The 4-Hour Body

An uncommon guide to rapid fat-loss, incredible sex, and becoming superhuman

Timothy Ferriss

Author of the #1 New York Times bestseller The 4-Hour Workweek
CROWN PUBLISHING GROUP

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TIM’S DISCLAIMER

Please don’t be stupid and kill yourself. It would make us both quite unhappy.
Consult a doctor before doing anything in this book.

PUBLISHER’S DISCLAIMER

The material in this book is for informational purposes only. As each individual situation is unique, you should use proper discretion, in consultation with a health care practitioner, before undertaking the diet, exercises, and techniques described in this book. The author and publisher expressly disclaim responsibility for any adverse effects that may result from the use or application of the information contained in this book.
ON THE SHOULDERS OF GIANTS

I am not the expert. I’m the guide and explorer.

If you find anything amazing in this book, it’s thanks to the brilliant minds who helped as resources, critics, contributors, proofreaders, and references. If you find anything ridiculous in this book, it’s because I didn’t heed their advice.

Though indebted to hundreds of people, I wish to thank a few of them up-front, here listed in alphabetical order (still more in the acknowledgments):

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START HERE
THINNER, BIGGER, FASTER, STRONGER?

How to Use This Book

MOUNTAIN VIEW, CALIFORNIA, 10 P.M., FRIDAY

Shoreline Amphitheater was rocking. More than 20,000 people had turned out at northern California’s largest music venue to hear Nine Inch Nails, loud and in charge, on what was expected to be their last tour.

Backstage, there was more unusual entertainment.

“Dude, I go into the stall to take care of business, and I look over and see the top of Tim’s head popping above the divider. He was doing f*cking air squats in the men’s room in complete silence.”

Glenn, a videographer and friend, burst out laughing as he reenacted my technique. To be honest, he needed to get his thighs closer to parallel.

“Forty air squats, to be exact,” I offered.

Kevin Rose, founder of Digg, one of the top-500 most popular websites in the world, joined in the laughter and raised a beer to toast the incident. I, on the other hand, was eager to move on to the main event.
In the next 45 minutes, I consumed almost two full-size barbecue chicken pizzas and three handfuls of mixed nuts, for a cumulative total of about 4,400 calories. It was my fourth meal of the day, breakfast having consisted of two glasses of grapefruit juice, a large cup of coffee with cinnamon, two chocolate croissants, and two bear claws.

The more interesting portion of the story started well after Trent Reznor left the stage.

Roughly 72 hours later, I tested my bodyfat percentage with an ultrasound analyzer designed by a physicist out of Lawrence Livermore National Laboratory.

Charting the progress on my latest experiment, I’d dropped from 11.9% to 10.2% bodyfat, a 14% reduction of the total fat on my body, in 14 days.

How? Timed doses of garlic, sugar cane, and tea extracts, among other things.

The process wasn’t punishing. It wasn’t hard. Tiny changes were all it took. Tiny changes that, while small in isolation, produced enormous changes when used in combination.

Want to extend the fat-burning half-life of caffeine? Naringenin, a useful little molecule in grapefruit juice, does just the trick.

Need to increase insulin sensitivity before bingeing once per week? Just add some cinnamon to your pastries on Saturday morning, and you can get the job done.

Want to blunt your blood glucose for 60 minutes while you eat a high-carb meal guilt-free? There are a half-dozen options.

But 2% bodyfat in two weeks? How can that be possible if many general practitioners claim that it’s impossible to lose more than two pounds of fat per week? Here’s the sad truth: most of the one-size-fits-all rules, this being one example, haven’t been field-tested for exceptions.

You can’t change your muscle fiber type? Sure you can. Genetics be damned.

Calories in and calories out? It’s incomplete at best. I’ve lost fat while grossly overfeeding. Cheesecake be praised.

The list goes on and on.

It’s obvious that the rules require some rewriting.

That’s what this book is for.
Diary of a Madman

The spring of 2007 was an exciting time for me.

My first book, after being turned down by 26 out of 27 publishers, had just hit the New York Times bestseller list and seemed headed for #1 on the business list, where it landed several months later. No one was more dumbfounded than me.

One particularly beautiful morning in San Jose, I had my first major media phone interview with Clive Thompson of Wired magazine. During our pre-interview small chat, I apologized if I sounded buzzed. I was. I had just finished a 10-minute workout following a double espresso on an empty stomach. It was a new experiment that would take me to single-digit body-fat with two such sessions per week.

Clive wanted to talk to me about e-mail and websites like Twitter. Before we got started, and as a segue from the workout comment, I joked that the major fears of modern man could be boiled down to two things: too much e-mail and getting fat. Clive laughed and agreed. Then we moved on.

The interview went well, but it was this offhand joke that stuck with me. I retold it to dozens of people over the subsequent month, and the response was always the same: agreement and nodding.

This book, it seemed, had to be written.

The wider world thinks I’m obsessed with time management, but they haven’t seen the other—much more legitimate, much more ridiculous—obsession.

I’ve recorded almost every workout I’ve done since age 18. I’ve had more than 1,000 blood tests performed since 2004, sometimes as often as every two weeks, tracking everything from complete lipid panels, insulin, and hemoglobin A1c, to IGF-1 and free testosterone. I’ve had stem cell growth factors imported from Israel to reverse “permanent” injuries, and I’ve flown to rural tea farmers in China to discuss Pu-Erh tea’s effects on fat-loss. All said and done, I’ve spent more than $250,000 on testing and tweaking over the last decade.

Just as some people have avant-garde furniture or artwork to decorate their homes, I have pulse oximeters, ultrasound machines, and medical de-

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1. Multiple tests are often performed from single blood draws of 10–12 vials.
VICES FOR MEASURING EVERYTHING FROM GALVANIC SKIN RESPONSE TO REM SLEEP. THE KITCHEN AND BATHROOM LOOK LIKE AN ER.

IF YOU THINK THAT’S CRAZINESS, YOU’RE RIGHT. FORTUNATELY, YOU DON’T NEED TO BE A GUINEA PIG TO BENEFIT FROM ONE.

HUNDREDS OF MEN AND WOMEN HAVE TESTED THE TECHNIQUES IN THE 4-HOUR BODY (4HB) OVER THE LAST TWO YEARS, AND I’VE TRACKED AND GRAPHED HUNDREDS OF THEIR RESULTS (194 PEOPLE IN THIS BOOK). MANY HAVE LOST MORE THAN 20 POUNDS OF FAT IN THE FIRST MONTH OF EXPERIMENTATION, AND FOR THE VAST MAJORITY, IT’S THE FIRST TIME THEY’VE EVER BEEN ABLE TO DO SO.

