The 4-Hour Body

AN UNCOMMON GUIDE TO RAPID FAT-LOSS, INCREDIBLE SEX, AND BECOMING SUPERHUMAN

Timothy Ferriss

CROWN ARCHETYPE
NEW YORK

CONTENTS

START HERE

Thinner, Bigger, Faster, Stronger? How to Use This Book 2

FUNDAMENTALS—FIRST AND FOREMOST

The Minimum Effective Dose: From Microwaves to Fat-Loss 17
Rules That Change the Rules: Everything Popular Is Wrong 21

GROUND ZERO—GETTING STARTED AND SWARAJ

The Harajuku Moment: The Decision to Become a Complete Human 36
Elusive Bodyfat: Where Are You Really? 44
From Photos to Fear: Making Failure Impossible 58

SUBTRACTING FAT

BASICS

The Slow-Carb Diet I: How to Lose 20 Pounds in 30 Days Without Exercise 70
The Slow-Carb Diet II: The Finer Points and Common Questions 79
Damage Control: Preventing Fat Gain When You Binge 100
The Four Horsemen of Fat-Loss: PAGG 114

ADVANCED

Ice Age: Mastering Temperature to Manipulate Weight 122
The Glucose Switch: Beautiful Number 100 133
The Last Mile: Losing the Final 5–10 Pounds 149

ADDING MUSCLE

Building the Perfect Posterior (or Losing 100+ Pounds) 158
Six-Minute Abs: Two Exercises That Actually Work 174
From Geek to Freak: How to Gain 34 Pounds in 28 Days 181
Occam's Protocol I: A Minimalist Approach to Mass 193
Occam's Protocol II: The Finer Points 214

IMPROVING SEX

The 15-Minute Female Orgasm—Part Un 226
The 15-Minute Female Orgasm—Part Deux 237
Sex Machine I: Adventures in Tripling Testosterone 253
Happy Endings and Doubling Sperm Count 264

PERFECTING SLEEP

Engineering the Perfect Night's Sleep 275
Becoming Uberman: Sleeping Less with Polyphasic Sleep 287

REVERSING INJURIES

Reversing "Permanent" Injuries 294
How to Pay for a Beach Vacation with One Hospital Visit 319
Pre-Hab: Injury-Proofing the Body 324

RUNNING FASTER AND FARTHER

Hacking the NFL Combine I: Preliminaries—Jumping Higher 347
Hacking the NFL Combine II: Running Faster 354

Ultraendurance I: Going from 5K to 50K in 12 Weeks—Phase I 367
Ultraendurance II: Going from 5K to 50K in 12 Weeks—Phase II 386

GETTING STRONGER

Effortless Superhuman: Breaking World Records with Barry Ross 406
Eating the Elephant: How to Add 100 Pounds to Your Bench Press 424

FROM SWIMMING TO SWINGING

How I Learned to Swim Effortlessly in 10 Days 434
The Architecture of Babe Ruth 444
How to Hold Your Breath Longer Than Houdini 453

ON LONGER AND BETTER LIFE

Living Forever: Vaccines, Bleeding, and Other Fun 460

CLOSING THOUGHTS

Closing Thoughts: The Trojan Horse 471

APPENDICES AND EXTRAS

Helpful Measurements and Conversions 476
Getting Tested—From Nutrients to Muscle Fibers 478
Muscles of the Body 483
The Value of Self-Experimentation 484
Spotting Bad Science 101: How Not to Trick Yourself 491
Spotting Bad Science 102: So You Have a Pill . . . 501
The Slow-Carb Diet—194 People 505
Sex Machine II: Details and Dangers 511
The Meatless Machine I: Reasons to Try a Plant-Based Diet for Two Weeks 520
The Meatless Machine II: A 28-Day Experiment 536

BONUS MATERIAL 550
- Spot Reduction Revisited: Removing Stubborn Thigh Fat
- Becoming Brad Pitt: Uses and Abuses of DNA
- The China Study: A Well-Intentioned Critique
- Heavy Metal: Your Personal Toxin Map
- The Top 10 Reasons Why BMI Is Bogus
- Hyperclocking and Related Mischief: How to Increase Strength 10% in One Workout
- Creativity on Demand: The Promises and Dangers of Smart Drugs
- An Alternative to Dieting: The Bodyfat Set Point and Tricking the Hypothalamus

ACKNOWLEDGMENTS 551
PHOTO AND ILLUSTRATION CREDITS 553
INDEX 555

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.

