

smart solutions to
regain and maintain
strength, health & youth

Clint Cornelius, CSCS

IB

Preface to the E-book

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Marketers might typically refer to this approach as "certifiably stupid". The accepted practices are taking the money at the door, cash up front, there's a sucker born every minute, and so forth. But I am always left with such a creepy and used feeling when I myself am taken advantage of, whether by businesses or individuals exploiting my inborn gullibility and desperation - so I refuse to be a part of it, whether to my own detriment or not.

Should you end up liking and/or benefiting from the book, I invite you to do any or all of the following three things:

- 1 **Recommend it to a friend or family member, either the e-book or the hardcopy version.** You could also pick up a copy to gift to people who don't care for reading books on a screen. (As of this writing, those sorts of people still exist in fairly large number.)
- 2 **Write a review for a seller such as Amazon.com.** I'm a strong believer in peer-recommendation and will often skip right past the editorials to the customer reviews.
- 3 **You can pick up a hard copy for your own collection.** I am certainly not above being fairly compensated for my work, and helping me move up the sales ranks and get more exposure for the book is a nice way to do it.

I would also enjoy hearing from you if the book has provided you a service, or if you have comments or critique. Write me at **clint@brainoverbrawn.com**.

Notice: This book is intended as a reference volume only, not as a medical manual, and is meant to supplement, not replace, proper exercise training and nutritional guidelines. Any form of exercise poses its own inherent risks. The author and publisher advise you to take full responsibility for your safety and to know your limits. The information herein is designed to assist you in making your own informed decisions. It is not intended as a substitute for any exercise routines, treatments, or dietary regimens that may have been prescribed by your doctor. If you suspect that you have a medical problem, you are urged to seek competent medical help. As with any dietary or fitness program, you should seek your doctor's approval before beginning.

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Clint Cornelius

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Acknowledgments

I thought a lot about what to put in this section. You know, it's odd because you first want to thank everyone that helped directly with the book. The people who devoted time to edit and critique, and the people who helped it along. But then, what about people who helped me along in the past? What about my parents and grandparents? Without them, I couldn't very well write this book at all now could I? What about my teachers in school, or my professors who encouraged my curiosity? What about everyone I've learned from along the way? I suppose it should be enough for me to assure you that there are good people out there, doing good things to help each other get by. Especially when they don't *have* to. If you've ever done a turn for me, this is my acknowledgment of you. Even if you don't recall, I certainly do. And honestly, anyone that is doing or has done good by someone, not because they have to, but because that's what's in them, I'd like to acknowledge them as well.

About the CSCS

Now toward the end of this book I might be a little, shall we say, mildly disparaging of the state of personal training (as well as a few other fields), and I might not speak in the kindest of regards for the associated certifications. However, of what's out there, I feel that if any are worthwhile, the National Strength and Conditioning Association's (NSCA) Certified Strength and Conditioning Specialist (CSCS) is about as good as it gets. The CSCS is the only strength training and conditioning certification that's nationally accredited by the NCCA, and requires a Bachelor's to even sit for it. And you have to re-qualify every three years, so in theory you have to stay current on information and won't be pushing some outdated middle school football coach crap at people. It's not perfect, but it's a step in the right direction of establishing a baseline of education. And I'm not just saying that to polish up my own little honorific that I put on the cover; there are doubtless CSCS holders who are rubbish as well. Your best way of identifying a legitimate trainer isn't a title; it's knowing enough that you recognize when something's wrong. And I'm hoping to help you out with that right now.

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Introduction

“Every child knows that play is nobler than work.”

– Cormac McCarthy

1

This is a book for humans. If you are human, this is for you. (If you are a dog or cat, bear or otter, reptile or other *homo sapienally*-challenged being, stop reading immediately. Besides, you already know what’s in this book.) The more subtle distinction of man or woman, child or elderly, motivated or lazy, bored or busy, over- or under-educated, artist or executive, does not alter the relevance of what you’re about to read: If you are a human, this information will apply.

In a way, this book was designed to perform the opposite function of a traditional book (a bizarro-book, if you will): its goal is to help you *reduce* the already bloated amounts of information fed to you by the diet, nutrition, and exercise industries—much of which is outdated, inaccurate, misleading or incomplete. We as a species are rapidly becoming as obese and inundated mentally with information as our bodies are with food. Your best defense is knowledge, so that you may quickly discern useful information from marketing gimmicks, outright scams, or otherwise legitimate programs that range anywhere from inefficient to downright dangerous. And that is the goal of this book: to teach you to fish, rather than sell you an auto-renewing fish subscription, or the latest in fishing pole technology, as it were.

Humans are obsessed with health. Or in fact, perhaps it is more accurate (and revealing) to state that people are obsessed with illness, with disease, with repelling the inevitable germ and viral armies of sickness that persistently assault and invade our bodies. Yet the CDC reports that of the **225 million** adults (age 20+) in the United States, **141 million** (roughly **67%**) of them are overweight or obese (and contrary to what singer Meatloaf’s ballad would have you believe, 2 out of 3 *is bad*).¹ And while 50 million of those Americans each year will resolutely start a diet (or diets), perhaps **5%** (1 in 20) will succeed in achieving any substantial or lasting change. Recently, ‘fat acceptance’ proponents have even begun to condemn advocacy of fitness standards as obsession with vanity and appearance, but this objection is far outweighed by the risks to health, mobility, length, and quality of life. The FDA also estimates the diet and weight loss industries are expanding faster than waistlines at a hefty \$30 billion for 2008, which therefore begs the question: with all this money being spent, why are we only getting fatter?

¹ National Health and Nutrition Examination Survey (NHANES) 2007-2008, Centers for Disease Control, National Centers for Health Statistics, 2008

Why a typical diet or exercise plan fails

- 1 **It's extreme, ineffective, or both.** Any diet or program must adhere to the laws of marketability; if it's not billed as ultimate, hyper-effective, effortless, or achievable in minutes a day, fewer people would buy it. For decades, sound nutritionists, competent trainers and even the government mouthpieces have been holding the safe, vague party line that "you need to eat properly and exercise regularly", despite the definitions of both "proper" and "regular" undergoing perpetual revision. Though we may hate to admit it, humans collectively are easy prey for gimmicks and shortcuts, and wherever there is something too good to be true, a line of people will form with their wallets out.

Whether it's a 400-recipe cookbook demanding you throw out all of your carbs or your cheese, eat your burger without the bun, or have a daily serving of juice made from some magical herb that grows in some far away land, many diet plans command you to refocus your life to the worship of some new concept or new product. Few people have the fortitude to even begin these plans, let alone stick to them long enough to see lasting results. Many exercise courses also require you to contort your already-hectic life to coincide with class schedules for kickboxing, rock-climbing, bicycling or yoga. And the sketchier ones that promise results in just 30, 15, or even 5 minutes a day subsequently fail to fulfill their promise to get the results you want—and somehow schedule themselves right back out of your life as soon as the novelty wears off.

- 2 **It's confusing and complicated.** There are thousands of diet guides and books, pieces of equipment, pills, supplements, and programs to choose from. Many of them flatly contradict each other (this book likewise contradicting some). For any given strategy, you probably know at least two examples who've tried it—one enjoying great results and endlessly singing its praises, and one was completely unaffected, and perhaps even harmed by that same strategy, and solemnly assures you it's a scam. Between the sports supplement industry, the diet pill industry, the food and exercise equipment industries, and the weight loss services industry, there are tens of thousands of experts, quacks, snake-oil salesmen, and shamans out there with their hands out for your money. The handful of legitimate experts and practitioners are drowned out beneath the waves of copycats and charlatans who, most often, possess superior marketing tactics and a savvy for influence that overshadows their lack of applicable knowledge, and a layman would have a difficult time authenticating their credentials.

When it comes to exercise, there are hundreds of programs to choose from, endorsed by athletes and celebrities, guaranteed to work wonders right up until the moment they don't. There are kickboxing clubs, fitness gyms based around specific workouts (or lack thereof), health spas, martial arts dojos, and yoga clinics. The catalog of potential gym equipment is so vast that you can get a workout just examining reading the brochures, and most fitness-related books have hundreds of exercise variations to dazzle and bewilder you with. There are too many options and no reliable way to discern what is most effective for you, or to separate the accurate from the misleading.

- 3 **It's miserable or boring.** Dwarfing the estimated \$30 billion spent on weight loss, in 2007 Americans spent well over **\$82 billion** on digital entertainment,² split up between \$27.45 billion on television (not counting the astounding accompanying revenue of \$209.74 billion via commercials), \$25.7 billion on home video, \$10.4 billion on music (CDs and downloads), \$9.6 billion at the box office, and \$8.69 billion on video games. According to the A.C. Nielsen Co., in 2007 the average American watched more than four hours of TV each day (or 28 hours/week, or two months' worth of nonstop TV-watching per year),³ with an additional hour each day for radio and still another hour for the Internet. Though interested in being fit, we are significantly *more* interested in being entertained. And plodding on a treadmill, doing crunches on your bath mat, or watching the same video for the hundredth time is about as far from entertaining as it gets.

How is this book any different?

- 1 **It's focused on the most effective essentials.** No particular fruit, vegetable, grain, meat, fish, vitamin, micro- or macro-nutrient is demonized or declared a miracle drug that will change the world. You don't need a membership to a gym or club, you don't need to carve out two dozen hours a week to cook special meals or run in a circle. I won't lie to you—getting fit will require a modest level of commitment, but simply by reading this book you have demonstrated the initiative necessary to be successful. This book is designed to enhance and improve your life rather than replace it, and the level of intensity, time spent, and types of food and exercise are chosen and manipulated by you.
- 2 **It's simple and direct.** There's no equipment to buy, no prescription to fill, no bands, bars, or wobble boards to order from an online catalog. There's also no membership to subscribe to, no club to join, and no alternative world you have to relocate to in order to avoid eating out at restaurants or smelling bread. You're presented with options rather than being buried underneath them and, better still, you are shown how to apply these selectors to find and develop the optimal exercises for you. It cuts the fat (so to speak); the most effective practice in the least amount of time.
- 3 **It's entertaining and adaptable.** The book's humble comedic value aside, the concepts are presented to help you reframe both "diet" and "exercise"—taking them out of the 'boring chore' or 'suffering misery' categories and reestablishing them as something more palatable, and perhaps even pleasurable. Analyzing which characteristics distinguish a worthwhile meal, exercise, or habit will help you quickly and easily examine a potential new workout, food, or product and determine its utility to you. By eating delicious foods that are still intelligent choices, and by performing strenuous exercises that are fun and amusing, you can concurrently build a program worthy of commitment.

2 Motion Picture Association of America, US Entertainment Industry Market Statistics, *referencing statistics originally published by the Veronis Suhler Stevenson (VSS) Industry Report, 2007*

3 2007 Report on Television, *Nielsen Media Research Survey, 2007*

This book, in a word, is about one thing: **you**. Within is a collection of simple, concise guidelines to help you take the best of what's around and fit it into your lifestyle, on your terms.

Of course, within you shall find exercise programs, nutritional guidelines, food recommendations, and simple remedies for debilitating habits you're probably not even aware you have (like how holding a stretch can make you weaker). But this book, and the program as a whole, is not designed as a replacement lifestyle; rather, it is intended to be a structural foundation: a set of guidelines that you can apply to improve and enhance your strategy. As most people are not interested in sacrificing their current lives and arrangements, I'd like to think this is viable. For those who actually would prefer to start over from scratch and create a whole new life, this manual will give you the blueprint to build it right this time, from the ground up.

And in that spirit of simplicity, enough talk; let's get to ~~work~~ play.

Clint Cornelius, CSCS

1: Theory

“The race is not always to the swift, nor the battle to the strong, but that’s the way to bet.”

– **Damon Runyon**

Suppose you must choose between either living five years as a world-class athlete, or living twenty years strapped to a bed? Is the choice difficult for you to make? (Should you be torn over this decision, simply ask anyone bed-ridden which they would rather have). Health is not merely about the length of life, but also the quality with which it may be lived.

The most obvious benefit of good nutrition and proper exercise is health itself (forgive the tautology). This, however, is the most often overlooked benefit due to the survival-driven nature of our minds. For many people, it can be difficult to think beyond the end of the day or week. “When I turn 65” is hard for a 30 year-old to imagine. It’s even more improbable for a 20 year-old to accurately foresee.

But the fact is, if you’re physically fit, you are not only more likely to live longer, but for a greater span of that time you can actively *live*—with reduced incidence of physical or mental deterioration. To spend that time productively, having more opportunities *and* a greater capacity to realize them, is immeasurably valuable. Both time and health are priceless in a way difficult to comprehend until they are gone.