WHY DO 4HB APPROACHES WORK WHERE OTHERS FAIL?

BECAUSE THE CHANGES ARE EITHER SMALL OR SIMPLE, AND OFTEN BOTH. THERE IS ZERO ROOM FOR MISUNDERSTANDING, AND VISIBLE RESULTS COMPEL YOU TO CONTINUE. IF RESULTS ARE FAST AND MEASURABLE, SELF-DISCIPLINE ISN’T NEEDED.

I CAN GIVE YOU EVERY POPULAR DIET IN FOUR LINES. READY?

- EAT MORE GREENS.
- EAT LESS SATURATED FAT.
- EXERCISE MORE AND BURN MORE CALORIES.
- EAT MORE OMEGA-3 FATTY ACIDS.

WE WON’T BE COVERING ANY OF THIS. NOT BECAUSE IT DOESN’T WORK—IT DOES . . . UP TO A POINT. BUT IT’S NOT THE TYPE OF ADVICE THAT WILL MAKE FRIENDS GREET YOU WITH “WHAT THE #$%& HAVE YOU BEEN DOING?!” , WHETHER IN THE DRESSING ROOM OR ON THE PLAYING FIELD.

THAT REQUIRES AN ALTOGETHER DIFFERENT APPROACH.

THE UNINTENTIONAL DARK HORSE

LET’S BE CLEAR: I’M NEITHER A DOCTOR NOR A PHD. I AM A MITICULOUS DATA CRUNCHER WITH ACCESS TO MANY OF THE WORLD’S BEST ATHLETES AND SCIENTISTS.

THIS PUTS ME IN A RATHER UNUSUAL POSITION.

I’M ABLE TO PULL FROM DISCIPLINES AND SUBCULTURES THAT RARELY TOUCH ONE ANOTHER, AND I’M ABLE TO TEST HYPOTHESES USING THE KIND OF SELF-

2. Not just noticeable.
experimentation mainstream practitioners can't condone (though their help behind the scenes is critical). By challenging basic assumptions, it's possible to stumble upon simple and unusual solutions to long-standing problems.

Overfat? Try timed protein and pre-meal lemon juice.
Undermuscled? Try ginger and sauerkraut.
Can't sleep? Try upping your saturated fat or using cold exposure.

This book includes the findings of more than 100 PhDs, NASA scientists, medical doctors, Olympic athletes, professional sports trainers (from the NFL to MLB), world-record holders, Super Bowl rehabilitation specialists, and even former Eastern Bloc coaches. You'll meet some of the most incredible specimens, including before-and-after transformations, you've ever seen.

I don't have a publish-or-perish academic career to preserve, and this is a good thing. As one MD from a well-known Ivy League university said to me over lunch:

_We're trained for 20 years to be risk-averse. I'd like to do the experimentation, but I'd risk everything I've built over two decades of schooling and training by doing so. I'd need an immunity necklace. The university would never tolerate it._

He then added: “You can be the dark horse.”

It's a strange label, but he was right. Not just because I have no prestige to lose. I'm also a former industry insider.

From 2001 to 2009, I was CEO of a sports nutrition company with distribution in more than a dozen countries, and while we followed the rules, it became clear that many others didn't. It wasn't the most profitable option. I have witnessed blatant lies on nutritional fact panels, marketing executives budgeting for FTC fines in anticipation of lawsuits, and much worse from some of the best-known brands in the business.³ I understand how and where consumers are deceived. The darker tricks of the trade in supplements and sports nutrition—clouding results of “clinical trials” and creative labeling as just two examples—are nearly the same as in biotech and Big Pharma.

³. There are, of course, some outstanding companies with solid R&D and uncompromising ethics, but they are few and far between.
I will teach you to spot bad science, and therefore bad advice and bad products.\textsuperscript{4}

Late one evening in the fall of 2009, I sat eating cassoulet and duck legs with Dr. Lee Wolfer in the clouds of fog known as San Francisco. The wine was flowing, and I told her of my fantasies to return to a Berkeley or Stanford and pursue a doctorate in the biological sciences. I was briefly a neuroscience major at Princeton University and dreamed of a PhD at the end of my name. Lee is regularly published in peer-reviewed journals and has been trained at some of the finest programs in the world, including the University of California at San Francisco (UCSF) (MD), Berkeley (MS), Harvard Medical School (residency), the Rehabilitation Institute of Chicago (fellowship), and Spinal Diagnostics in Daly City, California (fellowship).

She just smiled and raised a glass of wine before responding:

“You—Tim Ferriss—can do more outside the system than inside it.”

A Laboratory of One

Many of these theories have been killed off only when some decisive experiment exposed their incorrectness . . . thus the yeoman work in any science . . . is done by the experimentalist, who must keep the theoreticians honest.

—Michio Kaku (Hyperspace), theoretical physicist and co-creator of string field theory

Most breakthroughs in performance (and appearance) enhancement start with animals and go through the following adoption curve:

\[\text{Racehorses} \rightarrow \text{AIDS patients (because of muscle wasting) and bodybuilders} \rightarrow \text{ elite athletes} \rightarrow \text{rich people} \rightarrow \text{the rest of us}\]

The last jump from the rich to the general public can take 10–20 years, if it happens at all. It often doesn’t.

I’m \textit{not} suggesting that you start injecting yourself with odd substances never before tested on humans. I \textit{am} suggesting, however, that government agencies (the U.S. Department of Agriculture, the Food and Drug Admin-
Installation) are at least 10 years behind current research, and at least 20 years behind compelling evidence in the field.

More than a decade ago, a close friend named Paul was in a car accident and suffered brain damage that lowered his testosterone production. Even with supplemental testosterone treatments (creams, gels, short-acting injectables) and after visiting scores of top endocrinologists, he still suffered from the symptoms of low testosterone. Everything changed—literally overnight—once he switched to testosterone enanthate, a variation seldom seen in the medical profession in the United States. Who made the suggestion? An advanced bodybuilder who knew his biochemistry. It shouldn’t have made a difference, yet it did.

Do doctors normally take advantage of the 50+ years of experience that professional bodybuilders have testing, even synthesizing, esters of testosterone? No. Most doctors view bodybuilders as cavalier amateurs, and bodybuilders view doctors as too risk-averse to do anything innovative.

This separation of the expertise means both sides suffer suboptimal results.

Handing your medical care over to the biggest man-gorilla in your gym is a bad idea, but it’s important to look for discoveries outside of the usual suspects. Those closest to a problem are often the least capable of seeing it with fresh eyes.