AN ALTERNATIVE:

THE BODY-FAT SET POINT AND SHANGRI-LA

“Hacking is much bigger than clever bits of code in a computer — it's how we create the future.”
- Paul Buchheit, creator of Gmail

This chapter was written by Dr. Seth Roberts, professor emeritus of psychology at the University of California–Berkeley and professor of psychology at Tsinghua University. His work has appeared in the New York Times Magazine *and* The Scientist*, and he is on the editorial board of the journal* Nutrition.

In 2000, I spent a week in Paris. To my dismay, I lost my appetite. I almost never felt like eating. There was no obvious reason -- I wasn't sick or upset -- but I thought of a non-obvious reason. Five years earlier, I'd invented a new theory of weight control. The new theory was inspired by what I'd learned from teaching the subject and some rat experiments I'd just learned about (see below). One of its predictions, I realized, was relevant: *unfamiliar food causes loss of appetite*.

I'd been to Paris before without losing my appetite. This visit differed in one big way from earlier visits: It was hot. To cool off, I'd been drinking soft drinks with sugar. I'd chosen unfamiliar brands with unfamiliar flavors. They were sweet, and sweetness was familiar -- but maybe sweetness didn't matter.

When I got home, I tested this explanation. I started drinking fructose water -- water to which only fructose had been added. I used fructose rather than sucrose (ordinary sugar) because fructose is digested more slowly. I added no flavoring because any flavor might become familiar. If my explanation of what happened in Paris was correct, the fructose water should cause loss of appetite. A few years earlier, I'd lost weight eating lots of sushi.

Fructose water might be as potent as sushi, I thought. I'd lost weight eating about 1000 calories of sushi per day. So the first day, I drank about 1000 calories of fructose water. Half an hour after the first glass, my appetite utterly vanished. I was stunned how unhungry I felt. I didn't keep other food intake constant; I ate much less. What stayed constant -- before and after I started the fructose water -- was that I ate as much as I wanted.

I drank no fructose water the next day.

My appetite didn't return. (I'd forgotten that in Paris I'd had about two soft drinks per day -- far less than 1000 calories per day.) I cut the dose in half (500 calories/day) for a few days. I still felt no hunger. I cut the dose in half again (250 calories/day). At this level, which calorically equals two cans of Coke per day, I had a little bit of hunger, but only if I ate one meal every two days.

I lost weight so fast that a colleague asked, "Are you dying?" Over three months I lost about 30 pounds, going from about 180 (BMI 26) to 150 (BMI 21). At 150 pounds I stopped trying to lose weight. It was a nice round number and made the point. The Minnesota Starvation Experiment, done during World War II, shows what usually happens. Its subjects underwent an artificial famine. Their calorie intake was cut in half and they were forced to take long walks. They lost as much weight as me in a similar length of time, but, unlike me, they became very hungry. They thought about food constantly. It was very unpleasant. One subject went crazy and chopped off three fingers.

Why was my experience so different?

A Body-Fat Set Point

In 1953, a British physiologist named Gordon Kennedy proposed that mammals regulate body fat using a system that tries to keep the amount of body fat at a certain level (the set point). It does so mostly by varying hunger. If your weight is below your set point, you will feel hungry. The further below, the more hunger. If your weight is *above* your set point (which is rare), you will feel less hungry than usual. The system also controls how soon you feel full during a meal. If your weight is far below your set point (which is rare) it will take more food than usual before you feel full. If your weight is above your set point, it will take less food than usual to feel full.

Kennedy's proposal was based on an experimental observation. Rats whose liquid diet was suddenly diluted (half as many calories per unit volume) lost weight for a day or so but then started eating more calories than usual and regained the lost weight. In the following years, similar results were observed many times. The best support for Kennedy's idea came from the discovery of leptin in 1994. Because hunger is controlled by the brain, Kennedy's idea predicted that your brain can tell how much body fat you have. Leptin provides that information. Leptin is made by fat cells and released into the blood. The more fat a cell contains, the more leptin it makes, so leptin concentration in the blood indicates total amount of body fat. Some brain cells have leptin receptors, so they measure leptin concentration in the blood.

The notion of an *adjustable* body-fat set point was introduced by Michel Cabanac, a professor of physiology at Laval University. He believed your set point is not fixed but depends on what you eat.

