MAGIC PILL

EXTRAORDINARY
BENEFITS AND
DISTURBING RISKS
OF THE NEW
WEIGHT-LOSS
DRUGS

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NEW YORK TIMES BESTSELLING AUTHOR OF STOLEN FOCUS

MAGIC PILL

The Extraordinary Benefits and Disturbing Risks of the New Weight-Loss Drugs

Johann Hari



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CONTENTS

INTRODUCTION

The Holy Grail

CHAPTER 1

Finding the Treasure Chest How the Drugs Work

CHAPTER 2

Cheesecake Park
Why We Gained Weight

CHAPTER 3

The Death and Rebirth of Satiety

The Strange Connection Between Processed Food and the New Drugs

CHAPTER 4

Living in an Inflamed State

What Has Happened to Our Bodies—And Do These Drugs Reverse It?

CHAPTER 5

An Old Story Repeating Itself?

The Risks of the Old Weight-Loss Drugs—And the New Ones

CHAPTER 6

Why Don't You Diet and Exercise Instead?

The Two Biggest Alternatives to Weight-Loss Drugs—And Why They Have (Mostly) Failed

CHAPTER 7

The Brain Breakthrough

Good News for Addiction, Bad News for Depression?

CHAPTER 8

What Job Was Overeating Doing for You?

The Five Reasons Why We Eat—And What Happens When They Are Taken Away from Us

CHAPTER 9

"I Don't Think You're in Your Body"

How Ozempic Made Me Realize I Had to Change

CHAPTER 10

<u>Self-Acceptance vs. Self-Starvation?</u>

What Will These Drugs Mean for Eating Disorders?

CHAPTER 11

The Forbidden Body?

What Do These New Drugs Mean for Stigma?

CHAPTER 12

<u>The Land That Doesn't Need Ozempic</u>

What the Japanese Do Right—And How We Can Become like Them

CONCLUSION

The Choices Now

So What Do We Do, for Us, and Our Kids?

What You Can Do to Improve the Food System

Further Reading

<u>Acknowledgments</u>

Notes

Index

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INTRODUCTION

The Holy Grail

In the winter of 2022, the global pandemic seemed to be finally receding, so for the first time in two years, I went to a party. I felt schlubby and slightly self-conscious, because I had gained about 20 pounds since the world shut down. Some people say the main reason they survived the pandemic was the vaccine; for me, it was Uber Eats. The party was being thrown by an Oscarwinning actor, and while I didn't expect Hollywood stars to have pudged out as much as the rest of us, I thought there would be a little swelling at the edges.

As I milled around, I felt disconcerted. It wasn't just that nobody had gained weight. They were gaunt. Their cheekbones were higher, their stomachs tighter. This hadn't only happened to the actors. The middle-aged TV executives, the actors' spouses and kids, the agents—everyone I hadn't seen for a few years suddenly looked like their own Snapchat filter, clearer and leaner and sharper.

I bumped into an old friend and said to her, in a kind of shamed mumble, that I guessed everyone really did take up Pilates in lockdown. She laughed. Then, when I didn't laugh back, she stared at me. "You know it wasn't Pilates, don't you?" I looked back, puzzled, and she said: "Do you really not know?"

Standing at the side of the dance floor, she pulled up an image on her phone.

I squinted at it in the darkness, as the shrunken partiers all around us shook their bony behinds and discreetly declined the canapés.

On the screen, I could see a light blue plastic tube, with a tiny needle sticking out of it.

Later, I would wonder if I had been waiting for that moment all my life.

On the afternoon of Christmas Eve in 2009, I went to my local branch of KFC in east London. I gave my standard order—a bucket of grease and gristle so huge that I'm too embarrassed to list its contents here. The man behind the counter said: "Johann! We have something for you." He walked off behind where they fry the chicken and returned with all the other staff who were working that day. Together, they handed me a massive Christmas card. I opened it. They had addressed it "To our best customer," and all written personal messages.

My heart sank, because I thought: This isn't even the fried chicken shop I come to the most.