Despite the incredible progress in some areas of medicine in the last 100 years, a 60-year-old in 2009 can expect to live an average of only 6 years longer than a 60-year-old in 1900.

Me? I plan on living to 120 while eating the best rib-eye cuts I can find. More on that later.

Suffice to say: for uncommon solutions, you have to look in uncommon places.

The Future’s Already Here

In our current world, even if proper trials are funded for obesity studies as just one example, it might take 10–20 years for the results. Are you prepared to wait?

I hope not.
“Kaiser can’t talk to UCSF, who can’t talk to Blue Shield. You are the arbiter of your health information.” Those are the words of a leading surgeon at UCSF, who encouraged me to take my papers with me before hospital records claimed them as their property.

Now the good news: with a little help, it’s never been easier to collect a few data points (at little cost), track them (without training), and make small changes that produce incredible results.

Type 2 diabetics going off of medication 48 hours after starting a dietary intervention? Wheelchair-bound seniors walking again after 14 weeks of training? This is not science fiction. It’s being done today. As William Gibson, who coined the term “cyberspace,” has said:

“The future is already here—it is just unevenly distributed.”

The 80/20 Principle: From Wall Street to the Human Machine

This book is designed to give you the most important 2.5% of the tools you need for body recomposition and increased performance. Some short history can explain this odd 2.5%.

Vilfredo Pareto was a controversial economist-cum-sociologist who lived from 1848 to 1923. His seminal work, Cours d’économie politique, included a then little explored “law” of income distribution that would later bear his name: “Pareto’s Law,” or “the Pareto Distribution.” It is more popularly known as “the 80/20 Principle.”

Pareto demonstrated a grossly uneven but predictable distribution of wealth in society—80 percent of the wealth and income is produced and possessed by 20 percent of the population. He also showed that this 80/20 principle could be found almost everywhere, not just in economics. Eighty percent of Pareto’s garden peas were produced by 20% of the pea-pods he had planted, for example.

In practice, the 80/20 principle is often much more disproportionate.

To be perceived as fluent in conversational Spanish, for example, you need an active vocabulary of approximately 2,500 high-frequency words. This will allow you to comprehend more than 95% of all conversation. To get to 98% comprehension would require at least five years of practice in-
Instead of five months. Doing the math, 2,500 words is a mere 2.5% of the estimated 100,000 words in the Spanish language.

This means:

1. 2.5% of the total subject matter provides 95% of the desired results.

2. This same 2.5% provides just 3% less benefit than putting in 12 times as much effort.

This incredibly valuable 2.5% is the key, the Archimedes lever, for those who want the best results in the least time. The trick is finding that 2.5%.5

The book is not intended as a comprehensive treatise on all things related to the human body. My goal is to share what I have found to be the 2.5% that delivers 95% of the results in rapid body redesign and performance enhancement. If you are already at 5% bodyfat or bench-pressing 400 pounds, you are in the top 1% of humans and now in the world of incremental gains. This book is for the other 99% who can experience near-unbelievable gains in short periods of time.

How to Use This Book—Five Rules

It is important that you follow five rules with this book. Ignore them at your peril.

RULE #1. THINK OF THIS BOOK AS A BUFFET.

Do not read this book from start to finish.

Most people won’t need more than 150 pages to reinvent themselves. Browse the table of contents, pick the chapters that are most relevant, and discard the rest . . . for now. Pick one appearance goal and one performance goal to start.

The only mandatory sections are “Fundamentals” and “Ground Zero.” Here are some popular goals, along with the corresponding chapters to read in the order listed:

5. Philosopher Nassim N. Taleb noted an important difference between language and biology that I’d like to underscore: the former is largely known and the latter is largely unknown. Thus, our 2.5% is not 2.5% of a perfect finite body of knowledge, but the most empirically valuable 2.5% of what we know now.
RAPID FAT-LOSS
All chapters in “Fundamentals”
All chapters in “Ground Zero”
“The Slow-Carb Diet I and II”
“Building the Perfect Posterior”
Total page count: 98

RAPID MUSCLE GAIN
All chapters in “Fundamentals”
All chapters in “Ground Zero”
“From Geek to Freak”
“Occam’s Protocol I and II”
Total page count: 97

RAPID STRENGTH GAIN
All chapters in “Fundamentals”
All chapters in “Ground Zero”
“Effortless Superhuman” (pure strength, little mass gain)
“Pre-Hab: Injury-Proofing the Body”
Total page count: 92

RAPID SENSE OF TOTAL WELL-BEING
All chapters in “Fundamentals”
All chapters in “Ground Zero”
All chapters in “Improving Sex”
All chapters in “Perfecting Sleep”
“Reversing ‘Permanent’ Injuries”
Total page count: 143

Once you’ve selected the bare minimum to get started, get started.
Then, once you’ve committed to a plan of action, dip back into the
book at your leisure and explore. Immediately practical advice is contained
in every chapter, so don’t discount something based on the title. Even if you
are a meat-eater (as I am), for example, you will benefit from “The Meat-
less Machine.”
Just don’t read it all at once.
RULE #2. SKIP THE SCIENCE IF IT’S TOO DENSE.
You do not need to be a scientist to read this book.
For the geeks and the curious, however, I’ve included a lot of cool details. These details can often enhance your results but are not required reading. Such sections are boxed and labeled “Geek’s Advantage” with a “GA” symbol.
Even if you’ve been intimidated by science in the past, I encourage you to browse some of these GA sections—at least a few will offer some fun “holy sh*t!” moments and improve results 10% or so.
If you ever feel overwhelmed, though, skip them, as they’re not mandatory for the results you’re after.

RULE #3. PLEASE BE SKEPTICAL.
Don’t assume something is true because I say it is.
As the legendary Timothy Noakes PhD, author or co-author of more than 400 published research papers, is fond of saying: “Fifty percent of what we know is wrong. The problem is that we do not know which 50% it is.” Everything in this book works, but I have surely gotten some of the mechanisms completely wrong. In other words, I believe the how-to is 100% reliable, but some of the why-to will end up on the chopping block as we learn more.

