

Eat Food: Food Defined

Michael Pollan

Best known for his engaging writing about food and his ability to tell complex stories that weave together politics, culture, nutrition, ethics, and history, Michael Pollan is an award-winning author, *New York Times Magazine* writer,

and professor of journalism at the University of California, Berkeley. He has written numerous articles and books, including four *New York Times* best sellers: *Food Rules: An Eater's Manual* (2010); *In Defense of Food: An Eater's Manifesto* (2008); *The Omnivore's Dilemma: A Natural History of Four Meals* (2006); and *The Botany of Desire: A Plant's-Eye View of the World* (2001). This selection comes from *In Defense of Food: An Eater's Manifesto*, a book in which Pollan works to define just what should count as food. He argues that "food" must be differentiated from "foodish products" and makes a case for how to define the difference.

The first time I heard the advice to "just eat food" it was in a speech by Joan Gussow, and it completely baffled me. Of course you should eat food — what else is there to eat? But Gussow, who grows much of her own food on a flood-prone finger of land jutting into the Hudson River, refuses to dignify most of the products for sale in the supermarket with that title. "In the thirty-four years I've been in the field of nutrition," she said in the same speech, "I have watched real food disappear from large areas of the supermarket and from much of the rest of the eating world." Taking food's place on the shelves has been an unending stream of food-like substitutes, some seventeen thousand new ones every year — "products constructed largely around commerce and hope, supported by frighteningly little actual knowledge." Ordinary food is still out there, however, still being grown and even occasionally sold in the supermarket, and this ordinary food is what we should eat.

But given our current state of confusion and given the thousands of products calling themselves food, this is more easily said than done. So consider these related rules of thumb. Each proposes a different sort of map to the contemporary food landscape, but all should take you to more or less the same place.

• **DON'T EAT ANYTHING YOUR GREAT GRANDMOTHER WOULDN'T RECOGNIZE AS FOOD.** Why your great grandmother? Because at this point your mother and possibly even your grandmother is as confused as the rest of us; to be safe we need to go back at least a couple generations, to a time before the advent of most modern foods. So depending on your age (and your

grandmother), you may need to go back to your great- or even great-great grandmother. Some nutritionists recommend going back even further. John Yudkin, a British nutritionist whose early alarms about the dangers of refined carbohydrates were overlooked in the 1960s and 1970s, once advised, "Just don't eat anything your Neolithic^o ancestors wouldn't have recognized and you'll be ok."

What would shopping this way mean in the supermarket? Well, imagine your great grandmother at your side as you roll down the aisles. You're standing together in front of the dairy case. She picks up a package of Go-Gurt Portable Yogurt tubes — and has no idea what this could possibly be. Is it a food or a toothpaste? And how, exactly, do you introduce it into your body? You could tell her it's just yogurt in a squirtable form, yet if she read the ingredients label she would have every reason to doubt that that was in fact the case. Sure, there's some yogurt in there, but there are also a dozen other things that aren't remotely yogurtlike, ingredients she would probably fail to recognize as foods of any kind, including high-fructose corn syrup, modified corn starch, kosher gelatin, carrageenan, tri-calcium phosphate, natural and artificial flavors, vitamins, and so forth. (And there's a whole other list of ingredients for the "berry bubblegum bash" flavoring, containing everything but berries or bubblegum.) How did yogurt, which in your great grandmother's day consisted simply of milk inoculated with a bacterial culture, ever get to be so complicated? Is a product like Go-Gurt Portable Yogurt still a whole food? A food of any kind? Or is it just a food product?

There are in fact hundreds of foodish products in the supermarket⁵ that your ancestors simply wouldn't recognize as food: breakfast cereal bars transected by bright white veins representing, but in reality having nothing to do with, milk; "protein waters" and "nondairy creamer"; cheeselike foodstuffs equally innocent of any bovine^o contribution; cakelike cylinders (with creamlike fillings) called Twinkies that never grow stale. Don't eat anything incapable of rotting is another personal policy you might consider adopting.

There are many reasons to avoid eating such complicated food products beyond the various chemical additives and corn and soy derivatives they contain. One of the problems with the products of food science is that, as Joan Gussow has pointed out, they lie to your body; their artificial colors and flavors and synthetic sweeteners and novel fats confound the senses we rely on to assess new foods and prepare our bodies to deal

^{Neolithic:} of or relating to the period of human history about 10,000 years ago, when humans began to develop agriculture and polished stone tools.
^{bovine:} relating to cows.

with them. Foods that lie leave us with little choice but to eat by the numbers, consulting labels rather than our senses.

