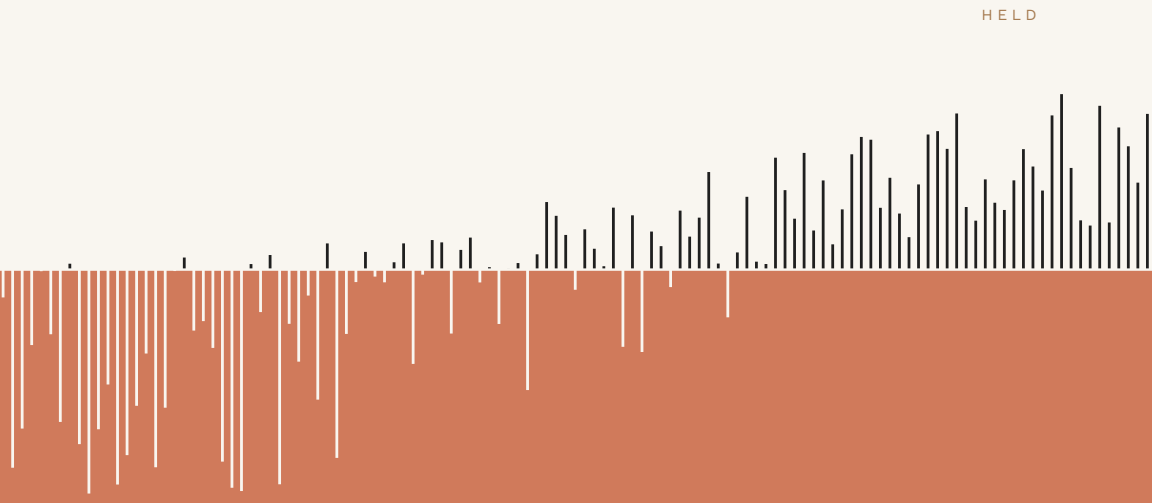
The Safety Switch

Why your body defends its weight — and what actually changes it.



EACH MARK IS A SIGNAL. THE LINE IS THE THRESHOLD. LET GO

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The Safety Switch

THE

Safety Switch

Why your body defends its weight — and what actually changes it.

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RECLAIM POWER TELEHEALTH

The Safety Switch
Why your body defends its weight — and what actually changes it.

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This book is educational and is not medical advice. It does not establish a clinician–patient relationship, and it is not a substitute for individual assessment, diagnosis, or treatment. Talk with a qualified clinician who knows your history before making changes to medication, nutrition, or exercise — particularly if you are pregnant, managing a chronic condition, or have a history of disordered eating.

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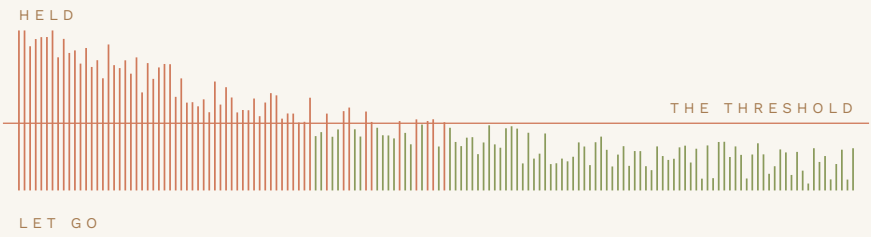
For my mother.
Dành tặng mẹ.

A NOTE ON THE PICTURES

There is one drawing in this book, repeated with variations. It is on the cover and at the opening of every chapter.

Each hairline mark is a signal your body is reading right now — a meal, a night of sleep, a stress, a hormone, a message from your gut. The horizontal line is the threshold: the point at which your body decides it has enough to spend.

Marks standing above the line are signals your body is still holding onto. Marks that settle below it have been let go.



Every chapter gets its own field, because every chapter is about a different set of signals. None of them are data. They are a way of picturing a decision your body makes about a thousand times a day.

Your body is not asking you to try harder.
It is asking you a question.

Am I safe enough to spend this?

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INTRODUCTION

The Question I Stopped Asking

And the one I ask instead

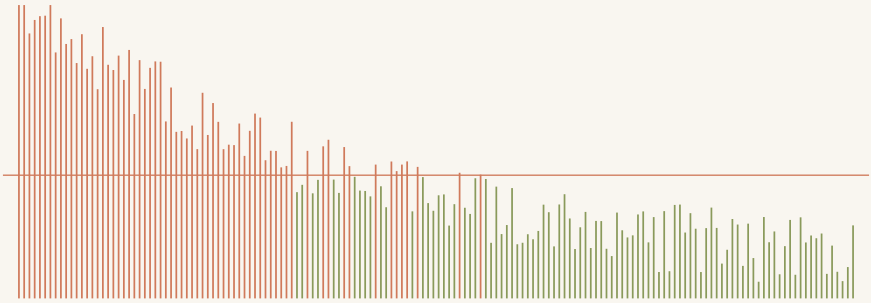


PLATE I · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

I have never met a patient with a willpower problem.

I've met plenty who were certain they had one. They come in with a folder. Sometimes it is an actual folder: printouts, food logs, three years of lab work, a spreadsheet. And sometimes it is just the story they have rehearsed on the drive over. The story is almost always the same. *I know what to do. I just can't seem to do it.*

Then they tell me what they have been doing, and it turns out they have been doing it for eleven years.

Eleven years of discipline is not a discipline problem. Read that again. That is the part that stops me every time. The person sitting across from me has demonstrated more sustained effort in one domain of their life than most people manage in any domain at all, and they have concluded from the results that they are weak. Nobody has ever offered them a second explanation.

What we were taught to ask

The question we were handed is: *how do I eat less and move more?*

It is not a stupid question. Energy balance is real. The first law of thermodynamics doesn't take days off, and I'm not going to spend a book pretending otherwise. But it is an incomplete question, and incomplete questions have a way of producing complete-sounding answers that fail quietly for years.

That question leaves something out. Your body gets a vote.

I mean that literally. The vote is physiological, cast continuously by systems that were selected over a very long time to keep you alive through conditions far worse than a Tuesday. When you reduce the fuel coming in, those systems notice. They notice fast, and they respond by adjusting your hunger, your energy, your body temperature, your thyroid output, and, in ways you will never consciously register, how much you move on an ordinary day.

Every bit of that is a response, and a response always implies a stimulus. Character never enters into it.

The question I ask instead

So the question I actually ask, in the first visit, before I look at a single lab value, is this:

What is your body responding to?

Small change in wording. Enormous change in direction. *Why can't I lose weight?* looks for a defect in the person. *What is my body responding to?* looks for a signal in the system. One of those questions has an answer you can work with.

I want to be careful here, because this is where a lot of health writing drives straight off a cliff. I am not going to tell you that your metabolism is broken, or that one hormone explains everything, or that there is a hidden lock and I am about to sell you the key. What I am going to do is walk you through what is actually known about how a human body regulates weight — the parts that are well established, the parts that are still being argued about in the literature, and the parts we genuinely do not know yet. I will tell you which is which.

About the title

I call it the safety switch. That is a metaphor, and I want to name it as a metaphor on the first page rather than let you discover it on the last.

There is no single switch. There is no anatomical structure you could point to on a scan. What there is, is a set of overlapping systems — hormonal, neurological, digestive, immune — that all feed into the same region of the brain, and that all appear to be answering variations of the same question: *is it safe to spend energy right now?* When enough of those systems answer no, your body becomes very good at holding onto what it has. When

enough of them answer yes, the same body that felt impossible starts to feel workable.

The switch is a way of holding all of that in your head at once. Use it as a model, not a mechanism.

What this book is for

This is not a plan. There is no meal timing chart at the back and no fourteen-day reset. I've watched enough people follow enough excellent plans into the ground to be suspicious of my own urge to write another one.

This book is for understanding. It is for the moment when something you have been calling a personal failure gets reclassified as a physiological response, and the entire problem changes shape in your hands. In my experience that moment does more for people than a protocol does, because it is the thing that finally lets them stop fighting themselves long enough to make a real decision.

What you do with the understanding is a conversation for you and whoever is caring for you. But you cannot make a good decision about a system you have been taught to blame.

Let's look at the system.

ONE

Your Body Is Not Bad at Math

Weight is a regulated system, not an arithmetic problem

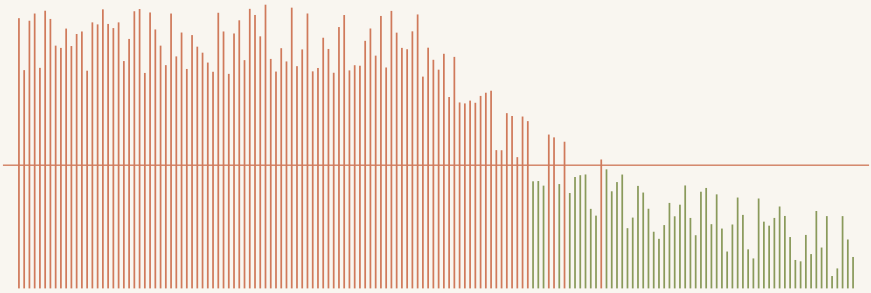


PLATE II · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

Your body holds your temperature at roughly 98.6 degrees without asking your permission.

You do not think about this. You do not budget for it. On a hot day you sweat, on a cold one you shiver and your blood vessels narrow, and across an enormous range of external conditions the internal number barely moves. If it did move — even three or four degrees — you would be in real trouble, and your body knows that, so it defends the number with everything it has.

Blood pressure works this way. Blood sugar works this way. Blood pH is defended so tightly that the entire normal range is about a tenth of a point wide.

Body weight is also regulated. Less tightly than pH, more loosely than temperature, and with far more individual variation than either, but regulated. There are hormones whose job is to report on stored energy, a brain region that integrates those reports, and a set of outputs that adjust when the reports change. If that sounds like a fringe idea, it is the standing position of the Endocrine Society, laid out in a thirty-page scientific statement that gets almost none of the attention it deserves.[1]

What "regulated" actually means for you

If weight were purely an arithmetic problem, the math would be simple and it would work. Take in less, spend the same, lose the difference. Every time. Predictably. Linearly.

That is not what happens, and it is not what happens in a way that has been measured carefully enough that we can put numbers to it. When you drop your intake, several things move at once. Your resting energy expenditure falls, and in many people it falls further than the loss of tissue alone would predict. Your hunger hormones shift. The hormone that reports satiety drops; the hormone that drives appetite rises. And here is the finding that I think should be far better known than it is: in a study that followed

people for a full year after weight loss, those hormonal changes were still present at twelve months.[3] A full year, long after the part everyone calls the hard part was supposed to be over.

A broken system would not be that consistent. That is what a working system looks like: hard at it, continuously, in a direction you did not choose.

You are up against a control system that has decided calories are worth defending, and it has been doing this job far longer than you have.

Where the "set point" idea is right, and where it goes too far

You may have heard your weight described as having a set point, like a thermostat. I use the comparison myself, because it is useful. I also want to complicate it, because it is not quite true and the ways it is untrue matter.

A thermostat has one number. Your body has a range, and the range moves. It moves with age, with hormonal transitions, with medication, with how much muscle you carry, with sleep, with illness, and — this is the uncomfortable one — with your own history of dieting. It is less a set point than a *defended zone*, and the defense is not equally vigorous everywhere in it. Most people can move within the zone without much resistance. It is at the edges that the resistance shows up, and it shows up asymmetrically: the body defends the lower boundary far more aggressively than the upper one.

The asymmetry makes sense once you remember what killed people for most of human history, and it was rarely abundance.

The mismatch

Which brings us to the actual problem, which sits outside you.

Your regulatory system was assembled under conditions of scarcity, unpredictability, and enormous daily physical demand. It is now operating in an environment of continuous availability, engineered palatability, chronic low-grade stress, artificial light at every hour, and a working life that can be conducted almost entirely from a seated position.

Every one of those is a novel input. Your body does not have a category for "ultra-processed snack food engineered by a team of food scientists to be difficult to stop eating." It has a category for *dense calories, unusually available, take them.* It does not have a category for "quarterly performance review." It has a category for *sustained threat, conserve resources.*

This is what I mean when I say your body is not bad at math. It is doing exactly the calculation it was built to do. The inputs have changed faster than the calculator has, and that is the situation all of us are working inside of, whether we know it or not.

What this changes

I want to be honest about what this framing does and does not buy you.

Intake still counts. So do effort and behavior, and nobody's weight is fixed. People do change their weight and their health, sometimes substantially, and I would not have a practice if I believed otherwise.

What the framing does mean is that if you treat a regulated system like an arithmetic problem, you will get a specific and predictable kind of failure: early success, then a stall, then rising hunger, then a rebound that feels like a moral collapse and is not one. And you will blame the person, because that is what we have all been trained to do.

The most useful thing I can tell you in this chapter is that the plateau was the system engaging, and you can stop reading it as the moment you broke. What we do with that engagement, and whether we can change what the system is responding to, is the rest of the book.

The evidence

Two studies carry most of the weight in this chapter. One shows what happens when you give a human body food it has no category for. The other shows what the body does for a full year after you take food away.

The ultra-processed food trial. In 2019, Kevin Hall's group at the National Institutes of Health did something that sounds simple and had never actually been done.[44] They locked twenty healthy adults into a research ward for a month and fed them. Volunteers, I should say. It was a study, not a kidnapping. For two weeks the meals were built from ultra-processed foods: the packaged, engineered kind. For the other two weeks the meals were built from minimally processed foods. The order was random. Each person got both.

Here's the clever part. The two menus were matched. Same calories on the tray, same sugar, same fat, same fiber, same carbohydrate. The meals even looked comparable. And people were told to eat as much or as little as they wanted.

On the ultra-processed menu they ate about 500 calories a day more. Not because they were told to, and not because the food was sweeter or fattier on paper; it wasn't. They ate faster, and they ate more, and over two weeks they gained about two pounds. On the minimally processed menu, the same people lost about two pounds.

Twenty people, one month, under lock and key. It isn't a study of the whole population, and it can't tell you which part of

processing does the damage. What it can tell you, because the design was tight enough to tell you, is that the body misjudges this kind of food. It doesn't register the calories as they go in. That's the mismatch from earlier in this chapter, measured in a building in Maryland.

I think about this study every time somebody tells me they "just need more willpower." The volunteers didn't lack willpower. They weren't even trying to restrain themselves. They were eating normally, and normal came out 500 calories different depending on what was on the plate.

The year after. The second study runs the other direction. In 2011, a group in Melbourne put fifty overweight adults on a very-low-calorie diet for ten weeks.[3] They lost about thirty pounds each. Then the researchers did what almost nobody does: they kept measuring for a year.

At the end of the diet, the hormones that govern appetite had all moved in the direction you'd expect from a body that thinks it's being starved. Leptin, the fullness signal, was down. Ghrelin, the hunger signal, was up. Several of the gut hormones that end a meal were down. And the people reported being hungrier.

The news was what happened next. A year later, with the diet long over and some of the weight back, those hormones had not returned to where they started. Leptin was still low. Ghrelin was still high. The volunteers were still hungrier than they had been before they ever started. Their bodies were, in effect, still treating the weight loss as an emergency, twelve months on.

This is the study I'd want every person who has "failed" a diet to read. The hunger that showed up during the diet and never left was measurable and hormonal, and it was still there a year later in people who had done everything right.

What I take from the two. Put them side by side and you get the whole argument of this chapter. One body, given food it wasn't

built for, eats 500 calories a day it never notices. The same kind of body, given less than it wants, rings the hunger alarm for a year.

Neither of those is a math problem. It's the same system, doing what it was built to do, with inputs it was never built for.

TWO

The Slowdown

Adaptive thermogenesis, and an honest account of the argument about it

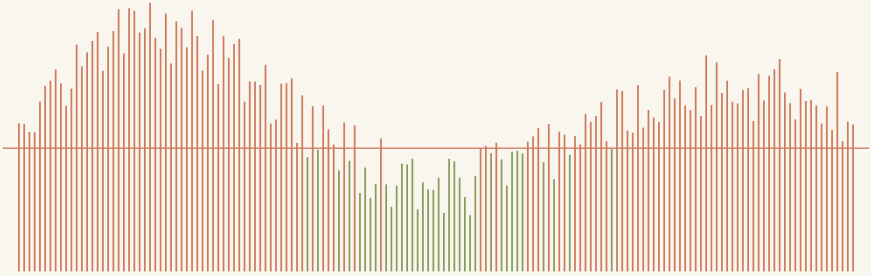


PLATE III · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

Here is something you don't often see in a book like this. The science in this chapter is genuinely contested, and I'm going to show you both sides.

I'm doing that for a selfish reason. Functional medicine has a credibility problem, and we earned it by overstating things. I'd rather hand you a smaller claim you can rely on than a bigger one that falls apart the moment you look it up.

The phenomenon

When you lose weight, you burn fewer calories. That part is not controversial and it is not interesting; a smaller body has less tissue to run, and less mass to move around. Of course it costs less.

The interesting question is whether the drop is *larger* than the loss of tissue predicts. Whether, beyond the accounting, there is an additional efficiency the body switches on when it senses a deficit.

That extra piece has a name: adaptive thermogenesis. And it is one of the more argued-about numbers in obesity physiology.

The case that it matters

The evidence here is real. Multiple careful studies have found resting expenditure sitting below what body composition alone would predict after weight loss, sometimes by a couple of hundred calories a day, and sometimes persisting long after the weight was lost. A National Institute of Diabetes and Digestive and Kidney Diseases workshop was convened specifically to describe the physiology of what they termed the weight-reduced state, which tells you the phenomenon was considered substantial enough to gather people in a room about.[5]

Alongside the energy piece runs the hormonal one, which is on firmer ground. Leptin — produced by fat tissue, reporting stored

energy to the brain — falls with weight loss, and falls proportionally more than fat mass does. Ghrelin, which drives appetite, rises. Thyroid hormone conversion shifts toward the less metabolically active form. Those changes are well documented, and, as noted in the last chapter, they persist.[3]

The case that it has been overstated

And yet. A 2020 analysis in the *American Journal of Clinical Nutrition* concluded that metabolic adaptation is not, in fact, a major barrier to weight-loss maintenance.[6] Not that it does not exist, but that its practical size has been inflated, that it is inconsistently measured across studies, and that it does not explain most of what happens when people regain weight.