Some foods produce a lower set point than other foods. This implied there were two quite different ways to lose weight. If your set point goes down, you will lose weight easily; if your set point does not go down, weight loss will be difficult. In the 1970s, Cabanac and his colleagues did two experiments that showed this. In one experiment, subjects lost weight via calorie restriction (as in the Minnesota experiment). *What* they ate stayed the same; *how much* they ate was now limited. In a second experiment, the subjects drastically changed their diet: They consumed only a liquid Slimfast-like food -- a dietary change meant to lower the set point. They could drink as much as they wanted. *What* they ate changed; *how much* remained unlimited. Both methods produced similar weight loss (10-20 pounds) in similar amounts of time (3-8 weeks) but the experiences were completely different. Losing weight by calorie restriction was "torture," Cabanac said. (He was one of the subjects.) "You dream you are breaking the fast and ruining the experiment." In contrast, while losing weight with the dietary change the subjects didn't suffer at all. Except maybe from boredom.

The Theory Behind the Shangri-La Diet

Cabanac and his colleagues had found one food—their SlimFast®—that lowers the set point. The next step was finding a general rule -- a rule that predicts the effect of any food on the set point. I couldn't imagine how to do this. In 1995, however, I read a paper by Israel Ramirez, a scientist at the Monell Chemical Institute in Philadelphia, that described some rat experiments with surprising results. They suggested that associative learning (the type of learning studied by Pavlov) affected the set point -- a possibility that no one had considered.

But it made perfect sense. Associative learning obviously controlled *what* we eat. Food with an entirely new flavor tastes strange. When a friend of mine tasted his first Coke, he thought: *What's the big deal?* It tasted like medicine. Food with a new flavor tastes strange because the flavor is not yet associated with calories, a type of learning called *flavor-calorie learning*. When we eat a food, we remember its smell for perhaps an hour. If our digestive system detects calories in the food during that time, a flavor-calorie association is formed. Its effect is to make the food taste better. Anthony Sclafani, a professor of psychology at Brooklyn College, has done many experiments that show the power of this learning.

You can experience it yourself. Buy two new flavors of tea. Have one always with sugar, the other always with artificial sweetener. Cup after cup, the one with sugar will taste better and better; the one with artificial sweetener will not.

Not long after reading Ramirez's paper, I thought of the following theory of weight control:

1. Between meals your set point goes down.

2. Eating raises your set point. The size of the increase depends on how strongly the food's flavor is associated with calories. The stronger the association, the bigger the increase. Flavors not associated with calories don't raise the set point.

The secret to painless and sustainable weight loss, says this theory, is *eat as much as you want while raising your set point as little as possible*. The strength of a food's flavor-calorie association depends on its calorie content, but it also depends on other factors.

You choose foods with those other factors in your favor.

At first I saw four ways to do this:

1. *Avoid eating foods with exactly the same flavor.* Fast food and factory-made foods are the main examples. When a food has exactly the same flavor each time you eat it, a stronger flavor-calorie association can develop than if the flavor is somewhat different each time you eat it.

2. *Eat foods with a weak flavor*. Weak flavor = weak flavor-calorie association. This is why Cabanac's subjects lost weight on a liquid diet: Its weak flavor. I lost weight eating sushi because it was just fish and white rice. No wasabi or soy sauce.

3. *Eat foods that are digested slowly*. If a food is digested more slowly than usual, its calorie signal will reach the brain later than usual. At that point its smell memory will be weaker than usual and the association formed will be weaker than usual. This is why low-carb and low-glycemic-index diets work: They forbid foods that are digested quickly, such as bread and potatoes ()

4. *Eat unfamiliar foods*. New flavors haven't yet developed flavor-calorie associations.

The Shangri-La Diet

After my Paris experience, I realized that food without smell is the ultimate way to consume calories without raising the set point. Sugar water has no smell.

For three years I kept my weight down by drinking sugar water -- about 200 calories per day. Then a friend pointed out that some oils have no smell; if my theory was right they should have the same effect. I replaced the sugar water with the same number of calories of extra-light olive oil, which has no smell. My weight stayed the same. The extra-light olive oil seemed be as powerful per calorie as the sugar water and had benefits the sugar water did not: softer skin and hair, no worries about blood sugar.