Obesity and heart disease:

In modern, advanced civilization obesity is at an all-time high; to put it bluntly, many of us—Americans leading the pack—whether professional or layman, are overfed, unexercised, and drowning in our own opulence. As obesity climbs, so too do the instances of heart disease and heart attacks. Heart disease is the leading cause of death in the US, and a major cause of disability.¹ Worse, the majority of heart disease is directly due to obesity-related factors, and per individual may be greatly reduced or nonexistent were they physically fit.^{2,3}

Osteoporosis/Osteopenia:

The National Institutes of Health reports osteoporosis as a “major public health threat” for 44 million Americans, 68% of which are female. Osteoporosis, and its less severe form osteopenia, is a prevailing disease that lessens the mineral density and quality of bones. This

¹ Kung HC, Hoyert DL, Xu J, Murphy SL. Deaths: final data for 2005. *National Vital Statistics Reports* 56(10), 2008

² Centers for Disease Control, Health, United States, 2007 with chartbook on trends in the health of Americans. Hyattsville; National Center for Health Statistics: 2007.

³ Hayes DK, Greenlund KJ, Denny CH, Keenan NL, Craft JB. Disparities in multiple risk factors for heart disease and stroke, 2003. *MMWR*. 54:113–116, 2005

Mental health:

Multiple reputable studies demonstrate regular exercise, in many cases, to be *at least* as effective as medication in treating such prevalent illnesses as depression and anxiety.⁵ It's certainly refreshing to think that a walk or a few sets of pull-ups can make us smile. Plus, looking in the mirror and liking what looks back at you is a mood elevator all its own. (Bear in mind this is not some holistic manifesto commanding anyone to quit their doctor or their pills; this is simply noting a common effect that may serve to supplement and assist in recovery. Follow your doctor's advice.)

Exercise gets you high:

Perhaps the phrase 'getting high' has too many negative connotations, but working out, particularly in doing exercises that put significant load on your skeletal frame, delivers a fantastic home-brewed chemical cocktail, featuring blends of mood and sensation enhancers, serotonin,⁶ hormones (both growth and pleasure-related), stimulants, and—in cases of explosive and strenuous lifting (which is the preferred sort)—catecholamines, the fight-or-flight hormones.⁷ Proper resistance training is a recreational drug that is natural, safe, and legal. (Enjoy it while you can, it'll be taxed as soon as it gets popular enough.)

Books are judged by their covers

In preparing this book for publishing, I had to face some hard truths. The first was no matter how well-written the book was, or how pertinent or well-conceived the advice therein, unless it had a catchy title and a marketable cover, it was significantly less likely that you would even pick it up. The same truth applies to all of us: what's on the inside may be what matters, but it's the outside that will determine if someone even bothers to venture inside in the first place.

The 1920s saw the first empirical demonstration of a phenomenon known as the 'Halo Effect', in which people have a tendency to make current and future judgments about a person based on their current perceptions.⁸ That study further

4 National Institute of Arthritis and Musculoskeletal and Skin Diseases, Osteoporosis Overview, *The National Institutes of Health*, 2009

5 Landers DM. The Influence of Exercise on Mental Health, *President's Council on Physical Fitness and Sports Research Digest* 2:12, 1997

6 Salmon P. Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clinical Psychology Review* 21:33-61, 2001

7 Bracken RM, Brooks S. Plasma catecholamine and nephrine responses following 7 weeks of sprint cycle training; *Amino Acids, Sport and Exercise Science Research Centre, School of Engineering, Swansea University*, 2009

8 Thorndike EL. A constant error on psychological rating. *Journal of Applied Psychology*, IV, 25-29, 1920

determined that like attracts like: an initial positive trait made it more likely the observer would find more positive things to like about a subject, and a negative trait would direct the observer to find more negative things to dislike. This pioneering research led to such studies as the Implicit Personality Theory, which describes how people have a pre-developed network of assumptions they make based on a central trait or behavior. For example, we would assume a quiet person is shy or an unsmiling person is hostile or brooding. Numerous psychological studies went on to find that more attractive people are automatically and unconsciously viewed and evaluated by others to be smarter, more knowledgeable, more likeable, more trustworthy, and more reliable.^{9,10,11} Perhaps even more concerning is social psychologist Richard Nisbett's findings that even when we are *explicitly told* that our judgments have been influenced by the Halo Effect, we may still be clueless and hence powerless to actually perceive the influence.¹²

Another unwavering truth: many of us have the same face we will always have. Most of these ways we are unique will remain static. However, this isn't necessarily bad news. While some factors are difficult or impossible to change, many are affected by simple fitness. For example, the shape of an overweight person's face tends to aesthetically improve as he or she loses weight. Virtually everyone will see marked aesthetic improvement in their face, head-shape, and neck, as their body composition likewise improves, both in gaining muscle and losing fat.

The conclusion is that a fit person is irresistibly considered to be a *better* person. Strangers, acquaintances, business associates, friends, and even family respond more positively, warmly, and affectionately to the fit and healthy. They cannot help it. People simply want to be closer to things they perceive positively. The converse is also true; no matter how incredible a person is on the inside, if she or he is weak or fat or scrawny, his or her qualitative image suffers. Observers are unable to help themselves. This applies to self-image as well: weak people often believe they are capable of less; strong and hearty people unreasonably believe themselves capable of greater things. Unsurprisingly, they are both often right.

- 1 **As an earner:** Statistically, fit and attractive people earn more money than someone out of shape. They are considered more favorably and more often for promotion. Their ideas and work are more respected, their opinions and suggestions, more influential. The converse effects are also inescapable: when creative talents and astonishing intellects are marginalized and discarded due to distortion by the 'fat guy/fat girl' bias, it is at the loss to both parties. But in knowing of this bias, you dismiss it at your own risk.

9 Kanazawa S, Kovar J. Why Beautiful People are More Intelligent *Intelligence* 32: 227-243, 2004

10 Bull R, Hawkes C. Judging Politicians by their Faces *Political Studies Association* 30: 95-101, 2006

11 Clifford M, Walster E. The Effect of Physical Attractiveness on Teacher Expectations *Sociology of Education* 46:248-258, 1973

12 Nisbett RE, Wilson TD. Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84(3), 231-259, 1977

- 2 **As a lover/spouse:** It's impossible to measure the amount of business brought to psychiatrists (and lawyers) each year based solely on someone's partner being out-of-shape or having 'let themselves go'. Sessions regularly deal with the overwhelming levels of resentment people have accrued because their spouse "doesn't care" about their aesthetic appeal. From a gender role standpoint, a masculine partner that is incapable and weak is unattractive. And for many people, their sensuality is so firmly rooted in visuals that an unattractive partner may compel them to look elsewhere.
- 3 **As a parent and role model:** Parents play a fundamental role in the development of not only their own children, but through them, influence the development of their children's friends, classmates, and from there on out into the world. Due in no small part to the advance of technology, we are without question a global village, and we all play a part in the growth and success of succeeding generations. Adults that are healthy, active, and aware inspire and encourage their children to be likewise. It is more important than ever that we behave accordingly—not only for our health and well-being, but for the greater good of our species and world.

Our own choices have far-reaching consequences; proper nutrition and exercise aren't solely for our own bodies, but influence the community and thereby encourage all people to be more healthy, responsible, intelligent, and perhaps most importantly, happy.

Wellness as an institution

Though a potentially offensive metaphor, health as a practice may be juxtaposed to a religious or political outlook. To begin, there are endless reasons someone chooses to ally themselves with a particular system, whether it be family or social pressures, peer influence, or the seeking of a personal goal or answer.

In the study of health, there are countless schools of thought, from major institutions to small cult-like orders, some which profess their system to be the best if not the only true path. There are also opposing camps with conflicting doctrines or practices, each as readily refuted by detractors as they are upheld by believers. And also as happens with spirituality or political ideology, there are those among every faction who believe in tolerance, that there are many paths to the same goal, and to each person, their own practice and belief.

That said, this method takes a minimalist approach—more a philosophy than a belief, really—and sets two modest goals: the first is to provide a powerful framework and arsenal of techniques to help achieve the maximal benefits from a comparatively small amount of input. The second is to define the concepts and theory behind *why* these work, in order to develop the useful skill to examine other sports, programs, diets, and institutions so you may cherry-pick the practices that you will

find most rewarding. All this and more, and without requiring you to the drink of the proverbial punch, take up collections, or peddle competitively priced bath salts.

Q: Why are people fat? A: Because they can be.

With consistent innovation in technology and the rapidly multiplying database of our collective knowledge and research, how could it be that the trend of obesity continues to rise unabated? (Restated: If we're so damn smart why can't we stop hurting ourselves?)

11

One obvious answer is overabundance. There is an overabundance of available foods—from food products and brands viciously fighting for space on the grocery shelves (and therefore in homes) to the strip malls of restaurants every other block. People are inundated with gratuitous food and opportunities to consume it, most of which disregard or even directly contradict intelligent nutrition in favor of the instant gratification that comes from indulgent tastes.

How do you define intelligent nutrition? Unfortunately, the knowledge base for nutrition, exercise, and dietary planning is just as overabundant—saturated with hundreds of conflicting reports, crash diets, pills, juices and outright scams. There are testimonials (some factual, some fabricated) that claim, “*I got unbelievable results on this program!*” immediately refuted by, “*I followed this diet to the letter and actually gained fat!*” The ‘official’ reports even shift: eggs are great, eggs are bad, egg whites are good but the yolk is bad, no the yolk is good! But through all this, the egg continues to be the egg, unmoved and unsympathetic to constant reanalysis.

Generally, people prefer to assume there are universal rules or factors that will serve one person just as well as another. Unfortunately, this seldom holds true. Though we are taught that people are much more alike than they are different, our actual differences are often rather significant, due to the organic and ever-evolving nature of living beings.

Let us take dogs for example: dogs vary to unbelievable degrees, from the tiny Chihuahua and Pekinese to the Great Dane and Alaskan Husky, yet virtually all stock are capable of interbreeding. The diversity in humans is surprisingly comparable, even if not in immediately apparent ways. One obvious demonstration is when one person eats a poor diet of junk food, and yet remains thin and aesthetically pleasing and subjectively healthy, while the next diligently micromanages his or her diet and exercise, yet still struggles to maintain an even modestly healthy figure. In the same way each person may have allergies, food intolerances, a strong or weak constitution, and even different responses to factors like sunlight and pressure, so too are people exotically varied on a biological level.

This is also why prescription drugs must say “check with your doctor”; one person may unexpectedly react to a medicine in a completely different manner from another, even in cases where the subjects may be diagnostically very similar.

All this variance and exception leads to the inevitable modern sub-text: “Your Results May Vary.” We are not interchangeable cogs in a machine.

“Instant gratification” is a term typically applied with disparagement to that ‘ooh-something-shiny Next Big Thing’ attention deficit behavior. This is often juxtaposed to the much-lauded virtues of long-term vision and preparedness. And yet, instant gratification served our ancestors well through the centuries and millennia leading up to this one. Often by necessity, quick results took precedence over the long-term, being as life-and-death struggles tend to supersede the fruition of slow-growth plans. Mid and long term investments were secondary until the immediate was well and properly handled, and then most often as a respite from the monotony and effort of constant short-cycle reinvestment.

Throughout human history, those that satisfied their immediate needs, such as food, shelter, and safety, were rewarded with the simple (yet ample) gift of survival. Only in very recent terms has immediate indulgence become so accessible and automatic that our focus has shifted to prospects with a longer time span. Less than two centuries ago, persistent bad weather could mean the difference between you and your family starving to death, rather than getting a little damp on your way to the shop or gym. Dietary profiles were also severely limited by what you could grow or trade for locally. This stands in stark contrast to having the world’s wealth stored in bins a few feet apart, conveniently located up the street from your home.

Now I am not one to disparage technology or progress. I treasure things like books and electricity, and am consciously thankful each and every day that indoor plumbing is so prolific. And while it is likely I will always speak well of squatting as an exercise, doing so over a hole is not my preferred method of a morning constitutional. I am grateful for medicine and rapid transportation and exotic foods becoming common ones. I merely state the previous as a gentle reminder that things haven’t always been the way they are now. Though evolution has a flawless and exacting memory, the most discrete increment of its reaction time is the generation.

Another evolutionary shift neatly corroborates the answer to “why are people fat” as “because we can be.” Being weak or obese has considerably lessened as a factor for survival; there are now only rare instances of a need to flee from predators (and people who would have trouble fleeing seldom get themselves out the door of the house, and into such situations in the first place). The demand for muscular ability steadily diminishes as a part of locomotion, survival, or even work.

Or to put it another way, people were more fit in the past because exercise was an inevitable part of their existence. It requires muscle to hunt, to harvest, to clean, or to build; few professions or methods of survival were pursuable while at rest. Even simply going to the market or getting a drink of water took considerably more effort.

As the world becomes increasingly digitized, mechanized, and automated, we are finding it less and less necessary to perform physical tasks. Why? Because we just don't have to.

The willpower to perform superfluous or deliberately arduous physical tasks is born primarily from selfishness—either for one's own aesthetic vanity, or for their health and longevity. This is not to suggest that selfishness is a vice; far from it, as selfishness can be a powerful motivator in the appropriate mindset. And how better to define 'selfishness' if not the indulgence of poor food choices and slothfulness? Show me the person who eats potato chips or ice cream or skips workouts for philanthropic reasons! Rather than disparage and philosophically shun the idea of instant gratification or selfish indulgence, let us seek methods for using these natural and often rewarding motivations to our advantage.

