

Neanderthal Diets

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Neanderthals did not descale their teeth regularly, for which modern scientists can be very thankful. My guide through the recent discoveries on Neanderthal diet is [John Speth](#), Emeritus Professor of Anthropology at the University of Michigan.

As far as I'm concerned, the Neanderthal diet is a bunch of cavemen sitting around chomping their way through a woolly mammoth before it goes off. So I asked Professor Speth, is that a true picture?

John Speth: Well, let me answer it this way. That's very close to the mainstream thought, whether it's close to truth, we don't know yet. If academia were a democracy, that would be the point of view. I think that would win, hands down, that Neanderthals were primarily hunters. That everybody says they undoubtedly gathered. But nevertheless, the emphasis is on animals and hunting and meat. And what we find in most Neanderthal sites are the remains of large animals. Depending on where you are, they're hunting smaller animals as well, but still the larger ones on the landscape. So things like reindeer, red deer, various equids or horses, wild horses. And they're not going after, at least not in any sizable way, after little things, you know, the small mammals, reptiles. Although, again, there are exceptions to that.

Jeremy: Now, apart from finding bones in association with Neanderthal remains, I mean, what other kinds of evidence do you have about diet?

John: We have stone tools that have use wear on them that suggest that they are doing things with plant remains, but that's very, very vague. And it doesn't tell us whether the things they're doing with these plants relate to making equipment, cutting bedding and so forth, or whether it relates to food. And then the plant remains themselves generally don't preserve. Again, there are exceptions, some wonderful exceptions. And one of the sites that I've been working on the animal

bones from, is called Kibera Cave, in Israel. There are several thousand charred seeds. The most prominent among them are lentils and relatives of lentils.

Jeremy: Let me stop you. What's the date on those?

John: Probably somewhere between 50 and 60,000 from the bottom.

Jeremy: So way before farming.

John: Oh, yes. Oh, yes.

Jeremy: When you talk about charred lentil and other seeds, are they charred because they were overcooked or an accident? I mean, do we ... Were they being cooked?

John: Yeah. Kibera cave has an incredible number of stratified fireplaces. Hearths. By stratified, I mean there's layer upon layer upon layer of fireplace built upon fireplace over literally millennia. How things like lentils got charred is a good question. Most of us, I think believe that they would get charred accidentally. That is, as you're preparing food and you're dealing with small plants, seeds and so forth, it's very likely you're going to drop some of those, spill some of them. And if they get burned, you just for the archaeologists sake, you have to hope that they get charred, but not totally, because otherwise we don't find them.

Jeremy: Yep yep.

John: There are new techniques that are being developed in the last decade or so that have tremendous promise. And these are recovery of phytoliths. These are the silica bodies that are small, often nicely shaped, interestingly shaped, little silica bodies that provide structure in the cell walls of plants. These silica bodies can be identified, and at least sometimes you can tell that it's a grass, from a grass seed. And you might even be able to tell that it's of a type that came from a wild wheat or a wild barley or something of that nature. Recently, we've discovered that phytoliths can get trapped in the tartar calculus that develops on human teeth. We go to the dentist regularly to get it removed. Neanderthals didn't have dentists. And if the museum curators didn't very carefully remove it, these tartar calculus deposits often remain. They're calcified, so they preserve quite well. And it's

been discovered that there are phytoliths trapped within the calculus. And these are almost certainly food remains.

Jeremy: It's absolutely extraordinary that someone a) thought to look for the calculus and b) thought to find food remains in it.

John: Most people hadn't really thought of doing much with it. You know, it's just this deposit that's formed over the teeth. And in the old days, I think a lot of people, when the specimen came to the museum, they'd chip it off so they'd have these nice, shiny, clean Neanderthal teeth. But fortunately, they didn't do that with all of them. And now people are beginning to look at it systematically.

Jeremy: So apart from the phytoliths, what else can you find in tartar deposits?