Later still, I would wonder if our culture had been waiting for that moment for more than two thousand years.

I learned from the eating disorders expert Hilde Bruch that in ancient Greece people believed that there had once been a drug that made it possible for people to stay slim, but somewhere along the way the secret formula was lost, never to be found again. Ever since, humans have tried to make this dream a reality—to find a way to hack our biology and reverse weight gain. The headline "NEW MIRACLE WEIGHT-LOSS DRUG" is as old as headlines themselves.

But when I spoke to experts on obesity across the world, they told me that this time, with this drug, something really was different. Rigorous scientific studies have shown that there is a new generation of drugs—working in a completely new way—that cause the people who use them to

lose between 5 and 24 percent of their body weight. I was told by Tim Spector, a professor of genetic epidemiology at King's College London, that for people with severe obesity: "It is the Holy Grail that people have been seeking." Dr. Clemence Blouet, an obesity researcher at Cambridge University, said: "It's the first time we have a safe anti-obesity drug," and now that the code has been cracked, the discoveries about how to make them better and more effective "are super-fast" and "every day there is something new." Emily Field, a sober-minded analyst at Barclays Bank who studied the likely value of these drugs for investors, wrote a report explaining that she believed the impact these drugs would have on society was comparable to the invention of the smartphone.

This scientific excitement has caused a stampede. In one survey, 47 percent of Americans said they were willing to pay to take these drugs. Graham MacGregor, who is a professor of cardiovascular medicine at Queen Mary University in London, told me that in Britain, "within ten years, 20 or 30 percent of the population will be on obesity drugs.... There's no argument about it." Some financial analysts believe that the market for them could be worth as much as \$200 billion globally by 2030. As a result, Novo Nordisk—the Danish corporation that manufactures one of these drugs, Ozempic—has in one fell swoop become the most valuable company in Europe.

Ozempic and its successors look set to become one of the iconic and defining drugs of our time, on a par with the contraceptive pill and Prozac.



Standing on that dance floor, I couldn't remember ever feeling so immediately and intensely conflicted about a topic.

Skimming the basic facts about these drugs on my phone, I realized at once that I could make a passionate case for taking them. The calculations for the exact number of people killed by obesity and poor diet vary. The lowest credible calculation for the US is that it ends 112,000 lives a year—which is more than double the number of people killed in all murders, suicides, and accidents involving guns combined. At the upper end, Jerold Mande—an adjunct professor of nutrition at Harvard best known for designing the

nutritional label displayed on all food in the United States—warns that "food-caused illnesses" are estimated to kill 678,000 people every year. He told me this is "far and away the leading cause of death."

Here, then, was a chance to finally interrupt our relationship with bad food, and transform it. Nothing else we have tried has worked. We have been serially starving ourselves on diets for decades, and even the most optimistic studies find that only approximately 20 percent of us succeed at keeping off the weight we lose after a year. Doctors warn us that obesity contributes to two hundred known diseases and complications, and explain that we are eating ourselves to death—and we nod gravely, and open the KFC app. Many of us argue for taking on the power of the food companies to stop them from producing ever more addictive junk, but even a figure as popular and charismatic as Michelle Obama couldn't get any traction for that cause.

The proponents of the new weight-loss drugs say this fog of despair is finally parting. Obesity is a biological problem, and now, at last, we have a biological solution. Here is a moment of liberation from a crushing condition that according to some studies doubles your risk of dying when you are older. Here is an opportunity to massively slash the resulting rates of diabetes, dementia, and cancer that every major public health body in the world warns about. Here is a drug that could give millions of people a shot at life again.

I could see the power of these arguments. I felt their force. So why was I so uneasy?

I had several huge doubts right away.