It's true that foods have long been processed in order to preserve them, as when we pickle or ferment or smoke, but industrial processing aims to do much more than extend shelf life. Today foods are processed in ways specifically designed to sell us more food by pushing our evolutionary buttons — our inborn preferences for sweetness and fat and salt. These qualities are difficult to find in nature but cheap and easy for the food scientist to deploy, with the result that processing induces us to consume much more of these ecological rarities than is good for us. "Tastes great, less filling!" could be the motto for most processed foods, which are far more energy dense than most whole foods: They contain much less water, fiber, and micronutrients, and generally much more sugar and fat, making them at the same time, to coin a marketing slogan, "More fattening, less nutritious!"

The great grandma rule will help keep many of these products out of your cart. But not all of them. Because thanks to the FDA's^o willingness, post-1973, to let food makers freely alter the identity of "traditional foods that everyone knows" without having to call them imitations, your great grandmother could easily be fooled into thinking that that loaf of bread or wedge of cheese is in fact a loaf of bread or a wedge of cheese. This is why we need a slightly more detailed personal policy to capture these imitation foods; to wit:

AVOID FOOD PRODUCTS CONTAINING INGREDIENTS THAT ARE A) UNFAMILIAR, B) UNPRONOUNCEABLE, C) MORE THAN FIVE IN NUMBER, OR THAT INCLUDE D) HIGH-FRUCTOSE CORN SYRUP. None of these characteristics, not even the last one, is necessarily harmful in and of itself, but all of them are reliable markers for foods that have been highly processed to the point where they may no longer be what they purport to be. They have crossed over from foods to food products.

Consider a loaf of bread, one of the "traditional foods that everyone 10 knows" specifically singled out for protection in the 1938 imitation rule. As your grandmother could tell you, bread is traditionally made using a remarkably small number of familiar ingredients: flour, yeast, water, and a pinch of salt will do it. But industrial bread — even industrial whole-grain bread — has become a far more complicated product of modern food science (not to mention commerce and hope). Here's the complete ingredients list for Sara Lee's Soft & Smooth Whole Grain White Bread.

FDA: United States Food and Drug Administration, the federal agency that is responsible for regulating and supervising food safety.

(Wait a minute — isn't "Whole Grain White Bread" a contradiction in terms? Evidently not anymore.)

Enriched bleached flour [wheat flour, malted barley flour, niacin, iron, thiamin mononitrate (vitamin B₁), riboflavin (vitamin B₂), folic acid], water, whole grains [whole wheat flour, brown rice flour (rice flour, rice bran)], high fructose corn syrup [hello!], whey, wheat gluten, yeast, cellulose. Contains 2% or less of each of the following: honey, calcium sulfate, vegetable oil (soybean and/or cottonseed oils), salt, butter (cream, salt), dough conditioners (may contain one or more of the following: mono- and diglycerides, ethoxylated mono- and diglycerides, ascorbic acid, enzymes, azodicarbonamide), guar gum, calcium propionate (preservative), distilled vinegar, yeast nutrients (monocalcium phosphate, calcium sulfate, ammonium sulfate), corn starch, natural flavor, beta-carotene (color), vitamin D₃, soy lecithin, soy flour.

There are many things you could say about this intricate loaf of "bread," but note first that even if it managed to slip by your great grandmother (because it is a loaf of bread, or at least is called one and strongly resembles one), the product fails every test proposed under rule number two: It's got unfamiliar ingredients (monoglycerides I've heard of before, but ethoxylated monoglycerides?); unpronounceable ingredients (try "azodicarbonamide"); it exceeds the maximum of five ingredients (by roughly thirty-six); and it contains high-fructose corn syrup. Sorry, Sara Lee, but your Soft & Smooth Whole Grain White Bread is not food and if not for the indulgence of the FDA could not even be labeled "bread."

