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Mark Bittman

FOOD
MATTERS

A Guide to Conscious Eating*



*WITH MORE THAN 75 RECIPES

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Before starting on a weight-loss plan, or beginning or modifying an exercise program, check with your physician to make sure that the changes are right for you.



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*For Kerri Conan, Kelly Doe, Suzanne Lenzer,
and Sidney M. Baker, MD, who made this possible*

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MEASUREMENT CONVERSIONS

ACKNOWLEDGMENTS

Introduction

TWO YEARS AGO, a report from the United Nations Food and Agriculture Organization (FAO) landed on my desk. Called *Livestock's Long Shadow*, it revealed a stunning statistic: global livestock production is responsible for about one-fifth of all greenhouse gases—more than transportation.

This was a signal moment for me, coming along with some personal health problems, an overall gloomy global outlook, and an increasing concern with animal products in general—the quality of meat, the endangerment of wild fish, the way domestic animals are raised, and the impact our diet has had on the environment. Never before had I realized issues of personal and global health intersected so exquisitely. The destiny of the human race and that of the planet lay in our hands and in the choices—as individuals and as a society—that we made.

If I told you that a simple lifestyle choice could help you lose weight, reduce your risk of many long-term or chronic diseases, save you real money, *and* help stop global warming, I imagine you'd be intrigued. If I also told you that this change would be easier and more pleasant than any diet you've ever tried, would take less time and effort than your exercise routine, and would require no sacrifice, I would think you'd want to read more.

When you do, you'll find an explanation of the links among diet, health, the environment in general and climate change in particular and you'll see how *you* can make a difference. And while you're doing your part to heal the planet you'll improve your health, lose weight, and even spend less at the checkout counter. And yes: This is for real.

The consequences of modern agriculture

It doesn't take a historian to see that events that took place hundreds or even thousands of years ago reverberate to our day, and it doesn't take a scientist to see the profound effects of every significant advance in technology, from the invention of the wheel and the internal combustion engine to that of the microchip.

Unfortunately, we can rarely anticipate the consequences of historical events, inventions, and new technologies. Some have had nearly entirely positive results: indoor plumbing and vaccinations have saved countless lives, and it would be hard to argue that the telephone or railroads were not almost entirely positive. Automobiles, with their huge demand on limited energy sources, are a tougher call.

The industrialization of food production was one development that—though positive at first—is now exacting intolerable costs. Just as no one could foresee that cars would eventually suck the earth dry of oil and pollute the atmosphere to unsafe levels, no one could have anticipated that we would raise and eat more animals than we need to physically sustain us, that in the name of economy and efficiency we would raise them under especially cruel conditions (requiring some humans to work under cruel conditions as well), or that these practices would make them less nutritious than their wild or more naturally raised counterparts *and* cause enormous damage to the earth, including the significant acceleration of global warming.

Yet that's exactly what has happened. Industrialized meat production has contributed to climate change and stimulated a fundamental change in our diets that has contributed to our being overweight, even obese, and more susceptible to diabetes, heart disease, stroke, and perhaps even cancer.

It isn't just our propensity for eating animal products that's making us fat and sick, but also our consumption of junk food and overrefined carbohydrates. And these foods—which as a group are also outrageously expensive, especially considering their nutritional profiles—are also big contributors to environmental damage and climate change.

The twentieth-century American diet, high in meat, refined carbohydrates, and junk food, is driven by a destructive form of food production. The fallout from this combination, and the way we deal with it are issues as important as any humanity has faced: The path we take from this crossroads will determine not only individual life expectancy and the quality of life for many of us, but whether if we were able to see the earth a century from now we would recognize it.

Climate change is no longer a theory, and humans will suffer mightily if it isn't reversed. Most people know this. Less well known is the role that raising livestock plays in this, which is greater than that of transportation. Equally certain is that many lifestyle syndromes and diseases are the direct or indirect result of eating too many animal products. Our demand for meat and dairy—not our need, our want—causes us to consume way more calories, protein, and fat than are good for us.

Why food matters

Global warming, of course, was accidental. Even 30 years ago we couldn't know that pollution was more than stinky air. We thought it caused bad visibility and perhaps a few lung diseases here and there—as if that weren't bad enough.

The current health crisis is also an accident: We thought that the more meat and

dairy and fish and poultry we ate, the healthier we would be.

This has not proved to be the case. Overconsumption has been supported and encouraged by Big Oil and Big Food—the industrial meat and junk food complex—in cahoots with the federal government and even the media and (one might say so-called) health industries. This has come at the expense of lifestyles that would have encouraged more intelligent use of resources—not just oil, but land and animals—as well as global health and longer life for individuals.