In 1960, when my parents were teenagers, they knew almost no obese people. There had been no obese kids at their schools, and hardly any obese adults lived near them. Today, in the two countries where I spend most of my time, obesity levels for adults have hit 26 percent in Britain and 42.5 percent in the United States. This transformation—unprecedented in human history—didn't happen because we all contracted a disease. It didn't happen because something went wrong in our biology. It happened because something went disastrously wrong with our society. The food-supply system transformed beyond all recognition. We began to eat foods that didn't exist before—designed by the food industry to be maximally addictive, pumped full of just

the right proportions of sugar and salt and starch to keep us chomping. We built cities that it's often impossible to walk or bike around. We became much more stressed, making us seek out more comfort food.

From this perspective, Ozempic and the drugs that have followed represent a moment of madness. We built a food system that poisons us—and then, to keep us away from the avalanche of bad food, we decided to inject ourselves with a different potential poison, one that puts us off all food.

We have started to take these drugs knowing surprisingly little about them. We have no idea about their long-term effects when they are used to treat obesity. We don't know if they will even carry on working for obese people beyond a few years. And chillingly, the scientists who helped create them—as I was going to learn—are not yet sure why they work, or precisely what they are doing to us.

I had another anxiety. We seemed to be finally reaching a moment in our culture where we were learning to stop punishing our bodies and start accepting them, even if they were outside the narrow Western beauty norm. Was this going to slam all that into reverse? Was body positivity going to drown in a tide of Ozempic and its competitor Mounjaro?

Worse than that, what would happen when people with eating disorders get hold of these drugs? What would transpire when we give people determined to starve themselves an unprecedentedly powerful tool to amputate their appetite?

Surrounded by people whose veins were coursing with this drug, I was full of uncertainty, seesawing between support and skepticism. If we really are about to begin taking drugs that cause sustained massive weight loss, what will that mean—for our personal lives, our health, and our societies? Can these drugs really be what they claim? Do they mean we are giving up on challenging the food industry and how it has screwed us over? Do they mean we are giving up on accepting ourselves as we are?

I realized there was one person who I most wanted to discuss all this with. It was because of her that I decided to write this book.

To understand everything that happened next, I need to tell you about Hannah.

When I was nineteen years old, I went to the National Student Drama Festival in the faded English seaside town of Scarborough. Every year, students in Britain who've staged plays apply to take part, and theater professionals come and assess your work, and if it's good enough, you are invited to perform your play by the sea and compete against other students from all over the country, get seen by agents, and potentially win awards. That year, some of my friends got through to the finals, and I went along for the ride. It meant that I watched about twenty plays in a few days. Some were brilliant, and some were lousy, but it was seeing the worst of them all that, in a strange way, changed my life.

One afternoon, I sat down to watch a play called *Atlantica*. It was written and performed as a realistic drama about a group of scientists who were confronting a peculiar and disturbing problem. All over the world, whales were hurling themselves onto beaches and slowly dying. Nobody knew why. It was almost as though these giant blubbery creatures were killing themselves. Were they trying to escape pollution? Did they have a brain disease? What was happening? The play followed these scientists as they took boats out onto the ocean and observed the whales in the wild, to try to figure out this mystery. But when they did, something disturbing happened. Suddenly, the whales charged their boats, trying to break them in half. As the scientists tried to speed away, one cried: "Oh my God! We've got a sperm whale riding shotgun!"

One of the scientists turned to another and said: "David—do you think the whales are" (dramatic pause) "evil?" Everyone sitting in the audience near us seemed to be leaning into the seriousness of the drama, caught up in its spell. Everyone, that is, except for me—and one other person. In the seat next to mine, in the darkness, there was a young woman who I could see was physically shaking with laughter. I tried really hard not to look at her, because I was afraid I would let out a howl. The more intently the rest of the audience followed the play, the more we began to shake. "These whales are going to—kill us all!" one of the scientists cried.

Then came the twist. The scientists figured out why the whales were beaching themselves en masse. It turned out they had been watching humanity for some time, and they had concluded that human beings had forgotten how to play. They were tossing themselves onto the world's beaches to urge us to join them in the ocean, to learn how to frolic once again. After explaining this, the lead scientist said: "There's only one solution."

The other scientists gasped. "No," they said, "you can't."

"I have to. I have to—become a whale." And then, with orchestral music swelling in the background, he leaped into the water and transformed into a whale. Curtain. Applause.