RULE #4. DON’T USE SKEPTICISM AS AN EXCUSE FOR INACTION.
As the good Dr. Noakes also said to me about one Olympic training regimen: “This [approach] could be totally wrong, but it’s a hypothesis worth disproving.”
It’s important to look for hypotheses worth disproving.
Science starts with educated (read: wild-ass) guesses. Then it’s all trial and error. Sometimes you predict correctly from the outset. More often, you make mistakes and stumble across unexpected findings, which lead to new questions. If you want to sit on the sidelines and play full-time skeptic, suspending action until a scientific consensus is reached, that’s your choice. Just realize that science is, alas, often as political as a dinner party with die-hard Democrats and Republicans. Consensus comes late at best.
Don’t use skepticism as a thinly veiled excuse for inaction or remaining in your comfort zone. Be skeptical, but for the right reason: because you’re looking for the most promising option to test in real life.
Be proactively skeptical, not defensively skeptical.
Let me know if you make a cool discovery or prove me wrong. This book will evolve through your feedback and help.

RULE #5. ENJOY IT.
I’ve included a lot of odd experiences and screwups just for simple entertainment value. All fact and no play makes Jack a dull boy.
Much of the content is intended to be read as the diary of a madman. Enjoy it. More than anything, I’d like to impart the joy of exploration and discovery. Remember: this isn’t a homework assignment. Take it at your own pace.

The Billionaire Productivity Secret and the Experimental Lifestyle

“How do you become more productive?”
Richard Branson leaned back and thought for a second. The tropical sounds of his private oasis, Necker Island, murmured in the background. Twenty people sat around him at rapt attention, wondering what a billionaire’s answer would be to one of the big questions—perhaps the biggest question—of business. The group had been assembled by marketing impresario Joe Polish to brainstorm growth options for Richard’s philanthropic Virgin Unite. It was one of his many new ambitious projects. Virgin Group already had more than 300 companies, more than 50,000 employees, and $25 billion per year in revenue. In other words, Branson had personally built an empire larger than the GDP of some developing countries. Then he broke the silence:

“Work out.”
He was serious and elaborated: working out gave him at least four additional hours of productive time every day.
The cool breeze punctuated his answer like an exclamation point.
4HB is intended to be much more than a book.
I view 4HB as a manifesto, a call to arms for a new mental model of living: the experimental lifestyle. It’s up to you—not your doctor, not the newspaper—to learn what you best respond to. The benefits go far beyond the physical.
If you understand politics well enough to vote for a president, or if you have ever filed taxes, you can learn the few most important scientific rules for redesigning your body. These rules will become your friends, 100% reliable and trusted.

This changes everything.

It is my sincere hope, if you’ve suffered from dissatisfaction with your body, or confusion regarding diet and exercise, that your life will be divided into before-4HB and after-4HB. It can help you do what most people would consider superhuman, whether losing 100 pounds of fat or holding your breath for five minutes. It all works.

There is no high priesthood—there is cause and effect.

Welcome to the director’s chair.

Alles mit Maß und Ziel,

Timothy Ferriss
San Francisco, California
June 10, 2010
FOR YOUR READING PLEASURE

Getting Tested

There are dozens of tests mentioned throughout this book. If you ever ask yourself “How do I get that tested?” or wonder where to start, the “Getting Tested” list on page 478 is your step-by-step guide.

Quick Reference

Not sure how much a gram is, or what the hell 4 ounces is? Just flip to the common measurements on page 476 and unleash your inner Julia Child.

Endnotes and Citations

This book is very well researched. It’s also big enough to club a baby seal. If you really want to make your eyes glaze over, more than 500 scientific citations can be found at www.fourhourbody.com/endnotes, divided by chapter and with relevant sentences included.

Resources

To spare you the headache of typing out paragraph-long URLs, all long website addresses have been replaced with a short www.fourhourbody.com address that will send you to the right place.

Got it? Good. Let’s move on to the mischief.
FUNDAMENTALS—FIRST AND FOREMOST
Arthur Jones was a precocious young child and particularly fond of crocodiles. He read his father’s entire medical library before he was 12. The home environment might have had something to do with it, seeing as his parents, grandfather, great-grandfather, half-brother, and half-sister were all doctors.

From humble beginnings in Oklahoma, he would mature into one of the most influential figures in the exercise science world. He would also become, in the words of more than a few, a particularly “angry genius.”

One of Jones’s protégés, Ellington Darden PhD, shares a prototypical Jones anecdote:

In 1970, Arthur invited Arnold [Schwarzenegger] and Franco Colombu to visit him in Lake Helen, Florida, right after the 1970 Mr. Olympia. Arthur picked them up at the airport in his Cadillac, with Arnold in the passenger seat and Franco in the back. There are probably 12 stoplights in between the airport and the Interstate, so it was a lot of stop-and-go driving.

Now, you have to know that Arthur was a
man who talked loud and dominated every conversation. But he couldn’t get Arnold to shut up. He was just blabbing in his German or whatever and Arthur was having a hard time understanding what he was saying. So Arthur was getting annoyed and told him to quiet down, but Arnold just kept talking and talking.

By the time they got onto the Interstate, Arthur had had enough. So he pulled over to the side of the road, got out, walked around, opened Arnold’s door, grabbed him by the shirt collar, yanked him out, and said something to the effect of, “Listen here, you son of a bitch. If you don’t shut the hell up, a man twice your age is going to whip your ass right out here in front of I-4 traffic. Just dare me.”

Within five seconds Arnold had apologized, got back in the car, and was a perfect gentlemen for the next three or four days.

Jones was more frequently pissed off than anything else. He was infuriated by what he considered stupidity in every corner of the exercise science world, and he channeled this anger into defying the odds. This included putting 63.21 pounds on champion bodybuilder Casey Viator in 28 days and putting himself on the Forbes 400 list by founding and selling exercise equipment manufacturer Nautilus, which was estimated to have grossed $300 million per year at its zenith.

He had no patience for fuzzy thinking in fields that depended on scientific clarity. In response to researchers who drew conclusions about muscular function using electromyography (EMG), Arthur attached their machines to a cadaver and moved its limbs to record similar “activity.” Internal friction, that is.

Jones lamented his fleeting time: “My age being what it is, universal acceptance of what we are now doing may not come within my lifetime; but it will come, because what we are doing is clearly established by simple laws of basic physics that cannot be denied forever.” He passed away on August 28, 2007, of natural causes, 80 years old and as ornery as ever.

Jones left a number of important legacies, one of which will be the cornerstone of everything we’ll discuss: the minimum effective dose.
The Minimum Effective Dose

The minimum effective dose (MED) is defined simply: the smallest dose that will produce a desired outcome.

Jones referred to this critical point as the “minimum effective load,” as he was concerned exclusively with weight-bearing exercise, but we will look at precise “dosing” of both exercise and anything you ingest.\(^1\)

Anything beyond the MED is wasteful.

