Book Excerpt: Why We Get Fat

The following is an excerpt from the introduction of Gary Taubes' book *Why We Get Fat*.

The Original Sin

In 1934, a young German pediatrician named Hilde Bruch moved to America, settled in New York City, and was "startled," as she later wrote, by the number of fat children she saw—" really fat ones, not only in clinics, but on the streets and subways, and in schools." Indeed, fat children in New York were so conspicuous that other European immigrants would ask Bruch about it, assuming that she would have an answer. What is the matter with American children? they would ask. Why are they so bloated and blown up? Many would say they'd never seen so many children in such a state.

Today we hear such questions all the time, or we ask them ourselves, with the continual reminders that we are in the midst of an epidemic of obesity (as is the entire developed world). Similar questions are asked about fat adults. Why are they so bloated and blown up? Or you might ask yourself: Why am I?

But this was New York City in the mid- 1930s. This was two decades before the first Kentucky Fried Chicken and McDonald's franchises, when fast food as we know it today was born. This was half a century before supersizing and high- fructose corn syrup. More to the point, 1934 was the depths of the Great Depression, an era of soup kitchens, bread lines, and unprecedented unemployment. One in every four workers in the United States was unemployed. Six out of every ten Americans were living in poverty. In New York City, where Bruch and her fellow immigrants were astonished by the adiposity of the local children, one in four children were said to be malnourished. How could this be?

A year after arriving in New York, Bruch established a clinic at Columbia University's College of Physicians and Surgeons to treat obese children. In 1939, she published the first of a series of reports on her exhaustive studies of the many obese children she had treated, although almost invariably without success. From interviews with her patients and their families, she learned that these obese children did indeed eat excessive amounts of food—no matter how much either they or their parents might initially deny it. Telling them to eat less, though, just didn't work, and no amount of instruction or compassion, counseling, or exhortations— of either children or parents —seemed to help. It was hard to avoid, Bruch said, the simple fact that these children had, after all, spent their entire lives trying to eat in moderation and so control their weight, or at least thinking about eating less than they did, and yet they remained obese. Some of these children, Bruch reported, "made strenuous efforts to lose weight, practically giving up on living to achieve it." But maintaining a lower weight involved "living on a continuous semi-starvation diet," and they just couldn't do it, even though obesity made them miserable and social outcasts.

One of Bruch's patients was a fine- boned girl in her teens, "literally disappearing in mountains of fat." This young girl had spent her life fighting both her weight and her parents' attempts to help her slim down. She knew what she had to do, or so she believed, as did her parents—she had to eat less—and the struggle to do this defined her existence. "I always knew that life depended on your figure," she told Bruch. "I was always unhappy and depressed when gaining [weight]. There was nothing to live for. . . . I actually hated myself. I just could not stand it. I didn't want to look at myself. I hated mirrors. They showed how fat I was. . . . It never made me feel happy to eat and get fat—but I never could see a solution for it and so I kept on getting fatter."

Like Bruch's fine- boned girl, those of us who are overweight or obese will spend much of our lives trying to eat less, or at least eat not too much. Sometimes we succeed, sometimes we fail, but the fight goes on. For some, like Bruch's patients, the battle begins in childhood. For others, it starts in college with the freshman twenty, that cushion of fat that appears around waist and hips while spending the first year away from home. Still others begin to realize in their thirties or forties that being lean is no longer the effortless achievement it once was.

Should we be fatter than the medical authorities would prefer, and should we visit a doctor for any reason, that doctor is likely to suggest more or less forcefully that we do something about it. Obesity and overweight, so we'll be told, are associated with an increased risk of virtually every chronic disease that ails us—heart disease, stroke, diabetes, cancer, dementia, asthma. We'll be instructed to exercise regularly, to diet, to eat less, as though the thought of doing so, the desire to do so, would never otherwise have crossed our minds. "More than in any other illness," as Bruch said about obesity, "the physician is called upon only to do a special trick, to make the patient do something—stop eating— after it has already been proved that he cannot do it."

The physicians of Bruch's era weren't thoughtless, and the doctors of today are not, either. They merely have a flawed belief system—a paradigm—that stipulates that the reason we get fat is clear and incontrovertible, as is the cure. We get fat, our physicians tell us, because we eat too much and/or move too little, and so the cure is to do the opposite. If nothing else, we should eat "not too much," as Michael Pollan famously prescribes in his best-selling book *In Defense of Food*, and this will suffice. At least we won't get fatter still. This is what Bruch described in 1957 as the "prevalent American attitude that the problem [of obesity] is simply one of eating more than the body needs," and now it's the prevalent attitude worldwide.