Other groups have reached similar conclusions from different directions. The methodological problems are not trivial: measuring resting expenditure precisely is difficult, predicting what it *should* be requires an equation and equations have error bars, and self-reported intake in free-living humans is famously unreliable in one specific direction.

So we have a real phenomenon of disputed magnitude. That is an ordinary state of affairs in physiology and an uncomfortable one in health marketing, which is presumably why you have mostly heard the first half.

> **WHERE I LAND ON THIS**
>
> Adaptive thermogenesis is real, is probably smaller than the popular version suggests, and is almost certainly not the main event. The hormonal and appetite changes appear to do more work than the metabolic-rate changes do, and behavioral drift and reduced spontaneous movement do more still. In other words: the body's most effective tool for defending its weight is not slowing your furnace. It is making you hungrier, and quietly making you move less.

Why I still tell patients about it

Because the direction of the finding matters even when the magnitude is uncertain.

Whatever the exact number, the sign is negative. The body responds to deficit by resisting deficit. Nothing in the contested literature suggests the opposite. And that means a person who plateaued at month four was telling the truth about it, and is missing no quality that thinner people possess.

I have sat with people who cried about that plateau. They were crying about the verdict they had handed themselves, and the verdict was wrong.

The scale stopped moving because a system engaged, and a system is something you can work with.

What actually predicts a harder time

Setting aside the argument about metabolic rate, there are patterns I see clinically in people whose bodies defend weight more stubbornly. These are observations from practice, consistent with the literature but not proof of anything on their own:

- A long history of dieting, often many cycles, starting young
- Rapid early loss, particularly from very aggressive restriction
- Low muscle mass, which lowers the floor of daily expenditure and reduces where fuel can go
- Sleep that is short, broken, or on a shifting schedule
- High and unrelenting life stress, especially the kind with no end date
- Untreated thyroid disease, which is worth ruling out properly rather than assuming

- Significant undereating, which reliably produces the exact response it is trying to overcome

That last one deserves a sentence of its own, because it is the most common thing I see and the most counterintuitive to fix. The person is eating very little, is not losing, is convinced the answer is to eat less still, and has been in that loop for a long time. Almost nothing about the rest of their physiology can be assessed clearly until that stops.

> **WHAT ENOUGH LOOKS LIKE**
>
> This is as close as this book comes to a rule, and it is still not a plan. Protein at every meal, a portion about the size of your palm, because spreading it across the day does more for fullness and for holding onto muscle than the same amount eaten at dinner.[33] Plants in variety across the week, for the fiber; chapter six explains why. And when a meal has a starch in it, eat the protein and vegetables first. In a small study of people with type 2 diabetes, that one change cut the rise in blood sugar after the meal by about a third in the first hour, and it costs nothing.[34] None of this restricts anything. It is the floor, and most of the people who come to me stuck have been living under it.

A note on speed

If I could change one behavior in the way weight loss is commonly attempted, it would not be the food. It would be the pace.

Aggressive deficits produce faster results, more muscle loss, stronger hormonal counter-response, and a higher probability that the whole thing ends in a rebound that leaves the person worse off: in body composition, in metabolic health, and in what they now believe about themselves. Slower keeps you under the threshold where the defense engages hardest. That is the whole reason I recommend it; there is nothing virtuous about it.

Your body will tolerate change. What it resists is change that reads as an emergency. Most of what I do in the first month with a new patient is convince their body that this is not one.

The evidence

Here are the studies I actually think about when a patient tells me their metabolism is broken. I'm going to tell you what each one found and what it doesn't prove, because the second part gets left out of most versions of this story.

The Biggest Loser study. In 2016, a team at the National Institutes of Health published a follow-up on fourteen contestants from the television show, six years after their season ended.[39] You probably remember the show. People lost enormous amounts of weight on camera in thirty weeks, about 128 pounds on average, through brutal exercise and very little food.

Six years later, most of it was back. Thirteen of the fourteen had regained some or all of the weight, and five were heavier than when they started. That part surprised nobody who has ever dieted.

The part that made the news was their metabolism. At the end of the competition, their resting metabolic rate had dropped by about 600 calories a day. That alone isn't shocking; smaller bodies burn less. What was shocking was that six years later, after most of the weight had come back, their metabolism had not come back with it. They were still burning roughly 500 calories a day less than you would predict for people of their size and age. And the contestants who had kept the most weight off were the ones with the biggest slowdown.

That study is the reason "your metabolism is damaged forever" became something people say at dinner parties. So let me tell you what it doesn't show.

It's fourteen people. They did something almost nobody does: lost a third of their body weight in seven months while exercising for hours a day. A later look at the same data suggested the slowdown may have been tangled up with how much the contestants were still exercising to hold their weight down, which is a different story from a furnace that simply went out.[42] Fourteen people on a game show tell you what the extreme looks like. They don't tell you what happens to a woman in her forties losing twenty pounds over a year.

The one I trust more. Twenty years earlier, a group at Rockefeller University did something slower and more careful.[40] They took forty-one people, some who had been obese their whole lives and some who never had, and moved their weight up or down by ten percent under controlled conditions. Then they measured how much energy their bodies spent.

Lose ten percent, and energy expenditure fell by about fifteen percent, more than the smaller body accounted for. Gain ten percent, and it rose by about sixteen percent, again more than the bigger body accounted for. It happened in the people who had always been heavy and the people who had always been lean.

I like this study because it shows the system working in both directions. A body isn't broken because it resists losing weight. It resists gaining weight too. It's a thermostat, and a thermostat pushing back is a thermostat doing its job. The problem is only that it pushes harder on the way down.

The one that argues with both of them. In 2020, researchers in Alabama followed 171 overweight women through a weight-loss program and then for two years afterward.[6] They lost about twelve kilograms, twenty-six pounds or so, which is a normal, real-world amount, closer to what my patients are trying to do.

Their metabolism did slow more than the lost tissue predicted, by about 50 to 60 calories a day. Fifty. Not five hundred. And here's

the part I keep coming back to: a year later the slowdown had faded, and the women whose metabolism had dropped the most were not the women who regained the most. Metabolic adaptation did not predict regain at one year or at two. The regain was real (half the weight at one year, most of it at two), but it was being driven by something else.

The oldest one. In 1944, thirty-six young men volunteered to be starved for science.[41] For six months they ate roughly half of what they needed, walked twenty-two miles a week, and lost about a quarter of their body weight. Their metabolic rate fell by around forty percent, far more than their smaller bodies explained.

But if you read what the men actually reported, the metabolism isn't what stands out. What stands out is the hunger. They dreamed about food. They read cookbooks. They collected recipes. For a group of young men in 1944, that tells you most of what you need to know. They couldn't concentrate on anything else. Some of them took a long time to recover a normal relationship with eating after the study ended.

That study was done to help feed Europe after the war. It has been quoted ever since to prove that dieting slows your metabolism. I think it proves something more useful. When a body decides it's in an emergency, it doesn't start by turning down the furnace. It takes over your attention.

What I take from all four. The slowdown is real, in every study, in every direction. The size of it depends enormously on how hard and how fast the weight came off. In the extreme case, it's hundreds of calories. In the ordinary case, the one that looks like you, it's closer to a cup of coffee with cream, and it fades.

And in the study that followed people long enough to ask the question, it didn't predict who regained. Appetite did more work than metabolism. So when someone sits across from me convinced their body is burning nothing, I'm less interested in their furnace

than in their hunger, their sleep, and the pace they tried to do this at.

THREE

The Movement You Never Decided to Stop

NEAT, energy flux, and the calories that disappear without your noticing

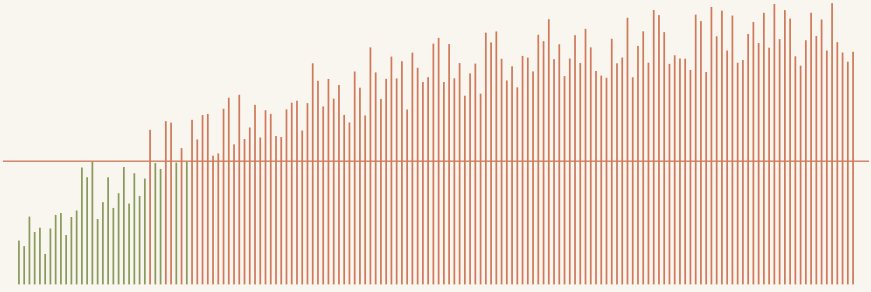


PLATE IV · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

A patient told me once that she had stopped losing weight even though nothing had changed. Same food, same workouts, same everything. She was frustrated with herself and slightly frustrated with me.

I asked her what she had been doing on Saturdays six months earlier, before she started.

She thought about it and said she used to garden. All afternoon, most weekends, whether or not anything actually needed doing. She hadn't gardened since March. She never decided to stop. She just hadn't felt like it — and hadn't noticed that she hadn't felt like it.

That is one of the most important conversations I have with people, and it almost never comes up unless someone asks.

The category nobody counts

Your daily energy expenditure has four components. Your resting metabolism is the largest by far. Digesting food takes a small, fairly consistent slice. Deliberate exercise — the part everyone tracks — is usually a surprisingly modest share, on the order of five to fifteen percent for most people who are not athletes.

And then there is everything else. Standing. Walking to the printer. Cooking rather than ordering. Fidgeting. Shifting in your chair. Taking the stairs because you did not think about it. Carrying things. Pacing while on the phone. Gesturing when you talk.

This category has a name: non-exercise activity thermogenesis (NEAT). It is the most variable component of human energy expenditure by a wide margin. Two people of similar size and similar formal exercise habits can differ substantially in daily energy spend based on this alone, and in the research the gap between a very sedentary person and a very active one has been described in the hundreds of calories per day.[9,10]

You will see much larger figures quoted. I am giving you the conservative version deliberately. Even the conservative version is larger than most people's workout, which is the part I want you to sit with before we go on.

Most of your movement lives in a category you have never once thought about, and very little of it lives in the workout you scheduled.

Why it falls, and why you cannot feel it fall

This is the part that changes how people think about their own plateau.

NEAT is an output. Your brain modulates it based on perceived energy availability, and it does so below the level of conscious awareness. When the system reads scarcity — from restriction, from poor sleep, from grinding stress, from illness — one of the first economies it makes is in spontaneous movement.

You will never catch yourself deciding to move less. What you catch, if you catch anything, is sitting down a little sooner. Taking the elevator without a thought. Standing more still. A slightly shorter walk. Not gardening on Saturdays.

Every one of those feels like a preference, and physiology is the last thing you would suspect. And together, over a week, they can erase a deficit entirely, which is precisely why the diet stopped working while nothing appeared to change.

> **WHAT THIS MEANS PRACTICALLY**
>
> If you find yourself doing less without deciding to, treat it as data. It is often the earliest visible sign that a body has moved into conservation. It shows up before the scale stalls. It is more informative than the scale, and nobody looks at it.

Energy flux

There is a related idea that I find more useful in practice than almost anything else in this book, and it has a bloodless name: energy flux. It refers to the *volume* of energy moving through your system — how much comes in, how much goes out — separately from whether those two are balanced.

Two people can both be in energy balance. One eats 1,600 calories and barely moves. The other eats 2,400 and moves a great deal. Same balance. Very different physiology.

The low-flux version tends to look like: fatigue, cold hands, poor training recovery, preoccupation with food, unreliable hunger cues, a stalled scale, and a body composition that quietly worsens even when the weight holds. It is a fragile state. It has no give in it. One bad week and the whole thing tips.

The high-flux version tends to look like: better appetite regulation, better sleep, more stable energy across the day, more muscle, better glucose handling, and — critically — enough room to absorb a normal human week without the system collapsing.

Given a choice between eating less and moving more, and eating enough and moving much more, the second one is almost always the better place to live.

I am not claiming this as settled physiology in every particular. I am telling you it matches what I see, it is biologically coherent, and it is the direction I steer people in when their intake has been driven very low for a very long time and nothing is working.

What I do not mean

I'm not telling you to hit ten thousand steps. Step targets are fine and I have no argument with them, but they miss the point of this chapter.

The islands that get written up for having the most hundred-year-olds are famous for it, and I will save you the trip: the people who live there do not follow a diet, and they do not exercise. They walk because the store is uphill. They garden because dinner is in the garden. Nobody there is on a program. It's just Tuesday.

The point is that movement is largely an *output* of how safe and how fueled your system feels. Trying to force it upward through discipline while the underlying signal says conserve is possible for a while and expensive the whole time. Fix the signal and the movement tends to return on its own, which is what people are describing when they say they suddenly feel like doing things again.

Your goal is to build a body that wants to move. Forcing the movement is the harder road, and a shorter one. I have watched a lot of people try it. Most of them are back on my schedule by spring, and not because they stopped trying.

The evidence

The idea that your body quietly adjusts how much you move is not a theory I made up in clinic. It has been measured, in some cases by people who were strapped into sensors for days. Here are the three studies I'd put in front of anyone who doubts it.

The overfeeding study. In 1999, James Levine and his colleagues at the Mayo Clinic took sixteen healthy, non-obese adults and fed them 1,000 calories a day more than they needed, every day, for eight weeks.[9] Everyone ate the same surplus. The question was what their bodies would do with it.

The answer was: wildly different things. Some people gained almost nothing. Others gained nearly ten times as much fat as the people at the bottom. Same food, same surplus, same eight weeks.

What explained the difference was not formal exercise; the volunteers were asked not to change that. It was the movement nobody counts. The people who resisted fat gain had unconsciously started moving more during their ordinary days: standing, pacing, fidgeting, shifting. Across the group, this non-exercise movement changed by anywhere from about 100 calories a day *less* to nearly 700 calories a day *more*, and it tracked closely with who stayed lean. Their bodies had noticed the extra fuel and spent it, without anyone deciding to.

Nobody in that study decided to fidget. That's the whole point of it.

The sitting study. Six years later the same group did the opposite experiment.[10] Instead of feeding people, they watched them. Twenty adults, half lean and half obese, all self-described couch potatoes, wore sensors in their underwear that recorded their posture and movement every half second for ten days.

The lean group stood and walked about two and a half hours a day more than the obese group. The obese group sat about two hours a day more. That difference was worth roughly 350 calories a day. Then the researchers made the lean people gain weight and the obese people lose weight, and checked again. The pattern didn't move. The lean people kept standing. The obese people kept sitting. It looked less like a habit than a setting.

Let me say what that does and doesn't mean. It does not mean sitting made anyone obese, or that standing up more will fix it; a ten-day study of twenty people can't tell you that. What it tells you is that two people with the same job and the same gym membership can differ by a few hundred calories a day in a category neither of them has ever thought about, and that the category seems to be regulated rather than chosen.

The hunter-gatherers. The third study is the one that surprised me most. In 2012, a team led by Herman Pontzer measured the

daily energy expenditure of Hadza adults in northern Tanzania, people who still hunt and gather for a living, walking miles every day.[43] If calories burned were simply a matter of how much you move, they should have burned far more than a Westerner sitting at a desk.

They didn't. Once you accounted for body size, their total daily expenditure was about the same as an office worker's.

That finding has been argued about ever since, and I'm not going to pretend it's settled. But the most likely explanation is the one that fits everything else in this chapter: the body has a budget, and when it spends more in one place, it quietly spends less somewhere else. Walk more, and something downstream (inflammation, stress hormones, the restlessness you never noticed) gets turned down to compensate. The total stays stubbornly close to a number your body has decided on.

What I take from the three. Movement isn't only something you do. A lot of it is something your body does with you, in response to how fueled and how safe it feels. Overfeed it and it fidgets. Underfeed it and it sits. Exercise harder and it finds savings elsewhere.

I don't start with a step count. I start with the question from the top of this chapter: what were you doing on Saturdays six months ago that you aren't doing now? If the answer is "nothing, I just didn't feel like it," your body has already told me something, and I'd rather listen to that than hand you a target it will quietly undercut.

FOUR

What Your Hormones Are Actually Saying

Who sits at the table when your body decides whether to spend

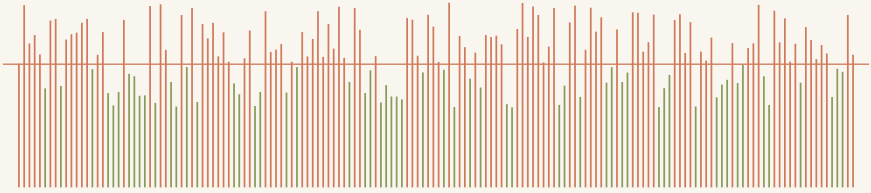


PLATE V · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

If you could watch your metabolism make a decision, it would look less like a machine and more like a family around a kitchen table, arguing about money. Everyone has a job, everyone has an opinion, and there is one question in front of them.

Is it safe to spend energy right now?

Every hormone in this chapter has a seat at that table, and none of them is the villain. Each one reports on something and argues for a response, and what comes out is a household decision, not a decree. A family that has been through a lean year decides differently from one that hasn't, and that is chapter five.

Insulin: where the fuel goes

Insulin has been cast as the villain in more diet books than any other molecule, and it doesn't deserve a single one of them.

Insulin is a director of traffic. Fuel arrives; something has to decide where it goes. Insulin makes that call: into muscle to be used or stored as glycogen, into the liver, into fat tissue. It rises after you eat, which is the entire job.

What changes the picture is *sensitivity*. In a body that is well-slept, well-muscled, not particularly inflamed, and not under sustained stress, a given amount of insulin does a lot of work, and fuel moves efficiently into tissues that will use it. In a body that is short on sleep, low on muscle, carrying inflammation, and running high stress hormones, the same signal accomplishes less, so more of it is required, and the disposal of fuel skews.

People often feel this before any lab flags it: heavy after meals, an afternoon crash that arrives on schedule, hunger returning ninety minutes after a real breakfast, energy that depends entirely on when they last ate.