A special word regarding the fairer sex

I have a close friend approaching retirement age; she is kind and generous, professionally successful, a great mother, and brilliant to boot. She's also slender and stays informed about health developments. That said, it is highly unlikely I will ever be able to get her to do an Olympic squat. Despite suffering from the effects of osteoporosis and the general discomforts and reduced mobility that people experience as they get older, and despite knowing what she must do about it, she simply cannot envision herself lifting heavy weights. It's just beyond her. I would like to share with her the freedom of not having to sit down because her own body hurts her. (I'd like to share that with everyone, actually, but for now we speak of women).

Let us start with a few simple observations that illustrate a common bit of widespread and prevalent misinformation, and likewise underscore chronic symptoms women as a population face:^{4(pg 8)}

- 1 The average woman (and almost all the not-average ones) is utterly and completely unable to get "buff" or "bulky" naturally by lifting heavy weights.
- 2 The same average woman suffers from significantly underdeveloped (though fortunately correctable) upper body strength
- 3 Women are four times as likely to develop osteoporosis compared to men
- 4 Osteoporosis can be prevented or reversed through simple loading exercises (i.e. lifting heavy weights) and proper nutrition

We as a culture are obsessed with 'skinny', and many women have bought into it off the fear of becoming 'big and bulky'. Now, I accept the risk of sounding like a broken record to drive this point home, and despite being a rabid feminist, I'll also hazard coming off as a biased, chauvinistic pig. Our society's fascination with the airhead rat-dog-in-purse spoiled brat has the unfortunate side-effect of inadvertently elevating that stereotype as a role-model. (And let us not even start on the issues with modern role models.) At barely eighty-five pounds if you count the Juicy Couture shorts and open-back shirt, this feeble specimen exists on a diet of Coke Zero, cigarettes, and bulimia. The modern and ever-popular image of the emaciated runway model is contra-survival, an evolutionary dead end. In any age other than this one, such a specimen could only exist as a novelty, pet, or through the indulgent support of others. This idolization is not only misrepresentative and insulting to the many women who courageously have and do champion women's rights in the United States, but on a deeper level is disrespectful of women's (and our species') strength throughout the past.

Throughout history, survival has favored those who are clever, tough and fortunate. Natural selection operates impartially and without mercy; weakness and lacking the ability to adapt or overcome is an evolutionary dead-end. Only the strong survive. A harsh climate or hostile environment naturally produces a tougher and hardier creature; consequently, the weaker die off at a higher rate. More than any other group or minority, women have suffered discrimination and hardship under consistent global patriarchies and survived. They have survived every war, plague, famine, and crisis that has befallen us, with the additional struggle of being treated as inferior. These experiences and natural selection have made them deceptively tough. This may be readily demonstrated in our DNA: a female undergoing strength training will make gains comparable to a male without the accompanying obvious increase in size¹³. She may gain physical strength and stamina without sacrificing compactness or agility; if men are a slow, heavy axe, women are a swift sword.

Though the written record myopically focuses on the wealthy and the noble elite (and the male, they being the writers of history), life for the rest of the species has been difficult and unforgiving. The masses struggled valiantly, and in turn were rewarded with survival, women and men both. And no amount of patriarchal dogma, misogyny, or celebrity worship can make this otherwise. The only thing preventing women from assuming an equal (or heavens forefend, even dominant) role is the long-standing social tradition of masculine dominance, and the tactics of intimidation from those who continue to enjoy the benefits of such an arrangement.

But these times they are a'changin'.

¹³ *If you are having trouble picturing this, I suggest watching the Olympics or any competitive sport. You may certainly find genetic examples of stocky women, but they are overshadowed by thousands of female athletes who are incredibly powerful and well-conditioned, and if they were wearing a medium shirt you'd never know it. They should be our role models.*

2: Strategy

*"If you always do what you've always done,
you'll always get what you always got."*

—Anthony Robbins

The human body, despite its endless variation and adaptation, is at its heart an organic machine. That being so, we begin with three statements that are (and are likely to remain) so universally inclusive that a reader may confidently adapt and apply them to their own life, no matter who they are or what their circumstance:

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- 1 **You are what you eat; a great body is built in the kitchen as much as the gym.** There is a slim minority of people who can still see noteworthy composition (leanness or muscularity) in spite of poor nutrition. However, those very same individuals would inarguably see greater results were they to optimize their diet. But if their nutrition is poor, the vast majority of people will see poor or negative results, no matter how intensive or sound their exercise program.
- 2 **Through the act of movement, we and our environment mutually shape each other.** Human beings, both as individuals and as creators, are designed to journey through and physically interact with the world around them. From walking, carrying and moving things, to sports and even sex, physical effort is as much for utility and pleasure as it is for aesthetic and health benefits. Humans express their will upon the world through physical force; even in the use of tools, the mind operates the tool via muscle, be it a wrench, musical instrument, keyboard, or pen.
- 3 **Resistance training¹ will immeasurably enrich anyone's quality of life.** The human body responds most readily to the manipulation of objects. Pushing and pulling substantial weight is the key to development of muscular strength and performance. Now, not everyone is meant to bench press 500 pounds, but all people, from children to the elderly, both men and women, from any demographic or walk of life, may reap incredible benefits from lifting significant mass and moving it through space. From preventing or reversing osteoporosis, to being able to climb stairs without incapacitating yourself, to lifting a heavy box onto a high shelf, the benefits of resistance training are abundant. Apart from health, the ability to be physically capable and independent is at the core of human freedom and individuality. Fear of strength (or of being too strong) is counter-intuitive to what it is to be human.

¹ While resistance training is obviously a form of exercise, it is given separate distinction because it is often marginalized or overlooked entirely in favor of tiny hand-weights or striding on an elliptical machine. It also tends to elicit images of hulking, sweaty men clanging iron together and yelling aggressively, which can be intimidating or off-putting for many. But everyone should lift heavy things, whether or not those things are attached to an iron bar.

Admittedly, those three statements alone do little to break new ground; the first two are the staple of any proper fitness program (usually as a quick overview of one and an emphasis on the other). They are stated outright as a foundation for a more universal solution, as one person's body and environment often differ so drastically that results are unreliable with just a single workout, diet, or program.

The most effective approach is based in personal understanding, so that you may capably distinguish good nutritional choices from poor ones, and efficient exercises from wastes of time. Such knowledge permits you to evaluate the benefits or failings in a prospective program, and implement what you find most rewarding.

Where do I find the time?

For the average American, eight hours of a given day are spent working, and eight more on sleeping. That's two out of every three hours, 66%+, a healthy majority, already spoken for, spent, finished. Trying to juggle family, a social life, meals, exercise, self-improvement, and enough recreation to make the whole mess worthwhile in the remaining one-third of the time is a serious challenge for anyone.

Let us begin by confirming that the eight hours of sleep are nonnegotiable. The average person performs best with somewhere between seven and nine hours of sleep. This isn't to say anyone will do well at any point in that spread; some people can't bear to sleep a minute past seven hours, and some people have a hard time functioning with even a few minutes shy of nine hours of sleep. You will need to find the optimal solution for you; even then, you should allot additional time each week to sleep your fill, to recompense for factors such as unavoidable interruptions, staying up late, or increased stress (this is discussed further in Chapter 5, "Rest").

Your family life (and social life) should be second on the list of things not to tamper with or short-change. Fortunately, family and social interactions can (and should) be incorporated into your exercise and meals (discussed further in Chapter 3, "Allies"). As humans are generally social creatures, involving your friends and family in your exercise and feeding serves the dual purpose of making all participants healthier, happier, more active, and more involved, while also providing time and activities together. Eating and cooking with family and friends not only helps to alleviate the drudgery and monotony commonly associated with those activities, but also encourages and promotes healthier mutual living and energy. Compare this to taking the family out for greasy burgers before everyone passes out together in front of the television. Even if you find it hard to care for yourself, it's more difficult to rationalize having a chubby, unhealthy spouse or child, and harder still to justify being an enabler. While it's commonly said that misery loves company, it's decidedly more rewarding to instead share success and happiness.

Next in line are the necessary basics, be it cleaning up, commuting, writing thank you cards and so on. Tamper with these at your own risk. Perhaps the best source for recoverable time is to look to dead-space. As the average American in 2008 spends an hour a day on the Internet (and this figure is rapidly growing), and four hours a day watching television, you can't even really consider a few hours of exercise a week to qualify as a 'hobby'. By simply cutting short a bit of couch-surfing, be it of channels, blogs, news, or sports, you free up time for a quick walk (or race) around the park, for lifting of some heavy things, or to cook a healthy dinner instead of ordering pizza. And forgive my preachiness, but a few of those liberated hours might also be applied to catch up on that reading you've been meaning to do.

Applying the 80/20 principle

Richard Koch formulated an interesting concept (and book) known as the 80/20 Principle, based on the economic theory of Pareto's Law.² Pareto compared all the available data-sets of economic distribution, regardless of culture or location, and found that roughly 80% of the wealth was inevitably held by 20% of the people. Koch extrapolated this concept of consistent disparity to apply in other factors and situations, thereby refining his statement to this: approximately 80% of any given results achieved come from 20% of the input into achieving those results.

Koch identifies this pattern in other economic disparities, such as 80% of a business' revenue coming from 20% of its products or customers. He also applies it to a multitude of aspects, such as 20% of your clothing or carpet getting 80% of the wear. While the ratio is not always 80/20, it's exceedingly rare that the results, when compared to the efforts, aren't strikingly disproportionate.

Some of the applications of the 80/20 Principle may be controversial—the philosophic standpoint that the universe exists on a perpetual slant is stunning in its implications—but even disregarding the supplemental applications, the core argument is a hard one to refute, as it is so readily apparent in everyday life. Of course, the secret to success is then in determining which small slice of effort will achieve the major component of results.

This theory-philosophy hybrid may be readily applied to physical conditioning; around 80% of the results from exercise come from 20% of the actual workout, especially in the gym. While working out the biceps and triceps seems crucial to an established gym rat, the greater part of the actual development of these muscles comes from complex, compound movements such as presses and pull-ups. And for the amount of progress that may come through focus and specialization on specific muscle groups or exercises, still greater results with significantly less investment

2 Koch, Richard, *The 80/20 Principle: The Secret to Success by Achieving More With Less* ISBN: 978-0385491747, 1999

can be attained through larger compound movements utilizing the body as a whole. Gaining the maximum return by focusing on the biggest contributors to success is key not only to this program, but to efficiency in business and other aspects of life.

If you can get ~80% of the results of a professional athlete or bodybuilder by doing ~20% of his or her workout, why wouldn't you? That 20% is what makes the difference between being sharply defined, well-built, and attractive, and getting the full-blown, fake-tanned, greased-up-and-on-stage-wearing-dude-panties magazine body. You should likewise be aware that models for such photographs are only at that physical extreme the day of the photo shoot, and that one day requires weeks of rigorous dieting, carb cycling, and massive over-hydration followed by dehydration to shed the last bit of water weight. Make no mistake, posing for magazines and bodybuilding shows is every bit a demanding discipline as athletic competition.

Getting the greater part of the results with a mere 15 minutes versus 90 or more should seem like an incredibly efficient investment. I imagine you, like me, can find something else to do with those 75+ suddenly unspoken-for minutes.

Let's take a quick look at a sample "fitness magazine" workout.

<i>tricep push-downs</i>	<i>bench press</i>	<i>bicep curls</i>
<i>shoulder raises</i>		<i>forearm curls</i>

And now, we focus on the one exercise in this group that simultaneously works every muscle that the rest of the exercises do individually, but more effectively and efficiently, giving you the lion's share of the real gains.

<i>tricep push-downs</i>	<i>bench press</i>	<i>bicep curls</i>
<i>shoulder raises</i>		<i>forearm curls</i>

There we go. Four-fifths of the workout knocked off, and 80% of the results. The growth you see won't be *quite* at the level that adding the single-joint exercises would be, but you will get *effectively* the same results with a lot less wasted motion (and in all likelihood you will be more willing to follow through on it).

You can even remove the equipment requirements of the bench press, including the bench, barbell, and weights by going with the humble push-up. You can incorporate variety and challenge, as we will discuss later, such as adding more resistance or increasing the range or altering the trajectory of motion. In short, the human body is surprisingly simple to shape and maintain to your custom specifications, with little to nothing in the way of equipment or cost, provided you have the knowledge and personal understanding to do so.

Total body

The human tendency to generalize, deconstruct, classify, and label has led to a fractured and excessively augmented workout routine. If each muscle and group has its own name then surely each one will need its own specific exercise or exercises to properly develop, right?

How often in the daily use of your body do you call upon a single, isolated muscle? Even when driving a car you don't use just your calf. Try it now: your knee, thigh, and even hip are all involved in the simple motion of applying the brakes or stepping on the gas. Swinging a golf club, shaking hands, opening a door and even simply standing up from a seated position all incorporate a chain of movement from multiple muscle groups. Compound exercises mimic the body's use in life.

In similar regard, if you could get 80% of the success of a diet or lifestyle change by conforming to 20% of the rules, why wouldn't you? Again, the secret is in knowing *which* 20% to adhere to, and which 80% to write off.