We can call this the "calories- in/ calories- out" or the "overeating" paradigm of excess fat—the "energy balance" paradigm, if we want to get technical. "The fundamental cause of obesity and overweight," as the World Health Organization says, "is an energy imbalance between calories consumed on one hand, and calories expended on the other hand." We get fat when we take in more energy than we expend (a positive energy balance, in the scientific terminology), and we get lean when we expend more than we take in (a negative energy balance). Food is energy, and we measure that energy in the form of calories. So, if we take in more calories than we expend, we get fatter. If we take in fewer calories, we get leaner.

This way of thinking about our weight is so compelling and so pervasive that it is virtually impossible nowadays *not* to believe it. Even if we have plenty of evidence to the contrary—no

matter how much of our lives we've spent consciously trying to eat less and exercise more without success—it's more likely that we'll question our own judgment and our own willpower than we will this notion that our adiposity is determined by how many calories we consume and expend.

My favorite example of this thinking came from a wellrespected exercise physiologist, a co-author of a set of physical-activity and health guidelines that were published in August 2007 by the American Heart Association and the American College of Sports Medicine. This fellow told me that he personally had been "short, fat, and bald" when he first took up distance running in the 1970s, and now he was in his late sixties and was "short, *fatter*, and bald." In the intervening years, he said, he had gained thirty-odd pounds and run maybe eighty thousand miles—the equivalent, more or less, of running three times around the Earth (at the equator). He believed that there was a limit to how much exercise could help him maintain his weight, but he also believed he would be fatter still if he hadn't been running.

When I asked him whether he really thought he might be leaner had he run even more, maybe run four times around the planet instead of three, he said, "I don't see how I could have been more active. I had no time to do more. But if I could have gone out over the last couple of decades for two to three hours a day, maybe I would not have gained this weight." And the point is that maybe he would have anyway, but he just couldn't wrap his head around that possibility. As sociologists of science would say, he was trapped in a paradigm.

Over the years, this calories- in/ calories- out paradigm of excess fat has proved to be remarkably resistant to any evidence to the contrary. Imagine a murder trial in which one credible witness after another takes the stand and testifies that the suspect was elsewhere at the time of the killing and so had an airtight alibi, and yet the jurors keep insisting that the defendant is guilty, because that's what they believed when the trial began.

Consider the obesity epidemic. Here we are as a population getting fatter and fatter. Fifty years ago, one in every eight or nine Americans would have been officially considered obese, and today it's one in every three. Two in three are now considered overweight, which means they're carrying around more weight than the public- health authorities deem to be healthy. Children are fatter, adolescents are fatter, even newborn babies are emerging from the womb fatter. Throughout the decades of this obesity epidemic, the calories-in/ calories-out, energy-balance notion has held sway, and so the health officials assume that either we're not paying attention to what they've been telling us—eat less and exercise more—or we just can't help ourselves.

Malcolm Gladwell discussed this paradox in *The New Yorker* in 1998. "We have been told that we must not take in more calories than we burn, that we cannot lose weight if we don't exercise consistently," he wrote. "That few of us are able to actually follow this advice is either our fault or the fault of the advice. Medical orthodoxy, naturally, tends toward the former position. Diet books tend toward the latter. Given how often the medical orthodoxy has been wrong in the past, that position is not, on its face, irrational. It's worth finding out whether it is true."

After interviewing the requisite number of authorities, Gladwell decided that it was our fault, that we simply "lack the discipline. . . or the wherewithal" to eat less and move more— although for

some of us, he suggested, bad genes extract a greater price in adiposity for our moral failings.

I will argue in this book that the fault lies entirely with the medical orthodoxy—both the belief that excess fat is caused by consuming excess calories, and the advice that stems from it. I'm going to argue that this calories-in/ calories-out paradigm of adiposity is nonsensical: that we don't get fat because we eat too much and move too little, and that we can't solve the problem or prevent it by consciously doing the opposite. This is the original sin, so to speak, and we're never going to solve our own weight problems, let alone the societal problems of obesity and diabetes and the diseases that accompany them, until we understand this and correct it.

I don't mean to imply, though, that there is a magic recipe to losing weight, or at least not one that doesn't include sacrifice. The question is, what has to be sacrificed?

The first part of this book will present the evidence against the calories-in/ calories-out hypothesis. It will discuss many of the observations, the facts of life, that this concept fails to explain, why we came to believe it anyway, and what mistakes were made as a result.

The second part of this book will present the way of thinking about obesity and excess fat that European medical researchers came to accept just prior to the Second World War. They argued, as I will, that it is absurd to think about obesity as *caused* by overeating, because anything that makes people grow—whether in height or in weight, in muscle or in fat—will make them overeat. Children, for example, don't grow taller because they eat voraciously and consume more calories than they expend. They eat so much—overeat—because they're growing. They *need* to take in more calories than they expend. The reason children grow is that they're secreting hormones that make them do so—in this case, growth hormone. And there is every reason to believe that the growth of our fat tissue leading to overweight and obesity is also driven and controlled by hormones.