The woman who'd been rocking with suppressed laughter in the darkness hurried out of the auditorium and ran around a corner. I followed her and, without saying a word, we both began to cry laughing. She yelled: "Do you think the whales are...evil?" and I shouted back: "I have to become—a whale." I literally fell to the floor.

That night, Hannah and I began to tour the fast-food outlets of Scarborough. We started with a fish and chip shop, then headed to a kebab shop, and then a fried chicken shop. It was only there that I looked at her properly for the first time. She had mousy brown hair and a huge stomach, and she spoke with a musical lilt, as if she was always trying to caress more humor out of the world. At the time, I was overweight, and she liked to describe herself as "deliciously enormous."

Right away, we developed our first running joke. We would go into the skeeziest greasy spoon and immediately begin to review it like it was a Michelin-starred restaurant. She took a tiny nibble of a grease-laden kebab and said: "It's a delightful amuse-bouche with...yes"—she chewed some more—"a deliciously *bold* aftertaste." We became connoisseurs of grease, sommeliers of Big Mac sauce. We drew up a plan to create our own Michelin stars, except these would be given out by the Michelin Man himself, and the award would be for giving you bigger and bigger tires around your stomach. As we ate our third kebab, she began to improvise stories about famous suicides who turned out—in a stunning twist—to have been whales. Socrates

whale, slugging hemlock rather than face a blubbery tribunal. Sylvia Plath whale, ramming its head into an oven. Virginia Woolf whale, filling its spout with stones and hopping onto land.

As I got to know Hannah, I discovered some hint of why she had developed her stabbingly dark sense of humor. Her grandmother was Jewish and had escaped Germany just in time in the 1930s, and Hannah volunteered at a center for Holocaust survivors in north London. For years, her social group consisted largely of people who had been in concentration camps. I became friends with one of the survivors she introduced me to, a woman named Trude Levi who had collapsed on her twenty-first birthday on one of the death marches. Hannah liked to say that it's not a coincidence that the Jews and the Irish had both the most horrific histories in Europe and the best sense of humor. You laugh in order to survive. You joke to endure. One of her heroes was Joan Rivers, the outrageous comedian who, after her husband's suicide, went onstage and said as an opening line: "My husband killed himself and it's my fault. I knew I shouldn't have taken that paper bag off my head while he was fucking me."

For years, Hannah and I would go to the Edinburgh Festival, a cultural volcano where tens of thousands of performers descend on the medieval streets of the city and perform for over a million annual visitors. You walk up the Royal Mile—the city's central artery—and all around you, people are performing parts of their plays: they're juggling, they're dancing, they're handing you flyers. Inspired by *Atlantica*, we would deliberately seek out the worst-sounding plays and see them all. *Graham—The World's Fastest Blind Man*, a musical about a blind sprinter? We dashed there as fast as our bulk would let us. Every afternoon, we drank milkshakes at the Filling Station, a restaurant on the Royal Mile. Hannah had an incredibly beguiling way of befriending people; she drew them to her with a mixture of extreme vulnerability and extreme vulgarity. Most of her running jokes are so extreme I can't write them down, even here. But I can tell you that one day, one of the waitresses in the Filling Station laughed so hard at one of her obscene jokes that she spilled a banana milkshake all over me.

One evening, an American actor told us about a place I had never heard of. In Las Vegas, he said, there is a restaurant named the Heart Attack Grill. At the entrance, there is a huge set of cattle scales, and if you are over 350 pounds you eat for free. As soon as you walk through the door, you have to sign a waiver saying that if the food gives you a heart attack, the responsibility lies entirely with you. You then put on a hospital gown, and you are served by waitresses dressed as nurses. If you don't finish all of the massive portions of food, they spank you with a paddle. We immediately promised ourselves that one day we would go there and toast our friendship in banana milkshake.

