[1] found the Hadza ate a lot of meat, tubers, berries, and fruit and honey from the baobab tree. According to this paper, the Hadza don't eat vegetables.

> *"That supports a hypothesis that I had advanced previously in my work, which was that maybe vegetables, meaning roots, stems, leaves and seeds, are not that good for humans in the first place,"* Saladino says. *"I wanted to see this firsthand."*

The study in question also asked the Hadza to rank how much they liked each food. Honey was ranked the highest, followed by meat (primarily the eland, a very large type of antelope, baboon and bush pig), baobab fruit and berries. Tubers were their least favorite food. Saladino's investigation supported these basic preferences as well.

Did a Meat-Based Diet Make Man Smarter?

Essentially, the Hadza favor meat and animal organs, while tubers are looked upon more as survival foods that don't make up the majority of the diet. Saladino reviews how during the Pleistocene, going back some 2 million years, the human brain suddenly got a lot larger, and evidence suggests the reason for this was an increasing presence of meat in the diet.

> *"We really became human in the last 2 million years,"* he says. *"Before that, there was Australopithecus and a divergence, a sort of a schism of the evolutionary tree with a species called Paranthropus boisei, and then Homo habilis and Homo erectus.*
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> *That branch point was super fascinating because that was a branch point between meat and plant. This is about 4 million years ago in human evolution, and Paranthropus boisei ate more plants. We can tell this based on stable isotopes, looking at the teeth.*
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> *Homo habilis and homo erectus ate more and more meat … The unique nutrients found in that meat and those organs allowed our brains to grow — nutrients like choline, carnitine, taurine, B12, K2, essential fatty acids [and carnosine] …*

I think the prevailing thinking now, which is quite compelling in my opinion, is that eating meat and organs made us human, and the species that chose to eat more plants went extinct … Many anthropologists believe the Hadza are some of the direct descendants of the original Homo sapiens who remained in the Rift Valley in Africa."

The Hadza Lifestyle

When asked why they choose to maintain their hunter-gatherer lifestyle, being well aware of modern civilization all around them and other tribes that have chosen to farm and keep herds of cattle and goats, the Hadzi replied, "We want to be free. We like to eat meat. We want to be able to hunt and we like this lifestyle." Another question that arose was what makes the Hadza happy? Interestingly, this is more or less a non-issue. "Happiness" is their default state of mind.

"That is their default mode when they are in nature doing what humans have always done," Saladino says. *"This is so interesting to me. Here's this group of hunter-gatherers. They live in the bush. They do not sleep on beds. They sleep on the ground in these thatched huts that they build in a day. They're nomadic.*

They have little camps … The camp that we went to was about 40 to 50 men and women with children, and they moved the camp three or four times a year. They have three or four camps that they've established, and they know spots in the Lake Eyasi region. Some of them are better for the rainy season, some of them are better for the dry season, and so the whole camp will move throughout the year at different times …

They have fires for men and fires for the women. They live under rock shelters. They sleep in the auspices of rocks and they are profoundly healthy individuals. They love their life because every day they get to go play. For them, play and fun is hunting. The next day, we got to see this because we went on a hunt with them. It was incredible. It was so joyous and so simple."

The Importance of Organ Meats

Saladino recounts the hunt, noting how the organ meats were consumed in the field. After hunting down a baboon, the men created a fire to burn off the hair, after which the animal was gutted. Intestines were given to the hunting dogs, while all the other organs — heart, liver, lungs, spleen, kidneys and pancreas — were cooked on the open fire and shared among the hunting party. Nothing is wasted, not even the bones, which are broken to extract the marrow.

They also eat the connective tissue, which is high in collagen, and the skin. The internal organs, which are the most highly prized, are called epeme, and according to the local lore, the epeme must be shared among all the men of the tribe. If a hunter chooses not to, bad things will happen to them. The hunter responsible for the kill is rewarded with the most valuable organs, however, such as the brain, which Saladino says was "delicious."

While they might not understand individual nutrients, they clearly know that if you eat these organs, you will be more vital. "That's why I think it's so important for humans to get back to eating nose to tail, to eating those organs," Saladino says. Interestingly, while the Hadza diet has been described as high in fiber, Saladino disagrees.

The tubers they collect are extremely fibrous. So much so, you cannot actually swallow it. You have to chew it and spit out the fibers, so in reality, their diet is low to moderate (at best) in fiber.