Sara Lee's Soft & Smooth Whole Grain White Bread could serve as a monument to the age of nutritionism. It embodies the latest nutritional wisdom from science and government (which in its most recent food pyramid recommends that at least half our consumption of grain come from whole grains) but leavens that wisdom with the commercial recognition that American eaters (and American children in particular) have come to prefer their wheat highly refined — which is to say, cottony soft, snowy white, and exceptionally sweet on the tongue. In its marketing materials, Sara Lee treats this clash of interests as some sort of Gordian knot^o — it speaks in terms of an ambitious quest to build a "no compromise" loaf — which only the most sophisticated food science could possibly cut.

And so it has, with the invention of whole-grain white bread. Because the small percentage of whole grains in the bread would render it that

Gordian knot: in legend, a knot impossible to untangle. Alexander the Great "untied" the knot by cutting it with his sword.

much less sweet than, say, all-white Wonder Bread — which scarcely waits to be chewed before transforming itself into glucose — the food scientists have added high-fructose corn syrup and honey to make up the difference; to overcome the problematic heft and toothsomeness of a real whole-grain bread, they've deployed "dough conditioners," including guar gum and the aforementioned azodicarbonamide, to simulate the texture of supermarket white bread. By incorporating certain varieties of albino wheat, they've managed to maintain that deathly but apparently appealing Wonder Bread pallor.

Who would have thought Wonder Bread would ever become an ideal of aesthetic and gustatory perfection to which bakers would actually aspire — Sara Lee's Mona Lisa?

Very often food science's efforts to make traditional foods more nutritious make them much more complicated, but not necessarily any better for you. To make dairy products low fat, it's not enough to remove the fat. You then have to go to great lengths to preserve the body or creamy texture by working in all kinds of food additives. In the case of low-fat or skim milk, that usually means adding powdered milk. But powdered milk contains oxidized cholesterol, which scientists believe is much worse for your arteries than ordinary cholesterol, so food makers sometimes compensate by adding antioxidants, further complicating what had been a simple one-ingredient whole food. Also, removing the fat makes it that much harder for your body to absorb the fat-soluble vitamins that are one of the reasons to drink milk in the first place.

All this heroic and occasionally counterproductive food science has been undertaken in the name of our health — so that Sara Lee can add to its plastic wrapper the magic words "good source of whole grain" or a food company can ballyhoo the even more magic words "low fat." Which brings us to a related food policy that may at first sound counterintuitive to a health-conscious eater:

AVOID FOOD PRODUCTS THAT MAKE HEALTH CLAIMS. For a food product to make health claims on its package it must first *have* a package, so right off the bat it's more likely to be a processed than a whole food. Generally speaking, it is only the big food companies that have the wherewithal to secure FDA-approved health claims for their products and then trumpet them to the world. Recently, however, some of the tonier fruits and nuts have begun boasting about their health-enhancing properties, and there will surely be more as each crop council scrounges together the money to commission its own scientific study. Because all plants contain antioxidants, all these studies are guaranteed to find *something* on which to base a health oriented marketing campaign.

But for the most part it is the products of food science that make the boldest health claims, and these are often founded on incomplete and often erroneous science — the dubious fruits of nutritionism. Don't forget that trans-fat-rich margarine, one of the first industrial foods to claim it was healthier than the traditional food it replaced, turned out to give people heart attacks. Since that debacle, the FDA, under tremendous pressure from industry, has made it only easier for food companies to make increasingly doubtful health claims, such as the one Frito-Lay now puts on some of its chips — that eating them is somehow good for your heart. If you bother to read the health claims closely (as food marketers make sure consumers seldom do), you will find that there is often considerably less to them than meets the eye.

Consider a recent "qualified" health claim approved by the FDA for (don't laugh) corn oil. ("Qualified" is a whole new category of health claim, introduced in 2002 at the behest of industry.) Corn oil, you may recall, is particularly high in the omega-6 fatty acids we're already consuming far too many of.

Very limited and preliminary scientific evidence suggests that eating about one tablespoon (16 grams) of corn oil daily may reduce the risk of heart disease due to the unsaturated fat content in corn oil.

The tablespoon is a particularly rich touch, conjuring images of moms administering medicine, or perhaps cod-liver oil, to their children. But what the FDA gives with one hand, it takes away with the other. Here's the small-print "qualification" of this already notably diffident health claim:

[The] FDA concludes that there is little scientific evidence supporting this claim.

And then to make matters still more perplexing:

To achieve this possible benefit, corn oil is to replace a similar amount of saturated fat and not increase the total number of calories you eat in a day.

