

Reklam - Advertisement

How Certain Cultured Foods Can Help The Microbes Inside Us Thrive



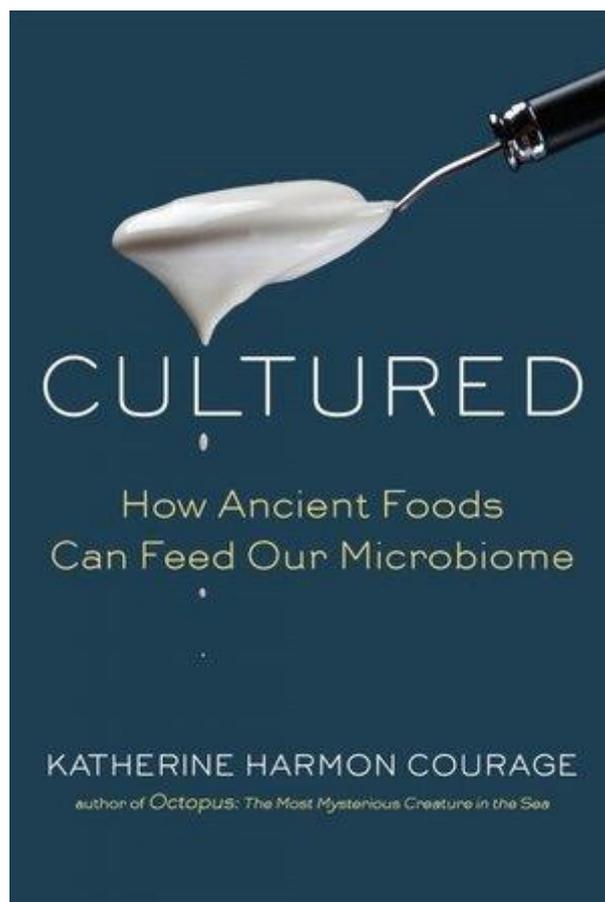
Korean kimchi, made of salted and fermented vegetables, contains microbes that contribute to its distinctive taste.

Katherine Harmon Courage wants us to think about digestion as a collaborative journey between us and our microbes. In her new book, *Cultured: How Ancient Foods Can Feed Our Microbiome*, she envisions digestion not as a simple food-in, excrement-out process, but as a series of encounters with varying microbial players that takes place along the winding 30-foot tunnel of our gastrointestinal tract. Along the way, microbes digest the food we can't, and in return we give them a warm, well-stocked place to live.

But a surge in microbiome research over the past two decades has revealed they do much more than simply digest food. They can [mediate weight gain](#), [fight off infection](#), and even [alter our mood](#). Scientists still have much to learn about the identity of these microbes, which are important, and how the beneficial ones work their magic.

Incomplete understanding hasn't stopped the burgeoning probiotic industry, which argues that we can improve our gut health by taking a pill stuffed with billions of beneficial strains of bacteria, or eating a probiotic-infused yogurt with breakfast. The thinking goes that we just need to eat the right microbes to construct a healthier gut.

Reklam - Advertisement



Cultured

How Ancient Foods Can Feed Our Microbiome

by Katherine Harmon Courage

Hardcover, 271 pages

[purchase](#)

Courage believes this focus on the microbes themselves is myopic. She views the process of digestion as collaborative because the food we put into our bodies affects the kinds of bacteria that live and thrive there. In her book, she explores the science behind how what we feed our microbes affects our health.

She thinks we can learn how to better work together with our microbial partners by looking to the past. From Greenland to Greece, Courage explores the ancient gut-friendly foods that have become integral parts of many food cultures, and offers suggestions on how to diversify the kinds of foods we feed our microbiome.

We spoke with Courage about the science behind pro- and prebiotics, and what she learned exploring fermented staples across the world. The interview has been edited for brevity and clarity.

Reklam - Advertisement

A lot of the buzz around the microbiome has been about the microbes themselves, and what they do for us. You focus much of your book on what they eat, the " prebiotics" we feed them. Why?

It may be less interesting to talk about fiber than about all these new species we're learning about and infusing into foods, but what we feed our microbes is just as important as what microbes are there.

I think that, from our human perspective, it's helpful to think about microbes in two broad categories. There are microbes that we have in our guts throughout our lives that are adapted for living there, and then there are the microbes we get from food or supplements. Those latter ones just kind of pass through. They can survive the journey, and can certainly provide benefits along the way, but they aren't long-term residents of the gut, and they're not going to have the long-term health impacts that more-permanent residents might have.

We're starting to learn more about how we can create the conditions for those resident microbes to thrive and potentially benefit us, and a large part of that is what we feed them. And much of what we feed them is fiber.

What happens if we don't feed our microbes?

So then they start to eat us — our lower intestine, which is only a single human cell thick, which helps us absorb as much as we can from our digested food before we expel it. But it also makes it easy for things to escape.

When our microbes don't get enough fiber, they can start eating away the mucus lining protecting this thin layer, and sometimes the lining can break, which can lead, literally, to leaky gut syndrome, which is associated with many poor health outcomes.

When I think of fiber, I think processed, cardboard-like breakfast cereal. Is fiber more diverse than that? How important is having a diverse diet of fiber to cultivating a healthy microbiome?