Note what is doing the work in that paragraph. Sleep. Muscle. Inflammation. Stress. Insulin is downstream of your life.

Leptin: the report on the reserves

Leptin is made by fat tissue, and its message to the brain is essentially: *we have reserves, you can spend.*

You would reasonably expect that more fat tissue means more leptin means a strong satiety signal and easy regulation. And leptin is indeed higher in people carrying more fat. But the receiving end can become less responsive; the message is sent, and the brain acts as though it did not arrive. The functional result is a brain operating on the assumption of scarcity in a body that is not scarce.

Leptin also falls with weight loss, and falls out of proportion to the fat that was lost. This is one of the most consistent findings in the entire literature, and it is a large part of why the year after losing weight is harder than the losing was.[3]

Your brain never reads your body directly. It reads a report about your body, and the difference between the two is where a great deal of the trouble lives.

Cortisol: the one watching the news

Popular writing calls cortisol the stress hormone, and the name has done a lot of damage. At the table, cortisol is the one who has been watching the news and decides how bad things are out there. It is closer to the hormone of *mobilization* — it liberates fuel, sharpens attention, and gets a body ready to handle something. You need it. A morning without a cortisol rise is a morning you cannot get out of bed.

The trouble starts when the all-clear never comes.

Sustained elevation nudges glucose up, increases insulin demand, disrupts sleep, and interferes with the appetite signals discussed above. There is reasonable evidence linking chronic stress physiology to central fat distribution, though I would caution you against the version of this claim that appears in

supplement advertising. The effect is real, and it is not the sole explanation for anyone's midsection.

Here's the part I won't hedge. I have never once helped someone reach a metabolic goal while ignoring their sleep and their stress. Not one time, in any year I've been doing this. It is the single most reliable pattern in my practice, and it is the least commercially interesting thing I could tell you, since neither of those is something I can sell.

One warning, because I have watched this go wrong. If you leave this chapter and add *manage stress* to the list of things you are going to be disciplined about, with an app and a schedule and a score to hit, you have missed the point. When you are stressed about stress relief, you are adding stress. The all-clear has to actually arrive, and your body cannot be talked into it.

THE SLEEP PROBLEM NOBODY SCREENS FOR

One specific thing I look for in anyone who is tired, snores, and cannot lose weight is obstructive sleep apnea. Breathing stops and restarts through the night, sleep never gets deep, and the body spends every night in a low-grade emergency. It is common, it is more common the more weight a person carries, and most people who have it have never been tested. The signs: loud snoring, pauses in breathing that a partner notices, waking unrefreshed no matter how long you slept, morning headaches, and nodding off in the afternoon. An eight-question screen takes a minute, and a sleep study settles it.[35] I will be honest about what treatment does. On its own it does not reliably move the scale.[36] What it changes is energy, appetite, blood pressure, and what a person is capable of the next day, which is where the weight work actually happens.

The man who asked to skip this chapter

I met him in the rehabilitation facility where I still work a few days a week. He was seventy-one, six foot three, and 275 pounds. He

had come in after a fall, at the end of three months of his legs going weak and numb, and when he arrived he needed help to stand. He had a replaced heart valve and a heart that had failed once and recovered, kidneys working at about half strength, a back that had been fused the winter before, psoriatic arthritis in his shoulders, hips, and elbows, and feet he could no longer feel. For thirteen years before anyone found the valve, he had been telling doctors he couldn't breathe and being told it was in his head.

He had spent his whole life fixing things. Toys, then cars, then the machinery in a steel mill, then the buildings he ran for a living. He has ridden motorcycles since he was twelve and spent years teaching other people to ride them safely. He does not cook, and he was about to move, alone, into a condo several states away.

When he decided to keep working with me after rehab, he made one request before we started. Could we leave sleep out of the plan.

He'd slept badly for more than forty years, for reasons that are his to tell and not mine. Longer than I've been alive. He wasn't being difficult. He was being realistic, the way a man who repairs things is realistic about a part that can't be repaired. Sleep, he said, was the one thing he had failed at, and he didn't want it on the list where it would sink everything else.

I said fine.

I meant it. I've watched enough people turn "fix my sleep" into one more thing to lie awake worrying about. So I wrote him a plan with five things in it and sleep wasn't one of them. Eat mostly Mediterranean-style food he could assemble without a stove, which is where the Mediterranean guide at the back of this book comes from; I wrote it for him. Protein at every meal, capped because of his kidneys. Move every day without overdoing it. Keep up the strength and balance work from therapy. Follow his heart-failure plan. Under the eating section I wrote, "Slow is not a

compromise here. Slow is the plan." Under the vegetables I made one negotiated exception for okra, because he objected to the name and I had enough other vegetables that I didn't need to win it.

He had been started on a GLP-1 medication before the hospital stay, and never went back to it, so none of what follows happened on the drug. I say that because people will ask.

Then he did something I didn't ask for. He built a spreadsheet. Every day: what he ate, how many sit-to-stands, how long he could stand, how far he walked, how long he swam, waist, hips, and the four questions I'd told him to ask himself once a week. At the end of the first month he turned it into a report and sent it to me.

Here is what four weeks looked like, in his numbers. Weight from 275 to 267. Waist down an inch, hips down two. Standing unsupported went from under three minutes to twenty. His longest walk went from seven minutes to twenty-five. He got into a pool for ten minutes in week one and was swimming for fifty-three minutes by week four, more than forty lengths, with his lap times falling. Sit-to-stands went from eight to twenty-four. And most of that happened in the back half of the month. He left Indiana with the plan in hand, camped for a week, and didn't properly start until he was settled in the condo. Midway through week three, he wrote, everything started to gel.

And in the section of the report about his body, one line, with no fanfare: "Sleep has improved significantly." When I asked, it was six hours a night. He told me the emotional weight he'd carried for decades was, for the first time, not a significant factor. On the questionnaire he'd filled in on day one, "Do you have trouble going to sleep or staying asleep?" had been a yes. A month later it was a no.

I hadn't touched his sleep. We never discussed it after that first conversation. What changed was everything around it: a body that

was fed, moving a little more each day, in the water most afternoons, and, I think, less afraid. The sleep came on its own, the way movement comes back in chapter three, as an output of a system that had started to feel safer.

I want to be careful here, because this is the chapter about being careful. It's one month. He's a complicated man with a complicated body, and there's a sleep study in his record from years ago suggesting severe apnea, with pauses in his heart rhythm at night, that was never properly followed up. I raised it while he was still in Indiana, and he has a new sleep study scheduled. Six hours is not eight. He still has brain fog he can't explain and feet that get worse at night.

But he asked me to leave out the one thing he couldn't fix, and it started fixing itself. I think about that more than almost anything else in this book.

He also taught me something I should have known. He splits his year between that condo near the ocean and his sister's house in Indiana. At the condo, where he swims and eats the simple meals from the guide, he loses weight. At his sister's, where the food is wonderful and there's someone to eat it with, he gains it back. Same man. Same discipline. Two kitchens. He noticed the pattern before I did, and he wasn't blaming himself for it, which put him ahead of most of my patients.

Shared with permission. Identifying details have been omitted.

Thyroid: the pace

Your thyroid sets the rate at which the whole operation runs. It is also responsive — output and, more importantly, the conversion of storage hormone into its active form shift with energy availability, illness, and stress. Under sustained restriction, that conversion tends to move toward the less active form. Metabolic rate follows.

Two things are true at once here, and functional medicine gets one of them right and the other wrong. Right: this responsiveness is real, and a person can feel genuinely under-powered — cold, slow, flat, sluggish digestion — with labs that never cross a diagnostic line. Wrong: this does not mean everyone has a thyroid problem, and it does not mean every fatigue is thyroidal. Actual thyroid disease is common, is diagnosable, and should be properly assessed rather than assumed in either direction. The most common cause of an underactive thyroid in the United States is autoimmune, and the antibodies that flag it are not on a standard panel, so they go unchecked for years in people who have been getting labs the whole time. In chapter seven I will tell you about a woman who went sixty-five years without anyone checking hers. She happens to be my mother.

Sex hormones: the terms of the deal

For women, the perimenopausal transition changes the metabolic terms in ways that are frequently dismissed and genuinely consequential. As estrogen declines and fluctuates, insulin sensitivity commonly shifts, fat distribution tends to move toward the abdomen, sleep is often disrupted, and muscle becomes harder to hold and easier to lose.[12] Progesterone's decline affects sleep and mood, which loop straight back into everything in this chapter.

Women in their forties get told this is normal. It is. Then they get told there's nothing to be done about it, which is a completely different claim and a much weaker one. Expected and untreatable are not the same word. That distinction is most of why I do this work.

For men, testosterone supports muscle mass, insulin sensitivity, and spontaneous activity, and it falls with age, poor sleep, chronic stress, and excess adiposity, which then makes each of those

harder to address. The loop runs in both directions, which means it can be entered from either side.

The gut's contribution

Every meal triggers a set of signals from your digestive tract to your brain: GLP-1 and PYY reporting fullness, CCK slowing the pace of eating, others coordinating the response. These signals are the reason a meal ends.

This is also, not incidentally, the machinery that the GLP-1 medications work on. Those drugs amplify a process you already have rather than inventing a new one, which is worth knowing whether you are considering them, taking them, or have decided they are not for you. They are a legitimate tool and they are not a substitute for the rest of the picture. Both statements are true, and I will come back to them properly at the end of the book.

The table, not the people at it

If you leave this chapter hunting for the one hormone that is out of line, I have failed.

Your weight is decided at the table, never by one voice at it. And what gets decided there depends on things you would not think of as hormonal at all: what time you went to bed, what happened at work, how much muscle you carry, what you ate at eight this morning.

Which is why a lab panel is a snapshot of a meeting in progress, and why interpreting it without knowing anything about the person's life is close to useless. Numbers are a sentence. You still need the paragraph, and the paragraph is the part of the visit that takes the longest and gets paid for the least.

The evidence

I said earlier in this chapter that I have never helped anyone reach a metabolic goal while ignoring their sleep. I want to show you why I'm so stubborn about it, because the studies are small, and they are also some of the cleanest in this book.

Two nights. In 2004, Eve Van Cauter's lab in Chicago limited twelve healthy young men to four hours of sleep a night for two nights.[11] Then, on a different occasion, the same men slept ten hours a night for two nights. Everything else was held the same: same food, same activity, same lab.

After the short nights, leptin, the hormone that tells the brain you have enough, was down about eighteen percent. Ghrelin, the hormone that drives hunger, was up about twenty-eight percent. The men rated themselves about a quarter hungrier, and what they wanted most was specific: calorie-dense carbohydrates. Sweets, salty snacks, starches. Their craving for those went up by a third to nearly half.

Two nights. Not a month of bad sleep, not years of shift work. Two nights of four hours, in healthy twenty-somethings, and the hormones at the kitchen table had already changed their vote.

I don't need a study to tell me that tired people crave sugar; anyone who has had a newborn knows it. What the study tells me is that the craving is hormonal, measurable, and fast. The person reaching for the pastry at three o'clock after a short night isn't failing at anything. Her leptin is down and her ghrelin is up, and she's doing what those two hormones are telling her to do.

Same diet, half the sleep. The second study is the one I'd put on the wall of every weight-loss clinic.[45] In 2010, a group at the University of Chicago took ten overweight adults in their forties and put them on a calorie-restricted diet for two weeks. Twice. Once while sleeping eight and a half hours a night, and once while sleeping five and a half. Same diet, same calories, same people.

On the scale, the two runs looked identical. The volunteers lost about three kilograms each time, around six and a half pounds. If you only weighed them, you'd say sleep didn't matter.

Then the researchers looked at what the weight was made of. With enough sleep, about half of the loss was fat. With short sleep, fat loss fell by more than half, and the loss of lean tissue, which is mostly muscle, went up by sixty percent. The short-sleep volunteers were also hungrier the whole time, and their bodies showed more of the hormonal signs of a starvation response.

That is the most important finding in this chapter. Same diet, same number on the scale, and in one version the body gave up fat while in the other it gave up muscle and held onto the fat. The scale couldn't tell the difference. The body could.

Ten people and two weeks is a small study, and I'd love to see it done bigger. But the direction of the finding has held up in the research since, and it fits what I see every week: people who are sleeping badly and dieting hard lose the thing they can least afford to lose.

What I take from the two. Sleep sits upstream of the hormones that decide how hungry you are and what your body does with a deficit. Shorten it, and your body gets hungrier within days and starts spending muscle instead of fat within weeks.

So when someone tells me they're doing everything right and nothing is working, one of my first questions is what time they went to bed. Not because I'm changing the subject. Because I'm not.

FIVE

Some Bodies Are More Careful Than Others

Genetics, history, and why the same plan produces different results

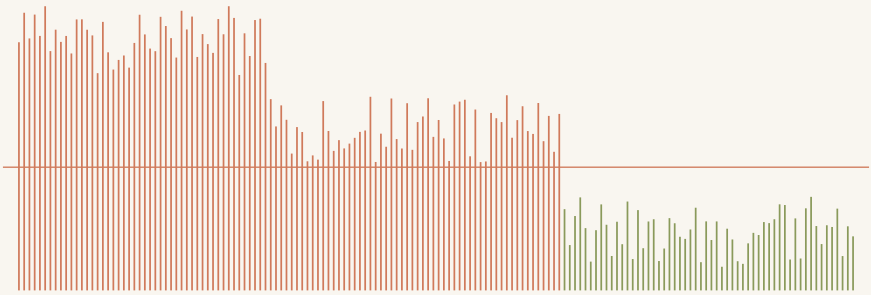


PLATE VI · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

Two women, both forty-five, both 187 pounds, decide to lose weight in the same month. They get the same plan from me. The same meals. Weight training three days a week. A ten-minute walk after meals. Seven to eight hours of sleep. Something for stress that they actually do. I know both of them well enough to be confident nobody is misreporting anything.

Twelve weeks later, one has lost thirteen pounds and the other has lost six.

The one who lost six is frustrated, and I understand why. She did the same things. She did them the same number of times. She has the food log to prove it, and the log looks like her friend's.

The temptation is to look for the hidden variable — the secret snack, the missed workout, the reason it is still, at bottom, a behavior problem. Sometimes there is one. Frequently there is not. Frequently the honest answer is that two different bodies were asked the same question and gave different answers, because they came into the room with different histories.

What genetics actually contributes

Body weight is meaningfully heritable. Twin and adoption studies have consistently found a substantial genetic contribution to BMI — most estimates fall somewhere in the range of forty to seventy percent, depending on the population and the method.[13] That is a wide range, and the width is honest; this is hard to measure.

What gets passed down is a set of tendencies rather than a number:

- How strongly hunger registers, and how quickly fullness does
- How rewarding food is to your particular brain
- Where fat is preferentially stored
- How your body responds to a given amount of insulin
- How much your spontaneous movement changes when energy gets scarce

None of that is destiny, and I want to be firm on this because genetic fatalism is its own kind of harm. Highly heritable traits are still modifiable. Height is more heritable than weight, and average heights moved substantially in a single century when nutrition changed. Heritability describes the variation in a population, not the ceiling on an individual.

But it does mean this: people are not standing at the same starting line, and treating identical effort as though it should produce identical results is bad arithmetic dressed up as fairness.

Two people can do the same thing and get different results without either of them having done anything wrong. We know this about every other trait. We refuse to accept it about this one.

Epigenetics, used carefully

Epigenetics might be the single most abused word in wellness marketing. So let me keep this narrow.

Your genes are the text. Epigenetic marks are the notes in the margin: read this part louder, skip that one. The notes respond to your life — what you eat, how you sleep, how much stress you are carrying, what you have been exposed to, what illnesses you have had. Some of those notes stay written for a long time.

What we actually know, and where it stops: that your environment changes how your genes get read: solid. That this is part of why two bodies behave differently: solid. That anyone can currently tell you which of your genes your life turned up, and then hand you a protocol to turn them back down: no. Not yet, and not close.

So if someone is selling you an epigenetic weight-loss program, they are selling ahead of the science. I would want my money back.

I keep the concept anyway, because it is the honest bridge between *your genes matter* and *your life matters*. Both are true. This is part of how they meet, and it is why I ask about your childhood before I ask about your breakfast.

What the body remembers

Now the part that I think is under-discussed in clinical settings and over-dramatized outside them.

Bodies keep records.

Hard early years, stress that ran for a decade, not having enough food, serious illness, and diet after diet after diet — all of it leaves residue. In how the stress system fires. In inflammatory tone. In how hunger gets reported to the brain. All of it is measurable, and it sits in mainstream literature on metabolic risk, well away from the fringe.

Let me make that concrete with someone I am still working with.

She came to me at 230 pounds, and she had been heavier than the other kids for as long as she could remember. Both parents were the same. So her body had a history before she had ever tried a diet, and the history had a family tree.

When we looked past the scale, the record was longer than that. Her A1C was 4.8 percent, which any chart would call textbook normal. Her fasting insulin was telling a different story. Her legs and arms showed a pattern consistent with lipedema, a fat and connective tissue disorder that does not respond to calorie restriction the way people expect it to. She had spent years assuming she simply owned a body that did not behave like other people's. She was partly right. It had a name, and the name changed what we could do about it. She had orthostatic symptoms, so standing up and leg workouts were genuinely hard, and not because she was avoiding them. Her gut had slowed to a

crawl. And her nervous system was running with almost no recovery capacity, which I did not have to guess at, because it showed up in her heart rate variability every single morning.

Read that list the way a body would. A lifetime of carrying more than the people around you. A tissue disorder. Circulation that complains when you stand. A gut that has stopped moving. A stress system with nothing left in reserve. Every one of those is a reason for a body to be careful, and hers had all of them at once. Nobody had asked. She had been handed the same plan everyone gets, and every time it did not work, she got the same explanation everyone gets.

Her history was most of the diagnosis. What happened when we asked her body a different question is in chapter eight.

Shared with permission. Identifying details have been omitted.

Now the boundary, because I owe you one. An association between adverse history and metabolic difficulty is well supported. A mechanistic account of exactly how a specific person's specific history produced their specific weight is not something anyone can currently deliver, and I would be suspicious of anyone who offers it confidently.