To boil water, the MED is 212°F (100°C) at standard air pressure. Boiled is boiled. Higher temperatures will not make it “more boiled.” Higher temperatures just consume more resources that could be used for something else more productive.

If you need 15 minutes in the sun to trigger a melanin response, 15 minutes is your MED for tanning. More than 15 minutes is redundant and will just result in burning and a forced break from the beach. During this forced break from the beach, let’s assume one week, someone else who heeded his natural 15-minute MED will be able to fit in four more tanning sessions. He is four shades darker, whereas you have returned to your pale pre-beach self. Sad little manatee. In biological systems, exceeding your MED can freeze progress for weeks, even months.

In the context of body redesign, there are two fundamental MEDs to keep in mind:

To remove stored fat → do the least necessary to trigger a fat-loss cascade of specific hormones.

To add muscle in small or large quantities → do the least necessary to trigger local (specific muscles) and systemic (hormonal) growth mechanisms.

Knocking over the dominos that trigger both of these events takes surprisingly little. Don’t complicate them.

For a given muscle group like the shoulders, activating the local growth mechanism might require just 80 seconds of tension using 50 pounds once every seven days, for example. That stimulus, just like the 212°F for boiling

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1. Credit is due to Dr. Doug McGuff, who’s written extensively on this and who will reappear later.
2. In fancier and more accurate terms, neuroendocrine.
water, is enough to trigger certain prostaglandins, transcription factors, and all manner of complicated biological reactions. What are “transcription factors”? You don’t need to know. In fact, you don’t need to understand any of the biology, just as you don’t need to understand radiation to use a microwave oven. Press a few buttons in the right order and you’re done.

In our context: 80 seconds as a target is all you need to understand. That is the button.

If, instead of 80 seconds, you mimic a glossy magazine routine—say, an arbitrary 5 sets of 10 repetitions—it is the muscular equivalent of sitting in the sun for an hour with a 15-minute MED. Not only is this wasteful, it is a predictable path for preventing and reversing gains. The organs and glands that help repair damaged tissue have more limitations than your enthusiasm. The kidneys, as one example, can clear the blood of a finite maximum waste concentration each day (approximately 450 mmol, or millimoles per liter). If you do a marathon three-hour workout and make your bloodstream look like an LA traffic jam, you stand the real chance of hitting a biochemical bottleneck.

Again: the good news is that you don’t need to know anything about your kidneys to use this information. All you need to know is:

*80 seconds is the dose prescription.*

More is not better. Indeed, your greatest challenge will be resisting the temptation to do more.

The MED not only delivers the most dramatic results, but it does so in the least time possible. Jones’s words should echo in your head: “REMEMBER: it is impossible to evaluate, or even understand, anything that you cannot measure.”

80 secs. of 20 lbs.
10:00 mins. of 54°F water
200 mg of allicin extract before bed

These are the types of prescriptions you should seek, and these are the types of prescriptions I will offer.
RULES THAT CHANGE THE RULES

Everything popular is wrong.
—Oscar Wilde, The Importance of Being Earnest

Know the rules well, so you can break them effectively.
—Dalai Lama XIV

“This is clearly a lie. Gaining 34 lb in 28 days requires a caloric surplus of 4300 calories per day, so for a guy his size, he must have eaten 7000 calories a day. He expects me to believe that he dropped 4% in bodyfat as a result of eating 7000 calories? . . .”

I took a big swig of Malbec and read the blog comment again. Ah, the Internet. How far we haven’t come.

It was amusing, and one of hundreds of similar comments on this particular blog post, but the fact remained: I had gained 34 pounds of muscle, lost 4 pounds of fat, and decreased my total cholesterol from 222 to 147, all in 28 days, without anabolics or statins like Lipitor.

The entire experiment had been recorded by Dr. Peggy Plato, director of the Sport and Fitness Evaluation Program at San Jose State University, who used hydrostatic weighing tanks, medical scales, and a tape measure to track everything from waist circumference to bodyfat percentage. My total time in the gym over four weeks?
Four hours.\(^3\) Eight 30-minute workouts.
The data didn’t lie.

But isn’t weight loss or gain as simple as calories in and calories out?
It’s attractive in its simplicity, yes, but so is cold fusion. It doesn’t work quite as advertised.

German poet Johann Wolfgang Goethe had the right perspective: “Mysteries are not necessarily miracles.” To do the impossible (sail around the world, break the four-minute mile, reach the moon), you need to ignore the popular.

Charles Munger, right-hand adviser to Warren Buffett, the richest man on the planet, is known for his unparalleled clear thinking and near-failure-proof track record. How did he refine his thinking to help build a $3 trillion business in Berkshire Hathaway?

The answer is “mental models,” or analytical rules-of-thumb\(^4\) pulled from disciplines outside of investing, ranging from physics to evolutionary biology.

Eighty to 90 models have helped Charles Munger develop, in Warren Buffett’s words, “the best 30-second mind in the world. He goes from A to Z in one move. He sees the essence of everything before you even finish the sentence.”

Charles Munger likes to quote Charles Darwin:

\textit{Even people who aren’t geniuses can outthink the rest of mankind if they develop certain thinking habits.}

In the 4HB, the following mental models, pulled from a variety of disciplines, are what will separate your results from the rest of mankind.

\textbf{New Rules for Rapid Redesign}

\textbf{NO EXERCISE BURNS MANY CALORIES.}\n
Did you eat half an Oreo cookie? No problem. If you’re a 220-pound male, you just need to climb 27 flights of stairs to burn it off.

\(^3\) In this case, the “4-Hour Body” is quite literal.
\(^4\) These “mental models” are often referred to as \textit{heuristics} or \textit{analytical frameworks}. 
RULES THAT CHANGE THE RULES

F*cking hell, right? It’s enough to make a lumberjack cry. Confused and angry? You should be.

As usual, the focus is on the least important piece of the puzzle. But why do scientists harp on the calorie? Simple. It’s cheap to estimate, and it is a popular variable for publication in journals. This, dear friends, is referred to as “parking lot” science, so-called after a joke about a poor drunk man who loses his keys during a night on the town.

His friends find him on his hands and knees looking for his keys under a streetlight, even though he knows he lost them somewhere else. “Why are you looking for your keys under the streetlight?” they ask. He responds confidently, “Because there’s more light over here. I can see better.”

For the researcher seeking tenure, grant money, or lucrative corporate consulting contracts, the maxim “publish or perish” applies. If you need to include 100 or 1,000 test subjects and can only afford to measure a few simple things, you need to paint those measurements as tremendously important. Alas, mentally on your hands and knees is no way to spend life, nor is chafing your ass on a stationary bike.