> *"The other thing I want to mention about eating the tubers was that there was no bathroom to wash my hands in. Nor did I want to because I'm very interested in soil-based organisms and the interaction of our microbiome with our environment. Everyone believes that the Hadza have a healthy, diverse microbiome because they eat a high-fiber diet.*
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> *Well, No. 1, they don't eat a high-fiber diet. No. 2, they probably have a healthy, diverse microbiome because they live in nature and they are inevitably taking inputs, information from nature, in the form of dirt and soil-based organisms.*

> *This is something that I've always expected and it's a complete paradigm shift. And, as we know, adding fiber to the diet does not increase alpha diversity, and removing fiber does not decrease alpha diversity.*
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> *What does increase alpha diversity? Well, living in nature increases alpha diversity probably because you're eating dirt, and there was definitely dirt on my hands and my fingers, and dirt on this tuber as I'm holding it in my mouth. The Hadza are not a dirty people though.*
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> *They do not smell. They don't use deodorant. They don't have bad breath. I was really close to them a lot of the time in the bush hunting. They don't have body odor. Yet they don't bathe that regularly. We were there for a week and they didn't bathe."*

Their microbiome is most likely the reason for their lack of body odor, as malodorous armpits are due to specific axillary bacteria. The Hadza microbiome has previously been studied in some detail, showing they have higher levels of microbial richness and biodiversity than Western urban controls.

The Hadza are also unique in that they have an absence of Bifidobacterium. Differences in microbial composition between the sexes have also been found, which is probably a reflection of the division of labor between the sexes.

> *"I think that when humans are exposed to soil-based organisms and live in a natural environment like this, that is what creates high alpha diversity,"* Saladino says. *"I think that's what creates the microbial richness that we really should seek if we're looking to be healthy, or we want a healthy gut microbiome, rather than trying to just put a whole bunch of fiber in our guts, which causes problems for some people."*

Fiber Isn't a Cure-All

Saladino cites two recent research papers, one of which compared Tanzanian urbanites with more rural dwellers, finding that urbanites had higher rates of inflammation. In the

second, companion paper, the authors blamed the higher inflammation in urbanites to a fiber-poor Western diet. Saladino disagrees with these conclusions, saying:

> *"What they're trying to say is that the urban people in Tanzania are eating more saturated fat and less fiber and that is what fuels their inflammatory phenotype. What I observed was completely different than that. In fact, when you go into a grocery store in urban Tanzania, there are two aisles, there's two sort of shelves of oil.*
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> *One of them is a huge shelf of vegetable oil. They call it flower oil and safflower oil, and many of the vegetable oils that we saw were actually expired and they're in plastic. Right next to that is a whole shelf of beef fat, beef tallow.*
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> *The beef tallow is actually cheaper than the vegetable oil, but what do people buy in the cities? They buy seed oils. So, my observation is that in the urban cities, people are probably eating more seed oils and less saturated fat than the rural settings.*
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> *In speaking to our guide in Tanzania, he told us he went to his doctor in Tanzania and his doctor told him that he needed to stop eating red meat because red meat causes diabetes, and encouraged him to eat seed oils. We said, 'Gasper, that's completely wrong. Do the Hadza eat animal meat and fat?' He said, 'Yes.'*
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> *I said, 'Do the Hadza look like they have diabetes?' He said, 'No.' [I said] 'Your doctor is completely wrong. His thinking is outdated. His thinking is antique, based on sort of the epidemiology that has been promulgated in the Western world.'*
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> *It's incredible that in this Nature Immunology paper, their editorializing and trying to claim that it's a fiber-poor Western diet that contributes to inflammation. I think it's the seed oils and processed refined sugars that are clearly doing that and I would posit that it has nothing to do with how much fiber you eat.*

Some people can tolerate fiber, but for a lot of people, it makes them much worse. As I have shown, and as I've talked about in my podcast, which is called Fundamental Health, adding more fiber into your diet doesn't improve the alpha diversity of your microbiome. I've even tested my microbiome on zero-fiber diets consisting of meat, organs and honey, in some ways trying to make a Hadza diet, and my alpha diversity was very high."

Surprising Health Benefits of Raw Honey

Saladino also recounts how the Hadza collect honey made by stingless bees that burrow into the baobab tree. It's a common belief that honey is no different than sugar, but Saladino is starting to reconsider this notion.

"I went down this rabbit hole recently, and I did a recent Controversial Thoughts podcast about honey," Saladino says. *"In some of my research, what I found was that raw honey contains nitric oxide metabolites. How cool is that? And honey actually improves endothelial function."*

The assumption is that the nitric oxide metabolites are converted back to nitric oxide when you eat the honey. Saladino cites a 2003 paper,[2] "The Identification of Nitric Oxide Metabolites in Various Honeys," in which they did an intravenous injection of diluted honey into sheep, showing it increased plasma and urinary nitric oxide metabolite concentrations.