It doesn't have to continue: by simply changing what we eat we can have an immediate impact on our own health and a very real effect on global warming—and the environment, *and* animal cruelty, *and* food prices.

That's the guiding principle behind *Food Matters*, and it's really very simple: eat less meat and junk food, eat more vegetables and whole grains. I'm not talking about a diet in the conventional sense—something you do for two weeks or three months and then “maintain.” I'm not suggesting that you become a vegetarian or eat only organic food. I'm not even talking about a method for weight loss, *per se*, though almost anyone who makes the kinds of changes I'm suggesting here is likely to lose weight and keep it off. You won't be buying exotic foods or shopping in expensive specialty markets, and you won't be counting calories—or anything else.

I'm just suggesting eating less of some things and more of others. The results will make you healthier while you do a little toward slowing climate change—much like trading in your gas guzzler for something more energy and cost efficient.

You could stop reading now and put your own plan into action. Or you can read on and find the details of how we allowed ourselves to be stuck with this mess and how you can help yourself and the rest of us get out of it. I'll describe what sane, conscious eating is, and the impact it will have. I'll suggest different strategies for changing how you think about food and prepare it. I'll show you how easy it is to follow the Food Matters plan when you eat out, whether at restaurants or other people's houses. I'll give you some sample menus and direction so you can easily create your own. Finally, I'm providing 77 easy recipes to get you started.

At first my suggestions may seem radical, but they can be integrated gradually into *any* style of eating. There's no sacrifice here, only adjustment and benefit: I will not suggest that you cut your calorie consumption (I don't even advocate counting calories), though you probably will simply by following the plan. Other than suggesting that you pretty much rule out junk food, I won't put any foods off limits.

The fact is that what I'm asking you to do isn't radical at all, and I'm confident you'll find this new mind-set so easy and so natural, and that you'll see its many benefits so easily, that you'll be eager to adjust your diet.

Why me?

Who am I to tell you how to eat and suggest it's a way to reduce global warming? I've been a reporter and researcher for more than 30 years; for much of that time, I've written about food from every possible angle. I've seen nutritional “wisdom” turned on its head more than once, and I've seen studies contesting studies designed to disprove studies. I have no more agenda than to inject some common sense into the discussion.

It doesn't take a genius to see that an ever-growing population cannot continue to devote limited resources to produce ever-increasing amounts of meat, which takes roughly 10 times more energy to produce than plants. Nor can you possibly be "nice" to animals, or respectful of them, when you're raising and killing them by the billions.

And it doesn't take a scientist, either, to know that a handful of peanuts is better for you than a Snickers bar, that food left closer to its natural state is more nutritious than food that has been refined to within an inch of its life, and that eating unprecedented quantities of animals who have been drugged and generally mistreated their entire lives isn't good for you.

I've got plenty of evidence to back up what I'm saying in these pages, but I've got my own story, too, and maybe you'll find that equally convincing. I've tried to strike a balance here, avoiding citing an overwhelming number of studies in an attempt to prove my point; that approach doesn't work, anyway, because most data can be read many ways, depending on your prejudices. My contention is that this way of eating is so simple, logical, and sane that cherry-picking scientific research isn't necessary.

Which Would You Choose?

Nutrient	2-ounce Snickers bar	2 tablespoons dry- roasted peanuts
Calories	271	107
Sugar	29 g	<1 g
Fat (saturated)	14 g (5.2 g)	9 g (1.8 g)
Protein	4 g	4 g
Sodium	140 mg	2 mg
Fiber	1 g	<2 g
Vitamin E	<1 mg	2 mg
Folate	12 mcg	27 mcg
Niacin	2 mg	3 mg

One more thing: I'm not a doctor or a scientist, but I'm not a health-food or nutrition nut either. For my entire adult life I've been what used to be called a gourmand and is now called (unfortunately) a foodie: a daily and decent cook, a traveler who's eaten all over the world and written about it, a journalist and food lover who's eagerly devoured everything. I intend to continue to do just that, but in different proportions.

For our own sakes as well as for the sake of the earth, we need to change the way we eat. But we can continue to eat well—better, in fact. In the long run, we can make food more important, not less, and save ourselves and our planet (and some money) by doing so.

FOOD MATTERS

PART I

Rethinking Consumption

Could improved health for people and planet be as simple as eating fewer animals, and less junk food and super-refined carbohydrates?