Hannah liked to talk to men in public places in startlingly frank sexual ways. She enjoyed seeing the shock on people's faces, as if she was refusing to be ashamed of her weight and her body, and defying the world to take her as she was. Her voice had a soothing, mellifluous quality that often jarred with the things she said—she once told me she wanted people hearing her to feel like they were listening to a children's TV host gently reading out the words of Charles Manson.

And yet, existing alongside this spirit of joy and play, she would show sudden bursts of being terribly afraid. She would have panic attacks, seemingly out of nowhere. She hated getting on public transport. She took a very high dose of antidepressants. She was convinced that politics could turn very dark, very fast, that the stability we lived through would turn out to be an illusion, and the world would turn out to be a charnel house, so our job was to amuse ourselves as best we could before it consumed us. (On July 7, 2005, after a terrorist attack on the London Underground, she immediately texted me: "Now you see why I am a taxi person.") She had a level of fear appropriate to the Holocaust survivors she volunteered with, not to a person who had grown up in 1980s and '90s Britain. She always had the vigilance of somebody who was ready to run.

We never talked about why she ate so much, except through our obsessive surreal joshing. I never heard her express any concern about her weight. We once watched a documentary about a person so obese that they had to dismantle his house to get him out for medical treatment. She said: "I have a new life goal."

Our friendship became a rat-a-tat-tat of shared jokes and shared obsessions. We loved Stephen Sondheim musicals, and we prided ourselves that our favorite was, at that time, the most obscure: *Merrily We Roll Along*. It's the story of three friends, told backward: it starts with the central characters as jaded, bitter, drunk forty-somethings, and then rolls back the years, scene after scene, until they are young and naive and optimistic, just starting out. There's a song in it—"Old Friends"—about how, even if you argue with your old friends, they're always there, lodestars for how you live. I thought of it as my and Hannah's song.

But then something happened. Every time I met her, it struck me anew that Hannah was one of the cleverest people I've ever known, constantly coming up with brilliant ideas out of thin air. For example, the day the United States invaded Afghanistan, she started improvising, over dinner, a novel about an undercover US agent in Kabul, written in the style of Raymond Chandler. I can still remember the first line: "She wore her burkas tight, and her morals loose." I urged her to write it all down, and to translate her brilliance onto the page. I was starting to become successful as a journalist, but she was just staying at home a lot of the time, feeling anxious, not working. It seemed to me that Hannah had chosen to stay hidden. I kept pressing her to do more, and as I pushed her, she retreated. We began to argue. I was pushing her to be everything I felt she could be. Thinking about it now, perhaps she thought I was judging and condemning her.

As we quarreled, I became increasingly frustrated. Every flash of genius I saw in her seemed even more like a waste. Why was this being confined only to me and her small group of friends? Why scatter it to the wind?

Somewhere along the way, this dynamic meant we pushed each other away. The last night I remember seeing her was in 2008, when we watched Barack Obama's victory at a big party in my apartment. But even as the gap since we'd last seen each other yawned wider, I was always sure we would meet up again somewhere down the road. We had too many shared jokes, I believed, for our bond to break. Often, I would hear something funny and

think—I must phone Hannah and tell her that. In my mind, she was somewhere hailing a taxi, milkshake in hand, laughing, always laughing.

Then, one morning, in early 2021, I received a phone call. Hannah's family had posted on Facebook that she had died. In the days that followed, I called our mutual friends who were still in touch with her. They told me what they knew. Several years before, she had developed severe back pain, and started taking opioid-based painkillers. She became addicted and found it really hard to stop, but she managed to do it. Then she developed type 2 diabetes. Then she developed cancer and felt that taking opioids would constitute a relapse, so she went through the grueling treatment in agony. She was weakened by the cancer but survived. Then she got Covid and was weakened some more, but survived again. Then one night, she began to choke while eating and went into cardiac arrest.

I was incredulous that somebody who took such joy in living could have died in her mid-forties. I kept running over her old jokes in my mind, writing down as many as I could, as if they were slipping away from me. I felt desperately sad that she didn't reach out to me when she was ill. She must have thought that I would judge her, or that I wouldn't show up at all.