Mathematics

While some analytically-minded people might enjoy creating spreadsheets and crunching numbers, the majority of people's eyes glaze over as soon as you start in with the counting, specifically "x repetitions", "y sets", "z grams of protein", tablespoons, pounds, and so on. Numbers often have a debilitating effect; for example, people's perceptions are such that when asked to lift a weight that they never have before, they assume they cannot because of the number of pounds assigned to the weight. And that psychosomatic barrier may well prevent them from accomplishing what they might have under other conditions.

You are not bound by numbers, and they do not define you. The numbers are there for one thing: to help you determine that you're being honest with yourself. Strict counting helps you avoid the slippery slope of one missed exercise or blown out meal leading to the next. Many people have an all-or-nothing mentality and may likewise quit because of some small setback. All too often, when just doing 'what feels right', people have a tendency to under- or overshoot in favor of comfort or indulgence. Having a goal makes success concrete, and thereby more attainable.

The point is this: no individual unit, repetition, set, calorie, or gram is or can be the deal-breaker. But without one, you cannot have two, or three, or more. The fact each of them counts so little is why each of them counts so much. What you really want is consistency. It's not the one exercise or meal that provides success, it's lining them up in a row that gets you there. What is a mile if not a series of steps?

3: Allies

*“A two-man gang? Can you have that, David?”
“Well, that’s a pretty small gang. I mean, technically, the smallest gang possible.”*

- Murray & Dave, Flight of the Conchords

Alliances: a success insurance policy

A very (‘very’ may not be a strong enough modifier) small minority of people are powerfully self-motivated; if this is you, feel free to skim this chapter. But the vast (‘vast’ might also not be a strong enough modifier) majority of people can and will benefit by having someone other than themselves to answer to for their success or failure. Enlisting an ally serves this purpose and can help positively change the life of someone you may care about.

Your alliances can also be spread around. The number of times you will (or would wish) to exercise may not perfectly match a given partner’s preference; in this case, having an AM and PM buddy or otherwise staggering your allies can only serve to benefit you and your friends or family.

A few noteworthy benefits from having an alliance

Accountability:

By enlisting a partner you roughly double the odds that at least one of you is motivated, and exponentially increase both of your chances of success. Additionally, the desire to not be weak or whiny to a friend is motivation in and of itself. Of course you can enlist more than one partner per activity; the number isn’t terribly important, bearing in mind that the larger the group, the easier it becomes (for you and for others) to skip out on a day without anybody noticing. When you skip a workout, receiving sequential “Hey, what’s the deal?” phone calls is motivating to a point—but when you have two dozen people, the accountability becomes diffused. Make sure your group stays small enough that it’s embarrassingly obvious when someone doesn’t make it (and ideally gets heckled into showing up).

The spirit of competition:

The drive to succeed, to prove yourself, and (possibly) to defeat someone else is undeniable, and present in almost everyone (though in some it may be wilted and underfed). Whether it’s shooting hoops or racing (on bike, foot, rollerblade, or what have you), having someone to strive for victory over (or to recoup a loss from) not only motivates you to begin, but can help you tap into energy reserves you might not otherwise use. It also helps narrow the focus of instant gratification on the drive to win, rather than on the exhaustion to immediately follow.

Encouragement and motivation:

The flip-side of competition is its own sort of benefit. In addition to the acknowledgement that you are dedicated toward a life of quality, you also are helping someone (or multiple 'someones') achieve her or his own success. A second set of eyes that aren't locked in one perspective relative to your body also helps, and someone who sees you regularly is more apt to notice and comment on positive changes that might be difficult for you to see.

Physical therapy & sports massage:

As discussed in Chapter 6: 'Conditioning', having a partner for deep tissue massage, whether with deliberate kneading and therapy, or simply to have a substantial weight to sit on your legs or back to help relax tense muscle, is valuable beyond measure (and the reciprocal nature is an obvious budgetary improvement over regularly paying a professional). There is likewise solo work you can do, but if you do not yet have a masochist's soul to properly massage muscles deeply, it's valuable to have a partner to pull the trigger.

Interval training:

Most of the Interval Exercise suggestions listed in the Chapter 8 can be enhanced with the simple addition of a partner or group. Rivalry and encouragement are all well and good, but a few types of exercise such as boxing or the medicine ball/weighted bag toss require at least one partner for obvious reasons.

Resistance training:

When working with heavy or cumbersome weights, especially barbells, having a spotter is great for both encouragement and safety. Incidentally, partners also make excellent resistance to add to each other's workouts, both as active resistance such as wrestling or tug-of-war, and as passive resistance as a simple weight, such as via a fireman's carry.

Organized teams

A stunningly easy answer to all of the above criteria is joining a sports team. Whether a small collaboration for a sport like racket ball or tennis, or a simple game of catch, or in a larger group that plays soccer, baseball, or hockey, playing on a team can be enriching as well as entertaining. When you play a specific position, it's glaringly obvious when you're not present, and the motivation to not let the team down is great leverage to have when you get the urge to stay home, eat ice cream, and watch some trash TV. Nearly every sport provides opportunities for bursts of intense, maximal exertion interspersed with alert and aware but slower walking, breaks, or even static positions.

There are teams for almost any level of skill, and even if playing a team sport isn't your initial solution (perhaps you don't feel fit enough or skilled enough to perform in front of others), it gives you a goal to aim for as you exercise individually

or with a partner. In this way your progress is measurable, as you work to improve your body and skills to a level where you can confidently join a team, and then let that become your successive and more lasting exercise solution.

Team sports may never be an option for you, for whatever reason—that's just fine. You can still enlist a buddy (be it spouse, roommate, coworker or friend) or buddies to be mutually accountable to and for, and you can work together and help each other attain the success you seek.

4: Nutrition

“People are starving all over the world, what do you mean, ‘red meat will kill you’? Don’t eat no red meat? No, don’t eat no green meat—if you’re one of the chosen few people in the world lucky enough to get your hands on a steak, bite the shit out of it!”

- Chris Rock

I, Packrat

Imagine having lived your entire life in an isolated, inescapable prison. Periodically, food is deposited in the center of the jail yard. At times, the food is varied and appetizing; more often, it is bland and monotonous. Worse, the deliveries are unpredictable—sometimes food arrives twice in the same day, but most often it is days or even weeks between feedings. The only reliable method of survival is to grab and hold onto as much as you can, in competition against the other prisoners, then defend your hoard while eating as sparingly as possible. From your assets you eat first the foods that will spoil soonest, and hold in reserve foods that keep well. This practice has held since your earliest memories and on into the past of your parents and their parents before them.

But today, as you are sorting through your claim of the latest delivery, another shipment arrives. Then another. And still another. The shipments continue throughout the day. You and the others are dumbstruck by the sudden wealth of food and choices, but suspicion immediately arises. Though your first impulse is to gorge luxuriantly, who’s to say this won’t be the last shipment for a long, long time? What if this is it for good? What happens if you eat without concern and then run out and nothing new has come? Would a single day’s change cause you to consume heedlessly, or would your lifelong habit of cautious conservation hold out? Would you waste in excess or would you continue to carefully ration and jealously cling to as much as you could keep?

The ‘you’ in this tortured metaphor refers to humans (and pretty much everything that is living or has lived) throughout history; for tens of millions of years (or indeed, back to the earliest genetic memory), for the masses there has been scarcity, and subsequently, a scarcity mentality. For much of history—and in many places to this day—we have been chronically plagued by imminent threat of starvation, of famine, of poor nutrition, and lack of any assurance when or if we would eat again. It is only in this most recent blip of the evolutionary timeline that a sudden, sizeable human population is able to eat from a great variety of sources, and with regularity and consistency, if not well.

A minor segment of the population has had the fortune to go from “lucky me, I get meat today!” to “do I want poultry, fish, or red meat? What sort of cut? Organic? Free range?” and a host of other options, from the type, size, and shape, to where in the world it was grown or raised. The miracle of modern convenience has overtaken the civilized world, and while most of our individual memories have effortlessly forgotten or never known hardship, every cell in our body is engineered for the contingency that the nutrients from a handful of seeds or a single skinny fish may need to last us for as long as possible.

That exhaustive rant was intended simply to underscore a commonly overlooked paradox: through uncountable generations, your genes, in their preoccupation with survival, have engineered your body unfailingly toward fuel efficiency and conservation. With predictable regularity, the wasteful designs have failed selection and died off alongside the slow and the weak; we are left with a survival machine capable of persevering, even of thriving under the most grim and spare conditions.

As such, the body packrats unflinchingly and unapologetically. We quite suddenly find ourselves in surplus, no longer needing to get the maximum economy from each calorie and nutrient, nor do we require strength, speed and dexterity to gain food and avoid becoming food. But the body has not forgotten.

In a new world of abundance, you are specifically working to counteract the efficiency and effectiveness of your body. Your body wants to store energy. It has forever sought to burn fuel as carefully and sparingly as possible, and to retain all that it could; the only counterbalance was that a body also needed to remain strong and lean enough to survive competition.

Old ways

And so in a perfectly logical yet infuriating solution, our body has seen fit to benevolently reward obsolete nutrient-hoarding behaviors that no longer suit it. Not coincidentally, sugars and fats combine to create some of the most satisfying foods and confections on the planet. French fries, cheesecake, donuts, buttered croissants, nachos, lasagna, steak and potatoes, biscuits and gravy, even macaroni-and-cheese—these foods are considered delicious by so many precisely because they are so incredibly energy-efficient, so the body erroneously signals approval. As these foods are composed of highly stable fats, and are combined with readily available energy in the form of high-glycemic, storage-inducing sugars and starches, they are among the most efficient and powerful of fuels. These energy-dense foods are optimal for abundant, highly retainable calories in a comparatively small portion, which neatly suggests a possible answer to the question: “Why is it that the worse a food is for you, the better it tastes?”

The problem of efficiency-being-delicious is compounded further by technology and luxury making ever more fanciful (and dense) foods, each more extravagant and indulgent than the last. Restaurants, coffee shops, and most of the aisles in a grocery store offer 'treats' in gross excess. This needless feeding extravagance is in our face constantly, and has led to poor nutritional choices as a habit.

Let's take for example one of the most common food (mis)choices in this our modern society: the french-fried potato. It is appetizing to so many precisely because of how maddeningly fuel-efficient it is. Comprised of the starchy, insulin-driving potato, a french fry contains an energizing carbohydrate portion that commands the body to induce a storage state. And what is then available *to* store along with those carbs? Fat. French-fries, being fried, are fried in fat. (*A side note: up until recently, most fries were cooked in trans fats. You may thank New York for passing a law against it, which in turn caused the major chains to remove it from all their locations to preempt potential future hassles.*) The final insult to injury is the complete lack of any protein in the combination. The french fry is abundant in available energy in the form of fat and carbohydrates, both of which can readily be stored by the body if not immediately used, but they lack any significant benefit beyond being simple (and excessively abundant) fuel.

We are no longer seeking efficiency, as we have massive reserves of fuel to spare. We have a wide array of choices, and so it is in our interest to intelligently mix and brew our fuel with two critical goals: to burn hotly, brightly, and potently, as well as to burn cleanly and smoothly. We want jet fuel. We are Rocketmen, and we desire a powerful mixture that won't harm or foul our engines.

But there's good news: the same tireless and unforgiving engineering that brought us love for rich foods and high efficiency also gives us another essential survival trait—adaptability. Many cravings and preferences are subjective and can readily be calibrated and tuned by manipulating our environment. As a person living on a rich diet may find average foods unexciting, a person living on a bland diet may find average foods to be vivid or even indulgent. Though your old habits may call to you, your body is quick in its ability to adapt to new situations. By deliberately simplifying your diet for a few weeks, you can then reintroduce your long-term healthy meals and choices, and they will in turn taste spicier, more savory and more sweet.

And before you, in furious rage, punish your body for its betrayal and deception, recognize the other side of the coin: if for no other reason than the ability to survive, your body and genes desire you to be fit, strong, and powerful. That same slow memory that hoards fuel is also adamantly convinced you need to be fast and cunning to evade predators, yet strong and agile enough to fight when cornered. Those same traits would serve, if only in the ability to secure food in the first place.

It is also no coincidence that a sleek, powerful build is typically considered attractive to the opposite sex; it signals the likelihood of a creature to survive. As a result, there is an abundance of biochemical signals and pleasures that are tapped into during physical activity. “Runner’s High” and other similar endorphin releases are the body giving its approval, as are adrenaline and the heady rush of fight-or-flight chemicals, which we will cover in later chapters regarding exercise.

I eat, therefore I am

Proper nutrition is the cornerstone of a functional, healthy and strong body. A lean and powerful physique is made in the kitchen as much or more as in the gym; the “you are what you eat” cliché has been painfully overwrought for good reason.

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Some nutritional plans or diets have an agenda, be they overt or concealed, from agriculture lobbies trying to push their particular product to political or sectarian ideology. The guidelines found herein are based on methods shown to be successful and efficient for the human body, and only that. If your beliefs or other voluntary restrictions prohibit you from eating thusly, do what you feel is right. The human body is incredibly flexible in surviving and adapting to deficiencies and alternative sources. The following methods are outlined with the intention to give the best results for the most people, but I don’t claim they are the only successful path.