Yes. Of course health benefits for individuals would vary, and the effect on the planet would not necessarily be dramatic (as everyone knows, large adjustments in energy use are essential), but it would be a real step forward, and perhaps most important one that can be taken by individuals, with no government intervention.

There'd be other benefits, too: we would see the methods used in livestock production change. (This is important because the current system of raising animals for food is not only unsustainable but destructive, and will become more so: global meat consumption is expected to double within the next 40 years.)

The average person would also spend less money on food. With food prices in general rising at an average of about 5 percent a year, the differences in costs between vegetables, fruits, and grains, versus dairy, eggs, meat and especially junk food, are going to become more and more apparent (and painful, for those who refuse to make the change).

For the moment, let's ignore whether food is organic or local, or even whether animals are raised humanely. All these issues matter, but the bottom line here is that to eat well we must first eat moderately, and limit our eating to real food. (Organic junk food—and there is plenty of it—is still junk food.) Once we make those strides, which require small individual changes but whose collective impact is huge, we'll be able to eat more locally, we'll be able to eat more organic food, and we'll be able to treat animals more humanely. In fact, this will come naturally.

First, though, we have to adjust our consumption patterns. One argument, and it's a sound one, goes something like this: eat less meat, but eat better meat. "Better" meat, by its nature, tends to be local, more humanely raised, and less environmentally damaging: a good start. But my point, as I'll stress over and over, is that it all begins with eating *less* meat.

Our instincts, as human animals, prod us to eat all the food we can lay our hands

on; difficult as it may be to imagine, until recently nearly all humans struggled to obtain enough calories. Those instincts, coupled with relative affluence, almost unlimited availability, and marketing that encourages us to eat the food that's most profitable for manufacturers, lead to overconsumption of precisely the wrong foods.

It's easy to see this with, say, fruits versus processed sweet snacks: It's far more profitable to produce and sell Twinkies and Cinnabons, for example, than to grow and sell strawberries. That's why so much more money is spent convincing us of the deliciousness of Twinkies and Cinnabons.

Similarly, it's more profitable to sell a million pounds of industrially raised meat than it is to sell 100,000 pounds of humanely raised, antibiotic-and hormone-free. And if you're the producer of that meat, you create demand as necessary. Maybe you lower prices. Or you tell consumers that meat is healthier than an alternative protein source. Or you make it more appealing: it's manly, it's real food, it's what's for dinner. Maybe you even cook it for them and sell it as cheaply as you can. Or you provide a combination of all of these, which is what we have today. Whatever it takes.

The people in many developed countries, including the U.S., consume 1/2 pound of meat per day.

Most people crave meat. Arguably, that craving is natural, or at least not unnatural. We are omnivorous, capable of digesting a wide range of foods, and historically we have eaten just about all of them, first from necessity and then for pleasure.

If you grow up eating meat *and* it's marketed as real, healthy, cheap, sexy, and delicious, you really enjoy eating it. But given a large enough marketing budget, we can be persuaded to eat just about anything, including concoctions that contain no naturally occurring food at all.

A new world of meat eaters

We might love meat, we might benefit from eating it in moderate quantities, but we don't *need* to eat meat to live. And most independent experts believe that consuming it at our current levels is bad for us. And our consumption is headed in the wrong direction. Livestock, globally, is the fastest-growing sector of agriculture: Since 1980 the global production of pigs and poultry has quadrupled, and there are twice as many cattle, sheep, and goats.

The people in many developed countries (including the United States) consume an average of about half a pound of meat per day; in Africa, the average is about an ounce a day. And though meat consumption is fairly stable in the United States, it's rising at a faster rate in the developing world, where it has tripled since 1970. The Chinese eat twice as much meat as they did a decade ago.

Between 1995 and 2005, the number of chickens worldwide destined to be eaten rose by 14 billion (an increase of 40 percent); the number of egg-layers increased by 2.3 billion (31 percent); the number of pigs rose by 255 million (24 percent); and the

number of cows used for milk production increased by 12 million (6 percent). The FAO predicts that this increase in animal production will continue, and that meat production will double again by 2050.

Impressive numbers. And the truth is that because of them, the world *needs* factory farming. There is no other method that can produce these quantities of meat, eggs, and dairy. It follows, then, that *the only way to reduce factory farming is to demand less meat*.

We currently raise 60 billion animals each year for food—ten animals for every human on earth. The projection is that just to sustain current consumption levels (and consumption is increasing, so this is conservative), by 2050 we'll be raising 120 billion animals a year.