Instead of focusing on calories-out as exercise-dependent, we will look at two underexploited paths: heat and hormones.

Put another way, moving 100 kilograms (220 pounds) 100 meters (about 27 flights of stairs) requires 100 kilojoules of energy, or 23.9 calories (known to scientists as kilocalories [kcal]). A pound of fat contains 4,082 calories. How many calories might running a marathon burn? 2,600 or so.

The caloric argument for exercise gets even more depressing. Remember those 107 calories you burned during that kick-ass hour-long Stairmaster™ session? Don’t forget to subtract your basal metabolic rate (BMR), what you would have burned had you been sitting on the couch watching The Simpsons instead. For most people, that’s about 100 calories per hour given off as heat (BTU).

That hour on the Stairmaster was worth seven calories.

As luck would have it, three small stalks of celery are six calories, so you have one calorie left to spare. But wait a minute: how many calories did that sports drink and big post-workout meal have? Don’t forget that you have to burn more calories than you later ingest in larger meals due to increased appetite.

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Alas, mentally on your hands and knees is no way to spend life, nor is chafing your ass on a stationary bike.

Instead of focusing on calories-out as exercise-dependent, we will look at two underexploited paths: heat and hormones.
So relax. You’ll be able to eat as much as you want, and then some. New exhaust pipes will solve the problem.

A DRUG IS A DRUG IS A DRUG
Calling something a “drug,” a “dietary supplement,” “over-the-counter,” or a “nutriceutical” is a legal distinction, not a biochemical one.

None of these labels mean that something is safe or effective. Legal herbs can kill you just as dead as illegal narcotics. Supplements, often unpatentable molecules and therefore unappealing for drug development, can decrease cholesterol from 222 to 147 in four weeks, as I have done, or they can be inert and do absolutely nothing.

Think “all-natural” is safer than synthetic? Split peas are all-natural, but so is arsenic. Human growth hormone (HGH) can be extracted from the brains of all-natural cadavers, but unfortunately it often brings Creutzfeldt-Jakob disease with it, which is why HGH is now manufactured using recombinant DNA.

Besides whole foods (which we’ll treat separately as “food”), anything you put in your mouth or your bloodstream that has an effect—whether it’s a cream, injection, pill, or powder—is a drug. Treat them all as such. Don’t distract yourself with labels that are meaningless to us.

THE 20-POUND RECOMP GOAL
For the vast majority of you reading this book who weigh more than 120 pounds, 20 pounds of recomposition (which I’ll define below) will make you look and feel like a new person, so I suggest this as a goal. If you weigh less than 120 pounds, aim for 10 pounds; otherwise, 20 pounds is your new, specific goal.

Even if you have 100+ pounds to lose, start with 20.

On a 1–10 attractiveness scale, 20 pounds appears to be the critical threshold for going from a 6 to a 9 or 10, at least as tested with male perception of females.

The term “recomposition” is important. It does not mean a 20-pound reduction in weight. It’s a 20-pound change in appearance. A 20-pound “recomp” could entail losing 20 pounds of fat or gaining 20 pounds of muscle, but it most often involves losing 15 pounds of fat and gaining 5 pounds of muscle, or some blend in between.

Designing the best physique includes both subtraction and addition.
THE 100-UNIT SLIDER: DIET, DRUGS, AND EXERCISE

How, then, do we get to 20 pounds?

Imagine a ruler with 100 lines on it, representing 100 total units, and two sliders. This allows us to split the 100 units into three areas that total 100. These three areas represent diet, drugs, and exercise.

An equal split would look like this:

\[\text{\underline{\underline{\underline{\text{_____}}}}/\underline{\underline{\underline{\text{_____}}}}/\underline{\underline{\underline{\text{_____}}}}} \text{ (33\% diet, 33\% drugs, 33\% exercise)}\]

It is possible to reach your 20-pound recomp goal with any combination of the three, but some combinations are better than others. One hundred percent drugs can get you there, for example, but it will produce the most long-term side effects. One hundred percent exercise can get you there, but if injuries or circumstances interfere, the return to baseline is fast.

\[\text{\underline{\underline{\underline{\text{_____}}}} (100\% drugs) = \text{side effects}}\]
\[\text{\underline{\underline{\underline{\text{_____}}}} (100\% exercise) = \text{easy to derail}}\]

Here is the ratio of most of the fat-loss case studies in this book:

\[\underline{\underline{\underline{\text{____}}}}/\underline{\underline{\underline{\text{____}}}}/\underline{\underline{\underline{\text{____}}}} \text{ (60\% diet, 10\% drugs, 30\% exercise)}\]

If you’re unable to follow a prescribed diet, as is sometimes the case with travel or vegetarianism, you’ll need to move the sliders to increase the % attention paid to exercise and drugs. For example:

\[\underline{\underline{\underline{\text{____}}}}/\underline{\underline{\underline{\text{____}}}}/\underline{\underline{\underline{\text{____}}}} \text{ (10\% diet, 45\% drugs, 45\% exercise)}\]

The numbers need not be measured, but this concept is critical to keep in mind as the world interferes with plans. Learning diet and exercise principles is priority #1, as these are the bedrock elements. Relying too much on drugs makes your liver and kidneys unhappy.

The percentages will also depend on your personal preferences and “adherence,” which we cover next.
THE DUCT TAPE TEST: WILL IT STICK?

Eating at least one head of lettuce per day works well for losing fat and controlling insulin levels.

That is, if you’re a critical intervention patient, such as a morbidly obese type 1 diabetic. The options for such people, as explained by their doctors, are (1) change your diet with this prescription, or (2) die. Not surprisingly, adherence is often incredible. For someone who would like to lose 20 pounds but is more interested in how their ass looks in a pair of jeans, the adherence will be abysmal. Chopping vegetables and cleaning the Cuisinart three times per day will lead to one place: abandonment of the method. Does that mean it won’t work for some people? No. It just means that it will fail for most people. We want to avoid all methods with a high failure rate, even if you believe you are in the diligent minority. In the beginning, everyone who starts a program believes they’re in this minority.

Take adherence seriously: will you actually stick with this change until you hit your goal?

If not, find another method, even if it’s less effective and less efficient. The decent method you follow is better than the perfect method you quit.

DON’T CONFUSE PHYSICAL RECREATION WITH EXERCISE

Physical recreation can be many things: baseball, swimming, yoga, rock-climbing, tipping cows . . . the list is endless. Exercise, on the other hand, means performing an MED of precise movements that will produce a target change. That’s it. It’s next to impossible to draw cause-and-effect relationships with recreation. There are too many variables. Effective exercise is simple and trackable.