There are numerous diet plans that advocate the total elimination of blanket classes of foods, such as meats or carbohydrates. At best, such programs are extremist and largely unnecessary; at worst, they are harmful to your body and long-term health. With specific exceptions, there are almost no “bad” foods; the problem seldom lies in the content of the food, but in how it is combined with other foods, or how much processing it has undergone prior to its arrival in your stomach.

I propose that the reason many diets are difficult or impossible for would-be practitioners to adhere to is that they are complete replacements. If the diet is a cookbook type, the effort and time required to choose recipes for the week, make and combine grocery lists from the recipes, and then to find the ingredients, prepare the food, cook and then eat—well, it’s exhausting just to consider.

The diet plans that require you to buy their branded, preprocessed meals are equally problematic. You face limited food selections and a perpetual reliance on a company that, without notice, may increase prices, discontinue products, or otherwise dictate the quality of your life on their terms rather than your own. Further, they will invariably provide you with inferior feeding due to the necessary processing and preservative treatments that such TV dinner-like products must undergo to make them suitable for distribution.

Alternatively, you can overlay the following template on the recipes or foods you already eat and determine which ones are best for you, which ones could stand modification, and which ones must go. For those at home in the kitchen, this will help you design dishes and meals to complement your desires for your body and health. For those who are driven to shop in the frozen food section, this will help you to read a nutritional label and make the most intelligent choices possible regarding what to fuel yourself with. If you eat at restaurants regularly, hopefully this primer will help you decode the menu to some extent. If you eat fast food habitually, **stop**. I recommend everyone at least dabble in cooking; it's a rewarding and satisfying pastime that can only serve to improve your health by reducing your reliance on processed foods. But this is about simplifying your life, not complicating it further, so for now let's focus on improving what's already there.

Breaking down the nutritional facts label

While there are specific nutritional labels sorely lack, the Food and Drug Administration has made significant strides in requiring manufacturers to conform to standards, and is consistently improving requirements for detail and accuracy.

- **Serving size:** Easily overlooked is what amount of a particular food the label represents; while more are including a “for this package” measurement, it's not currently required, so you may find yourself multiplying and dividing by the following number:
- **Servings per container:** The other half of the figure disclosing how much is in the entire package. If you intend to eat the whole thing, multiply the various numbers by this number (i.e., two servings per container, 12g of fat per serving, = 24g of fat).
- **Calories:** Less important than you might think. Most diets, and even more dieters, obsess over the number of calories in a given item and work with near-religious fervor to try to balance this number with a flat total they attempt to not exceed. Calories can serve as a rough guideline, but as we will discuss later in this chapter, it is only for a basic awareness of portion size; far more critical than the number of calories is the *profile* of those calories and their effect on your body's processes.
- **Calories from fat:** Again, less important than you might think. Your primary concern will be ratios rather than numbers; you will compare the amount of protein to the amounts of fat and/or carbohydrates.
- **Fat: Dietary Fat is not the same thing as Body Fat.** Let me underscore that: fat in a given food does *not* correlate directly to fat gained by your body! The amount of fat

¹ Willett WC. Is Dietary Fat a Major Determinant of Body Fat? *Harvard School of Public Health, American Journal of Clinical Nutrition* Vol 67 556S-562S, 1998

your body will store or burn is much more positively (or negatively) affected by the types of carbohydrates in a given food than by the amount of fat. Taking in fat from foods will *not* make *you* fat; in fact, regular and healthy dietary fat intake is one of the surest ways to *reduce* body fat. “Low fat” and “fat free” are solely indicators of the food’s fat content; “fat-free” foods will not in and of themselves reduce the amount of fat you retain. Fat is readily convertible to (and from) energy.

- **Saturated fat:** Though facing a persistent and long-standing stigma as “bad, heart attack fat” and blamed for high cholesterol, the negativity surrounding saturated fats has been largely debunked. In fact, recent studies have shown saturated fat to be critical to bone health² to enhance the immune system and provide beneficial antimicrobial properties for the digestive tract,³ and to actually *lower* cholesterol as an essential component for the utilization of unsaturated fats.⁴ One legitimate concern with saturated fat is its strikingly disproportionate representation in the average diet, with some people ingesting 80–90% of their total fats as saturated fat.

“Okay,” you say, “so that’s Saturated fat. What other fats are there, being as they aren’t (yet) on the label?” Well, there are three: Saturated fat, Monounsaturated fat, and Polyunsaturated fat (and many combinations of fatty acid ratios and lengths). For simplicity, your general dietary goal will be to seek a roughly even three-way split between them. Supposing then that you are consuming 100g of fat in a given day, ~33g of each would be optimal. If you can’t be troubled with excessive precision, simply divide the amount of total fat listed on a label by three; if that figure is larger than the amount of saturated fat in an item, it’s a good choice. If it is not, simply note that you will want to make up for that food with one more prominent in unsaturated fats.

- **Trans fat:** I said I would avoid demonizing particular things, but here is a compound with no redeeming value that should be avoided at all costs. Unlike the fats listed above, trans fat is not essential, and possesses no positive health benefits. Trans fat is directly linked to increased risk of coronary heart disease⁵ and numerous other health problems. Some studies suggest trans fats exacerbate Alzheimer’s⁶, diabetes, liver dysfunction, infertility and (of course) obesity⁷. The vast majority of trans fats consumed today are a by-product of partially hydrogenated vegetable oils. If it turns out your favorite food or snack is otherwise viable for your dietary plan, with the exception being the trans fat, I sadly must insist you avoid it. (If it hurts to let it go, consider writing a letter to the manufacturer stating your displeasure and forbearance of their product until they remove the offending trans fats.)

2 Watkins BA, Turek JJ, Seifert MF, Xu H. Importance of Vitamin E in Bone Formation and in Chondrocyte Function *American Oil Chemists Society Proceedings*, Indianapolis, IN, 1996

3 Maki PA, Newberne PM. Dietary lipids and immune function *The Journal of Nutrition*, 122(3 Suppl):610–4, 1992

4 Garg ML, Wierzbicki AA, Thomson AB, Clandinin MT. Dietary saturated fat level alters the competition between alpha-linolenic and linoleic acid. *Lipids*. Apr;24(4):334–9, 1989

5 Mozaffarian D, Katan MB, Ascherio A, Stampfer MJ, Willett WC Trans fatty acids and cardiovascular disease *New England Journal of Medicine* 354:1601–13, 2006

6 Morris, CM et al, Dietary Fats and the Risk of Incident Alzheimer’s Disease, *Archives of Neurology* 60:194–200, 2003

7 Astrup A, Dyerberg J, Selteck M, Stender S. Nutrition transition and its relationship to the development of obesity and related chronic diseases, *Obesity Review* 9 Supplement, Frederiksberg, Denmark 1:48–52, 2008

- **Carbohydrates:** Carbs are often thought of as providers of energy, and the typical sources are sugar, grain, pasta or rice. Few if any processed foods are low in carbohydrates; items marked as “low carb” may or may not be so. Conversely, there are some foods (such as beans and chickpeas) that have a large amount of carbs on the label that will not have the typically problematic ‘carb effect’ on your body. We will discuss carbohydrates in detail later, but for now, realize that the nutritional label is just your front-line measure in telling whether a food or product is applicable for you.
- **Dietary fiber:** Fiber promotes good health, digestion and regularity, and there is mounting evidence showing fiber lowers risk of heart disease, cancer, diabetes, and kidney disease. Fiber also has little if any insulin impact and thus will not count toward the total carbohydrate surplus; subtracting this number from the carbohydrate value will give you a more accurate grasp of the carbs you’re consuming.
- **Sugar:** This is a rough indicator as to the glycemic level of a product. Sugars will almost always have an effect on your insulin levels; thus, if the amount of sugars listed on the label is the majority of the total carbohydrates, you may need to consider that to be a Peak meal. (Peak meals are discussed immediately following this section.)
- **Protein:** Last but absolutely not least is the protein in a given serving. A high protein content for **every meal** is recommended, though protein deficits in a given food may be supplemented by the inclusion of foods that are primarily protein, such as lean meats, fish, or egg whites. Complete meals will have protein levels comparable to or even higher than the fat/carbs that you are taking in. The sum of protein that one should consume has been hotly debated, but the meat of the argument is how much your body **needs** to function properly, versus what is **optimal** for the best results. There are copious health benefits derived from a high-protein diet, the central-most being that more protein increases your metabolic rate, burning more calories (beyond the protein’s own calories), burning excess body fat,⁸ increasing beneficial hormone concentrations and insulin resistance, even improving cardiovascular profiles.⁹

Foundational feeding

Let’s start with the good news: assuming you are active (this would imply you are meeting the exercise criteria in Section III) you will not need to tabulate calories or do complex calculations. You will frequently eat delicious, heaping portions. (In fact, early on you might find yourself having difficulty finishing all the food you are permitted). The basic classifications are Base meals, Peak meals, and Beverages. (Note that there is only one actual variable distinguishing the two meal types.)

⁸ Treyzon L, et al. A controlled trial of protein enrichment of meal replacements for weight reduction with retention of lean body mass, *Nutrition Journal*, Aug 27;7:23, 2008

⁹ Abete I, Parra D, Martinez JA. Legume-, fish-, or high-protein-based hypocaloric diets: effects on weight loss and mitochondrial oxidation in obese men. *Journal of Medicinal Food*, Feb;12(1):100-8, 2009

Base meals

Protein



Fat



Carbs



Base meals are the primary meal profile and the type you will be eating most often. A Base meal consists of four major components:

- 1 *high protein*
- 2 *moderate fat*
- 3 *low carbs*
- 4 *colorful vegetables*

This type of meal shares a few basic similarities with low-carb diet plans like Atkins™ or South Beach™ in that you limit the amounts of carbohydrates that will impact the level of insulin in your blood. Whether you are looking at nutritional labels on prepackaged food or restaurant nutritional cards, or combining raw ingredients (which is highly preferable, when possible), you should seek to keep protein totals equal to or higher than the total amount of fat (by gram), and carbs as low as possible. What follows is a partial list of carbohydrate-dense, yet marginal-impact foods that may be included to create more robust and diverse Base meals:

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<i>chickpeas</i>	<i>mushrooms</i>	<i>kidney beans</i>	<i>broccoli</i>
<i>green peas</i>	<i>peppers</i>	<i>black beans</i>	<i>cauliflower</i>
<i>spinach</i>	<i>tomatoes</i>	<i>green beans</i>	<i>cabbage</i>

Base meals may also include carbs comprised primarily of fiber (such as beans, or low-carb tortillas, e.g. ~16g of fiber for ~20g of carbs). Not only does fiber 'not count' as carbs; to some degree, it lessens the impact of other carbs.

Nuts are also a great way to add healthy fats to a Base meal, and the carbs are also mostly negligible. Just bear in mind that nuts are very nutrient dense—a little goes a long way. A few of the especially healthy nuts are:

<i>walnuts</i>	<i>almonds</i>	<i>cashews</i>
<i>pecans</i>	<i>brazil nuts</i>	<i>macadamia nuts</i>

Additionally, there are high-protein, high-fat sources that are ideally suited for Base meals (the fat content precluding them as protein sources for Peak meals):

<i>salmon</i>	<i>tuna steak</i>	<i>ground beef</i>	<i>duck</i>	<i>sausages</i>
<i>corned beef</i>	<i>cheeses</i>	<i>bacon</i>	<i>whole eggs</i>	<i>lamb</i>

Peak meals

Protein



Fat



Carbs



Peak meals are refuelling meals suited for eating soon or even immediately following intense exercise (as in chapters 8 and 9). Their components are:

- 1 *high protein*
- 2 *low fat*
- 3 *moderate carbs*
- 4 *vegetables or fruits*

This type of meal is comparable to the often-prescribed yet poorly-understood “low-fat” meals that are typically associated with a “diet”. I will beat this into the ground: dietary fat is not body fat, and a dietary intake that is uniformly low in fat is not only unhealthy in and of itself, but will inadvertently cause retention of fat and poorer body composition in most individuals.

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That said, and as this is the refuel meal in which you are taking advantage of the natural insulin surge generated by the preceding workout, you want to provide as much protein as possible to rebuild and create muscle, and in order to spare muscle that might otherwise be burned for fuel. The meal’s carbohydrates assist in the retention of protein, recharge your body’s fuel source, mobilize fat for burning, and are an opportunity to (in moderation) feed cravings for things like pastas, rice, oats, and whole grain breads.

Be sure to keep your fat intake low; what fat you do take in should be from mono- and polyunsaturated fats to help balance the proper spread for your day’s intake. Keep in mind that when cooking lean meats in a pan, you want to use fat-free cooking spray. Adding oils, even the healthier kinds, inadvertently can add a very large and unwanted serving of fat to your meal.