This little masterpiece of pseudoscientific bureaucratese was extracted from the FDA by the manufacturer of Mazola corn oil. It would appear that "qualified" is an official FDA euphemism for "all but meaningless." Though someone might have let the consumer in on this game: The FDA's own research indicates that consumers have no idea what to make of qualified health claims (how would they?), and its rules allow companies to promote the claims pretty much any way they want — they can

use really big type for the claim, for example, and then print the disclaimers in teeny-tiny type. No doubt we can look forward to a qualified health claim for high-fructose corn syrup, a tablespoon of which probably does contribute to your health — as long as it replaces a comparable amount of, say, poison in your diet and doesn't increase the total number of calories you eat in a day.

When corn oil and chips and sugary breakfast cereals can all boast being good for your heart, health claims have become hopelessly corrupt. The American Heart Association currently bestows (for a fee) its heart-healthy seal of approval on Lucky Charms, Cocoa Puffs, and Trix cereals, Yoo-hoo lite chocolate drink, and Healthy Choice's Premium Caramel Swirl Ice Cream Sandwich — this at a time when scientists are coming to recognize that dietary sugar probably plays a more important role in heart disease than dietary fat. Meanwhile, the genuinely heart-healthy whole foods in the produce section, lacking the financial and political clout of the packaged goods a few aisles over, are mute. But don't take the silence of the yams as a sign that they have nothing valuable to say about health.

Bogus health claims and food science have made supermarkets particularly treacherous places to shop for real food, which suggests two further rules:

♦ **SHOP THE PERIPHERIES OF THE SUPERMARKET AND STAY OUT OF THE MIDDLE.** Most 25 supermarkets are laid out the same way: Processed food products dominate the center aisles of the store while the cases of ostensibly fresh food — dairy, produce, meat, and fish — line the walls. If you keep to the edges of the store you'll be that much more likely to wind up with real food in your shopping cart. The strategy is not foolproof, however, because things like high-fructose corn syrup have slipped into the dairy case under cover of Go-Gurt and such. So consider a more radical strategy:

♦ **GET OUT OF THE SUPERMARKET WHENEVER POSSIBLE.** You won't find *any* high-fructose corn syrup at the farmers' market. You also won't find any elaborately processed food products, any packages with long lists of unpronounceable ingredients or dubious health claims, nothing microwavable, and, perhaps best of all, no old food from far away. What you *will* find are fresh whole foods picked at the peak of their taste and nutritional quality — precisely the kind your great grandmother, or even your Neolithic ancestors, would easily have recognized as food.

Indeed, the surest way to escape the Western diet is simply to depart the realms it rules: the supermarket, the convenience store, and the fast-food outlet. It is hard to eat badly from the farmers' market, from a CSA box (community-supported agriculture, an increasingly popular scheme in which you subscribe to a farm and receive a weekly box of produce),

or from your garden. The number of farmers' markets has more than doubled in the last ten years, to more than four thousand, making it one of the fastest-growing segments of the food marketplace. It is true that most farmers' markets operate only seasonally, and you won't find everything you need there. But buying as much as you can from the farmers' market, or directly from the farm when that's an option, is a simple act with a host of profound consequences for your health as well as for the health of the food chain you've now joined.

When you eat from the farmers' market, you automatically eat food that is in season, which is usually when it is most nutritious. Eating in season also tends to diversify your diet — because you can't buy strawberries or broccoli or potatoes twelve months of the year, you'll find yourself experimenting with other foods when they come into the market. The CSA box does an even better job of forcing you out of your dietary rut because you'll find things in your weekly allotment that you would never buy on your own. Whether it's a rutabaga or an unfamiliar winter squash, the CSA box's contents invariably send you to your cookbooks to figure out what in the world to do with them. Cooking is one of the most important health consequences of buying food from local farmers; for one thing, when you cook at home you seldom find yourself reaching for the ethoxylated diglycerides or high-fructose corn syrup. . . .

To shop at a farmers' market or sign up with a CSA is to join a short food chain, and that has several implications for your health. Local produce is typically picked ripe and is fresher than supermarket produce, and for those reasons it should be tastier and more nutritious. As for supermarket organic produce, it too is likely to have come from far away — from the industrial organic farms of California or, increasingly, China.¹ And while it's true that the organic label guarantees that no synthetic pesticides or fertilizers have been used to produce the food, many, if not most, of the small farms that supply farmers' markets are organic in everything but name. To survive in the farmers' market or CSA economy, a farm will need to be highly diversified, and a diversified farm usually has little need for pesticides; it's the big monocultures that can't survive without them.²

¹One recent study found that the average item of organic produce in the supermarket had actually traveled farther from the farm than the average item of conventional produce. [Pollan's note.]