John: Well, one of the most recent discoveries has been starch granules or starch grains. And again, the shape is distinctive. Usually, again, you can't determine species, but you can sometimes get down to the level of genus. And again, if not, you can often let's say with grasses, you can get down to what are often referred to as tribes; that is, groupings that that would include the wheats or the barleys and so forth. And lo and behold, when they started analysing the samples of dental calculus from Neanderthals, they're finding evidence of starch granules. And what's interesting is, they're finding them on Neanderthal teeth, not just in areas that that were far removed from the glaciers, you know, where you would expect plants to be available and therefore probably eaten. We're finding them in sites in Belgium and elsewhere where there would have been much harsher environments, much closer to the glacial, to the ice sheets and so forth. So we have evidence of consuming plant foods based on starch granules and phytoliths over a wide range of Neanderthal habitats, from close to the ice sheets to areas like where I work in the Near East, which were never glaciated.

Jeremy: I guess you can't tell from phytoliths whether they were cooked or not, but you can tell whether a starch granule has been cooked.

John: So we can tell so long as they've only been mildly cooked, whether it be wet cooking or dry cooking. And there is evidence, particularly from a skeleton, a Neanderthal skeleton from Iraqi Kurdistan, a cave called Shanidar Cave, of grasses that were not only

cooked, but the shape is suggestive of wet cooking. And this has raised an issue that I got involved in. Whether or not Neanderthals without containers like pottery, could they wet cook? Could they boil, steam, simmer and so forth? And I think they could.

Jeremy: Many other scientists disagree. Here's the thing. The standard way to boil things if you don't have a fireproof pot, is to put the stuff you want to boil into a skin or paunch and support that in a pit. Then you stick stones in a fire, and when they're good and hot, you dump them into the liquid in the paunch. The stones heat up the liquid, which eventually boils. When you do that, though, you leave telltale evidence. The shock of putting a very hot stone into cold liquid shatters the stone, and a fire cracked rock is really easy to identify.

John: All you need is somebody to point it out to you once, and you can then recognise it fairly easily. So the problem is, with Neanderthals, there's almost no fire cracked rock. It's exceedingly rare. So the long and short of it is we have assumed that Neanderthals could not boil. What I'm about to say is still quite speculative. We don't have real concrete evidence yet, but I think it's very likely that Neanderthals were capable of boiling. The starch granules hint at this, and I think the technique also exists. And the way I came to the realisation that this was a possibility was traveling with my son.

We don't have television at home, so when we travel we often stay in motels, and we watched a programme, or he watched a programme, called Survivor Man. And it was one of these episodes where the guy was in the wilderness somewhere — I wasn't paying all that much attention — and he ran out of water, and he needed water. He found a little puddle with water, but it was polluted. Or at least, he felt that it was polluted and needed to be boiled. And he had happened to find abandoned somewhere an empty plastic bottle. And he very nonchalantly said, oh, that's not a problem. And he filled it with his rather dubious water, and he built a fire and hung the water bottle right over the fire with the bottle, the plastic bottle, literally in the flames. And proceeded to boil the water without using any kind of heated stones. And my jaw dropped. And so I began to explore the literature too. And then I found that first of all, that lots of people were aware of this except archaeologists. And there are even books,

things that are dangerous things that all kids should do, for example, which describes boiling water on your kitchen stove in a paper cup.

Jeremy: Now, I did that as a kid, not in a paper cup, but in a in an origami piece of paper. And the explanation was that the water conducted the heat away from the paper sufficiently quickly that it never reached its ignition point.

John: This doesn't prove that Neanderthals boiled, but it does mean that the criterion we've been using, and the principal criterion that we've been using, the absence of fire-cracked rock, may be the wrong criteria, if you like.

Jeremy: Yeah. I mean, essentially you've got evidence of boiled starch grains, and that suggests that somehow they must have done it, somehow. And now you've come up with ways that they might have done it. So I guess you can go around ... You can go back now and look for evidence that maybe that was how they did it.

John: The problem is to find a signature of moist heating that is not mimicked or blurred or eliminated by these chemical and physical changes that occur over the 40, 50, 60,000 years that these items, bones or whatever have been lying in the ground.

Jeremy: One final point. I'm sure you can't be unaware of the fact that everybody's raving about paleo diets and all of that stuff. Does what you know from studying Neanderthal diets, does the paleo diet make any sense to you?

John: Yes and no. In my view, there is no such thing as a paleo diet. There are paleo diets, and we're still trying to understand what they were. If you think of the diversity of habitats that existed on this planet — glacial environments, tropical environments, desert environments — there is a tremendous range of of diets. The problem is, we don't know a lot about these diets yet. This is what we're trying to learn. The bottom line of this is, it's complicated.

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