Honey has also been shown to increase nitric oxide and total nitrite concentrations in humans, Saladino says. Heating decreases the nitric oxide metabolites in the honey, though, so for this benefit, you wouldn't want to add it to boiling liquids.

"Then, there's interventional studies that show honey performs differently in both humans and animal models relative to sucrose, which we would sort of expect, but within ketogenic circles, where people get very dogmatic about carbohydrates, honey is often thought to be the same as sucrose because honey does contain glucose and fructose, which is the disaccharide of sucrose.

It's fascinating to me that these whole foods are an informational package that our body perceives differently than a processed sucrose/high fructose corn syrup. Actually, in these studies honey performed differently than sucrose. Honey performed different than dextrose, which is not surprising because dextrose is a glucose polymer.

Sucrose is a disaccharide of glucose and fructose, and fructose and glucose are handled differently by the liver and our physiology. How interesting that honey appears to be good for humans potentially because of these nitric oxide metabolites and other things.

I had Malcolm Kendrick on my podcast. We talked about the way that nitric oxide is made by endothelial nitric oxide synthase and how critical that is for endothelial health. These are the cells that line all of the blood vessels of our body, and if those endothelial cells don't have nitric oxide, they can't expand properly.

How interesting that honey contains these foundational things for humans and it's probably very valuable for us. That first paper I showed suggested that the darker honey had more nitric oxide, and I can tell you the honey I ate in Tanzania was some of the most iridescent, dark, richly colored honey I've ever had in my life.

I just want to make this point that reductionist thinking in nutrition doesn't serve us, and I would posit that honey is nothing like sucrose."

The take-home message here is that, provided you're metabolically healthy, you can safely include honey in your diet. It's important to realize, though, that if you are insulin resistant or have diabetes, all forms of sugar need to be cut back until you've successfully reversed these conditions.

Health and Happiness Are Within Your Reach

In closing, there's a lot we can learn from the Hadza. As noted by Saladino:

"I spent a week with the Hadza. I got to hunt for berries with them and dig tubers with the women and we drank the water out of the baobab tree. I got to see all of these parts of their life. They are always in nature, they're always in the sun. They're always having low-level activity with spurts of sprinting.

They follow the circadian rhythms of the sun, which was one of the most joyous things. One of the reasons I came to Costa Rica was because I thought, 'I want to do an experiment. How can I live a little bit more like the Hadza? How can I be more in nature?'

Here in Costa Rica, I basically live in the jungle. I'm in Santa Teresa, by the beach. I'm in the ocean every morning. I get to watch all of the sunsets and sunrises and this has been a real gift. I think this is another takeaway for people to realize, and it's been self-evident. This is what humans need. As I said, the Hadza's default state is happiness."

So, not only do we need to identify an appropriate human diet, but also the most appropriate human lifestyle. Done right, your default state will also be that of happiness and physical vitality.

> **“You can get more sunlight. You can avoid blue light devices. You can avoid EMFs. You can eat the diet your ancestors ate and walk out of the zoo and find a richer life. ~ Dr. Paul Saladino”**

The key message is that there's an intrinsic happiness that results spontaneously from engaging in certain types of behaviors, and topping that list is the regular immersion in the natural world.

"I fear that in Western society, humans have been placed into a little bit of a zoo," Saladino says. *"We've been given these hamster wheels to run on, which essentially are treadmills at gyms and we've been given this processed,*

synthetic food, these rat pellets that are dropped into our cage every once in a while. It's no wonder that we're just not happy.

You know, I'm not a zoologist, but I have heard that when animals are placed in cages in the zoo, they become fat and unhealthy and they develop chronic diseases that they don't get in the wild. I've always found that to be a fascinating parallel with humans because I think we're exactly the same.

The difference for us is that the door to the cage is open. We have only to open the latch and walk through. We can get back to these things. You can get more sunlight. You can avoid blue light devices. You can avoid EMFs. You can eat the diet your ancestors ate and walk out of the zoo and find a richer life. Remember, the door is open. You've just got to walk through it."

More Information

To learn more about Saladino and his work, check out his website, **heartandsoil.co** (not .com). There, you will find his blog, podcast, social media links and much more.

Sources and References

- [1] Am J Phys Anthropol 2009 Dec;140(4):751-8
- [2] Journal of Medicinal Foods Winter 2003;6(4):359-64