What I will say is that the pattern shows up often enough that I ask about history in every intake. The point is to learn what this body has learned to expect, so I know how hard I can push and how fast.

A cautious system needs a gentler ask, and I cannot know how cautious a system is without asking where it has been.

Dieting history is history too

Your body counts every restriction cycle you have put it through.

I don't mean that metaphorically. Repeated cycles of loss and regain are associated with changes in body composition (a tendency for regained weight to include proportionally less

muscle), and clinically people who have been through many cycles frequently describe each attempt as harder than the last. Whether that difficulty is primarily metabolic, primarily behavioral, or primarily what fifteen years of self-blame does to a person's relationship with food is a question I don't think anyone has cleanly answered. Probably all three.

> **WHAT I DO WITH THIS INFORMATION**
>
> I use it to set the pace, not to lower the ceiling. A body with a long restriction history, high stress, and poor sleep gets a slower, better-fueled, more supported approach, not because it cannot change, but because pushing a cautious system hard is the most reliable way to trigger exactly the defense you are trying to avoid.

Why any of this matters to you

Because the standard interpretation of a difficult body is a deficient person, and that interpretation is both wrong and expensive.[15]

It is expensive because it produces the exact behavior that makes things worse: harder restriction, more punishment, more shame, more cycling. And because a person who believes the problem is their character will not look for the parts of the problem that are actually addressable.

Your body is not less disciplined than someone else's. It may be more careful. Those are different problems, and they need different answers.

The evidence

The idea that bodies arrive with different settings sounds like a kindness I extend to patients. It's about as well established as anything in this book. Here are the three studies I'd hand to someone who still believes everyone starts from the same line.

The adopted children. In 1986, Albert Stunkard and his colleagues used something Denmark has and almost nobody else does: a complete national register of adoptions.[46] They found 540 adults who had been adopted as infants and compared their weight with two sets of parents, the ones who raised them and the ones who made them.

The adoptees' weight tracked their biological parents. It did not track the parents who raised them, bought the groceries, set the dinner table, and modeled every eating habit they ever saw. The adoptive parents' weight told you nothing about how heavy the adopted child became. The biological mother's weight, in particular, told you a great deal.

I remember reading that the first time and sitting with it for a while. Everything we blame on upbringing, on the food in the house, on what a child was taught, and the Danish records say the home had almost no measurable effect on the adult's weight. The body had a plan before it ever sat down to dinner.

The twins who were overfed. Four years later, Claude Bouchard in Quebec ran the experiment that explains why the same plan produces different results.[47] He took twelve pairs of identical twins, young men, and overfed every one of them by 1,000 calories a day, six days a week, for a hundred days. Same surplus, same schedule, 84,000 extra calories each.

The gains ran from about nine pounds to about twenty-nine. A threefold difference, on identical overfeeding. But the striking part was the pattern. Brothers gained like their brothers. Within a pair, the two twins put on similar amounts of weight and, even more closely, stored it in similar places. The variation between pairs was three times larger than within them, and for where the fat went, around the belly or elsewhere, about six times larger.

So when the two women in this chapter get the same plan and lose thirteen pounds and six, the twin study has already explained

it. If you'd given each of them an identical sister, the sisters would have lost thirteen and six as well.

The hunger winter. The third study is about what the body remembers, and it starts with a war. In the winter of 1944 the German occupation cut off food to the western Netherlands, and for about six months people in the cities lived on a few hundred calories a day. Then it ended, abruptly, with the liberation. Because Dutch records were meticulous and the famine had a clear start and end, researchers could later ask what it did to children who were in the womb at the time.

In 1976, a team compared about 300,000 Dutch men at their military medical exam at age nineteen.[48] The men who had been in the first half of gestation during the famine, whose mothers were starving in early pregnancy, were almost twice as likely to be obese at nineteen as men born just before or after. The men exposed only at the very end of pregnancy and in the first months of life were, if anything, slightly less likely to be obese.

Nineteen years after a six-month famine their mothers lived through, and the difference was still there, in the direction of holding onto weight. Later work on the same cohort has found higher rates of diabetes and heart disease too. The body had taken a note, in early pregnancy, that food could run out, and it kept the note.

I bring this one up with patients carefully, because it is about a famine and most people's history isn't. But the principle is the one from this chapter. A body that has been through scarcity, whether in 1944 or in a childhood where there wasn't always enough, or across fifteen years of diets, is a body that has learned to be careful. That's an adaptation, and it worked.

What I take from the three. The home you grew up in matters less than people think. The body you were handed matters more.

And the body keeps records of what it has been through, sometimes from before you were born.

None of that is a reason to give up. The Danish adoptees still changed their weight when their lives changed; heritable doesn't mean fixed. It's a reason to stop grading yourself against your friend, and to stop asking why the same plan didn't work the same way. It was never going to. The useful question is what this body, with its history, needs in order to feel safe enough to let go.

SIX

Your Gut Gets a Vote

Appetite, cravings, and the ecosystem you are hosting

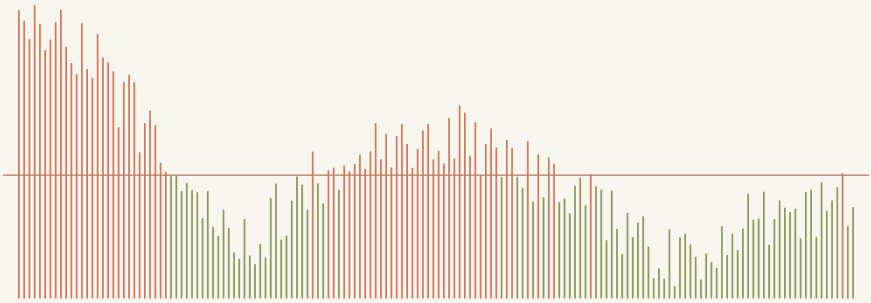


PLATE VII · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

The gut microbiome is real, it matters, and it is being studied hard. It is also the single most overhyped subject in this book, and the place where credible science and outright nonsense are hardest to tell apart. Much of the strongest data is from mice. Much of the human data is associative: it tells you two things occur together, not that one caused the other. Commercial microbiome testing has outrun what the science can currently support, and I don't use it to make weight decisions.

With that said, there is a real signal here, and it is worth understanding.

What the gut is doing

Your digestive tract is an endocrine organ, a substantial share of your immune system, and the home of a microbial ecosystem large enough to have its own metabolic output.[16] Calling it a pipe undersells it badly.

That ecosystem does things that matter to this book. It ferments the fiber you cannot digest, producing short-chain fatty acids — butyrate, acetate, propionate — that feed the cells lining your colon and appear to influence appetite signaling, glucose handling, and inflammation. It affects how much energy you extract from a given meal. It participates in bile metabolism, which turns out to be a signaling system and not just a detergent. And it communicates with your brain, continuously, through nerve, immune, and hormonal routes.[16]

Why the same meal lands differently in two people

Two people eat identical meals. One is comfortably full for five hours. The other is hungry again in ninety minutes and thinking about something sweet by three.

Some of that difference is what we covered in the last two chapters. Some of it appears to be ecological. Differences in

microbial composition are associated with differences in fullness signaling, in post-meal glucose response, and in the drive toward specific foods.

The specific organisms that come up most often in this research — *Akkermansia muciniphila*, various *Bifidobacteria*, *Faecalibacterium prausnitzii* — are genuinely interesting, and I want to be precise about the state of the evidence. They are consistently associated with better metabolic profiles. Some have promising early intervention data in humans. None of them constitutes an established treatment for weight, and I would not have you buy a supplement on the strength of an association.[18]

Association is not causation, and a mouse is not a woman in her forties. Both of those sentences should appear more often in wellness writing than they do.

The part I am confident about

Fiber.

Plant fiber, in food, in variety, across the week. You will notice I did not say a powder.

This is the least exciting recommendation in this book and the one I will defend the hardest. Adequate and varied fiber intake is associated with better appetite regulation, better glucose control, lower inflammatory markers, better bowel function, and better long-term health outcomes across an unusually broad range of endpoints.[17] It is also the single most common gap I find when I actually look at what someone is eating, particularly among people who have been eating in a restricted way for a long time.

If you take one practical thing out of this chapter, take that one. It's boring. It works.

When digestion is the actual problem

Sometimes what a person calls a weight problem is more accurately a digestion problem wearing a weight problem's clothes.

Chronic constipation, persistent bloating, feeling full and unsatisfied at the same time, nausea after fatty meals, a sense of food sitting. These are worth taking seriously on their own terms. I have no need to attach them to a metabolic story; they are unpleasant, they are frequently treatable, and they change what a person can realistically eat.

There is a specific pattern worth naming: methane-producing organisms in the small intestine are associated with slowed transit and constipation, and this is a recognized clinical entity with actual diagnostic testing behind it.[19] Whether it independently affects body weight is less well established than the internet suggests. But if someone has been bloated and constipated for three years and has been told it is stress, that is a real problem that deserves a real workup regardless of what the scale says.

> **IF YOU ARE TAKING A GLP-1 MEDICATION**
>
> These medications slow gastric emptying, which is part of how they work. In someone whose transit was already slow, that can produce significant constipation and bloating. This is common, it is manageable, and it is worth raising with your prescriber rather than enduring. Attention to fiber, fluid, and sometimes medication makes a substantial difference to whether people can stay on treatment comfortably.

What disrupts the system

The list is unglamorous and mostly familiar: chronic stress; poor sleep; antibiotics when they were necessary and when they were

not; a diet low in fiber diversity; long periods of restriction; and untreated constipation.

You will notice that the same four or five things keep appearing in every chapter of this book. That repetition is the actual structure of the problem, not a failure of imagination on my part. Sleep, stress, nourishment, movement, and time keep showing up because they are upstream of nearly everything else, which is inconvenient for anyone trying to sell a more interesting answer.

The reframe

If you have ever felt out of control around food in the evening, and concluded from that feeling that you lack self-control, I would like you to consider a second explanation.

Appetite is a signal. When the signal is disordered — by restriction, by poor sleep, by a disrupted gut, by a hormonal transition — you are receiving different information than the person next to you who finds it easy, and no amount of resisting changes the information.

The evidence

I promised at the top of this chapter to separate the credible science from the nonsense, so here is the credible science, with its edges showing.

The fiber review. In 2019 a team working for the World Health Organization pulled together everything worth reading on carbohydrate quality and health.[17] That meant 185 long-term observational studies, following roughly 135 million person-years of life, and 58 clinical trials. It was published in the *Lancet*, and it is the reason I'm so boring about fiber.

People who ate the most fiber, compared with people who ate the least, had somewhere between fifteen and thirty percent lower rates of dying from any cause, dying of heart disease, having a stroke, developing type 2 diabetes, and getting colorectal cancer. The trials, where fiber was actually increased on purpose, showed lower body weight, lower blood pressure, and lower cholesterol. And the benefit kept climbing with the dose: every extra 8 grams a day, which is about a cup of beans or two pieces of fruit, was worth another five to twenty-seven percent lower risk, depending on the outcome. The sweet spot was 25 to 29 grams a day, and more was better still.

Most adults I see are eating about half that.

Now the limits. Most of those 185 studies watched people rather than assigning them a diet, and people who eat a lot of fiber tend to do other sensible things too. The trials are shorter and smaller. So I'd call this a very strong association backed by a decent amount of trial evidence, which, for nutrition, is about as good as it gets. I'd also point out that the review found the benefit in whole grains and intact plant foods. It did not find it in fiber powders, because almost nobody has studied them that way.

The Akkermansia trial. This is the study behind every supplement ad you've seen with a bacterium's name on it, so you should know what it actually found.[18] In 2019, a group in Belgium took forty overweight adults with insulin resistance and gave them, for three months, either a placebo, a daily dose of live *Akkermansia muciniphila*, or the same bacterium killed by gentle heat. Thirty-two finished.

The heat-killed version did something. Compared with placebo, insulin sensitivity improved by about twenty-eight percent, fasting insulin fell by about a third, and total cholesterol dropped by nearly nine percent. Nobody got sick from it. Those are real findings, and they're why I said the organism was interesting.

Here's what it didn't do. The people taking it lost about five pounds more than the placebo group, and that difference did not reach the usual bar for statistical significance. Neither did the change in fat mass or waist. The authors called it what it was: a proof-of-concept pilot, thirty-two people, three months. It is not a weight-loss treatment, and the researchers never claimed it was. The supplement industry did that on their behalf.

So: a promising early signal for metabolic health, from one small trial, in one specific form of the bacterium. If a larger trial confirms it, I'll be the first to tell my patients. Until then, I'm not asking anyone to buy it.

What I take from the two. The strongest evidence in this entire chapter is for the least glamorous thing in it. Fiber, from food, in variety, with a benefit that shows up in millions of person-years and climbs with every extra serving. The glamorous thing, the named bacterium in the capsule, has one small trial and a modest signal that may or may not hold up.

That's an unusual situation in medicine, where the expensive thing usually has the better data. Here the cheap thing wins, and it isn't close. When a patient asks me which probiotic to buy, I usually answer with a question about beans.

SEVEN

Capacity

Load, environment, and the limits of what a body can process at once

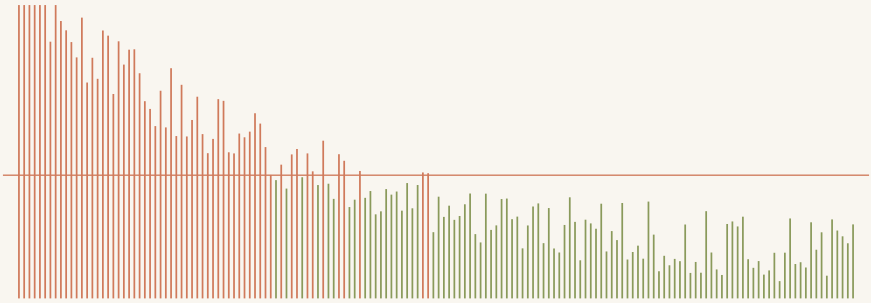


PLATE VIII · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

This chapter is about a word that has been badly damaged by marketing, and I am going to try to rescue the useful part of it.

The word is detoxification.

What it actually means, and what it does not

You do not need a cleanse. You have a liver, two kidneys, lungs, skin, and a gut, and together they run a continuous, extremely competent biotransformation operation that does not stop and does not require a juice.

That process is well characterized. Phase one, largely via cytochrome P450 enzymes, chemically modifies a compound. Phase two conjugates it, attaching something that makes it water-soluble and excretable. Then it leaves, through bile into stool or through the kidneys into urine. This is real biochemistry, taught in every pharmacology course, and it is the reason drug dosing works the way it does.[20]

What the wellness industry did with this was invent things to sell you that "support" it. What is actually true is more interesting and much less sellable: these pathways run on nutrients, energy, and organs that work — and they have a ceiling.

The useful word here is **capacity**. Detox is the wrong word, and it has been the wrong word for about twenty years.

Your body isn't dirty, it's busy, and the question worth asking is how much you are asking it to process at once.

Load

Think of it as a ledger rather than a toxin.

On one side: everything your system has to handle. Sustained psychological stress. Short sleep. Alcohol. Medications, including

necessary ones. Inflammation from any source. Illness. Chronic pain. Poor glucose control. Environmental exposures. Grief.

On the other side: capacity. Nutrient status. Sleep. Muscle mass. Liver and kidney function. Bile flow. Bowel regularity. Time in a genuinely recovered state.

Physiology does not stop when the ledger tips. It triages. And a body under triage protects essential function first and defers everything optional. From your body's point of view, that includes the substantial metabolic project of remodeling stored energy.

I can't give you a citation for that framing as a validated model, and I'm not going to pretend otherwise. It is a clinical heuristic. What it is built on — that inflammation, stress physiology, sleep loss, and poor nutrient status each impair metabolic function, and that they are additive in their effects — is well supported.

The liver, briefly

The liver gets described as a filter, which is like describing a hospital as a building with a parking lot. It is the central metabolic organ: it regulates glucose release between meals, manufactures and clears lipids, processes hormones including estrogen and thyroid hormone, produces bile, and manages a large share of the body's protein synthesis.

So when the liver is under strain — fat inside the liver itself, alcohol, a long medication list, insulin resistance — the trouble does not politely stay in some "detox" lane. It shows up in your blood sugar. Your lipids. How you clear hormones. How you digest.

Metabolic dysfunction–associated fatty liver disease is common, usually silent, and often reversible.[21] It is one of the first things I look for in someone's bloodwork. It is also, routinely, something nobody has ever mentioned to the person who has it.

Environmental exposures, honestly

Certain environmental compounds — some plasticizers, some persistent industrial chemicals, some pesticides — can interact with hormonal signaling. This is a real research area with real regulatory attention, not a fringe concern.

The honest version: these compounds have real hormonal activity, they are in nearly everyone, and population-level exposure tracks with metabolic outcomes.[22,23] Whether any one person's weight is meaningfully explained by their exposure is a different question, and nobody can currently answer it. I won't pretend to.

There is also a genuinely interesting observation that persistent organic pollutants accumulate in fat tissue and are released into circulation during weight loss. This has been measured. Whether that release meaningfully limits how readily a body will mobilize fat is a hypothesis, not a finding. I mention it because you will encounter it stated as fact, and I would rather you hear the caveat from me.

> **WHAT I ACTUALLY SUGGEST**
>
> Reduce exposure where it is cheap and easy to do so — glass or stainless instead of plastic for hot food, ventilation, filtered water, reading labels on things that sit on your skin all day. Do not build your life around it, do not buy the detox kit, and do not let it become one more thing to be anxious about. Anxiety is a load too.

Why this chapter exists

Because "I'm doing everything right and nothing is working" is sometimes a nutrition question. Sometimes a movement question. And very often a capacity question that nobody thought to ask.

The woman I think of first was in her late forties, with a senior job at a big company and the hours that go with it. She went to the

gym every day. She meal-prepped every day. She did not consider herself someone who ate badly, and she was right. She had kids old enough to have schedules of their own, and she carried theirs on top of her own. She was tired all the time, no matter how hard she pushed, and the fatigue was the thing that had taken the most from her life. She could not lose weight no matter how hard she trained.