60 BILLION animals are raised each year for food—10 animals for every human on earth.

That number would require using more land for agriculture than exists. Even if we could find the space (or technology) to meet the demand, the number also assumes that the atmosphere, land, and oceans could tolerate it. The effect would be cumulative, like credit card debt: a year of animal consumption at this rate requires a year and two months' worth of resources. And since consumption is increasing, the situation will get worse even faster. In developing parts of Asia, for example, meat consumption increased 131 percent between 1980 and 2002; in Latin America and the Caribbean, 24 percent; in industrialized countries, 10 percent; and in the world as a whole, 22 percent.

The only way to reduce factory farming is to demand less meat.

It's not just meat

There's another aspect to this problem, one that many experts believe affects our health even more dramatically than meat. And though it's been overshadowed by livestock in the realm of ecological damage, it's equally alarming.

That is the world of junk food, overrefined carbohydrates, and highly processed oils—foods that make up an astonishingly large part of our diet. A study from the University of California at Berkeley, for example, reports that almost one-third of Americans' total caloric intake comes from "nutrient-poor" foods like sweets, salty snacks, and fruit drinks. Seven percent of our calories come from soda—more than from vegetables—with hamburgers, pizza, pastries, and potato chips following close behind. (See the chart on the next page.) Meanwhile, beef, pork, dairy, chicken, and fish account for 23 percent of our total caloric consumption, while vegetables and fruit—including juice, which is often sugar-laden—barely hit 10 percent. (See the chart on the opposite page.)

Top 10 Foods Contributing to Energy Intake in the U.S. Population

Rank	Food	% of Total Energy
1	Regular soft drinks	7.1
2	Cake, sweet rolls, doughnuts, pastries	3.6
3	Hamburgers, cheeseburgers, meat loaf	3.1
4	Pizza	3.1
5	Potato chips, corn chips, popcorn	2.9
6	Rice	2.7
7	Rolls, buns, English muffins, bagels	2.7
8	Cheese or cheese spread	2.6
9	Beer	2.6
10	French fries, fried potatoes	2.2

7% of Americans' calories come from soda.

The term “junk food” means different things to different people. Potato chips. Shakes. Candy. Doughnuts. Double cheeseburgers. Chicken nuggets. White bread. None of these has as justifiable a role in good eating as decently raised meat, poultry, or fish; but all of them (with the possible exception of candy) represent categories of food that, made well and eaten occasionally, have a traditional and even legitimate role. None is, by itself, “junk.” But from our bodies' point of view, they all may do more harm than good. Why?

Top 10 Food Groups Contributing to Energy Intake in the U.S. Population

Rank	Food	% of Total Energy
1	Sweets, desserts	12.3
2	Beef, pork	10.1
3	Bread, rolls, crackers	8.7

4	Mixed dishes	8.2
5	Dairy	7.3
6	Soft drinks	7.1
7	Vegetables	6.1
8	Chicken, fish	5.7
9	Alcoholic beverages	4.4
10	Fruit, juice	3.9

For the most part, these foods contain far more calories than are justified by their nutrient levels. In part, this is because they're largely made from corn, in the form of a sugar called high fructose corn syrup; soy in the form of extracted protein or oil; or refined wheat—white flour—all processed to the point where they're nutritionally worthless or even damaging. Furthermore, they often contain added ingredients like preservatives and other chemicals that are at best useless and may be harmful. (Not coincidentally, corn, soy, and wheat are among our most highly subsidized and environmentally damaging crops.)

Consider the difference between eating a whole baked potato and eating an individual bag of potato chips. You'd need to eat 2.5 ounces of potato chips (that's two and a half single-serving bags, less than what most people eat in a sitting) to get the protein in one medium baked potato. By then you would have consumed nearly 25 grams of fat and 380 calories; nearly twice the amount in the baked potato, *even with a pat of butter*.

Two Forms of Potato

Nutrient	Potato Chips (2.5 ounces)	Medium Baked Potato with Pat of Butter
Calories	380	204
Fat	25 g	4 g
Sugar	0 g	2 g
Protein	5 g	5 g
Fiber	4 g	4 g
Vitamin C	22 mg	22 mg
Folate	33 mcg	45 mcg
Potassium	903 mcg	953 mcg

The environmental impact of overconsumption

Even the most conscientious agriculture has some environmental impact, and though much food production yields greenhouse gases, raising livestock has a much higher potential for global warming than crop farming. For example: To produce one calorie of corn takes 2.2 calories of fossil fuel. For beef the number is 40: *it requires 40 calories to produce one calorie of beef protein.*

In other words, if you grow corn and eat it, you expend 2.2 calories of energy in order to eat one of protein. But if you process that corn, and feed it to a steer, and take into account all the other needs that steer has through its lifetime—land use, chemical fertilizers (largely petroleumbased), pesticides, machinery, transport, drugs, water, and so on—you're responsible for 40 calories of energy to get that same calorie of protein. According to one estimate, a typical steer consumes the equivalent of 135 gallons of gasoline in his lifetime, enough for even some gas guzzlers to drive more than halfway from New York to Los Angeles, or for an energy-efficient car to make the drive back and forth twice. Or try to imagine each cow on the planet consuming almost seven barrels of crude oil.