Excellent lean sources of protein are suited to either type of meal. A few suggestions include:

<i>chicken breasts</i>	<i>lean ground beef</i>	<i>low fat cheeses</i>
<i>turkey</i>	<i>egg whites</i>	<i>lean fish</i>

Bonus tip: High-quality whey protein powder (addressed later in this chapter) may be mixed with a minimal amount of water (say ¼ cup per scoop of powder) to make a delicious icing that is almost exclusively protein. This will improve the protein profile of many reasonable Peak meals such as oatmeal or whole-grain bagels, while also giving your sweet tooth a treat.

Beverages

The benefits from proper hydration are immense, so aim to drink obnoxious amounts of water every day. The human body is made up of approximately 65% water, and water is the primary basis for all cells, lubricants, electrical conduits, nutrient transportation and waste elimination. To get the fat out, and to preserve the good stuff, you need lots of water. To facilitate this, I recommend purchasing a water bottle and compulsively carrying it with you. Put it on a string around your neck if you must. Every time you notice it, drink from it, until this habit is ingrained. Drink that aqua religiously and you will see the rewards.

Now comes the bad news: do not drink your calories. This means no sugared soda. No beer. No fruit juice (the majority of which are corn syrup anyway). No milkshakes. No caramel mocha hoodley-hoos with double whip. Water should be your primary source of fluids, supplemented by unsweetened tea.

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As of this writing, the jury is still out as to the possible harmful effects of artificial sweeteners, so I'll just say this: if adding flavor packets (those zero calorie lemonades and grapes and what-have-you from the grocery store) means the difference between you drinking enough fluids and not, do it. I buy them in bulk and it keeps me sipping away contentedly. Similarly, if you have a soda addiction you cannot bear to part with, drink sparingly of diet soda when you must feed the monkey.

Drink the majority of your daily allotment of water early in the day, as tapering off as evening approaches will prevent numerous trips to the bathroom in the middle of the night, which (as discussed in Chapter 5) is your prime sleep time and should be disturbed as sparingly as possible.

Pourin' out that forty

Considering that more than half of Americans regularly drink beer (and more than half are obese, coincidentally), the recommendation to eliminate caloric beverages will come as quite the devastating blow, and might well be the deal-breaker for some. But bear in mind that alcohol is a multi-front blitzkrieg on nearly every healthy function occurring in your body. Its presence exclusively occupies the liver, which means until all the available alcohol is metabolized, you can't properly burn fat or process other calories. It suppresses levels of critical hormones like GH and testosterone, and inhibits protein synthesis.¹⁰ Even a modest intake of alcohol can drastically suppress the immune system and reduce the quality of sleep. On top of alcohol's effects, it is calorie-dense and has minimally useful carbohydrates (which you should be avoiding, except with Peak meals), and no usable protein to speak of. All that said, not everyone will give up drinking; if that's the case (or keg) for you,

¹⁰ Lang CH, Pruznak AM, Nystrom GJ, Vary TC. Alcohol-induced decrease in muscle protein synthesis associated with increased binding of mTOR and raptor. *Nutrition and Metabolism*, Jan 20;6:4, 2009

consider minimizing the volume of drinking, or schedule specific ‘drinking nights’ perhaps once or twice a week (or month). A glass of beer each night may do significantly less damage than a weekend bender, but many people will crush away a six-pack or two in a sitting without even noticing. As an alternative, limit yourself to a single drink, be it beer, wine or liquor, and nurse it. Treat it as you would a reward or special occasion: savor and sip it fondly rather than slamming it.

Regarding supplements

Despite what a given lunk at a gym might tell you, almost the entire catalogue of supplements, especially sports supplements, is utter rubbish. The sports supplement industry, like the diet industry, is 95% scam built on the back of 5% effective research. In the last decade, we’ve learned more about strength and nutrition from diabetic research than we’ve ever learned from research subsidized by or coming out of the supplement industry. Every Berry Ab Blaster, Musclegain 40000, or Super Fatmelter Pro (those were all improvised parody, though I probably just infringed on some trademarks) are gimmicks preying on the desperate.

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As of this writing, there are still no effective weight loss aids or significant performance enhancing substances available over the counter. (And to readers in the far future, Greetings! The supplement you only just read about is probably bunk too.) However, there are a few ‘supplements’ that actually *supplement* your diet. But there is a caveat: buying them at the grocery store or mega-mart is not recommended. Companies able to get their products on the shelf have paid an arm and a leg to do so, and must keep their prices reasonable, so it is almost certain the quality of the product has suffered as a result. Checking consumer reports and online reviews will help you easily locate brands that are no-frills, inexpensive, and safe.

- **Powdered protein:** This is a simple method to add extra protein to your diet in a quick and easy way. The ability to add 20-30g of protein to a meal in two gulps by making shakes (or icing) is worth mentioning. I won’t go into a lengthy discussion of protein profiles and various types—just get one that is low in carbs and fats (flavored or pre-sweetened at your option), and is high quality from a reputable manufacturer. You don’t need any special additives, vitamins, boosters or anything silly; good protein is affordable. If you need more specificity: whey protein.
- **Fish oil:** Full of those lovely polyunsaturated fats known as ‘omega3s’, fish oil is an excellent supplement unless you already exist on a daily diet of fish. The main issue with fish oil is that, due to its numerous health benefits, it rapidly gained the spotlight and was hailed as a panacea for everything from weight loss to improved memory. It’s also caused companies with dubious standards to crawl out of the woodwork, offering spoiled, contaminated or mislabelled products. Fish oil does provide a host of excellent benefits due to the essential fatty acids it provides, but that’s the long

and short of it. They aren't magical, and the most basic and clean supplement will do. Special branding touting additional vitamins, formulas or extracts, or calling attention to "special" omega-6, -9, -12, or -10000 can be reliably disregarded.

- **Creatine:** Many people imagine creatine to be some super-soldier chemical or steroid. Creatine does, in fact, increase anaerobic ability and performance, but in actuality we already have creatine in our bodies. Creatine is abundant in game animals, though it exists at least in trace amounts in any kind of meat, including you. The reason we would need to supplement it is that the animals we eat spend most of their time standing stock still or locked in a cage, so they never really generate enough of it. The solution, of course, is to eat more animals that get plenty of anaerobic activity-like, say, wildcats. Or if you're scared, just find a jar of no-frills creatine and add ~5g to a drink or meal each day. For optimal absorption, have it with a peak meal after exercise. And you don't need to do the 'loading' phase most will recommend, which consists of imbibing five or so servings a day for the first week.

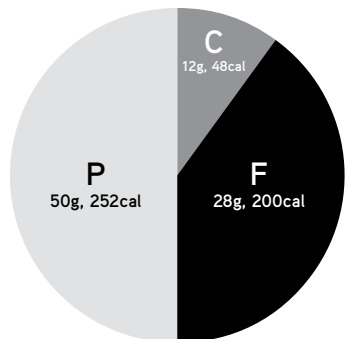
The Split: 40P/40F/20C

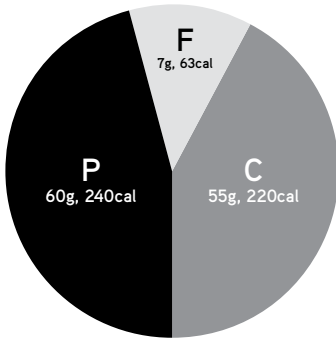
Returning to the topic of meals and caloric intake, you want to aim for the macronutrient breakdown of 40% protein, 40% fats, and 20% carbs. Bear in mind this is 40% *of calories*; there are nine calories in a gram of fat, compared to four calories per gram of either protein or carbohydrates.

Example: Out of 2500 calories taken in during a day, ideally 1000 calories are from protein, another 1000 from fat, and 500 from carbohydrates. But due to the caloric density of fat, that's actually 250g of protein but only 111g of fat (despite being the same %), along with 125g of carbs (strategically timed on Peak meals).

That divides out pretty well for an average, active day, with four to five of your meals being Base meals and one or two being Peak meals. If you find yourself completely unable to stick to Base/Peak meals, then adjusting your total intake to match the 40/40/20 split is substantially better than doing nothing. The downside is it will make you micromanage your calories more, and eat at a reduced level. (If you have a beef with the high levels of protein, rereading the "Protein" section under Nutritional Labels is recommended.)

Base meal (high protein and fat, low carbs) example:
Broiled Steak with Steamed Broccoli, 500 calories
protein: 50g, 200cal, fat: 28g, 252cal, carb: 12g, 48cal.





Peak meal (high protein, high carbs, low fat) example:
Roast Chicken Breast and Baked Yams, 523 calories,
 protein: 60g, 240cal, fat: 7g, 63cal, carb: 55g, 220cal.

Portion size

The chronic misconception of a-calorie-is-a-calorie remains a major sticking point in the modern picture of health and fitness. In actuality, eating and burning more calories directly induces a greater shift in your body's muscle-to-fat ratio. By consuming 2000 calories and burn 2000, you will maintain your weight. However, in eating 2500 and burning 2500, you will not only maintain your weight but also stimulate the creation of a greater amount of lean muscle, and reduce body fat.¹¹

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When you maintain an active body, eating more can help you burn off more fat while gaining more muscle.¹² If you are getting adequate exercise every day and eating faithfully partitioned Peak and Base meals, the actual number of calories you get in a day is surprisingly unimportant. Aim to take in roughly 500 calories per feeding, but an individual meal can be anywhere from 150 up to 800 or so calories each. The ratio of macronutrients (protein, fat and carbs) and the timing of the meal greatly outweigh the calorie count or even the volume of food in the meal.

Meal timing

The concept of "X calories in a day" has recently come under scrutiny, as numerous biological processes don't conform to a 24-hour cycle; the metabolic rate is a dynamic process rather than a static one. More significant is what you're eating currently and how it relates to the amount of activity you've recently undergone.

During your waking hours, you should feed yourself *once every three hours*. Rather than a 24 hour clock, you may view your metabolism as a 9-hour phase: your concern is your current 3-hour segment, with an eye both on the 3-hour block that just passed, and the 3-hour segment to come. By focusing on these time ticks, you can better plan your future meals so you are prepared when they come due, as well as coordinating the exercises you'll be doing that day with their Peak meals.

¹¹ Goran MI, Calles-Escandon J, Poehlman ET, O'Connell M, Danforth E Jr. Effects of increased energy intake and/or physical activity on energy expenditure in young healthy men, *Journal of Applied Physiology*, Jul;77(1):366-72, 1994

¹² Bell C, et al. High energy flux mediates the tonically augmented beta-adrenergic support of resting metabolic rate in habitually exercising older adults, *Journal of Clinical Endocrinology and Metabolism*, Jul;89(7):3573-8, 2004

Eat breakfast immediately after rising (barring any medical or other reason, or if you do an Interval exercise, whereupon you would eat immediately after). As a general guideline, you should enjoy higher calorie meals earlier in the day, and just after exercise. Since some workouts take as little as four to five minutes, it can be convenient to have your meal prepared and accessible, and to simply eat it after the workout is completed rather than deal with prep work while recovering. If you aren't working out at your home, having your meal ready in a travel container or a shaker cup and eating it on a bench or in a break room is just as easy.

After you finish a meal, from that point on if it hasn't been three hours since your last feeding, **don't eat**. If it's been three hours, **eat** and start counting again. Yes, this pretty much eliminates snacking, but it's difficult to get hunger cravings when you're taking in food regularly—along with all that water (you better be drinking that water!)—every three hours. Here are two simple approaches to keep track of your intake:

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- **Method A:** Cardinal hours. Pick a set of hours (most people find multiples of three to be best—6am, 9am, noon, etc). When the clock points to one of those times, you consume. When it doesn't, you don't.
- **Method B:** Just get a stopwatch. As soon as you're done eating a meal, start the stopwatch. When it hits 3:00 you eat again and start it again. Like the water bottle, this may seem a cumbersome or even silly addition to your life, but it is to assist you in forming the habits you will need to succeed. And it works.

Method B is the simplest to adjust for when you're a little off in your scheduling, and you can time it so that if (for example) you want to go out to a restaurant with friends that evening, you can feed 2.5 hours before you're going to go to the restaurant.

It is vital to provide a steady flow of nutrients and fuel to your body; it keeps your insulin and hormones regulated, prevents your body from wanting to store a bunch of fat (or burn off good tissue), and allows you to consume a greater quantity and quality of food while seeing positive results. To reiterate, this implies no guilty nibbling on things like chips or cookies (try fitting either of them under Base or Peak meal criteria and you'll see what I mean). You won't miss them for long.

Being prepared

Having the knowledge and even the food available to prepare a proper meal is all for naught if the 3-hour mark comes up and you have nothing prepared to eat. You'd be surprised how quickly time flies while you are preparing food. Rather than rely on prepackaged and processed foods, your best bet is to prepare meals in bulk.

This is not only useful for taking meals to work or school, but when the clock says it's time to eat, it's easy to pull a nutritious and wholesome meal from a container in the fridge and simply microwave it. You get the convenience of a TV dinner with the exponentially greater taste, flavor, and nutritional value. Rather than buy low-quality products that have been stamped out on an assembly line, prepare your own high-quality meals. One example is pan-frying a large batch of chicken with spices, onions, mushrooms, and peppers. This creates a dish high in protein that includes the mandatory vegetable content; this can be consumed on rice or in a tortilla for a Peak meal, or eaten with beans and cheese for a Base meal.