By then my friends' experiences and a small experiment had shown that sugar water had the same effect on most people as it had on me. Soon after this I wrote *The Shangri-La Diet*. The diet can be summed up very simply:

> ***Eat twice your weight (in pounds) in flavorless calories per day. Eat them at least an hour away from other food.***

If you weigh 200 pounds, for example, eat 400 flavorless calories per day. Avoiding other food means avoiding other food with smell. You can't eat the flavorless calories around the time you have coffee or tea or a diet soda, for example. *I consume them* *shortly before bedtime.*

The usual sources of flavorless calories have been sugar water and extra-light olive oil.

Since the Book

Since publication of *The Shangri-La Diet* (SLD), many people have posted their experiences, ideas, and questions at forums.shangriladiet.com. Their posts teach three lessons:

First, *there's something to it*. The diet sounds exceedingly strange, but the vast number of forum success stories leave no doubt it often works. According to conventional weight-loss advice (restrict calories, don't eat fat, don't eat carbs), the diet should cause weight *gain*.

The most impressive feature of the success stories is the uniqueness of the experience. Many diets cause weight loss. SLD weight loss is different. For example:

> It's amazing not to feel my hunger increasing as I lose weight. Usually [dieting] is like holding your breath underwater -- the longer you go without air, the more massively you need air. Usually the longer you are on a diet the more hungry you are. This is so strikingly different.

SLD makes you feel full much sooner:

> First time I ever did it I could not finish my bowl of oatmeal. Before SLD I had never, not ever, been able to not finish anything.

It reduces thinking about food:

> You're not craving foods. Food is in the background - your other life is in the forefront.

All this supports Cabanac's idea that there are two quite different ways to lose weight: easy (via set-point reduction) and hard (without set-point reduction). Unlike other diets, or far more powerfully, SLD reduces your set point.

Second, *better ways to do it.* The diet has been improved three ways:

1. *Nose-clipping.* Gary Skaleski pointed out that if you close your nose (using a swimmer's nose clip, for example), you no longer smell your food. Without smell, *every* food has no flavor-calorie association. *Anything* eaten this way should lower your set point. Many reports on the SLD forums suggest this is true:

> I was experiencing a driving hunger at night that overwhelmed my efforts to be modest in my eating. Then last Friday, I tried nose clipping. The relief was immediate. The hunger subsided and I even lost a couple of pounds. On Saturday I decided to try clipping every time I ate anything. By evening I could not eat my entire dinner.

A less conspicuous way to block smell is to put small pieces of pantyhose in your nose.

2. *The benefits of flaxseed oil.* After some people wondered if they could use flaxseed oil as the calorie source, I discovered that it improves my balance and other mental abilities and reduces inflammation, no doubt due to its high omega-3 content. This was wonderful. I now use flaxseed oil as my SLD calories by drinking it nose-clipped.

3. *Easier ways to drink the oil*. Some people have trouble drinking oil. One solution is to mix it with water. Another solution is to put the oil on toast and eat it nose-clipped. It tastes just like toast with butter.

Third, *better expectations.* To read the forums is to see that the diet is a tool, not a magic bullet. "Don't expect the wrench to fix the bike by itself," one person said. Data posted by about a hundred dieters showed that the average rate of weight loss was about 1 pound/week. It takes anywhere from six months to a year to get the full weight loss from whatever dose you've chosen. The forums show that, like a wrench, SLD sometimes is and sometimes isn't the only tool you need.

The story of SLD teaches three lessons: 1. Your weight is controlled by a set point. 2. Your set point isn't fixed. It depends on what you eat. 3. Flavorless calories are an easy way to lower your set point, but not the only way.

Less obvious uses of the theory behind SLD may turn out to be more important. For example, why are kids getting fat? The theory says it's because they're eating lots of food with exactly the same flavor every time. It isn't just junk food; it's also frozen juice, vitamin-enriched breakfast cereals, Hamburger Helper, and microwave entrees.

When Cabanac and his colleagues showed that drinking a liquid diet produced much easier weight loss than calorie restriction, they weren't saying: *To lose weight, drink a liquid diet*. They were saying: *Here's a new empirical effect. You should take seriously the idea behind it.* The Shangri-La Diet works, yes, but because it works, it says something far more broad and important: *Take seriously the idea that flavor-calorie associations control your set point.*

References

Roberts's weight-loss self-experimentation: http://escholarship.org/uc/item/2xc2h866 on 2009-10-18.

Minnesota Starvation Experiment: http://www.possibility.com/wiki/index.php?title=EffectsOfSemiStarvation on 2009-09-28.