40 CALORIES of fossil fuel are required to produce 1 calorie of beef protein.

Another way to put it is that eating a typical family-of-four steak dinner is the rough equivalent, energy-wise, of driving around in an SUV for three hours while leaving all the lights on at home. In all, the average American meat eater is responsible for one and a half tons more CO₂-equivalent greenhouse gas—enough to fill a large house—than someone who eats no meat. If we each ate the equivalent of three fewer cheeseburgers a week, we'd cancel out the effects of all the SUVs in the country. Not bad.

Yet thanks to agricultural subsidies and the lack of regulation about how meat is raised, it's far less expensive than it actually should be.

Because it's more difficult to get at the raw data, it's not as easy (or as much fun) to make similar statements about junk food. But when you add in all the packaging required to get the stuff into supermarkets and fast-food restaurants, the environmental damage is impressive enough. One estimate is that the food industry accounts for 10 percent of all fossil fuel used in the United States; of this, the total energy expended by processing, packaging, and transportation of food products is 37 percent.

To give you an idea of how much more energy goes into junk food than comes out, consider that a 12-ounce can of diet soda—containing just 1 calorie—requires 2,200 calories to produce, about 70 percent of which is in production of the aluminum can. Almost as impressive is that it takes more than 1,600 calories to produce a 16-ounce glass jar, and more than 2,100 to produce a half-gallon plastic milk container. As for your bottled water? A 1-quart polyethylene bottle requires more than 2,400 calories to produce.

Overproduction drives overconsumption, which in turn is bad for our bodies and the environment—but these negative effects can be diminished by more moderate

consumption, which in turn will eventually lead to lower production. This is where we come in: Every time you drink a glass of tap water instead of bottled water, you save the calorie equivalent of a day's food: the 2,400 calories it takes to produce that plastic bottle.

Likewise, every time you eat a salad instead of a burger you save energy. Look at it this way: When you eat a quarter pound of beef, you're consuming about 20 percent of your daily calories, but it takes about 1,000 calories—almost half your daily intake—to produce that burger. Remember, beef production requires energy for processing, transportation, marketing, and, most of all, the production of all the grain fed to the cow in the first place. (Producing a salad requires energy too, but nothing like what it takes to make that quarter-pounder.) Whenever you eat what might be called inefficient food—and beef is among the leaders in this category—you're consuming more of the planet's energy than you need to live well.

2,200 CALORIES are required to produce a **12 oz.** can of diet soda.

To make the case for changing your diet even more compelling, consider this: For a family that usually drives a car 12,000 miles a year, switching from eating red meat and dairy to chicken, fish, and eggs just one day a week—in terms of greenhouse gas emissions—is the equivalent of driving 760 miles less a year. And if you switch to a vegetable-based diet for that one day a week, you reduce emissions even more, to the equivalent of driving 1,160 miles less.

And this impact is exponential: By moving totally away from red meat and dairy to a diet made up of chicken, fish, and eggs you reduce your emissions by a further 5,340 miles a year. And if you switch to a completely vegetable-based diet? That same family reduces its emissions by more than 60 percent; the same as cutting their mileage down from 12,000 to just 3,900 miles a year.

Those are simple steps. But if, as is expected, the global population grows by nearly half in the next 40 years, meat consumption would have to fall to about three ounces a day (less than half of what Americans average now) just to stabilize the amount of greenhouse gases produced by raising livestock.

Meat consumption would have to fall **3 oz.** A **DAY** to stabilize greenhouse gasses produced by livestock.

And stabilizing production isn't going to cut it, since even at current levels global warming is deadly. But since our consumption of energy would also have to be cut back, let's take this as a goal.

The choice is obvious: To reduce our impact on the environment, we should depend on foods that require little or no processing, packaging, or transportation, and those that efficiently convert the energy required to raise them into nutritional calories to sustain human beings. And as you might have guessed, that means we should be increasing our reliance on whole foods, mostly plants.