She had tried, in order, a detox powder, a protein powder, an expensive supplement package for weight loss, and a commercial points program. Every one of them was aimed at the number. None of them were aimed at her.

What nobody had done was look at the whole picture. Her thyroid was underperforming, in a way that had never been flagged and that fit her fatigue exactly. Not long after, she was diagnosed with thyroid cancer and had her thyroid removed. She has recovered, she is doing well, and she has started the weight work again, this time on a body that is being looked at properly.

I cannot tell you that finding her thyroid earlier would have prevented the cancer. Nobody can, and I would not put it in a book. What I can tell you is that a proper look, years earlier, would have explained the fatigue, put eyes on a gland that needed watching, and spared her the years of buying powders for a problem the powders were never going to touch. She had been doing the work for a long time. What she had never been handed was the right question.

Details have been changed to protect her privacy.

The other example is closer to home. It is my mother.

She is sixty-five. She has had high cholesterol and prediabetes for as long as anyone has been checking, and she has never once eaten the way those numbers would suggest. She cooks. Whole food, at home, every day, the way she was taught. She does not eat sweets and she does not eat fast food, and she could not tell you

what a carbohydrate is, because nobody in her life ever needed her to. Hand her chart to a stranger and they would have the lecture about diet and exercise drafted before they looked up. I know, because for years people did.

What the chart never showed was the other side of the ledger. My mother came up in a tradition where the woman carries everything. Her children, her parents, her husband's family, the relative who needed a place to stay, whoever was sick, whoever was short that month. She worked, and she supported us, and she supported an extended family that stretched across an ocean, and she did it for decades without anyone asking what it was costing her.

She still carries it. When my husband and the kids and I go to visit her, we remind each other to bring a cooler, because we will not be allowed to leave without food. Phở broth. Herbs she grows herself. Bánh patê sô, steamed buns, enough of everything for weeks. My husband, who did not grow up in a Vietnamese kitchen, learned the hard way that if he says he likes something she made, he will drive home with two months' worth of it. When she visits us, the bathrooms are scrubbed and the refrigerator is stuffed before I've noticed she's awake. My parents have never said "I love you" to me. Not once. I don't take it personally; in Vietnamese families of their generation, almost nobody says it. You say it with a cooler. I love this about her. I have also stopped pretending it's free.

Her body was keeping the account the whole time.

When I finally sat down with her labs the way I sit down with a patient's, two things stood out. Her fasting insulin was 3.0, which is low, and not what you usually see in somebody whose blood sugar problem comes from eating badly. And nobody had ever checked her thyroid antibodies. They were 191. She had Hashimoto's, an autoimmune thyroid condition that can affect

cholesterol and metabolism, and she had probably had it for years. It had been sitting underneath everything the whole time, because it was never the thing anyone was looking for.

We worked on it for several months. Her A1C went from 6.0 to 5.7 and has held there. Her thyroid antibodies came down by nearly half, to 102. Her inflammation marker is about as low as the lab can measure. Her LDL and ApoB, the two cholesterol numbers I watch most closely, are still higher than I want, and I have made my peace with the fact that some of that is inherited and will need its own conversation. Nothing about this is a miracle. A woman's body finally got asked the right question, after sixty years of the wrong one.

She did not need to eat less. She was already eating better than most of my patients. She needed someone to look at the load, and at the one line on the panel nobody had ordered.

Sometimes the thing that finally moves a person's metabolism has nothing metabolic about it. Sleep. Treating the pain. The thing they have not said out loud yet. In my mother's case, it was a line on a lab panel and forty years of carrying everyone.

The evidence

This chapter made two claims that deserve their receipts: that the liver is where a lot of "metabolic" trouble actually lives and that it can recover, and that the chemicals around us have real hormonal effects without being anyone's whole story.

The liver that got better. The best evidence that a fatty liver is reversible comes from a study in Havana, published in 2015.[49] Researchers enrolled 293 adults whose liver biopsies showed not just fat but inflammation and early scarring, the stage where the liver is being damaged rather than just storing. Then they did something unglamorous for a year: diet, walking, and a lot of

follow-up visits. No drug. At the end of the year, everyone had a second biopsy.

The results sorted themselves by how much weight people lost, and the gradient is the part worth remembering. Among the people who lost seven to ten percent of their body weight, the inflammation resolved in about two thirds. Among those who lost ten percent or more, it resolved in ninety percent, and in nearly half of them the scarring had actually gone backward, which a lot of doctors were taught could not happen.

Then the sobering number. Only about one in ten of the 293 managed to lose that ten percent in a year, with a whole research team behind them. The liver will heal if you can get there. Getting there is the hard part, which is the whole subject of this book.

What I take from it clinically is simple. A fatty liver is one of the most responsive things on a blood panel, and it responds to the same unglamorous levers as everything else. I'd rather find it early, when the gradient is in your favor, than have someone discover it at fifty-five from an ultrasound they weren't expecting.

The chemicals, and what they do. In 2020, an international group of scientists from universities and public health agencies published a consensus on what makes a chemical an endocrine disruptor, and how we should decide that one is.[22] It's a dry document and an important one, because it settles a question people still argue about on the internet. Certain compounds in plastics, pesticides, and flame retardants do interact with human hormone signaling. That part is no longer in dispute among the people who study it; the dispute is about which ones, at what dose, with what effect.

A second body of work has tied population-level exposure to these compounds to population-level rates of obesity and diabetes, strongly enough that researchers now use the word "obesogen."[23] Strongly enough, that is, to say exposure and

outcome travel together across large groups of people. Not strongly enough to tell you that your weight is the result of your water bottle. Nobody can tell you that, and I'd be wary of anyone who tries.

The pollutants that come back out. The last piece is small but I think about it often. In 2000, a Canadian group measured persistent organic pollutants, the kind that accumulate in fat and don't leave, in a group of obese adults before and after a weight-loss program.[50] As the fat came off, the concentration of those compounds in the blood went up. The fat had been holding them, and losing it let them back into circulation.

That is a measurement, and I trust it. What has been built on top of it, the idea that the released chemicals then slow the metabolism and stall further weight loss, is a hypothesis. It's plausible and some small studies point that way. It is not established, and it has become a convenient explanation for every stall, which is exactly the kind of story this chapter is warning you about.

What I take from the three. The liver is the organ to watch, it's more forgiving than its reputation, and the dose of change it responds to is the same modest, sustained loss that everything else in this book is pointing toward. Environmental chemicals are real, they do interact with your hormones, and reducing the cheap exposures is sensible. Beyond that, the evidence runs out quickly, and the people selling detox kits are standing right where it ends.

INTERLUDE

The Other Tradition I Grew Up In

Where I came from, held to the same standard as everything else

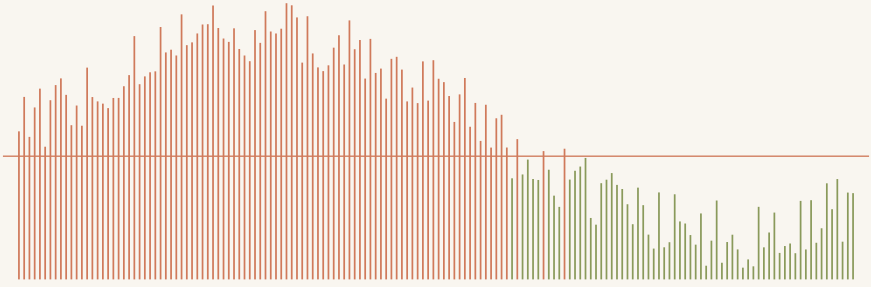


PLATE IX · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

I didn't learn any of this framing in nursing school.

When I was sick as a kid, my mother steamed me. She'd go out to the garden, or down to the wet market, and come back with lemongrass, pomelo peel, lime or grapefruit leaves, mugwort. All of it went into a pot and boiled until the whole house smelled like it. Then a blanket over my head and over the pot, and I sat under there and sweated.

I loved it. I still love the smell of it.

And I have to tell you the truth about it, which is that the evidence doesn't support it. The Cochrane review on heated humidified air for the common cold couldn't establish that it helps. Not *helps a little* — benefit not demonstrated, low-certainty evidence.[30] In fairness, that review tested a medical device, not a pot on your lap. But the pot on your lap has its own literature, and that one is worse. A single burn centre in Wales counted sixteen children scalded by steam inhalation in five years. Average age seven. The most common mechanism was exactly what you would guess: a bowl of boiling water balanced on a child's legs.[31]

Unproven benefit, real risk, concentrated in children. That isn't a close call.

Does that make me angry at my mother? No. She was doing what her mother did, with what grew in the yard, in a place where a pharmacy wasn't always the option. But I'm the one with the training now, and I don't get to be sentimental in print about something that scalds kids.

The ginger tea she gave me for an upset stomach is a different story. Ginger for nausea is one of the better-supported botanicals we have — pregnancy, post-surgical, chemotherapy. The trial quality is mixed and the dosing is all over the place, so I won't oversell it.[29] But it holds up better than most things sold in a bottle with a leaf on the label. My mother wasn't reading meta-analyses. She was right anyway.

The first question

When someone in my family got sick, nobody asked where it hurt.

They asked: **have you had anything to eat?**

That came first. Before the remedy, before rest, before anyone decided how worried to be. Food first, because a body with nothing in it can't do anything else.

Years later I sat down to write out the questions I actually work through when a patient is stuck. The first one I wrote was: *are you eating enough to support what you're asking your body to do?*

I didn't notice what I'd done until it was on the page.

I have a master's degree and a functional medicine certification, and my first clinical question is still the one the adults in my family asked first.

What was on the table

Food was important in my family, and I want to describe it plainly, because it turns out to be most of chapter six with a market attached.

Growing up in Vietnam, somebody went to the market every day. What came home was a live fish or a live chicken, and a lot of vegetables and fruit, because that was what there was. Everything came from an animal, the sea, or the land. Rice was the staple; we cooked it every day, and what changed was what went with it. Some days it was a stir-fry, meat and vegetables together in one pan. Some days it was meat braised in sauce and left to cook slowly for a long time. Some days it was soup. Fish and seafood were abundant, and I ate them most days of the week. My snacks were fruit: longan, rambutan, mango, whatever was in season. Dessert was fruit too, or something made from beans.

Nobody in my family would have called any of this a diet. It was Tuesday.

I think about this every time I hand someone the Mediterranean diet, which I do often, because it has more good evidence behind it than almost any other way of eating. It usually goes home with a cookbook, and that is where it tends to end. Nobody in a Mediterranean village was following a Mediterranean diet. They were eating what was in the house: oil, bread, beans, fish, whatever was in season, most of it put on a table rather than cooked. The same was true in my mother's kitchen, an ocean away, with rice instead of bread. The recipes were never the point. The point was what the house had in it, and you did not have to like cooking to eat from it.

I came to the United States at twenty-six, and everything was new, including the food. I had a vague idea of what a hamburger was. I could not have told you what was in one. I could not cook myself a meal for the first while, because the ingredients I knew were not in the stores I could get to, and the ingredients in the stores were not ones I knew.

I put myself through college working at Red Lobster. I applied to be a server and was hired as one, and then demoted to clearing tables, because I could not tell customers what the menu was talking about. I did not know what half of it meant. The food itself was hard for me too: the amount of dairy, the butter on everything, and portions I could not make sense of, on a plate meant for one person. I have grown up since. I understand the menu now. I can order myself a burger without somebody translating.

What has not changed is the shock of reading a food label and finding a list of things that do not belong in food. Buying a whole fish, a whole chicken, an uncut vegetable, a piece of fruit with the skin still on it has somehow become the unusual way to shop, and

the box with twenty ingredients has become normal. I still find that strange, and I have lived here a long time.

We rarely eat out as a family, and it is only partly about the food. Making dinner together is time with my kids and my husband that I would not trade for a restaurant.

So I teach my kids to eat what comes from the land, the water, a tree, or the garden. An apple with the skin on, not applesauce. Try it before you decide about it. My son turned out to love broccoli and my daughter loves mushrooms, and there is not much I can put on the dinner table that they will not eat. In the morning I cook their breakfast, sometimes an omelet, sometimes oatmeal, sometimes something with more carbohydrate in it, but always with protein in it somewhere. I pack their lunch too, and the easiest lunch I know is last night's rice fried with an egg and whatever vegetable is in the refrigerator, with fruit on the side.

None of that is a protocol. It is what my mother did, with a lunch box.

Where I break with it

I'm a nurse practitioner, and I'm not going to hand you tradition in place of evidence.

Coin scraping — cạo gió — is the clearest case. You scrape the skin with the edge of a coin until it bruises. I'm not interested in sneering at it, and people I love have done it for me.

But it should never stand in for emergency care, and it shouldn't be done on people whose skin and blood vessels can't take it — the very old, the very young, anyone on a blood thinner. When somebody is genuinely, dangerously sick, the harm is the hour spent scraping instead of going in, and the bruise is nothing.

There's a second harm that runs the other direction. Clinicians who have never seen those marks have been misreading them as inflicted injury since at least 1976, when a paper in *Pediatrics* gave

the phenomenon a name: pseudobattering.[32] Vietnamese families have been investigated for child abuse over a folk remedy. That belongs on the same ledger, and it is the reason I mention the practice at all rather than leaving it out to avoid the conversation.

The tradition has a quieter cost too, and it fell on the women. The same culture that taught my mother to feed a sick child before doing anything else also taught her that everyone's needs came before her own, for decades, without a word about it. I honor where I come from. I have also seen, on a lab panel, what carrying everyone costs.

Where it was ahead of us

And then there is dưỡng sinh. It translates roughly as nurturing life.

Gentle movement every day. Breathing. Sleep you keep to a schedule. Eating enough, and stopping before you go well past enough. Old people doing slow exercises in the park at six in the morning.

I was taught that as something old people did.

Then I trained, and spent years learning about non-exercise movement, parasympathetic recovery, sleep regularity and energy availability — which is dưỡng sinh with citations attached and a worse name.

I hold both. Not because they are equally rigorous, because they aren't, and I'll take the trial data every time. But one of them taught me to ask what a body has been given before I ask what is wrong with it.

EIGHT

Reading Your Own Body

A different set of questions to bring to the next difficult year



PLATE X · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

Everything up to here has been description. This chapter is about what to do with it: not a protocol, but a change in how you interpret your own information.

Symptoms are information

The single most useful shift I can offer you is this: stop treating symptoms as problems to suppress and start treating them as data about a system.

Hunger is information. Fatigue is information. Cravings, poor sleep, cold hands, a stalled scale, a shorter fuse, the sudden loss of interest in things you used to do on Saturdays — all information. None of it is a character report.

The body is reporting conditions, without opinion. Your job is to read the report rather than argue with it.

This does not mean every symptom has a hidden meaning, or that you should assemble a spreadsheet of your own sensations. It means that when something changes, the useful first question is what changed around it, not what is wrong with you for noticing.

Six questions worth more than any plan

When someone is stuck, these are what I actually work through. You can work through them yourself.

01 **Am I eating enough to support what I am asking my body to do?** Clean is a different question; this one is about enough. Chronic under-fueling is the most common thing I find in the people who have been trying the longest, and very little else can be read accurately until it is addressed. Protein and fiber first, and enough of both to hold the muscle you have — muscle is where fuel goes, and losing it is how weight loss quietly becomes lost capacity.

02 **Has my spontaneous movement changed without me noticing?** Set the workouts aside and look at the gardening, the stairs, the walk you used to take without deciding to. This is the question from chapter three, and it is the one that most often surprises people. It falls before the scale stalls, and almost nobody thinks to look at it.

03 **Am I sleeping deeply and consistently enough to recover?** Duration, continuity, and consistency of timing. Sleep sits upstream of appetite regulation, insulin sensitivity, stress physiology, and how much you move without deciding to. It is the highest-yield lever in this book, and the one people most want to negotiate around.[11]

04 **What load is my body carrying right now — stress, pain, illness, inflammation, medications, or life circumstances?** This is the capacity question from chapter seven. A body absorbs a hard month. A body absorbs a hard four years differently. Before adding one more demand, it is worth knowing honestly what is already on the ledger.

05 **Are hormones, metabolic health, or digestion contributing signals that need attention?** Thyroid, the perimenopausal transition, testosterone, insulin resistance, chronic constipation or bloating. These can be measured rather than guessed at, and the answers change what you should do next. This is the question that most often needs someone else in the room.

06 **Is what I am doing sustainable enough that I could still be doing it two years from now?** An approach that produces excellent results and cannot survive a normal December is a rehearsal for a rebound. If the honest answer is no, that is worth knowing now rather than in March.

WHAT THE WORKUPS IN THIS BOOK HAD IN COMMON

Nothing exotic was ordered for anyone in this book. Every test that changed the story is on a standard lab menu; what was missing was someone asking for it. A fasting insulin next to the glucose and A1C, because a normal A1C and a struggling insulin system can sit on the same page, as they did for the woman in chapters five and eight. Thyroid antibodies and not only TSH, because the most common thyroid disease in this country is autoimmune and the antibodies are how you find it, as they were for my mother. ApoB alongside LDL, because it counts the particles that do the damage. Blood pressure and heart rate sitting and then standing, which is free, takes two minutes, and explained why leg workouts were so hard for one patient. And a look at the medication list, because a number of common prescriptions for mood, blood pressure, diabetes, allergies, and pain promote weight gain, and nobody mentions it when they are started.[37] If your clinician has not looked at these, it is reasonable to ask.

A case that looks like failure on paper

Let me show you what this looks like when it is actually happening, because the six questions above sound tidy and the real thing never is.

Her weight didn't change. Almost everything else did.

In chapter five you met the woman who had been heavier than her friends since she was a kid, whose labs read normal and whose body did not. When she came to me in February, she weighed 230 pounds. Seven months later, she weighed 230 pounds. If the scale is the only number you look at, this is a failure. It isn't.