So, rather than define obesity as a disorder of energy balance or eating too much, as the experts have for the past half-century, these European medical researchers started from the idea that obesity is fundamentally a disorder of excess fat accumulation. This is what a philosopher would call "first principles." It's so obviously true that it seems almost meaningless to say it. But once we do, then the natural question to ask is, what regulates fat accumulation? Because whatever hormones or enzymes work to increase our fat accumulation naturally—just as growth hormone makes children grow—are going to be the very likely suspects on which to focus to determine why some of us get fat and others don't.

Regrettably, the European medical-research community barely survived the Second World War, and these physicians and their ideas about obesity weren't around in the late 1950s and early 1960s, when this question of what regulates fat accumulation was answered. As it turns out, two factors will essentially determine how much fat we accumulate, both having to do with the hormone insulin.

First, when insulin levels are elevated, we accumulate fat in our fat tissue; when these levels fall, we liberate fat from the fat tissue and burn it for fuel. This has been known since the early 1960s and has never been controversial. Second, our insulin levels are effectively determined by the carbohydrates we eat—not entirely, but for all intents and purposes. The more carbohydrates we eat, and the easier they are to digest and the sweeter they are, the more insulin we will ultimately secrete, meaning that the level of it in our bloodstream is greater and so is the fat we retain in our fat cells. "Carbohydrate is driving insulin is driving fat," is how George Cahill, a former professor of medicine at Harvard Medical School, recently described this to me. Cahill had done some of the early research on the regulation of fat accumulation in the 1950s, and then he coedited an eight-hundred-page American Physiological Society compendium of this research that was published in 1965.

In other words, the science itself makes clear that hormones, enzymes, and growth factors regulate our fat tissue, just as they do everything else in the human body, and that we do not get fat because we overeat; we get fat because the carbohydrates in our diet make us fat. The science tells us that obesity is ultimately the result of a hormonal imbalance, not a caloric one—specifically, the stimulation of insulin secretion caused by eating easily digestible, carbohydrate-rich foods: refined carbohydrates, including flour and cereal grains, starchy vegetables such as potatoes, and sugars, like sucrose (table sugar) and high- fructose corn syrup. These carbohydrates literally make us fat, and by driving us to accumulate fat, they make us hungrier and they make us sedentary.

This is the fundamental reality of why we fatten, and if we're to get lean and stay lean we'll have to understand and accept it, and, perhaps more important, our doctors are going to have to understand and acknowledge it, too.

If your goal in reading this book is simply to be told the answer to the question "What do I do to remain lean or lose the excess fat I have?" then this is it: stay away from carbohydrate- rich foods, and the sweeter the food or the easier it is to consume and digest—liquid carbohydrates like beer, fruit juices, and sodas are probably the worst—the more likely it is to make you fat and the more you should avoid it.

This is certainly not a new message. Until the 1960s, as I'll discuss later, it was the conventional wisdom. Carbohydrate-rich foods—bread, pasta, potatoes, sweets, beer—were seen to be uniquely fattening, and if you wanted to avoid being fat, you didn't eat them. Since then, it has been the message of an unending string of often best-selling diet books. But this essential fact has been so abused, and the relevant science so distorted or misinterpreted, both by proponents of these "carbohydrate-restricted" diets and by those who insist that they are dangerous fads (the American Heart Association among them) that I want to lay it out once more. If you find the argument sufficiently compelling that you want to change your diet accordingly, then all the better. I will give some advice on how to do so, based on the lessons learned by clinicians who have years of experience using these diets to treat their overweight and often diabetic patients.

In the more than six decades since the end of the Second World War, when this question of what causes us to fatten—calories or carbohydrates—has been argued, it has often seemed like a

religious issue rather than a scientific one. So many different belief systems enter into the question of what constitutes a healthy diet that the scientific question—why do we get fat?—has gotten lost along the way. It's been overshadowed by ethical, moral, and sociological considerations that are valid in themselves and certainly worth discussing but have nothing to do with the science itself and arguably no place in a scientific inquiry.

Carbohydrate-restricted diets typically (if not, perhaps, ideally) replace the carbohydrates in the diet with large or at least larger portions of animal product—beginning with eggs for breakfast and moving to meat, fish, or fowl for lunch and dinner. The implications of that are proper to debate. Isn't our dependence on animal products already bad for the environment, and won't it just get worse? Isn't livestock production a major contributor to global warming, water shortages, and pollution? When thinking about a healthy diet, shouldn't we think about what's good for the planet as well as what's good for us? Do we have a right to kill animals for our food or put them to work for us in producing it? Isn't the only morally and ethically defensible lifestyle a vegetarian one or even a vegan one?

These are all important questions that need to be addressed, as individuals and as a society. But they have no place in the scientific and medical discussion of why we get fat. And that's what I am setting out to explore here—just as Hilde Bruch did more than seventy years ago. Why are we fat? Why are our children fat? What can we do about it?