Additionally, be sure your portions are properly divided. While it may seem convenient to take a single large bowl of food along to the office and just eat out of it more than once, it's been demonstrated that visual cues can have a significant impact both psychologically and physiologically on how satiated you feel after eating. Finishing a portion and seeing the empty container can help assure your brain and body that you've been properly fed.¹³

And yes, eating every three hours means you will have two to three meals while at work. While lunch is doable for almost anyone, sneaking those other meals in during the work day may be more difficult. Using personal breaks (such as when smokers take smoke breaks... and if you smoke, how about eating instead) is a viable solution for most people, and having easy-to-handle foods such as jerky, string cheese, protein shakes, nuts, or other items that don't require a fork or spoon can make it still more workable.

So take a cooler to work, filled with your daily meals in nice little reusable plastic storage containers. You may also consider carrying an emergency meal in your bag, purse, or glove box, especially something that doesn't spoil readily, is also important for when you are caught unawares, are delayed, or have to take a detour.

Be good at being bad

As with most aspects of the body, the levels of its adaptability are astonishing, and it will be in your interest to deviate from the Fat-or-Carb meal plan roughly **one meal every two to three days**. This doesn't mean go out for the triple bacon deluxe super burger, fries and drink three nights a week, but assuming five to six meals a day you may choose to indulge yourself and eat a meal that violates the primary rule by containing both fat and carbohydrates. (*This is a great opportunity to feed cravings.*) Just be sure you still meet your protein requirements, and chuck in a serving of vegetables or fruit should it not include one, and you're good to go.

¹³ Wansink B, Painter JE, North J. Bottomless Bowls: Why Visual Cues of Portion Size May Influence Intake, *Obesity Research* 13(1):93-100, 2005

5: Rest

"That we are not much sicker and much madder than we are is due exclusively to that most blessed and blessing of all natural graces, sleep."

- Aldous Huxley

Many people, adults in particular, approach sleep as a mundane chore to do when the body absolutely requires it, and they do it begrudgingly at that. They sit in front of the TV, watching show after show until their eyelids are so heavy and their mind is so dulled that they finally must stumble off to bed, or even pass out right there on the couch. If they take a nap in the afternoon, they feel lazy or wasteful. They'd rather do something productive, seemingly productive, or just mindless in an effort to not throw away valuable time on sleeping.

Perhaps that paragraph doesn't describe you. Perhaps you are even willfully hedonistic in your love of naps and long, alarm-clock-free indulgent weekends. If that's the case, this section will still provide you with powerful methods and pointers for getting the most out of your beloved rest, improving the quality, depth and efficiency. However, if this describes you to a tee, if you're Robert Frostin' out with miles to go before you sleep, and rest is something you work into your perpetually booked schedule as time allows, perhaps the following reasons will give you pause to reconsider the nature of your rest.

In many ways, your body and mind are more active when sleeping than they are when you're awake. Delta waves and other brain activities increase dramatically during sleep; the endocrine system produces hormones, particularly growth hormones, in quantities unseen during wakefulness. During deep sleep when REM activates, most of the brain is at least as active, if not more so, as when awake. Rest is the other side of the coin; it is the passive component to building and maintaining a healthy, youthful body, and is every bit as important as proper diet and exercise.

Whether you're a full-time student who works, and you're going to bed at 2am and getting up at 6am, or you're a key figure at a company trying to juggle 60-hour work weeks and your family, short-changing your sleep cycle inadvertently sabotages all your waking efforts. Ideas will be less inspired and less frequent, senses will be dulled and cloudy, and attention to detail will be lacking. Cognitive processes will suffer, as will mood and patience. Energy will be in short supply and you will often have to rely on outside stimulants like caffeine to keep yourself going. Though many people often skimp on sleep in order to have more hours available for the day, the reduced quality of those hours ends up leaving them with less.

From a health standpoint, sleep is a critical factor for maintenance and well-being in a multitude of ways. Deep, quality rest is vital for the repair and expansion of the muscular system post-exercise, but it is also crucial for the recovery of the nervous system, both chemically and psychologically. Rest is beneficial to the respiratory and cardiovascular system. Proper sleep is the downtime maintenance cycle when your body cleans out the trash, restocks the pantry, puts fresh wood by the fireplace, washes the windows and floors, and generally provides all the physical and mental housekeeping required in order to keep your body and mind functioning in top form.

Far worse than simply missing out on the above benefits by neglecting full, quality sleep, insufficient rest can have a staggeringly negative impact on the body. A deficiency of sleep impairs or even cripples muscle recovery and growth, dulls nerves, slows responses, induces higher levels of stress, and exacerbates preexisting physical and mental conditions.¹

Unfortunately, rest has become inextricably associated with laziness, sloth, or even depression. Napping on a couch can seem so wasteful that some will even turn on the TV only for the sake of *something* going on. Ah! but the adaptability of humans may yet again shine. As with the innocent and indulgent joy that can be rediscovered with exercise, so too should we reexamine how we approach rest and sleep. Sleep can be pleasurable and fun—take particular joy in feeling the softness of the sheets, the give of the mattress. Rub your face on your pillow. Stretch long and determinedly, like a cat. The benefits of proper sleep are equally those of health and physiology as they are of hedonistic delight.

Fortress of solitude

The best and most enriching sort of sleep that can be attained is deep and uninterrupted. Full, luxurious REM cycles will provoke an enhanced recovery, rebuilding, and revitalizing of your body. Chemicals and hormones get replenished, neurological and psychological issues get resolved, and components are refueled, rearmed and ready for battle. In a deep, deathlike sleep is when all the best things happen, and are a treat you cannot afford to cheat yourself out of. Here are some general guidelines to enhance the deepness of your rest:

- **Budget for sleep first.** The optimal sleep levels for an adult range from seven to nine hours, depending on the person. Most people will read that as “I can get by on seven” or “seven max”. No. You should aim for eight initially, and adjust based on how rested and recovered you feel, not on what your schedule dictates. Of all the

¹ González-Ortiz M, Martínez-Abundis E. Impact of sleep deprivation on insulin secretion, insulin sensitivity, and other hormonal regulations, *Metabolic Syndrome and Related Disorders* 3(1):3-7, 2005

ever-growing demands for your time in a day, sleep should have first priority. For those who can't get enough hours out of the week, start by removing actual non-critical timesinks and waste. Sleep is non-negotiable. It's reported that the average American watches 22 hours of television each week; by dumping their least favorite shows, most people can not only reclaim enough hours for sleep but also for exercise and cooking. Much to the dismay of the career-focused, work is non-critical when reckoned against sleep. The spinning-your-mental-wheels treat you get while watching television can be administered by sleep in a far superior dosage.²

- **Total darkness.** When you stop to consider how long life has existed on earth, and that the light bulb has been around for only 120 years or so, it should come as no surprise that there have been concerns raised regarding our lack of total darkness and the subsequent disconnect from the night's rest and repair. Recent studies find that exposure to light at night suppresses the pineal gland's ability to produce melatonin. This in turn inhibits proper secretion of hormones from the thyroid, hypothalamus, pancreas, adrenals, ovaries and testes. Stifling these hormones may make us more prone to illness such as diabetes, heart disease, and cancer.³ A compelling demonstration of how the chemical replenishment achieved in sleep is dependent on total darkness, specifically in the eye receptors, studies demonstrate blind women being half as likely to develop breast cancer simply due to their innate ability to maintain darkness-criteria while sleeping.⁴

If you have a windowless room in your home, consider making this your bedroom. "What, and give up my bay windows?" Okay, then consider using heavy blackout curtains in your bedroom. Failing that, a comfortable sleep mask will suffice. In addition to psychological and endocrinal benefits, total darkness also prompts a deepening of sleep and the accompanying effectiveness of both NREM and REM sleep cycles. You need the dark.

- **Turn off the ringer.** This will be unacceptable for certain people, and a refreshing joy to the rest. If you have an elderly and failing parent, an on-call job, or an arrest-prone son or daughter, you will likely have trouble relaxing enough to fall sleep if you are unable to be reached, even temporarily. But for many, this prospect is minimal, and the much greater possibility of drunk dials/texts messages from friends or exes, phone companies trying to cajole you into switching carriers, or obnoxious mis-dials can be easily eradicated by turning off the ringer on your phones. We already have to silence our mobiles for business meetings, weddings, funerals, classes and court. Your sleep is sacred, and should be of high enough value to you to prevent its disturbance by turning off your ringer when sleeping. Should you still have a land-line, consider silencing it as well, or designate one as your 'emergency' contact so you can silence whichever phone which is more likely to ring.

2 *Basner M, Dinges DF. Dubious Bargain: Trading Sleep for Leno and Letterman, Sleep 32(6):747-52, 2009*

3 *Pauley S. The Dark Side of Light, Journal of the Royal Astronomical Society of Canada, Vol 95:276, 2001*

4 *Feychting M, Osterlund B, Ahlbom A. Reduced cancer incidence among the blind, Epidemiology;9:490-4, 1998*

- **Alarm clocks and bedtime.** Most people cannot simply rise when the sun is warm and they've had their fill of sleep, or they'll get fired, kicked out of school, and otherwise tank their life by not fitting in properly with others. If this describes your own life and scheduling demands, it is important for you to likewise schedule your rest. As I've noted, almost all people do well with between seven to nine hours of sleep; aim for eight hours at first and adjust based on how it feels to you. As you settle on a number, assign a cut-off period of 30 minutes prior to bedtime. If you're getting up at 7am, schedule your shutdown for 10:30pm. This will give you time to brush your teeth, dress down, and whatever else you do to prepare for bed. Don't write emails, get online to check the news one more time, or anything else until your bed prep is complete, and be ready to jump into bed right on time. It's those short 'just one more' tasks that result in your going to bed at 2am, so don't fall prey to mismanagement.
- **Nesting instinct.** Americans reportedly spend about 52 minutes a day on average commuting to and from work.⁵ And as mentioned earlier, that same average American also watches four hours of television. In that case, we each theoretically spend around eight times as long in bed as we do in our cars, and twice as long as in front of the TV. But of these three belongings, on which did we spend the most time doing research, studying brands, and comparing benefits? Which did we end up spending the most money on? At the risk of sounding like a shill for the mattress industry, you might consider upgrading your mattress if there are indicators (such as waking up sore or sleeping restlessly) that you aren't getting the best sleep quality possible.

Many people will spend more on a fancy wooden frame for their bed and the accompanying furniture, and then neglect or even short-change the mattress quality to recoup the difference. As you spend one of every three hours of your life in bed, it is compellingly in your interest to research and acquire a mattress that suits you well. I'm not suggesting you spend a fortune; just make sure you're getting the quality of sleep you deserve. You'll see returns on your investment the first night and it will only accumulate from there.

Paying as you go

Naps are an excellent method of recovery, replenishment, and (dare I say it) luxury and amusement. Some cultures even incorporate naps into the daily routine (such as siestas), and while any sort of time where you just relax is good, allotted or impromptu, a nice little mini-sleep is best.

The optimal nap length is determined by how long it takes you to actually fall asleep, and how much time it takes to get to the end of your first REM cycle without waking, prior to going in to deeper sleep. The typical person will find her or his best nap to be 15-30 minutes long, but you will want to find your own through some

5 *BTS Omnibus Household Survey Information. American Commuting Time, US Department of Transportation, 2003*

testing. After you've found your optimal length you can usually rely on it. Start at 35 minutes and work your way backward in 5-minute increments; when your alarm goes off and you practically pop up, alert and refreshed, stick with that length.

Salvador Dali would nap in a comfortable chair while holding a spoon in his hand, poised over a plate (this would obviously be less successful above carpet). Just as he would reach a deep sleep, his hand muscles would relax and release the spoon, and the noise of it hitting the plate would wake him, to what he claimed was a complete and refreshed alertness. This is, of course, anecdotal; your mileage may vary.

And on the seventh day

Realistically, even the most careful and diligent of planning cannot overcome inevitable complications and emergencies in life. There will be times, particularly during the work week, when you must stay up late or get up early. You will not always be able to get your full allotment of rest. In such cases, sleep is not the sort of thing you get a free pass on; you will accrue 'sleep debt', wherein the body runs at a reduced level until such time as you are able to 'pay off' the sleep you missed.⁶ As such, even if you are unable to sleep in uninterrupted isolation every night, getting at least one or two nights of good sleep a week while following the "Fortress of Solitude" guidelines will greatly assist your body and mind in naturally regenerating and revitalizing processes. Complete darkness, no alarm, and (optimally) sleeping until you wake up naturally, revitalized and rested.

⁶ Spiegel K, Leproult R, Van Cauter E, Impact of Sleep Debt on Physiological Rhythms, *Revue Neurologique* 159(11 Suppl):6S11-20, 2003

6: Conditioning

"We must be steady enough in ourselves, to be open and to let the winds of life blow through us, to be our breath, our inspiration; to breathe with them, mobile and soft in the limberness of our bodies, in our agility, our ability, as it were, to dance, and yet to stand upright..."