What the scale could not see was how she was living. Body aches most days. Legs and arms that felt heavy and bruised easily. A headache every week that sometimes woke her up. Sleep she described as light and interrupted. A bowel movement about once a week. Ibuprofen to get through the aching.

We stopped asking how to make her lose weight and started asking what her body was responding to. Chapter five is what we found. This is what happened next.

Two months in, she got shingles. Antivirals, steroids, six pounds of fluid in two weeks, and her energy dropped to a 2 out of 10.

That's the part I want people to see. Real life doesn't pause while you work on your health.

Here's where she is now, compared to February. Her energy went from a 5 to an 8. Her waist is smaller than the day she started, and down two inches from where it peaked in the spring, while her weight stayed flat. That gap matters: it means what's on her body changed even though how much of it didn't. Her night headaches are gone. She stopped the ibuprofen. She went from no strength training to three sessions a week, plus swimming. Her sleep went from six hours to close to eight. Her heart rate variability came up

and stayed up. Her bowel movements went from weekly to daily. The tenderness and heaviness in her arms and legs, the symptoms that had bothered her the most, came down and have mostly stayed down.

She's also on a GLP-1 medication, and I'll say that plainly, because pretending otherwise would be dishonest. Medication was one tool in the plan, and if you took it out, most of the plan would still be standing.

This case isn't finished. Her tenderness still isn't where I want it. Constipation is still the thing we fight most. Some weeks her recovery slips and we back off instead of pushing.

But she is stronger, sleeping better, moving more, and hurting less than she was in February, at exactly the same body weight.

If we had judged this by the scale, she would have quit in April.

Shared with permission. Identifying details have been omitted.

What good progress actually looks like

That case is why I do not let the scale run the conversation. It is one number from a system with dozens of outputs, and it is the noisiest number available.

The man from chapter four understood this faster than I did. When I wrote his plan I gave him a table to fill in once a week with seven columns: weight, waist, longest walk, longest swim, standing time, whether strength was better, whether he'd fallen. The scale was one column out of seven, and I told him so. He went further and tracked all of it daily, in a spreadsheet he built himself, with the four questions I'd given him along the bottom. In his first month the scale moved eight pounds. The other six columns moved more. If he had been weighing himself and nothing else,

he'd have had one modest number to show for a month in which he went from standing for three minutes to standing for twenty.

Things I pay more attention to:

- Whether hunger has become predictable rather than erratic
- Whether energy is stable across the day, or requires management
- Whether strength is increasing
- Whether sleep has improved in quality, not just in hours
- Whether the person has started doing things again: the Saturday afternoon gardening, the walking, the plans
- Whether food has stopped occupying so much mental space
- What the labs show over months, not weeks
- Whether the approach is one they could still be doing in two years

That last one is the whole game. It is the sixth question again, and I would trade every other marker on this list for it.

> **IF THE WEIGHT STARTS COMING BACK**
>
> Some regain is expected physiology; you have read two chapters on why. What matters is what happens in the first couple of weeks, because the first few pounds are the cheapest to address and the most likely to trigger the old loop: restrict harder, punish, quit. In a trial I describe later in this chapter, people who were taught to weigh regularly and act on a small regain before it became a large one were far less likely to regain over eighteen months than those left to notice on their own.[38] Acting on it does not mean a new diet. It means going back through the six questions and asking what changed: sleep, load, movement, the thing you stopped doing on Saturdays. Then restore the two or three things that were working, and get someone in the room in the first month rather than the sixth.

On weight-loss medication

A brief word, because this book would be incomplete without one, and because people ask me about it in the first five minutes of a visit.

My position is neutral, and I mean that precisely. The GLP-1 medications work. They help people lose weight, and the size of the effect is not in dispute; clinicians who dismiss them on principle are not doing patients a favor.[24,26] What I have watched in my own practice is that the same prescription lands very differently in different bodies. Some people lose a great deal. Some lose surprisingly little. Genetics, environment, and history — which is chapter five again — seem to decide more of that than the dose does.

The other thing I want people to understand better is what the medication actually does, because most people have it backwards. It does not burn fat off anyone. What it does is turn the volume down on appetite, the exact machinery from chapter four, and a quieter appetite is what lets a person make the food decision they already knew how to make. The medication makes the choice easier, and that is all it makes.

Which is why, with the people who go through my program, I build the foundation first. Food, movement, sleep, and stress, before I write the prescription. Sometimes they lose the weight by changing what goes into their body and how they move it, and we never get to the medication at all. When we do get to it, it lands on a body that is fed, moving, and sleeping, which is the only kind of body it works well in. Muscle protection and strength training are not optional on these drugs; they matter more, not less. Protein still matters. And the question of what happens when someone stops deserves an honest conversation before starting rather than after.[25]

So: a tool, not an identity. Whether it is the right tool for you depends on you, and that is a conversation for a clinician who knows your history.

The evidence

Two sets of studies sit under the last part of this chapter: the trials behind the medications, and the one trial I know of that studied what to do when the weight starts coming back.

The trial that changed the conversation. In 2021, the results of a study called STEP 1 were published in the *New England Journal of Medicine*.[24] Nearly two thousand adults with obesity, none of them with diabetes, were given either weekly semaglutide, the drug most people now know by its brand names, or a placebo injection, for sixty-eight weeks. Everyone also got lifestyle counseling.

The placebo group lost about two and a half percent of their body weight, which is what counseling alone usually produces. The semaglutide group lost about fifteen percent. For a 200-pound woman, that's thirty pounds, and about a third of the people on the drug lost twenty percent or more. Nothing short of surgery had ever done that in a trial.

That's why I said in this chapter that the size of the effect isn't in dispute. It isn't. Two thousand people, randomized, placebo-controlled, over more than a year. Anyone who tells you these drugs don't work hasn't read the paper.

What happened when they stopped. A year later, the same group published the part that gets less airtime.[25] About three hundred of the original participants were followed for a year after the injections ended. Both groups, drug and placebo, stopped everything, including the counseling.

The people who had been on semaglutide regained about two thirds of what they had lost. From seventeen percent down, they drifted back to about five and a half percent down, over twelve

months. The improvements in blood pressure, blood sugar, and cholesterol mostly went with it.

I want to be precise about what that means, because it gets used as a weapon in both directions. It does not mean the drug "doesn't really work." It means the drug works the way blood pressure medication works: while you take it. The hormone it's imitating is one your body makes before every meal, and when you stop supplying the extra, your body goes back to its own supply and its own appetite. That's the machinery from chapter four, behaving exactly as the machinery would.

It also tells you something about the foundation. The people in that extension had their counseling stopped at the same time as their injections. Nobody has yet run the trial I'd most like to see, where the drug comes off but the food, the sleep, the muscle, and the support stay. My guess, from watching it in my own patients, is that the regain is smaller when the foundation is still standing. That's a guess. I'd rather you hear it labeled as one.

What to do when it starts coming back. The last study is older, and it's the one I'd want every person who has ever lost weight to know about.[38] In 2006, Rena Wing's group at Brown took 314 adults who had already done the hard part: each had lost at least ten percent of their body weight, about forty pounds on average, within the previous two years. Then they watched for eighteen months to see who kept it off.

A third of them got quarterly newsletters. The other two thirds were taught a simple system, either online or in person. Weigh yourself every day. If you're within three pounds of your low, carry on. If you're three or four pounds up, adjust something this week. If you're five pounds up, that's the signal to go back to active effort, now, before it becomes fifteen.

After eighteen months, seventy-two percent of the newsletter group had regained five pounds or more. In the in-person group it

was forty-six percent. Among the people who actually weighed daily, the odds of a meaningful regain dropped by more than eighty percent.

What I love about this study is how little it asks. Not a new diet. Not more willpower. A scale, a number you've decided on in advance, and permission to act early instead of waiting until the regain feels like proof of something about you. The first five pounds are the cheapest to address and the most likely to trigger the old loop of shame and restriction. This trial says: catch it there.

What I take from the three. The medications are real, they are large, and they are not permanent; they borrow from a system you already have. What most reliably protected people's weight loss in a trial was a scale, a threshold, and the willingness to act on a small number instead of a large one.

Which is the sixth question from earlier in this chapter, asked by a different route: is what you're doing something you could still be doing in two years? A system you'll actually check in on is worth more than a plan you'll abandon in April.

What I am not telling you

I want to close the argument honestly.

I am not telling you that weight is entirely outside your influence, because it is not. I am not telling you that eating and moving do not matter, because they do, enormously. I am not telling you there is a hidden cause under everyone's difficulty, or that a lab panel will reveal it, or that the right supplement changes the equation.

And I'm not telling you that every body can reach every weight. Some of what shapes your body is inherited. Some is history. Some of it isn't going to move no matter how well you're cared for. I'd rather say that out loud than sell you a promise.

What I am telling you is that the difficulty is physiological, not moral. And that changes what you do next.

The last thing

Somewhere in this, the goal quietly stopped being a number.

The people I work with who do best over the long run are rarely the ones who lost the most; they're the ones who stopped organizing their lives around the losing. They got stronger. They slept. They ate enough. They kept doing the thing on Saturday afternoons. The weight, in many cases, moved, sometimes a lot, but by then it had become a side effect rather than the project.

I think that is the actual outcome worth wanting: a body with enough capacity in it to do what you want with your life, in your forties and your fifties and after. The size of it is a detail.

You do not have to earn that by suffering first. Your body was never asking for suffering. It was asking whether it was safe.

Answer that question well enough, for long enough, and the rest of it becomes possible.

A NOTE

On the Limits of This Book

What I owe you in plain language

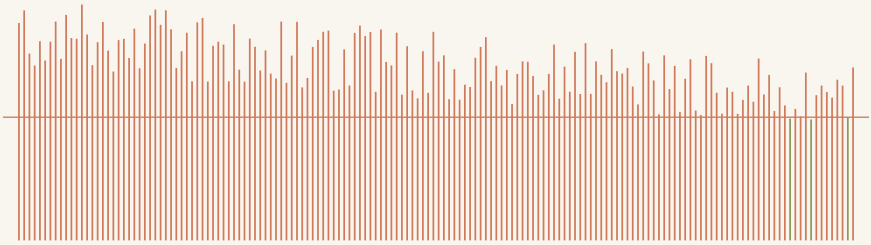


PLATE XI · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

Three things I want to say directly, without the frame of a chapter.

First, the safety switch is a model, not a mechanism. I have used it because it holds a great deal of real physiology in a form a person can carry around. There is no single switch. If you ever hear someone — including me — describe your body's behavior as though one mechanism explains all of it, apply pressure to that claim.

Second, this book is not a substitute for care. Persistent fatigue, unexplained weight change in either direction, new or worsening symptoms, disordered eating, and anything that frightens you all warrant an actual clinician who can examine you, take a history, and order the right tests. Understanding physiology is not the same as being assessed. I'd rather you be over-evaluated than reassured by a book.

Third, if any of this has become a way to avoid effective treatment, that is a misuse of it. The framing in these pages is meant to end self-blame, not to end action. If you have a diagnosable condition, treat it. If a medication is appropriate for you, take it. Understanding why your body is behaving as it does is the beginning of a decision, not a replacement for one.

If reading this made a difficult thing feel more legible and less shameful, it did the job I wanted it to do. What you do with it next is yours.

APPENDIX A

Mediterranean, Without the Cooking

The most-studied way of eating we have, written for people who don't cook and aren't planning to start

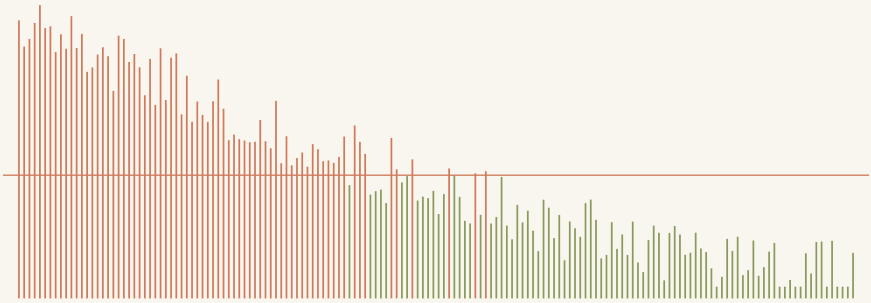


PLATE XII · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

I wrote this guide for one patient. He was seventy-one, living alone, recovering from a fall and a fused back, and he told me plainly that he does not cook and was not going to start. He is the man in chapter four. Most of what he ate in the month his sleep came back is on these pages, assembled from a grocery list he could get through in one trip, and nothing here needs more than a microwave and a can opener. It turns out that's most people.

The Mediterranean diet usually gets handed to people along with a cookbook. That is where it tends to end. I've watched it happen in visits. Someone leaves with the best dietary evidence in medicine and a list of dishes they are never going to make. Not because they don't care. Because they work twelve-hour shifts, or they cooked for twenty years and they're done, or they never learned and have no interest in starting at fifty-two.

Here's what gets lost in the cookbook version. The traditional Mediterranean way of eating was never a set of recipes. It was what people kept in the house. Oil, bread, beans, olives, cheese, fish, whatever was in season. Most of it got assembled and put on a table, not cooked.

So this guide will not teach you to cook. It will teach you what to buy, and what to put on a plate once you own it.

Why this one

There is no shortage of eating patterns with research behind them. This one has more than the rest, and more of the kind that actually counts.

The largest trial randomly assigned 7,447 adults at high cardiovascular risk in Spain to one of three groups: a Mediterranean pattern with extra-virgin olive oil, the same pattern with mixed nuts, or a lower-fat diet.[51] Almost five years later, the two Mediterranean groups had roughly thirty percent fewer heart

attacks, strokes, and cardiovascular deaths. Nobody was told to count calories. Nobody was told to eat less.

Two honest qualifiers. Those were high-risk adults, so the size of the benefit may not transfer exactly to someone with a healthy heart and normal labs. And thirty percent fewer is a comparison between groups, not a promise to any one person. What I'd take from it is the direction, which has held up across a very large body of research: this pattern lowers risk over years, without asking anyone to go hungry.

The parts that actually carry the weight:

- Olive oil as the main fat, used generously
- Beans, lentils, and chickpeas most days
- Nuts, a small handful, not a bowl
- Fish more often than red meat
- Vegetables and fruit at nearly every meal
- Whole grains instead of stripped ones

> **WHAT THIS IS NOT**
>
> It isn't a weight-loss protocol, and it doesn't treat any specific condition. It's a pattern. People lose weight on it sometimes, because beans, fish, and olive oil are more filling than what they were eating before, not because the pattern does anything clever to metabolism. If your question is about a specific diagnosis, that's a question for whoever is caring for you. This is the background, not the treatment.

One thing nobody tells you

Frozen and canned count. Reviews comparing fresh, frozen, and canned produce find the nutritional differences small and inconsistent, and fresh produce sitting in your refrigerator for five days loses more than frozen produce does.[52,53] A bag of frozen

green beans you actually eat beats fresh green beans you throw away on Sunday.

This matters more than it sounds. The single biggest reason this way of eating fails is spoilage. People buy beautifully, cook nothing, and quit.

Keep these in the house

This is the whole system. If your kitchen has most of this in it, you can put a Mediterranean meal together in four minutes without a recipe. You do not need all of it. Ten items is a working kitchen.

Shelf. Extra-virgin olive oil (buy one you like; it is the main fat here). Canned tuna, salmon, sardines. Canned chickpeas, white beans, lentils. Jarred roasted red peppers and artichoke hearts. Olives, capers, sun-dried tomatoes. Microwave grain pouches: farro, quinoa, brown rice. Whole grain crackers, pita, rye or sourdough. Walnuts, almonds, pistachios. Red wine vinegar or balsamic. Dried oregano, za'atar, red pepper flakes.

Refrigerator. Plain Greek yogurt (whole or 2%). Cottage cheese. Feta, fresh mozzarella, parmesan. Hummus, tzatziki. Pre-cooked hard-boiled eggs. Rotisserie chicken. Smoked salmon. Pre-cooked shrimp. Bagged greens: spinach, arugula, romaine. Cucumber, tomatoes, peppers, lemons.

Freezer. Steam-in-bag vegetables. Frozen berries. Shelled edamame. Frozen cooked shrimp. Whole grain pita or flatbread.

> **IF YOU ONLY BUY EIGHT THINGS, BUY THESE**
>
> Olive oil. Canned tuna. Canned chickpeas. Plain Greek yogurt. Bagged greens. Feta. Lemons. Whole grain crackers. Every meal in this guide is built from some combination of them.

Two notes before you shop. Canned and jarred food is salty. Rinse your beans in a colander and you drop a large share of the sodium.

Buy olives and feta in reasonable quantities rather than by the tub. If you have high blood pressure, heart failure, or kidney disease, this matters more for you than for most people, and if you've been told to limit potassium or protein, talk with your clinician before you start eating beans and nuts daily.

And buy the same eight things every week. Variety is good for your nutrition and terrible for your follow-through. Get the habit first.

How to build a plate

Four slots. Fill all four and you have a meal. Fill three and you have a good snack.

01 **Protein.** A palm-sized amount, roughly 25 to 35 grams. Canned fish, rotisserie chicken, Greek yogurt, cottage cheese, beans, eggs, shrimp. This is the slot people skip, and it's the one that decides whether you're hungry again at three in the afternoon.

02 **Produce.** Bagged, jarred, frozen, or fresh. Greens, tomatoes, cucumber, peppers, artichokes, berries. Aim to see more than one color.

03 **Whole grain.** Whole grain bread or crackers, a ninety-second grain pouch, or let the beans do this job and count them twice.

04 **Fat and acid.** Olive oil, plus lemon or vinegar, plus something salty like olives or feta. This is what makes cold food taste like a meal instead of like a diet. Do not skip it.

Protein, without weighing anything

Approximate grams per common serving. Use it to build a plate, not to track one. A meal's worth is about 30 grams.