Physical recreation is great. I love chasing dogs at the dog park as much as the next person. Exercise in our context, however, is the application of measurable stimuli to decrease fat, increase muscle, or increase performance.

Recreation is for fun. Exercise is for producing changes. Don’t confuse the two.

DON’T CONFUSE CORRELATION WITH CAUSE AND EFFECT

Want to look like a marathon runner, thin and sleek? Train like a marathoner.

Want to look like a sprinter, ripped and muscular? Train like a sprinter.

Want to look like a basketball player, 6’8”? Train like a basketball player.
Hold on now. That last one doesn’t work. Nor does it work for the first two examples. It’s flawed logic, once again appealing and tempting in its simplicity. Here are three simple questions we can ask to avoid similar mistakes:

1. Is it possible that the arrow of causality is reversed? Example: do people who are naturally ripped and muscular often choose to be sprinters? Yep.
2. Are we mixing up absence and presence? Example: if the claim is that a no-meat diet extends average lifespan 5–15%, is it possible that it is the presence of more vegetables, not the absence of meat, that extends lifespan? It most certainly is.
3. Is it possible that you tested a specific demographic and that other variables are responsible for the difference? Example: if the claim is that yoga improves cardiac health, and the experimental group comprises upper-class folk, is it possible that they are therefore more likely than a control group to eat better food? You bet your downward-dog-posing ass.

The point isn’t to speculate about hundreds of possible explanations. The point is to be skeptical, especially of sensationalist headlines. Most “new studies” in the media are observational studies that can, at best, establish correlation (A happens while B happens), but not causality (A causes B to happen).

If I pick my nose when the Super Bowl cuts to a commercial, did I cause that? This isn’t a haiku. It’s a summary: correlation doesn’t prove causation. Be skeptical when people tell you that A causes B. They’re wrong much more than 50% of the time.

USE THE YO-YO: EMBRACE CYCLING

Yo-yo dieting gets a bad rap. Instead of beating yourself up, going to the shrink, or eating an entire cheesecake because you ruined your diet with one cookie, allow me to deliver a message: it’s normal.

Eating more, then less, then more, and so on in a continuous sine wave is an impulse we can leverage to reach goals faster. Trying to prevent it—attempting to sustain a reduced-calorie diet, for example—is when
yo-yoing becomes pathological and uncontrollable. Scheduling overeating at specific times, on the other hand, fixes problems instead of creating them.

The top bodybuilders in the world understand this and, even when in a pre-contest dieting phase, will cycle calories to prevent hormonal downregulation.\textsuperscript{5} The daily average might be 4,000 calories per day, but it would be cycled as follows: Monday, 4,000; Tuesday, 4,500; Wednesday, 3,500, etc.

Ed Coan, described as the Michael Jordan of powerlifting, set more than 70 world records in his sport. Among other things, he deadlifted an unbelievable 901 pounds at 220 pounds bodyweight, beating even super-heavyweights. His trainer at the time, Marty Gallagher, has stated matter-of-factly that “maintaining peak condition year-round is a ticket to the mental ward.”

You can have your cheesecake and eat it too, as long as you get the timing right. The best part is that these planned ups and downs accelerate, rather than reverse, progress.

Forget balance and embrace cycling. It’s a key ingredient in rapid body redesign.

**PREDISPOSITION VS. PREDESTINATION: DON’T BLAME YOUR GENES**

The marathoners of Kenya are legendary.

Kenyan men have won all but one of the last 12 Boston Marathons. In the 1988 Olympics, Kenyan men won gold in the 800-meter, 1,500-meter, and 5,000-meter races, as well as the 3,000-meter steeplechase. Factoring in their population of approximately 30 million, the statistical likelihood of this happening at an international competition with the scope of the Olympics is about one in 1.6 billion.

If you’ve been in the world of exercise science for any period of time, you can guess their muscle fiber composition, which is an inherited trait: slow-twitch. Slow-twitch muscle fibers are suited to endurance work. Lucky bastards!

But here’s the problem: it doesn’t appear to be totally true. To the surprise of researchers who conducted muscle biopsies on Kenyan runners, there was a high proportion of fast-twitch muscle fibers, the type you’d expect to find in shot-putters and sprinters. Why? Because, as it turns out, they often train using low mileage and high intensity.

\textsuperscript{5} For example, proper conversion of T4 thyroid hormone to the more thermogenically active T3.
If you are overweight and your parents are overweight, the inclination is to blame genetics, but this is only one possible explanation.

Did fatness genes get passed on, or was it overeating behavior? After all, fat people tend to have fat pets.

Even if you are predisposed to being overweight, you’re not predestined to be fat.

Eric Lander, leader of the Human Genome Project, has emphasized repeatedly the folly of learned helplessness through genetic determinism:

> People will think that because genes play a role in something, they determine everything. We see, again and again, people saying, “It’s all genetic. I can’t do anything about it.” That’s nonsense. To say that something has a genetic component does not make it unchangeable.

Don’t accept predisposition. You don’t have to, and we can feed and train you toward a different physical future. Nearly all of my personal experiments involve improving something that should be genetically fixed.

It is possible to redirect your natural-born genetic profile. From now on, “bad genetics” can’t be your go-to excuse.

ELIMINATE PROPAGANDA AND NEBULOUS TERMS

The word aerobics came about when the gym instructors got together and said, “If we’re going to charge $10 an hour, we can’t call it jumping up and down.”

—Rita Rudner

One question you must learn to ask when faced with advice or sales pitches is: “If this [method/product/diet/etc.] didn’t work as advertised, what might their other incentives be for selling it?”

Aerobics classes? The reason you’re sold: aerobics is more effective than alternative X. The real reason it’s promoted: there’s no equipment investment and the gym can maximize students per square foot per class. Many “new and improved” recommendations are based on calculating profit first and then working backward to justify the method.

6. Genes alone cannot account for the diversity of characteristics we see around us. Messenger RNA (mRNA) is now thought to be responsible for much of the diversity, and there is good news: just as you can turn genes on and off, you can influence mRNA dramatically with environment—even shut down certain processes entirely through interference.
Marketer speak and ambiguous words have no place in 4HB or your
efforts. Both will surface in conversations with friends who, in their best
effort to help, will do more harm than good. If unprepared, one such con-
versation can single-handedly derail an entire program.