The heart of our shared sense of humor was our love of bad food, and our commitment to consuming it in epic quantities. I felt queasy as I thought about that now. It's possible for anyone, no matter what their weight, to choke and for their heart to suddenly fail. But it seemed very likely that her obesity had caused her death. She was weakened by a series of illnesses, and obesity makes it more likely you will get cancer, more likely you will become seriously sick with Covid, and more likely your heart will fail when faced with a stressful event. I also strongly suspect that the way she compulsively ate and crammed huge amounts of food into her mouth may have contributed to her choking.

I looked at the remembered jokes I had written down, and wanted to laugh at them one more time, but now they turned to dust in my mouth.

Not long afterward, I was in Las Vegas, researching a different book. I decided to keep my promise to her and go to the Heart Attack Grill, to toast our friendship in banana milkshake. I stood by the entrance and watched

people standing on the cattle scales, hoping to clock in at higher than 350 pounds so they could eat for free. I saw the waitresses dressed as nurses, spanking people who didn't finish their giant servings of fries. I gazed over the people wolfing down massive burgers, and buckets of milkshake, and onion rings the size of a whole plate.

I couldn't bring myself to go in. It felt like the joke was, in the end, on us.



Joseph Stalin reputedly said that one death is a tragedy but a million deaths is just a statistic. I guess I had known since I was a teenager that the major scientific bodies in the world warn that obesity kills large numbers of people every year—but in my twenties and thirties, it had seemed like an abstraction. Now Hannah had left a hole in the world. I am certain that nobody in my life will ever again be able to reduce me to the helpless, hysterical laughter of childhood as much as she did.

Hannah's death should have been a warning sign to me. As a child, I ate almost nothing but junk and processed food, but my weight only started to blow up in my late teens, when I began taking chemical antidepressants. Since then my weight had yo-yoed between being slightly underweight to quite seriously obese, with a waistline that ranged from thirty inches to forty inches.

By the time the pandemic was dissipating, I was creeping back into the danger zone. I am five foot eight and I weighed 203 pounds—a BMI just over 30, which was bad, but my other indicators were worse. When my trainer at the gym tested to see what percentage of my body was fat, he winced at the score: 32 percent. "If I was a sandwich, you wouldn't want to eat me," I said with a weak smile. Later I googled and learned that the most blubbery mammal in the animal kingdom, the whale, has 35 percent body fat.

I knew that for me in particular, this condition wasn't safe. My grandfather died of a heart attack when he was the age I am now, forty-four. My uncle died in his sixties of a heart attack. My father developed diabetes and had to have a quadruple heart bypass in his early seventies. Worse still,

my fat was in the worst possible place for my health. Dr. Shauna Levy, an obesity specialist at the Tulane University School of Medicine in New Orleans, told me that if your fat is distributed evenly across your body, that's less harmful to your health than for "people with central adiposity—skinny arms, skinny legs, big belly. They are more likely to have diabetes and high blood pressure." But I love life. I want as much of it as possible. I want to be around for a long time. (I can hear in my mind how Hannah would respond to all this. "Do you really think you love life more than you love Big Mac sauce?")

Many times before, I had received wake-up calls about weight that didn't wake me up. Sometimes a jolt would spur me to cut back on the junk food and exercise more, and the effects could be quite dramatic when I did. I even had a few years when I was at the lower end of the BMI chart, and my cheekbones emerged, like the lost continent of Atlantis from beneath the ocean. But I always slid back sooner or later, feeling slumped and ashamed. It's true I was nowhere near as obese as Hannah, but I suspect I had a larger genetic risk for cardiovascular problems than her.

For all my obvious doubts about Ozempic, I also wondered: Could this possibly be the way to break some of the danger that my own health was in? I learned that several people I knew were already taking the drug. The men would admit it quite freely, while the women would offer long stories about intermittent fasting or a fantastic new spa, and then quietly concede that, yes, they were on it too. I could see weight was falling off them, and their doctors were telling them that all their key indicators of health were dramatically improving.