- Rotisserie chicken, 4 oz: 32
- Canned tuna, 5 oz drained: 30

- Pre-cooked shrimp, 4 oz: 24
- Sardines, one tin: 22
- Greek yogurt, plain, 1 cup: 20
- Cottage cheese, ½ cup: 13
- Two large eggs: 12
- Smoked salmon, 2 oz: 10
- Edamame, shelled, ½ cup: 9
- White beans, ½ cup: 8
- Chickpeas, ½ cup: 7
- Almonds, 1 oz: 6
- Hummus, ¼ cup: 5
- Feta, 1 oz: 4

Two things on this list usually beat one. Yogurt plus walnuts. Chickpeas plus feta. Tuna plus white beans. That's how a plate gets to 30 grams without anyone cooking a piece of meat.

And if you take a GLP-1 medication, this page matters more, not less. Appetite drops, total intake drops with it, and protein is usually the first thing to fall short, which is the part you least want to lose. Get most of it earlier in the day, while food still appeals to you.

Breakfast

The Yogurt Bowl That Holds 23 G

1 cup plain Greek yogurt · 2 tbsp chopped walnuts · ½ cup berries · drizzle of honey · cinnamon

Spoon, layer, eat.

Whole-milk plain beats nonfat flavored every time. The flavored ones carry more sugar than a cookie and leave you hungry by ten.

Cottage Cheese and Tomato 20 G

¾ cup cottage cheese · sliced tomato · olive oil · black pepper · dried oregano · whole grain crackers

Bowl, tomato on top, oil and pepper over everything.

This is a breakfast in half of southern Europe, and it takes ninety seconds.

The Overnight Jar 22 G

½ cup milk · 1 tbsp chia seeds · 2 tbsp hemp hearts · ½ cup plain Greek yogurt · berries

Stir the milk, chia, and hemp in a jar at night. In the morning add yogurt and berries.

This is what I eat most mornings. Make two at a time.

Smoked Salmon Plate 14 G, 20 WITH AN EGG

2 oz smoked salmon · whole grain toast or crackers · cucumber · capers · lemon · olive oil

Toast if you want it. Everything else goes on cold.

Two Eggs and a Handful 18 G

2 pre-cooked hard-boiled eggs · olives · cherry tomatoes · 1 oz feta · small handful almonds

Put it on a plate. That's the recipe.

Pre-cooked eggs are in every grocery store now. Worth the extra dollar.

The Shake That Isn't Dessert 30 G

1 scoop plain or vanilla protein powder · 1 cup milk or kefir · ½ cup frozen berries · 1 tbsp almond butter · handful of spinach you won't taste

Blender, thirty seconds.

For the people who don't want breakfast. A shake you drink beats a breakfast you skip.

If you don't eat breakfast now, don't force a full meal on day one. Start with the yogurt bowl three mornings a week and pay attention to what happens around three in the afternoon. That's usually where you'll notice it first.

Lunch

The Tuna and White Bean Bowl 38 G

1 can tuna in olive oil, undrained · ½ cup white beans, rinsed · jarred roasted red pepper, torn · thin red onion · lemon · parsley if you have it

Fork everything together in a bowl. Use the oil from the tuna as the dressing.

If you make one thing from this guide, make this one.

Rotisserie Greek Salad 36 G

4 oz pulled rotisserie chicken · bagged romaine · cucumber · tomato · olives · 1 oz feta · red wine vinegar and olive oil

Pull the chicken with your hands. Dress it heavier than feels right.

Hummus Plate 16 G

½ cup hummus · carrots · cucumber · cherry tomatoes · whole grain pita · small handful almonds

Arrange on one plate so it reads as a meal instead of snacking.

Add a hard-boiled egg or a spoon of white beans if 16 grams won't hold you.

Chickpeas and Feta 18 G

1 cup chickpeas, rinsed · 1 oz crumbled feta · cucumber · tomato · olive oil · lemon · oregano

Mix. It gets better after ten minutes in the refrigerator.

Sardines on Rye 24 G

1 tin sardines · rye or sourdough toast · lemon · red pepper flakes · arugula

Toast, arugula, sardines, squeeze of lemon.

Sardines are the best-value food in the store: protein, omega-3s, calcium. Most people have never tried them as an adult.

The Grain Bowl Shortcut 18 G, 45 WITH CHICKEN

90-second farro or quinoa pouch · ½ cup chickpeas · jarred artichoke hearts · feta · spinach · olive oil · lemon

Microwave the pouch, dump everything on top while it's warm. The spinach wilts on its own.

Lunch is where this usually falls apart, because it's the meal most of us hand over to whatever is nearby. Pick two of these six and

repeat them. Repetition is not a failure of imagination here. It's the entire strategy.

Dinner

Shrimp, White Bean, Lemon 32 G

4 oz pre-cooked shrimp · ½ cup white beans · arugula · lots of lemon · olive oil · black pepper

Toss in a bowl. Five ingredients, no heat, reads like a restaurant dish.

Rotisserie Chicken and a Steam Bag 40 G

4 oz rotisserie chicken · steam-in-bag green beans or broccoli · brown rice pouch · olive oil · lemon · parmesan

Microwave the bag and the pouch. Chicken goes on cold or warm, your call.

The closest thing to a cooked dinner in this guide, and it's still just two buttons.

The Antipasto Dinner 22 G

3 oz fresh mozzarella · marinated artichokes · roasted peppers · olives · tomatoes · whole grain bread · olive oil

A board, not a plate. Eat it slowly with someone.

Eating with other people is part of this pattern, not a garnish on it.

Salmon Pouch Bowl 35 G

Pouch or can of salmon · quinoa pouch · frozen peas · olive oil · dill · lemon

Microwave the quinoa and peas together. Flake the salmon over the top.

Big Salad, Serious Version 40 G

Bagged greens · 1 can tuna · ½ cup chickpeas · feta · olives · cucumber · olive oil and vinegar

Two cans is what separates a salad from a side dish.

> **WHEN YOU NEED SOMETHING IN THREE MINUTES**
>
> Greek yogurt with walnuts. Apple and a handful of almonds. Olives, a little cheese, a few whole grain crackers. Microwave bag of edamame with sea salt. Cottage cheese with berries and black pepper. Hummus and whatever raw vegetable is still crisp.

When you're not home

Most of this pattern survives leaving the house, as long as you know what you're looking for.

Gas station. String cheese, nuts, hard-boiled eggs, a hummus cup, an apple. Not a great meal. A real one.

Grocery deli. Rotisserie chicken, the olive bar, a prepared bean or grain salad, a bag of greens. You can assemble dinner in the parking lot.

Restaurant. Order the fish. Ask for olive oil and lemon instead of the sauce. Vegetables as the side instead of the default starch. Take half home; most entrées are two meals.

Fast casual. Double the protein, keep the greens and the vegetables, go easy on the pita and the creamy sauces. These places are built for this way of eating even when they don't say so.

Four things that make this stick

- If a meal takes opening more than three containers, you won't make it at seven at night when you're tired. Keep the assembly to three.
- Salt and acid do the work that heat usually does. Lemon, vinegar, olives, feta. That's why cold food tastes like a meal here.
- Leave the olive oil on the counter. Anything in a cabinet is a thing you'll forget to use.
- Aim for most meals, not every meal. A pattern you follow two thirds of the time beats a perfect plan you abandon in March.

Where this leaves you

Put eight things in your kitchen. Put four of them on a plate. Do it again tomorrow.

One more thing, because it's the part people get wrong. You don't have to like cooking to eat well. That was never the requirement. It got attached along the way, and it has kept a lot of capable adults from a way of eating that would have served them.

> **IF YOU WANT A PLACE TO START, START HERE**
>
> This week, buy the eight items. Nothing else has to change yet. Make the tuna and white bean bowl twice; it's the one that convinces people. Then add one breakfast with real protein in it.

General education, not individualized medical or nutrition advice. Protein figures are approximate, rounded from standard food composition values, and vary by brand. If you have kidney disease, heart failure, a sodium or potassium restriction, a swallowing or digestive condition, or you take a medication affected by diet, talk with your clinician before changing how you eat.

APPENDIX B

Sleep Starts at Breakfast

Why fixing your night almost always means fixing your day

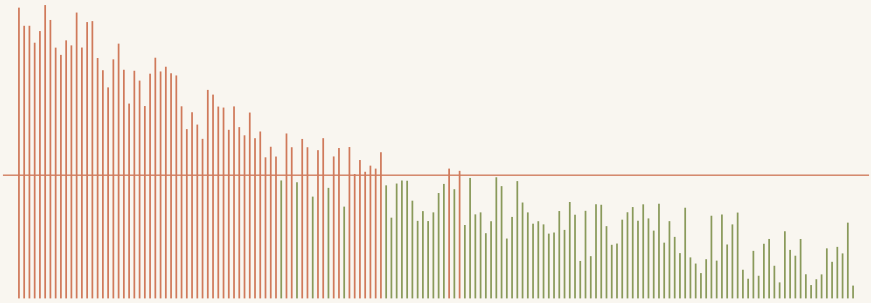


PLATE XIII · EACH MARK IS A SIGNAL · THE LINE IS THE THRESHOLD

Most people try to fix sleep in the last twenty minutes of the day. Darker room, cooler thermostat, phone face down. Those things help. They are also the smallest lever you have.

Sleep is the end of something that started when you woke up. What light you saw, when you ate, how long you sat still, how many hours your body spent braced for the next thing: all of it is still in the room with you at eleven o'clock.

So the question isn't what to do before bed. It's whether anything in your day told your body it was safe to shut down. That is the same question this whole book has been asking, pointed at one night.

None of what follows asks you to add more to your life. Most of it moves things you already do, a few hours one way or the other. And none of it is a plan to be disciplined about. The man in chapter four did almost none of this on purpose, and his sleep came back anyway. Think of these as the conditions sleep tends to show up in, not a list to pass.

By the time you're lying in the dark negotiating with yourself, most of the decisions have already been made.

One day, in order

Built around a 10:30 bedtime. Shift the clock times to match your own schedule; the order is what matters.

- **6 a.m.** Wake, at the same time as yesterday
- **7 a.m.** Protein breakfast, then ten minutes outside
- **Through the day** Up from the desk, every hour
- **1:30 p.m.** Last coffee
- **6 p.m.** Dinner

- **8:30 p.m.** Lights down, lenses on
- **9 p.m.** Warm shower
- **10:30 p.m.** Asleep

Everything before dinner is setting the clock. Everything after is letting it fall.

The first hour

Two things in the morning do most of the work, and neither one feels like it has anything to do with sleep.

Get outside before you get on your phone. Your brain uses light to decide when night begins, and what it measures is not brightness the way you experience it. A well-lit kitchen is a few hundred lux. An overcast morning outdoors is easily ten times that. Your phone, for all the attention it gets, is a small dim square compared to the sky.

When researchers sent people camping for a week with nothing but natural light, their internal clocks moved roughly two hours earlier, and mornings got easier.[54] You don't have to camp. Ten minutes outside after breakfast, most days, is the usable version. Cloudy counts.

Eat protein early. This one is not a sleep drug and I'm not going to pretend it is. What it does is steady the rest of the day. Blood sugar that spikes and drops all day often keeps doing it at night, and being wide awake at 3 a.m. for no obvious reason is one of the ways that shows up. The evidence here is more mechanism than trial, so I'd call it reasonable rather than settled.

Aim for about 30 grams at breakfast. A typical American breakfast has roughly a third of that. The breakfasts in the Mediterranean guide are built to get you there.

Give caffeine a curfew, not a limit. Most people manage the amount and ignore the timing. Timing is the part that reaches your night. Pooling twenty-four studies, researchers landed on about

nine hours between a standard cup of coffee and bedtime before the effect on total sleep disappears.[56] For a 10:30 bedtime, that is roughly 1:30 in the afternoon.

Two things worth knowing. Caffeine clears at very different speeds depending on genetics, medications, and hormones, so the same cup is not the same cup for everyone. And falling asleep fine is not evidence you're unaffected. It trims deep sleep in people who are certain it doesn't.

The middle of the day

This is the part nobody thinks of as sleep.

Interrupt the day, not just the sitting. A hard day isn't nine separate stressful events. If nothing comes down in between, your body experiences one continuous nine-hour demand and never gets the message that the emergency ended. Getting up every hour, away from the desk and not just standing at it, is less about steps than about putting a break in the pattern. Set a timer if you need one. Most people have no idea how long they've been holding still.

Move, somewhere in there. Regular physical activity is one of the most consistent non-drug findings in sleep research. It doesn't have to be a workout and it doesn't have to happen at a particular time of day. If evening is the only window you have, take it. Just not hard training in the hour before bed.

Get daylight again in the afternoon. The clock isn't set once in the morning and then done. Total daylight across the whole day is what keeps the rhythm sharp, which is part of why the same person sleeps differently in July and in January. Lunch outside, a walk to the mailbox, a desk moved nearer a window. It doesn't need to be a protocol.

The last two hours

Now the things people usually start with actually matter.

Turn the lights down, not just the screens down. This is the one most people have never been told, and it is the biggest. Ordinary household light is enough to do it. In a study at Brigham and Women's Hospital, room light in the hours before bed delayed the body's melatonin rise in ninety-nine percent of people and cut the length of the melatonin window by about ninety minutes.[55] Not screens. Overhead lights.

So: lamps instead of ceiling fixtures, lower and warmer, starting a couple of hours before bed. It will feel too dim for about a week. That is the point.

If you're going to be on a screen, block the blue properly. Amber or orange lenses that block close to all blue light are a different product from the faintly tinted ones at the optical counter. In a crossover trial, adults with insomnia who wore amber lenses for two hours before bed slept about half an hour longer than when they wore clear ones.[57] The trials are small and the results across studies are mixed, so I'd call this promising rather than proven.[58] It is also cheap and harmless, which is a good reason to test it on yourself for two weeks and judge for yourself.

Warm shower, one to two hours before bed. Falling asleep requires your core temperature to drop, so a hot shower sounds like it should work against you. It doesn't. Warming your skin sends blood to the surface and dumps heat, and your core temperature falls faster afterward. A review of thirteen trials found that ten minutes of warm water, one to two hours before bed, shortened how long it took people to fall asleep.[59] Right before bed does not work as well.

Be honest about alcohol. Alcohol will put you to sleep and then take it back in the second half of the night as it clears. If you wake at two or three most nights and have a glass of wine most

evenings, those two facts are probably related. This is one of the easiest things to test. Two weeks without, and watch what your 3 a.m. does.

> **WHAT I ACTUALLY DO**
>
> My first light of the day is outside, not on a screen: about ten minutes of walking after a protein breakfast. I get up and away from my desk every hour; that one is less about my back and more about not spending nine straight hours braced for the next thing. Two hours before bed, orange glasses that block the blue light, and the overhead lights go off. None of it is exotic. It just has to happen most days.

When it isn't habits

Everything above is the floor, not the ceiling. If you have been doing it steadily for a month and you still aren't sleeping, the answer is not to try harder at it. Any of these belongs in front of a clinician:

- Trouble falling or staying asleep most nights for three months or longer. There is a specific non-drug treatment for this, cognitive behavioral therapy for insomnia, and it outperforms sleeping medication over the long run. It is the recommended first step, and most people are never offered it.
- Snoring, gasping, or waking unrefreshed no matter how many hours you were in bed. That is the sleep apnea question from chapter four, and it has a test.
- Sleep that changed when your cycle changed. Perimenopause alters both temperature regulation and the hormones that make sleep come easily. That is a different conversation, not a willpower problem.
- Falling asleep fine, then waking at the same time every night. The consistency of the hour is itself information.

General education, not individualized medical advice. If you take sleep medication, or treatment for a mood, thyroid, or breathing condition, talk with your clinician before changing anything.

SOURCES

Notes and References

Sources for the claims in this book, each with a line on what the study did and why I cite it. Where the literature disagrees, I have said so in the text rather than choosing the citation that suited me.

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A thirty-page review by the Endocrine Society of everything known about why people gain weight and why bodies defend it. It is the mainstream position, written by mainstream endocrinologists, and it is the reason I can say "weight is regulated" without hedging.

02 Morton GJ, Cummings DE, Baskin DG, Barsh GS, Schwartz MW. Central nervous system control of food intake and body weight. *Nature.* 2006;443(7109):289–295.

The classic review of how the brain controls food intake and body weight: which hormones report in, where the signals land, and what the brain does with them. If you want the wiring diagram behind chapter four, this is it.

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The Melbourne study from chapter one. Fifty adults, ten weeks of very-low-calorie dieting, and a full year of follow-up showing that the hunger hormones had not returned to normal. The single most important study in this book for understanding why the year after a diet is so hard.

04 Rosenbaum M, Leibel RL. Adaptive thermogenesis in humans. *Int J Obes (Lond).* 2010;34(Suppl 1):S47–S55.

A review of adaptive thermogenesis, the extra drop in energy expenditure after weight loss, by two of the researchers who have spent their careers measuring it. Balanced and careful; it takes the phenomenon seriously without overselling it.

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The report from an NIH workshop convened to describe what happens in a body that has lost weight and is trying to keep it off. Useful because it shows that serious researchers consider the weight-reduced state a distinct physiological condition, not just a smaller version of the old one.

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07 Greenway FL. Physiological adaptations to weight loss and factors favouring weight regain. *Int J Obes (Lond).* 2015;39(8):1188–1196.

A review of the physiology behind weight regain, covering appetite, expenditure, and behavior together. Good for seeing how many different systems push in the same direction once weight comes off.

08 van Baak MA, Mariman ECM. Obesity-induced and weight-loss-induced physiological factors affecting weight regain. *Nat Rev Endocrinol.* 2023;19(11):655–670.

A more recent review of the same territory, with a decade more data. Confirms that the hormonal and appetite changes after weight loss are the more consistent finding, and the metabolic-rate changes the more variable one.

09 Levine JA, Eberhardt NL, Jensen MD. Role of nonexercise activity thermogenesis in resistance to fat gain in humans. *Science.* 1999;283(5399):212–214.

The Mayo Clinic overfeeding study from chapter three. Sixteen people, a thousand extra calories a day for eight weeks, and a tenfold difference in fat gain explained largely by how much people unconsciously moved. The origin of the term NEAT.

10 Levine JA, Lanningham-Foster LM, McCrady SK, et al. Interindividual variation in posture allocation: possible role in human obesity. *Science.* 2005;307(5709):584–586.