These are two categories of words that you should neither use nor listen
to. The first, **marketer-speak**, includes all terms used to scare or sell
that have no physiological basis:

- Toning
- Cellulite
- Firming
- Shaping
- Aerobics

The word *cellulite*, for example, first appeared in the April 15, 1968,
issue of *Vogue* magazine, and this invented disease soon had a believer base
worldwide:

> Vogue began to focus on the body as much as on the clothes, in part because
there was little they could dictate with the anarchic styles…. In a stunning
move, an entire replacement culture was developed by naming a “problem”
where it had scarcely existed before, centering it on the women’s natural state,
and elevating it to the existential female dilemma…. The number of diet-
related articles rose 70 percent from 1968 to 1972.

Cellulite is fat. Nothing special, neither a disease nor a unique female
problem without solutions. It can be removed.

Less obvious, but often more damaging than marketer-speak, are
**scientific-sounding words** that are so overused as to have no agreed-upon
meaning:

- Health
- Fitness
- Optimal

To eliminate words you shouldn’t use in body redesign, the question to
ask is: **can I measure it?**
“I just want to be healthy” is not actionable. “I want to increase my HDL cholesterol and improve my time for a one-mile jog (or walk)” is actionable. “Healthy” is subject to the fads and regime du jour. Useless.

The word *optimal* is also bandied about with much fanfare. “Your progesterone might fall within the normal range, but it’s not optimal.” The question here, seldom asked, should be: optimal for what? Triathlon training? Extending lifespan 40%? Increasing bone density 20%? Having sex three times a day?

“Optimal” depends entirely on what your goal is, and that goal should be numerically precise. “Optimal” is usable, but only when the “for what” is clear.

If it isn’t, treat *optimal* as Wikipedia would: a weasel word.
WHY A CALORIE ISN’T A CALORIE

Calories are all alike, whether they come from beef or bourbon, from sugar or starch, or from cheese and crackers. Too many calories are just too many calories.
—Fred Stare, founder and former chair of the Harvard University Nutrition Department

The above statement is so ridiculous as to defy belief, but let’s take a look at the issue through a more rational lens: hypothetical scenarios.

Scenario #1: Two male identical twins eat the exact same meals for 30 days. The only difference: one of the subjects just finished a strong course of antibiotics and now lacks sufficient good bacteria for full digestion.

Will the body composition outcomes be the same?

Of course not. Rule #1: It’s not what you put in your mouth that matters, it’s what makes it to your bloodstream. If it passes through, it doesn’t count.

The creator of the “calorie” as we know it, 19th-century chemist Wilbur Olin Atwater, did not have the technology that we have today. He incinerated foods. Incineration does not equal human digestion; eating a fireplace log will not store the same number of calories as burning one will produce. Tummies have trouble with bark, as they do with many things.

Scenario #2: Three females of the same race, age, and body composition each consume 2,000 calories daily for 30 days. Subject 1 consumes nothing but table sugar, subject 2 consumes nothing but lean chicken breast, and subject 3 consumes nothing but mayonnaise (2,000 calories is just 19.4 tablespoons, if you’d care to indulge).

Will the body composition outcomes be the same?

Of course not. Rule #2: The hormonal responses to carbohydrates (CHO), protein, and fat are different.

There is no shortage of clinical studies to prove that beef calories do not equal bourbon calories.

One such study, conducted by Kekwick and Pawan, compared three groups put on calorically equal (isocaloric) semistarvation diets of 90% fat, 90% protein, or 90% carbohydrate. Though ensuring compliance was a challenge, the outcomes were clearly not at all the same:

1,000 cals. at 90% fat = weight loss of 0.9 lbs. per day
1,000 cals. at 90% protein = weight loss of 0.6 lbs. per day
1,000 cals. at 90% carbohydrate = weight gain of 0.24 lbs. per day

7. Protein, for one, provokes a greater thermic effect of food (TEF) than either carbohydrate or fat—in simple terms, in digestion a higher percentage of protein calories are “lost” as heat vs. carbohydrates or fat. This has led some scientists to suggest that the 4 calories per gram assumed for protein should be downgraded 20% to 3.2 calories per gram.
Different sources of calories = different results.
Things that affect calorie allocation—and that can be modified for fat-loss and muscle gain—include digestion, the ratio of protein-to-carbohydrates-to-fat, and timing.
We’ll address all three.

MARKETING 101: SEXISM SELLS

More than 50% of the examples in this book are of women.
Marketers have conditioned women to believe that they need specific programs and diets “for women.” This is an example of capitalism at its worst: creating false need and confusion.

Does this mean I’m going to recommend that a woman do exactly the same thing as a 250-pound meathead who wants 20-inch arms? Of course not. The two have different goals. But 99% of the time both genders want exactly the same thing: less fat and a bit more muscle in the right places. Guess what? In these 99 cases out of 100, men and women should therefore do exactly the same thing.

On average, women have less than one-tenth (often less than one-fortieth) the testosterone of men. This biochemical recipe just doesn’t support rapid muscular growth unless you’re an outlier, so, for the duration of this book, please suspend any fear of “getting bulky.”

Even if you are a fast-responder, as you observe changes, you can omit pieces or reduce frequency. Don’t worry about waking up looking like the Hulk the morning after a single workout. It won’t happen, as much as men wish it did. There will be plenty of time to tweak and fine-tune, to cut back or shift gears, as you go.

One potential objection from the scientists in the group: But don’t women have more slow-twitch muscle fibers? Doesn’t that mean women should train differently? I propose not, and I’m not the first. Based on the data in this book and in the literature, you’ll see that (1) muscle fiber composition can be changed, and (2) you should eat and train for your desired outcome, not to accommodate your current condition.

Don’t fall victim to sexism in exercise. It’s almost always a fraud or a sales pitch.
TOOLS AND TRICKS

**Seeking Wisdom: From Darwin to Munger** ([www.fourhourbody.com/wisdom](http://www.fourhourbody.com/wisdom)) This is one of the best books on mental models, how to use them, and how not to make a fool of yourself. I was introduced to this manual for critical thinking by Derek Sivers, who sold his company CD Baby for $22 million.

**Poor Charlie's Almanack: The Wit and Wisdom of Charles T. Munger** ([www.fourhourbody.com/almanac](http://www.fourhourbody.com/almanac)) This book contains most of the talks and lectures of Charlie Munger, the vice chairman of Berkshire Hathaway. It has sold nearly 50,000 copies without any advertising or bookstore placement.

**Munger's Worldly Wisdom** ([www.fourhourbody.com/munger](http://www.fourhourbody.com/munger)) This transcribed speech, given by Charlie Munger at USC Business School, discusses the 80–90 important mental models that cover 90% of the decisions he makes.
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