Prebiotic fiber is just any kind of carbohydrate that we can't digest ourselves that instead passes through our digestive system as food for microbes. There are many different types of fiber that get broken down by different microbes at different stages of digestion. That's why it's a good idea to eat a wide variety of foods, and not just focus on a particular supplement here and there. Lots of different kinds of fibers help lots of different microbes thrive and create different beneficial compounds for us. Which is good because we're learning that generally, a more diverse microbiome is an indicator of health. If you look

Reklam - Advertisement

at people's guts around the world — and even in the same society — people with more diverse microbiomes tend to be healthier overall.



THE SALT

[You Don't Have To Go No-Carb: Instead, Think Slow Carb](#)

What are some examples of different types of fiber and the foods that carry them?

One kind of fiber that's gotten a lot of focus is inulin. We've actually been adding it to foods for longer than we've been looking closely at it, but it's commonly found in foods like chicory root or sunchokes. It's a very long carbohydrate chain, which means it takes a bit longer to pass through our system and get broken down by microbes. Research shows that it encourages growth of [bifidobacteria](#), [lactobacteria](#) [two strains of bacteria commonly associated with health benefits].

Another big one comes from fruits and veggies, called Fructo-oligosaccharides. It's shorter than inulin and adding it to your diet has been shown to reduce markers of inflammation.

Galacto-oligosaccharides are another form of fiber found in milk, and are broken down in the colon.

I was really surprised to learn about resistant starch as another form of fiber. It comes from more simple carbohydrates that have been cooked and then cooled; think of cold potato or pasta salad. So once those starches are crystallized, they become the type of resistant starch that our bodies can't

Reklam - Advertisement

break down anymore [but our microbes can]. Even cold pasta, which you don't necessarily think of as being healthy, can be a great source of resistant starch.

Do other aspects of our diet besides fiber affect the microbiome?

Almost everything we eat has some kind of impact on our microbes. One example I talk about in the book is meat. Really kind of fatty meats like pork can have a negative health impact on us via our microbes, because they produce a metabolite called [TMAO](#), which has been linked to negative health outcomes. But fish oil has been shown to be beneficial — the microbes of mice fed fish oil instead of pork lard produced much fewer TMAOs.

Another exciting area of research is looking at how gene expression in the same microbial strains can change, based on what they're being fed. Different metabolites get produced not by different microbes, but by the same microbes being fed differently.



THE SALT

[Chowing Down On Meat, Dairy Alters Gut Bacteria A Lot, And Quickly](#)

You looked at a lot of research comparing Western diets to more traditional, hunter-gatherer diets. How did their diets and microbiomes differ?

Researchers look to hunter-gatherer societies to try to understand what our ancestral diets looked like, before the advent of agriculture. This can give us clues potentially to the kinds of diets humans are adapted for.

These studies find that we eat a lot less fiber than we probably used to.

Reklam - Advertisement

The FDA recommends something like 30 grams of fiber a day, but most Americans don't even get that. Traditional hunter-gatherer cultures, like the Hadza group in Africa, eat 100-plus grams of fiber a day.

So people eating modern, Western diets are getting maybe 15 to 30 grams of fiber a day, when our bodies may be adapted to expect over 100. This lack of fiber seems to be making a big impact on the diversity of our microbiome. These traditional, high-fiber dieters have a much more diverse microbiome than [people eating] more modern diets, [and the former] is often linked to better health outcomes. It's hard to draw hard conclusions about cause and effect here, because there are so many other lifestyle factors at play, but it certainly seems that our low-fiber diet is not great for our health.

In reporting your book, you go on a culinary quest exploring all these different fermented and microbial foods. What was the most surprising food you encountered?

By far it was Kiviak, which is a traditional Inuit food from Greenland. Kiviak is birds, specifically Auks, fermented inside a seal skin. So when Auks are in season they capture the birds and stuff [up to 500] in the seal skin, sew it up and leave it underground to ferment for a year, and then dig it up and eat it.

It's important to remember that fermentation didn't necessarily come about because people were thinking about the health benefits. It was a way to preserve foods and make it through a harsh Greenland winter.

A lot of these foods are not seen as individual things to be eaten for a specific benefit, but rich, integral parts of food culture. How does culture shape how we feed our microbiome?

There's really not a culture out there that doesn't incorporate some kind of fermented food, and many have a rich diversity of different kinds of fermented foods.

We think about things like kimchi as being the Korean fermented food, and it is actually their national food, but they have so many other kinds of fermented foods that they infuse throughout the whole cuisine.

These foods aren't really viewed as this separate thing. You're not eating kimchi as a little healthful snack for your microbes and then going back to your normal

Reklam - Advertisement

diet. These fermented foods are incorporated into the food culture — they're condiments, sides, flavorings. A meal seems incomplete or unbalanced without them.

And that kind of consistency is a healthier, more sustainable way to feed our microbiome?

Yes. Generally, the kind of wild fermented foods — like kimchi, sauerkraut, or pickles — tend to have a higher diversity of microbes than your store-bought, probiotic-infused yogurts. Whether each individual strain in these foods is good for us is still unknown, but again, higher diversity tends to be associated with better health.

What advice do you have for those wanting to boost the health of their microbiome?

It's really about creating the right environment for our native microbes, and the best way to do that is by eating a lot of diverse types of fiber for them. I don't think probiotics or seeking out specific fermented foods is bad, of course, but focusing on fiber is a good first step.