The follow-up where the same group put sensors on lean and obese adults for ten days and found the lean group stood and walked about two and a half hours more per day, a difference that held even after their weights were changed. Cited in chapter three as the sitting study.

11 Spiegel K, Tasali E, Penev P, Van Cauter E. Sleep curtailment in healthy young men is associated with decreased leptin levels, elevated ghrelin levels, and increased hunger and appetite. *Ann Intern Med.* 2004;141(11):846–850.

Van Cauter's two-night sleep restriction study. Twelve young men, four hours of sleep for two nights, and leptin down, ghrelin up, hunger up, and cravings for sweet and starchy food up by a third or more. Small, tightly controlled, and much replicated since.

12 Greendale GA, Sternfeld B, Huang M, et al. Changes in body composition and weight during the menopause transition. *JCI Insight.* 2019;4(5):e124865.

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A systematic review of twin and family studies estimating how much of the variation in body mass index is inherited. The honest answer is a wide range, roughly forty to seventy percent, and this paper explains why the range is wide.

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The large genetic study that identified nearly a hundred regions of the genome associated with body weight and found that most of them act in the brain, on appetite and reward, rather than in fat tissue. Genes shape hunger more than they shape metabolism.

15 Rubino F, Puhl RM, Cummings DE, et al. Joint international consensus statement for ending stigma of obesity. *Nat Med.* 2020;26(4):485–497.

A consensus statement from an international group of obesity researchers and clinicians calling for an end to weight stigma in medicine, on the grounds that it is both scientifically wrong and clinically harmful. The source for chapter five's claim that blaming the person is expensive.

16 Cryan JF, O'Riordan KJ, Cowan CSM, et al. The microbiota–gut–brain axis. *Physiol Rev.* 2019;99(4):1877–2013.

A very long, very thorough review of how the gut and its microbes communicate with the brain. Dense, but it is the reference that backs up nearly every mechanistic claim in chapter six.

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The Lancet review commissioned for the World Health Organization that pooled 185 observational studies and 58 trials on carbohydrate quality. The basis for everything I say about fiber, including the 25-to-29-gram target and the dose-response.

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The Belgian pilot trial of Akkermansia supplementation: thirty-two people, three months, improved insulin sensitivity with heat-killed bacteria, and weight changes that did not reach significance. Promising, early, and not a weight-loss treatment.

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The American College of Gastroenterology's clinical guideline on small intestinal bacterial overgrowth, including the methane-producing form linked to constipation. The reason I can call it a recognized clinical entity with real testing, rather than an internet diagnosis.

20 Almazroo OA, Miah MK, Venkataramanan R. Drug metabolism in the liver. *Clin Liver Dis.* 2017;21(1):1–20.

A clear review of how the liver metabolizes drugs and other compounds, phase one and phase two. This is the actual biochemistry behind the word "detox," and it is considerably more interesting than the marketing.

21 Rinella ME, Lazarus JV, Ratziu V, et al. A multisociety Delphi consensus statement on new fatty liver disease nomenclature. *Hepatology.* 2023;78(6):1966–1986.

The 2023 international consensus that renamed fatty liver disease and tied it to metabolic dysfunction. Important because it reframes a common, silent condition as part of the same picture as insulin resistance, which is how I treat it.

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An international consensus on what makes a chemical an endocrine disruptor and how to identify one. The dry document that settles whether such chemicals affect human hormones; the remaining arguments are about which, and how much.

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A review of the evidence tying chemical exposures to obesity, from the group that coined the term "obesogen." Strong at the population level, and appropriately cautious about what it can say for any one person.

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The STEP 1 extension, following about three hundred participants for a year after the injections stopped. Two thirds of the lost weight came back. The reason I say these drugs work the way blood pressure medication works: while you take them.

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A practical review of what is known about keeping weight off, by two researchers who have thought hard about the question. Honest about how difficult maintenance is and what seems to help.

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An overview of systematic reviews on ginger for nausea, covering pregnancy, surgery, and chemotherapy. The evidence is reasonable but the dosing across studies is inconsistent, which is why the Interlude says I won't oversell it.

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The Cochrane review of heated, humidified air for the common cold. It could not establish a benefit, and rated the evidence as low certainty. The reason I cannot recommend the steam treatments of my childhood, however much I loved them.

31 Al Himdani S, Javed MU, Hughes J, et al. Home remedy or hazard? Management and costs of paediatric steam inhalation therapy burn injuries. *Br J Gen Pract.* 2016;66(644):e193–e199.

A five-year count of children scalded by steam inhalation at a single burn unit in Wales, most commonly from a bowl of hot water on a child's lap. The other half of the argument against the steam pot.

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The 1976 paper that first described coin-rubbing marks on Vietnamese children being mistaken for abuse, and gave the error a name. Still cited in clinical training, and still relevant.

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A review of protein's role in weight loss and maintenance, including the evidence that spreading it across the day does more for fullness and muscle than eating it all at dinner. The basis for the palm-sized-portion-at-every-meal rule.

34 Shukla AP, Iliescu RG, Thomas CE, Aronne LJ. Food order has a significant impact on postprandial glucose and insulin levels. *Diabetes Care.* 2015;38(7):e98–e99.

A small study showing that eating protein and vegetables before the starch in a meal lowered the rise in blood sugar afterward by about a third. Small, but it costs nothing to try, and it is the kind of result that holds up in practice.

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The validation study for the STOP questionnaire, the short screen for obstructive sleep apnea mentioned in chapter four. Four questions, under a minute, and good enough to tell you who needs a sleep study.

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A meta-analysis of what CPAP treatment for sleep apnea does to body weight. On its own, not much. The reason I am honest that treating apnea changes energy and appetite more reliably than it changes the scale.

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The Endocrine Society's guideline on medications for obesity, which includes a careful list of common prescriptions that promote weight gain. The source for chapter eight's advice to look at the medication list.

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Rena Wing's self-regulation trial from chapter eight: 314 people who had already lost weight, taught to weigh daily and act on small regains, and about half as likely to regain five pounds or more over eighteen months. The trial I'd want every dieter to know about.

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The six-year follow-up of fourteen Biggest Loser contestants, with their metabolic rate still about 500 calories a day below predicted. The most famous study in chapter two, and the one most often quoted without its limits.

40 Leibel RL, Rosenbaum M, Hirsch J. Changes in energy expenditure resulting from altered body weight. *N Engl J Med*. 1995;332(10):621–628.

Leibel's 1995 experiments moving people's weight up and down by ten percent under controlled conditions. Energy expenditure fell more than expected after loss and rose more than expected after gain, in lifelong-obese and never-obese people alike. The body defends in both directions.

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The book-length report of the Minnesota Starvation Experiment of 1944, in which thirty-six volunteers were semi-starved for six months. The metabolic findings are often quoted; the psychological ones, the obsession with food, are the part I find more useful.

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Pontzer's measurement of daily energy expenditure in Hadza hunter-gatherers, who walk miles a day yet burn about the same as Western adults once body size is accounted for. The study behind the idea that the body has a budget and compensates.

44 Hall KD, Ayuketah A, Brychta R, et al. Ultra-processed diets cause excess calorie intake and weight gain: an inpatient randomized controlled trial of ad libitum food intake. *Cell Metab.* 2019;30(1):67–77.

Kevin Hall's inpatient trial from chapter one: twenty adults, two weeks on an ultra-processed diet and two on a minimally processed one, matched for calories and nutrients, with people eating about 500 calories a day more on the ultra-processed food. Causal, controlled, and small.

45 Nedeltcheva AV, Kilkus JM, Imperial J, Schoeller DA, Penev PD. Insufficient sleep undermines dietary efforts to reduce adiposity. *Ann Intern Med.* 2010;153(7):435–441.

The Chicago sleep-and-diet study from chapter four. Ten adults on the same calorie-restricted diet, sleeping eight and a half hours or five and a half. Same weight loss on the scale, but short sleep cut fat loss by more than half and increased muscle loss by sixty percent.

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Stunkard's Danish adoption study: 540 adults whose weight tracked their biological parents and not the parents who raised them. The cleanest evidence that the home has less to do with adult weight than we assume.

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Bouchard's overfeeding of twelve pairs of identical twins, in which brothers gained like their brothers and stored fat in the same places, while pairs differed from each other by threefold. The study that explains why the same plan gives different results in different people.

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The 1976 Dutch famine study: 300,000 men examined at nineteen, with those exposed to the famine in early gestation nearly twice as likely to be obese. The origin of the idea in chapter five that the body remembers scarcity from before birth.

49 Vilar-Gomez E, Martinez-Perez Y, Calzadilla-Bertot L, et al. Weight loss through lifestyle modification significantly reduces features of nonalcoholic steatohepatitis. *Gastroenterology.* 2015;149(2):367–378.

The Havana lifestyle study of 293 adults with inflammatory fatty liver disease, showing that ten percent weight loss resolved the inflammation in ninety percent and reversed scarring in nearly half. Also showing that only one in ten got there.

50 Chevrier J, Dewailly E, Ayotte P, Mauriège P, Després JP, Tremblay A. Body weight loss increases plasma and adipose tissue concentrations of potentially toxic pollutants in obese individuals. *Int J Obes Relat Metab Disord.* 2000;24(10):1272–1278.

The Canadian measurement showing that persistent organic pollutants stored in fat are released into the blood during weight loss. A real finding; what has been built on it since is mostly hypothesis.

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PREDIMED, the Spanish trial of 7,447 high-risk adults randomized to a Mediterranean diet with olive oil or nuts versus a lower-fat diet, with about thirty percent fewer cardiovascular events over nearly five years. The trial behind the appendix. This citation is to the corrected 2018 republication.

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A review comparing the nutritional content of fresh, frozen, and canned fruits and vegetables, finding the differences small and inconsistent. The basis for telling people that frozen counts.

53 Bouzari A, Holstege D, Barrett DM. Vitamin retention in eight fruits and vegetables: a comparison of refrigerated and frozen storage. *J Agric Food Chem.* 2015;63(3):957–962.

A study of vitamin retention in produce stored in the refrigerator versus the freezer, showing that fresh produce kept for days often loses more than frozen. The other half of the frozen-counts argument.

54 Wright KP Jr, McHill AW, Birks BR, Griffin BR, Rusterholz T, Chinoy ED. Entrainment of the human circadian clock to the natural light-dark cycle. *Curr Biol.* 2013;23(16):1554–1558.

The camping study. Eight adults spent a week in the Rocky Mountains with no electric light, and their internal clocks shifted about two hours earlier. The cleanest demonstration that daylight, not willpower, sets the clock.

55 Gooley JJ, Chamberlain K, Smith KA, et al. Exposure to room light before bedtime suppresses melatonin onset and shortens melatonin duration in humans. *J Clin Endocrinol Metab.* 2011;96(3):E463–E472.

The Brigham and Women's study showing that ordinary room light in the hours before bed delayed melatonin in nearly everyone and shortened its window by about ninety minutes. The reason the appendix says lamps, not ceiling lights.

56 Gardiner C, Weakley J, Burke LM, et al. The effect of caffeine on subsequent sleep: a systematic review and meta-analysis. *Sleep Med Rev.* 2023;69:101764.

A meta-analysis of twenty-four caffeine studies, landing on roughly nine hours between a standard coffee and bedtime before the effect on sleep disappears. The source of the 1:30 curfew.

57 Shechter A, Kim EW, St-Onge MP, Westwood AJ. Blocking nocturnal blue light for insomnia: a randomized controlled trial. *J Psychiatr Res.* 2018;96:196–202.

A small crossover trial in adults with insomnia: amber lenses for two hours before bed, about half an hour more sleep. Promising, and small.

58 Singh S, Keller PR, Busija L, et al. Blue-light filtering spectacle lenses for visual performance, sleep, and macular health in adults. *Cochrane Database Syst Rev.* 2023;8:CD013244.

The Cochrane review of blue-light-filtering lenses, which found the evidence for sleep benefit mixed and low in certainty. Cited alongside the trial above so you have both sides.

59 Haghayegh S, Khoshnevis S, Smolensky MH, Diller KR, Castriotta RJ. Before-bedtime passive body heating by warm shower or bath to improve sleep: a systematic review and meta-analysis. *Sleep Med Rev.* 2019;46:124–135.

A review of thirteen trials on warm showers and baths before bed. Ten minutes of warm water one to two hours before bedtime shortened the time it took to fall asleep; right before bed worked less well.

THE AUTHOR

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I didn't set out to write about weight.

I trained as a family nurse practitioner, and for years I did what family practice does. Managed the conditions. Adjusted the medications. Ordered the labs, read the labs, moved to the next room. It's good work and I still do a version of it. It is also fifteen minutes at a time, and after enough of those fifteen minutes I started noticing that the same conversation kept happening at the very edge of the visit. Almost always in the last ninety seconds. Usually when I already had one hand on the door.

I'm exhausted. I'm doing everything I'm supposed to. Nothing is working.

There was never time for that conversation. It was, almost every time, the most important thing said in the room.

So I went back and trained in functional medicine — not because I'd lost faith in the medicine I already practiced, but because I wanted better tools for the ninety seconds nobody had time for. I wanted to be able to look at a person's history, their labs, their sleep, their stress, and their actual life, and say something more useful than *your numbers are fine.*

What I do now

I'm a board-certified Family Nurse Practitioner and a Functional Medicine Certified Practitioner, and I founded Reclaim Power Telehealth to do that work properly — with enough time, and enough context, to be worth a patient's money.

My clinical focus is metabolic health, hormones, energy, body composition, and healthy aging. I work with women and men. The midlife hormonal shift is real in both of them; it just gets studied and discussed for one, and joked about for the other.

Most of the people I see are in their forties, fifties, and sixties. Most of them are intelligent, capable, and quietly furious that a body they used to understand has started behaving like a stranger. The man who has trained hard for thirty years and is suddenly holding weight around the middle he cannot shift is having the same conversation with his body as the woman whose sleep fell apart at forty-six. Different hormones. Same question.

Many of them have been told to eat less and exercise more by someone who had eleven minutes and meant well.

I also continue to practice as a nurse practitioner in physical medicine and rehabilitation, which keeps me close to something I would rather not forget: that the point of all of this is function. Whether a person can do what they want to do with their day. Not a number.

How I think

I grew up around Eastern medicine and the idea that food, rest, movement, and season are part of health rather than accessories to it. I then spent years in a conventional system that is genuinely excellent at some things and structurally unable to do others. I do not think either tradition has the whole picture, and I have very little patience for people in each camp who pretend the other has nothing to offer.

What I believe, plainly: symptoms are information, not defects. Aging is something you can influence, not a diagnosis you receive. And a healthy life is not a perfect one — I am not interested in helping anyone build a life that revolves entirely around their health. Health should buy you a bigger life, not a smaller and more careful one.

I am not trying to look twenty-five. I am trying to be strong, capable, and fully awake in my forties — and in my fifties, and after.

Away from the clinic

I live in Indiana with my husband, James, and our two kids: a daughter who is ten and a son who is seven. They are sharper than I was at their age and funnier than I am now. They are also kind to people who have nothing to offer them, which is the part I am actually proud of.

We are outside as much as the calendar allows. Travel, motorcycles, water in the summer, skiing and snowboarding in the winter. Both of them will out-ski me inside of three years, and both of them know it.

There is also a candy jail.

This wasn't my idea. It is a large container in our kitchen where the kids deposit the candy that arrives at Halloween and birthdays and from well-meaning adults, on the grounds that it is — their words — "toxic chemicals." So it goes to jail. They also visit it regularly, which I think is the correct relationship to have with a jail.

I am quietly working on the vocabulary. It's a strange thing to write a book arguing that food is information rather than a moral category while your seven-year-old refers to a Snickers bar as a controlled substance. Candy is not the enemy, and I don't want

either of them growing up believing it is. But I laughed the first time, so a fair share of this is my fault.

I mention all of this because I don't think you should take health advice from someone who doesn't have a life. The things I ask my patients to do are the things I am doing.

Where to find the work

Reclaim Power Telehealth is a telehealth practice. I currently see patients located in Indiana, Colorado, Utah, Arizona, and Washington — the current list is at rptelehealth.com, since it does change. I write regularly at @rptelehealth, mostly about the things in this book, and occasionally about what I made for dinner.

If something here explained a thing you have been carrying around as a personal failure, that was the point. That is most of what I do all day.

THE PRACTICE

Reclaim Power

A telehealth functional medicine practice for adults who want the whole picture.

Reclaim Power Telehealth is a functional medicine practice for adults who want to understand what their body is actually doing — not just what to take for it.

We work with women and men on metabolic health, hormones, energy, body composition, and healthy aging — including the perimenopausal transition and the slower hormonal shift men move through in the same decades. The work is built around history, patterns, and appropriate laboratory testing, interpreted in the context of an actual life rather than a reference range in isolation.

The Reclaim Power Method™

01 **Discovery Dive.** The full history — symptoms, timeline, patterns, and the things that never made it into a chart.

02 **Blueprint for Balance.** A personalized picture of what needs attention and how the pieces connect to each other.

03 **Fuel Shift.** Nutrition and metabolic support, built for the life you actually have.

04 **Harmony Habits.** Sleep, movement, stress, and recovery — the unglamorous levers that do most of the work.

05 **Empowerment Partnership.** Ongoing support and education, so you end up managing your own health rather than depending on me to do it.

Practical details

The practice is telehealth-only and cash-pay; we do not bill insurance, and we can provide receipts for HSA and FSA use where applicable. Patients must be physically located in a state where I hold licensure at the time of their visit.

There are some things I cannot do by telehealth, and I would rather say so up front than waste your time. Certain medications require an in-person examination, and some situations need a clinician who can put hands on you. When that is the case, I will tell you, and help you find the right person.

Current services, testing options, and pricing are at **rptelehealth.com**.

The guide at the back of this book, *Mediterranean, Without the Cooking*, is also free to download and print from **rptelehealth.com**.

Renew. Rebalance. Revitalize.

Scan to find the practice, the free guides, and how to book a visit.

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