Kennedy: Kennedy, GC. The role of depot fat in the hypothalamic control of food intake in the rat. Proceedings of the Royal Society of London B 1953; 140: 579-592.

Cabanac calorie restriction: Cabanac M, Duclaux R, Spector NH. Sensory feedback in regulation of body weight: Is there a ponderostat? Nature 1971; 229: 125-7.

Cabanac liquid diet: Cabanac M, Rabe EF. Influence of a monotonous food on body weight regulation in humans. Physiol Behav 1976; 17; 675-8.

Cabanac quotes: Interview, October 28, 2005.

Ramirez: Ramirez I. Stimulation of energy intake and growth by saccharin in rats. J Nutr 1990; 120: 123-33.

Sclafani: Sclafani A. Learned controls of ingestive behaviour. Appetite 1997; 29: 153-8.

Roberts's theory: Chapter 3 of *The Shangri-La Diet*. A more technical description: http://www.sethroberts.net/about/whatmakesfoodfattening.pdf on 2009-10-18.

"It's amazing not to": http://boards.sethroberts.net/index.php?topic=785.msg5259 - msg52 on 2009-10-13.

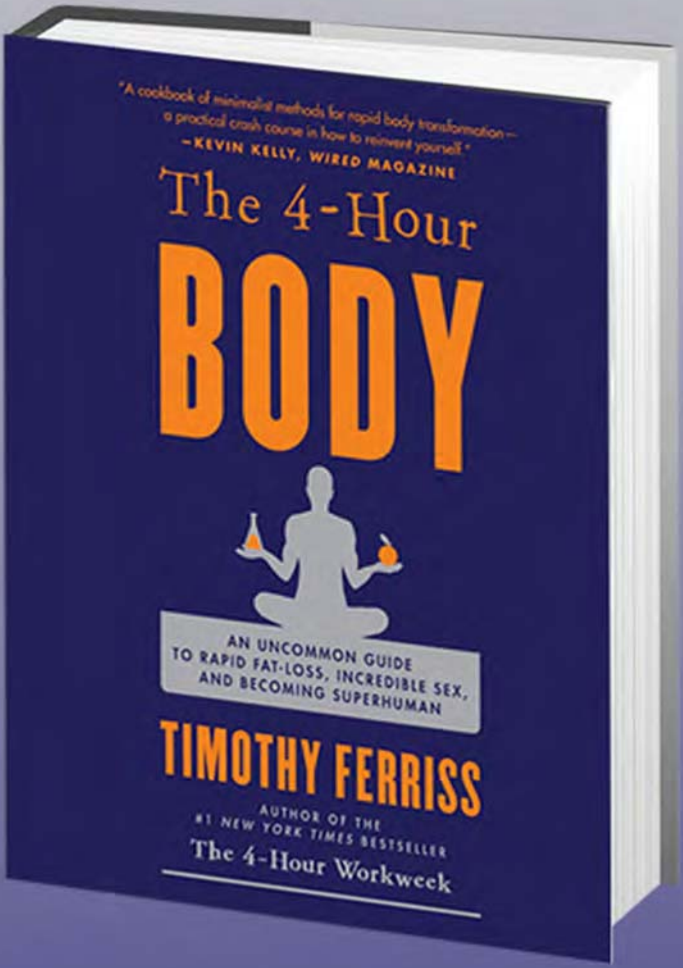
"first time I ever": http://boards.sethroberts.net/index.php?topic=7133.msg87040 - msg87040 on 2009-10-18.

"You're not craving": http://boards.sethroberts.net/index.php?topic=6972.msg83326 - msg83326 on 2009-10-18.

"I was experiencing": http://boards.sethroberts.net/index.php?topic=7243.msg90096 - msg90096 on 2009-10-18.

”benefits of flaxseed oil”: http://www.blog.sethroberts.net/category/nutrition/omega-3/omega-3-directory/ on 2009-10-18.

Tim Ferriss' New Book


"A cookbook of minimalist methods for rapid body transformation—a practical crash course in how to reinvent yourself."
—KEVIN KELLY, WIRED MAGAZINE
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

Available everywhere books are sold

Click on icon for full details

amazon.com

BARNES&NOBLE BOOKSELLERS

BORDERS.

INDIE BOUND

Powell's Books
EST. 1971
Portland, OR
THE LEGENDARY INDEPENDENT BOOKSTORE