²Wendell Berry put the problem of monoculture with admirable brevity and clarity in his essay "The Pleasures of Eating": "But as scale increases, diversity declines; as diversity declines, so does health; as health declines, the dependence on drugs and chemicals necessarily increases." [Pollan's note.]

If you're concerned about chemicals in your produce, you can simply ask the farmer at the market how he or she deals with pests and fertility and begin the sort of conversation between producers and consumers that, in the end, is the best guarantee of quality in your food. So many of the problems of the industrial food chain stem from its length and complexity. A wall of ignorance intervenes between consumers and producers, and that wall fosters a certain carelessness on both sides. Farmers can lose sight of the fact that they're growing food for actual eaters rather than for middlemen, and consumers can easily forget that growing good food takes care and hard work. In a long food chain, the story and identity of the food (Who grew it? Where and how was it grown?) disappear into the undifferentiated stream of commodities, so that the only information communicated between consumers and producers is a price. In a short food chain, eaters can make their needs and desires known to the farmer, and farmers can impress on eaters the distinctions between ordinary and exceptional food, and the many reasons why exceptional food is worth what it costs. Food reclaims its story, and some of its nobility, when the person who grew it hands it to you. So here's a subclause to the get-out-of-the-supermarket rule: *Shake the hand that feeds you.*

As soon as you do, accountability becomes once again a matter of relationships instead of regulation or labeling or legal liability. Food safety didn't become a national or global problem until the industrialization of the food chain attenuated^o the relationships between food producers and

eaters. That was the story Upton Sinclair told about the Beef Trust in 1906, and it's the story unfolding in China today, where the rapid industrialization of the food system is leading to alarming breakdowns in food safety and integrity. Regulation is an imperfect substitute for the accountability, and trust, built into a market in which food producers meet the gaze of eaters and vice versa. Only when we participate in a short food chain are we reminded every week that

"Only when we participate in a short food chain are we reminded every week that we are indeed part of a food chain and dependent for our health on its peoples and soils and integrity — on its health."

we are indeed part of a food chain and dependent for our health on its peoples and soils and integrity — on its health.

"Eating is an agricultural act," Wendell Berry famously wrote, by which he meant that we are not just passive consumers of food but cocreators of the systems that feed us. Depending on how we spend them, our

attenuated: made smaller, thinner, or weaker.

food dollars can either go to support a food industry devoted to quantity and convenience and "value" or they can nourish a food chain organized around *values* — values like quality and health. Yes, shopping this way takes more money and effort, but as soon as you begin to treat that expenditure not just as shopping but also as a kind of vote — a vote for health in the largest sense — food no longer seems like the smartest place to economize.

Understanding the Text

1. What is the "industrial food chain"?
2. What are "foodish products"? What reasons does Pollan offer for avoiding "foodish products"?
3. What are the differences between processed and whole foods? Why does this distinction matter to Pollan?

Reflection and Response

4. What does the advice to "just eat food" mean to you?
5. Does Pollan think we can trust food labels? Explain.
6. Select a packaged or processed food product that you like to eat, and examine the ingredients. Would Pollan classify your item as "food"? Why or why not? Do you classify it as "food"? Explain.
7. How would following Pollan's advice change your eating patterns? How might you benefit? What would you give up?

Making Connections

8. How might Pollan evaluate the Food Pyramid and Food Plate developed by the United States Department of Agriculture (p. 132)? Locate textual evidence to support your case.
9. Pollan quotes Wendell Berry, author of "The Pleasures of Eating" (p. 47), in the last paragraph of this selection. What ideals do Pollan and Berry share? What selections in this book complicate these ideals? How?
10. Rachel Laudan ("The Birth of the Modern Diet," p. 55) has said that her work as a food historian has made her an "unabashed, though not uncritical enthusiast about modern food." Compare her representation of the modern diet to Pollan's. What do they have in common? Where do they differ? How does Laudan complicate Pollan's prescription to eat only what your great-grandmother would recognize as food?