I was full of doubt—about my weight, and these drugs, and about the future. But I kept thinking of Hannah. I would lie awake at night and punch her number into my phone. We became friends just before mobile phones became widespread, so she had the last phone number I ever committed to memory. I would think of all the things I wanted to say to her—the jokes I'd heard, the regrets I wanted to offer.

Then, quite abruptly, I decided that I should start to take these drugs. It was a snap decision, and later I realized I was driven by impulses I didn't

fully understand at the time. I went to see a private doctor, and after some brief questions and some cursory measuring, he agreed to give me Ozempic. A few days later, a courier arrived at my home bearing a white parcel. I was too nervous to open it on my own, so I waited for a friend's party the next night, and we tore it open as a group. Inside, there was a fat blue pen and some tiny white needles. I hate syringes—I'm the kind of wuss who has to look away and sing to myself during blood tests. But this needle was tiny. The instructions said that, once a week, all I had to do was twist the teeny needle onto the end of the pen, poke it into my stomach, and push down on the base of the pen to let it flow into my bloodstream.

When I stabbed my flab with it, I felt very little—a sting no worse than an insect bite. I heard only the *click-click* coming from the pen as the drug was released. The Ozempic began to flow through my body for the first time.

I know a few people who have had near-death experiences, and they say that their lives really did flash before their eyes. In that moment, it happened with my culinary life. I pictured all the foods I have gorged on since I was a kid. I saw in my mind the mushrooms and bright yellow bananas made out of sugar that I would stuff into my mouth at the age of five. I thought of salt and vinegar chipsticks, a kind of sticky potato chip popular in the 1980s. I pictured more KFC than Colonel Sanders could conjure in his wildest, wettest dream.

I pictured the hundreds of branches of McDonald's I had sought out all over the world, like a plastic womb I could always retreat to wherever I found myself. I saw the lowest McDonald's in the world, by the Dead Sea in Israel. I saw the first ever McDonald's in Russia, a symbol of Western freedom that shut down shortly after I visited because of the invasion of Ukraine. I saw the branch of McDonald's I most love, at the end of the Strip in Las Vegas, just beyond the Luxor, where the customers are all either tourists who got lost or homeless people who live in the tunnels beneath the city. I saw the scariest McDonald's I ever visited, in El Salvador, where there was a guard on the door holding a huge machete. I asked him why he had that weapon and he said it was because the authorities had taken away their machine guns. There

are 38,000 branches of McDonald's in the world, and I felt like I could see them all before me, slowly fading away.

I stood up and rubbed the spot where the needle had been. I felt nothing.

It seemed like a bizarre moment in history—when nearly half of us would be keen to inject ourselves with a drug to stop us from wanting to eat. I wondered: How did I get here? More importantly, how did *we* get here?



To understand what these drugs will mean for us all, I went on a journey around the world, where I interviewed over a hundred experts and other people who have been affected by these questions. I got to know some of the key scientists who developed these drugs, and also their biggest critics. I followed the trail of this science to some strange and unexpected places, from a stadium filled with trampolining teens in Iceland, to a diet expert who watched me eat a cinnamon bun in Minneapolis, to a restaurant serving poisonous fish in Tokyo.

What I learned is complex. If you want a book uncritically championing these drugs, or alternatively a book damning them, I am afraid I can't give it to you. The more you look at this topic, and the wider debate about obesity, the more complicated it gets. When it comes to food and diet, we crave simple solutions, but this is a topic fraught with complexity, with question marks at every turn. I started this journey full of doubt, and I finished it knowing much more, but still riven with uncertainty. I hope, in the end, this is a strength. One of my favorite writers, Graham Greene, said, "When we are not sure, we are alive." I felt strangely alive while working on this book. The truth is that there are huge potential benefits to these drugs and huge potential risks, and everyone reading this book will weigh those differently. My hope is that we can find our way through the complexity together.

If we do, we can see that these drugs reframe—and to some degree may even resolve—some of the oldest and hoariest debates about obesity. Why have we gained so much weight in the last forty years? What really causes weight gain? Is losing weight a matter of willpower? How should we think about our bodies?