- T. S. Eliot

Like rest, most types of recovery are really just an alternate form of activity. Even low-intensity exercise (as outlined in chapter 7) is a method of active recovery. This chapter describes methods used for enhancing, rebuilding, and improving the composition of the body beyond diet and exercise. They include proper intake of both light (the complement to total darkness) and air, massage both self-applied and partner-assisted, stretching, and more.

Sunlight

Often spoken of in tones of destruction and woe, sunlight in moderation is actually one of the healthiest things we can give ourselves. The sun is demonized as an imminent cause of skin cancer, but numerous studies show that sunlight is actually an effective agent *against* some types of cancer, including breast and colon cancers¹. Additionally, blue-light levels can be very effective against depression (such as seasonal affective disorder) and cause positive effects involving LH (luteinizing hormone), which most notably enhances reproductive health in both sexes, and stimulates testosterone production in men. The best time to get sunlight is in the morning, soon after rising and for about 15 minutes, and again after a nap (or even during, like a cat in a spot of sunlight). As an alternative for the busy individual, a full-spectrum lamp can provide some of the mood and hormonal benefits of sunlight if you want to sit in front of it while you read the news and eat your breakfast.

Breathing

Abundant in numerous cultures are symbolic examples of the effectiveness of deep breathing. When someone arrives outdoors or in the country, they draw deep breaths of fresh air. When we want to calm down, slowing and deepening our breathing is the path to relaxation. Our breathing deepens as we are falling asleep. When we are injured, the first thing someone who is assisting us does is check for proper breathing, and attempts to maintain oxygen to the body and brain. Infants breathe deeply with their whole body; you can see this in action simply by watching their bellies rise and fall with each slow, deliberate breath. Most young children

¹ Selby PL, Mawer EB Sunlight and Health. Exposure to Sunlight May Reduce Cancer Risk, British Medical Journal (Clinical Research Ed) 319(7216):1067-8, 1999

still breathe all the way down to their diaphragm. By the time the average person reaches adulthood, he or she is utilizing only about 20% of his or her lung capacity. Whether this is due to simple negligence, or from people consciously trying to improve their posture by sucking in their gut and puffing out their chest, it deteriorates both health and emotional states.

We breathe unceasingly. Rudolf Steiner calculated that based on 18 breaths a minute, we average about 26,000 breaths a day. He further stipulated the average life expectancy was around 72, which is about 26,000 days. So each day we breathe roughly the same number of days as in our life. This obviously varies between individuals who live longer or shorter (the average life expectancy of Americans is up to 78 or so), and ones who breathe faster or slower, but the numbers are still fairly comparable. Having drawn air unceasingly since the moment we're born (with rare exception), it's easy to see how we take oxygenating our blood for granted. But if we stop breathing, after only a few minutes brain damage becomes likely, and past just ten minutes, brain death quickly becomes imminent.

50 Few people will take formal classes in breathing, but, as with lifting weights and eating, a few basic guidelines and practices can go a long way to helping you get the best mileage out of your lungs. By being conscious of your breathing and actively working to improve the deepness and quality of your breath, you can enjoy significant improvement in both health and mood, and likewise reduce stress and fatigue. The two key factors are breathing slowly, and breathing deeply. Breathing deeply alone can have the effect of over-oxygenating the blood and hyping you up, which may not be useful if you are, for example, trying to reduce anxiety or go to sleep. Hyperventilation is seldom advised.

Picture your torso as a large vessel; when you breathe, you are filling that vessel with air as if it were liquid, starting at the bottom in your pelvis and slowly 'pouring' it in until it has filled to the top, at the back of your throat. Most methods suggest breathing in to a count of four, holding your breath for an additional eight, and then exhaling for eight more. Repeat for four breaths initially, and work your way up to eight total breaths (each breath being a full cycle). By practicing twice each day, eventually you can increase the frequency of the breathing exercises until you are able to perform them four times an hour.

After practicing for a significant amount of time, it reputedly develops into an unconscious behavior, and you will breathe this way naturally from that point on. At the very least, breathing deeper and more deliberately whenever it crosses your mind produces worthwhile benefits. In addition to the health benefits, being mindful of your breath can also improve your attentiveness and your concentration.

Massage

Like naps and good food, there can be more to massage than a luxurious indulgence. Regular, proper massage—the firm, deep kind, not the feathery-touch sort—can dramatically improve muscle quality, and serves as a form of recovery for muscular and circulatory systems. Massage improves relaxation and reduces anxiety, helps to relieve tension both physical and psychological (if there’s even a distinction), promotes healing and recovery, improves posture, increases mobility and range of motion, and even strengthens the immune system.

As mentioned in *Allies*, having a partner for massage is a great help. The muscles that go down the back on either side of the spine (but not *on* the spine), in the neck and shoulders, and deep in the core of the thighs and calves are locations where typically a lot of tension is held. A partner is advised to use the base of the palm of the hand, or even the fist, to bring the most pressure to bear when massaging. Advanced practitioners may use forearms, elbows, or even feet to apply a deep, penetrating pressure to target muscle areas. Your partner should knead with deliberate slowness and depth, without dragging across the skin or inflicting other types of unnecessary roughness. The goal is to hit the muscles underneath with minimal impact to the surface layers.

Self-massage can also be effective, either if you are uncomfortable with allowing someone to rub on you, or if you simply don’t have someone available when you want it done. This can be particularly effective on the forearms, calves, thighs, and feet, following the same slow, methodical technique that a partner would. For the muscle groups and locations that you can properly reach, you will likely be using your torso muscles and hips to apply leverage. Knead and squeeze the muscles with your hand or between your thumb and fingers. Keep in mind there are a select few areas of the body that are difficult or impossible to get at on your own, such as the majority of the back.

The right tool for the job

A foam roller or (for advanced practitioners) a length of plastic pipe is an invaluable tool for self-massage and myofascial release. Typical use of a foam roller has you placing the roller across the frontal plane of your body (either leaning back against it as if you were propped up on a pillow, or laying across it face down in a superman pose) and from this position, letting gravity do the massage for you by pulling your body’s own weight against the firm object.

Rather than using a rolling, kneading action, a superior method is to slowly roll up or down until you feel significant discomfort, and then stop and persist until the muscle relaxes. Then, continue further along the muscular band, stopping at each point of discomfort to relax it, up until you’ve completed the full length of the

muscle in question. For people new to the experience, the sensations may range from uncomfortable to unbearable, but like with a good, strong massage, the sensation may eventually become more pleasurable with time.

The effect felt is the muscle receiving stress, simulating (though nothing like) being under a dangerously high load. When the muscle feels like it can no longer maintain the load without tearing itself (do not worry, this is not what is actually happening), the nerves in the muscle surrender and relax the muscle, helping to improve relaxation and letting the massage work deeper tissue. Most purchasable foam rollers are inexpensive, and come with at least rudimentary instructions on their use. There are also online guides available for DIY types.

For targeting specific areas, especially deep in the thigh or back, a ball can work wonders. A tennis ball is recommended, but a softball and even a baseball can be useful. Place the ball under a muscle group, such as the calf, and then support your body on your hands while carefully shifting weight onto the ball to provide a penetrating massage. This is equally functional for the front and rear muscles of the thigh, the hips, back, shoulders, and with careful and measured pressure, even your forearms and neck.

Another useful technique is putting a tennis ball under the base of your foot, and slowly shifting your weight onto it as much as possible. Then, carefully roll the ball under the foot as you apply pressure. This provides a relaxing and energizing self-foot-massage and improves fascia quality in the foot; considering how often we are on our feet, this can work wonders. The study of reflexology suggests that foot massage can directly effect stress relief and health in other parts of the body as well. Don't neglect your feet.

Stretching and flexibility

As we grow older, many people see loss of flexibility and balance as a foregone conclusion. Reaching an awkward angle above or behind a shelf, sitting down on a low stool or the ground, or even bending over to tie your shoes, all seem like actions that will inevitably be victims to achy joints, tight ligaments, and the merciless pull of gravity. But our body's interaction with the physical world is a method of expression; losing the ability to properly sit, stand, lie down and move about is akin to the fading of your verbal facility. A stiff and weak body can be compared to a stutter or stammer and a loss of vocabulary. As the means to express your will physically upon the world abandon you, so too does your fluency in the language of movement.

The first step to attaining flexibility is to abandon orthodox technique. Static stretching (for example, reaching to touch your toes until it's uncomfortable, and

holding it for 30 seconds, plus or minus) is the traditional method almost everyone remembers from gym class. Not only is it boring by design, and chore-like to prolong mild discomfort for long periods of time, significant research has demonstrated that static stretching actually reduces strength, muscle quality, and power. A decent analogy is comparing a muscle fiber to a rubber band; static stretching is metaphorically similar to stretching the rubber band to its limits, causing it to lose both shape and elasticity.

The preferred method for increasing flexibility, especially for active people, is a dynamic stretch. Not to be confused with a ballistic stretch (which can be damaging), a dynamic stretch is a sure, controlled movement throughout the range of motion, and serves both to warm up muscle and to improve muscle quality. Following are a few core dynamic stretches.

- **Pull-squat:** This is your primary method to reclaim your body's natural flexibility and movement from the damage done by one of the most diabolical inventions to date: the chair. This stretch is excellent for lengthening and strengthening the hamstrings and hips and improves squat depth and form, leading to better everything from hip mobility to being able to tie your shoes. Start with your feet spread approximately shoulder-width apart. Bend down and grab on to your toes, then pull up on them and physically *pull* yourself down into a deep squat position. Stand back up while keeping pressure on your toes, driving off your heels as you rise. Repeat up to 10 times. If you are initially unable to properly grab your toes, you can slip a belt underneath the balls of your feet and pull on that. Each time, try to move your hands a little further down the belt until such time as you can grab your toes. Enjoy improved flexibility, balance, and posture as a result.
- **Windmills.** A movement rescued from gym class, this dynamic stretch is excellent for your shoulders, one of the two major axes we will discuss in Resistance Training. Extend your arms straight out from your sides, elbows fully locked, and rotate slowly in tight circles. As you continue, make the circles ever so slightly larger each rotation until you are doing a butterfly stroke.
- **Torso twists.** This is the generic stretch you see people doing to 'warm up'. Twisting at the waist in a horizontal plane, this is a trunk rotation designed to stretch and innervate the long fibers throughout your back, ribs and abdomen. To enhance the effect of the stretch, take a step and stretch in the opposing direction of your pelvis, which will help to stretch the muscles and ligaments in the hips as well.
- **Neck rotations.** While we sit all day long in our chairs, we also stare blankly ahead at screens, or stare out of windshields. A lot of stress manifests itself physically in the neck. A simple and effective method for stretching neck muscles is to rotate and

lean your head slowly and firmly in every direction it will go. This includes touching your chin to your chest and arcing it back, turning to look over your shoulder, and attempting to lay your ear on your collar. Go nuts.

“Muscle quality”

I’ve thrown around the phrase “muscle quality” without really defining it, so I’ll take a moment to do so. Muscle quality is the suppleness of the muscle and its ability to activate. When someone ‘makes a muscle’ by say, flexing their arm, there’s typically a hard section of muscle that stands out or can be felt. That flexed solidness is activated muscle, specifically the muscle on one side (the triceps) working against the other side (the biceps) to activate those fibers. Stiff muscles are fibers in the muscle that remain under constant tension, and are perpetually ‘flexed’ even when you’re not doing or lifting anything of note. Stiff or hard muscle is already at least partially activated, and being activated it can’t be activated *more* than that and so does nothing to contribute to efforts you might make. Stiff muscle is wasted muscle that cannot be used to add to the force and power your body can generate; by relaxing, softening and reclaiming stressed and tense muscle fiber, you can naturally recover and increase your available strength.

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Consider a house cat; this is a lazy creature, eating and sleeping in the sun, only occasionally running off to play and pounce (as we’d all probably be better off by doing). If you grab a cat’s leg and clamp down on the muscle, the cat simply looks at you like you’re crazy. The cat is not in pain; the cat has supple muscles, and high muscle quality. That same muscle quality allows cats to make magnificent vertical leaps, and dexterously run down and catch swift prey.

In contrast, take your thumb and lay it across your biceps. Now dig in firmly. Chances are it hurts like the dickens. If not, feel free to press down hard on your thigh with your fist. If that too doesn’t hurt, then you probably have good muscle quality. If it hurts, there’s work to do. That’s free strength and agility awaiting you by relieving and unlocking those stressed fibers. In addition to stretching, deep tissue massage helps to break up and remove debris and scarring in the muscle tissue, allowing more fibers to slide and work more easily.

Whatever the case may be, taking the time to properly condition and care for your body, be it tissue, hormones, nutrients, or anything in between, will result in tangible and substantial benefits. These stretches and maintenance guidelines also have a synergistic effect with the nutritional and exercise improvements discussed in other chapters. In the same way that you tune and maintain a vehicle, you likewise want to perform dutiful service for your body. It’s the only one you’ll ever have, and an ounce of prevention can be worth far more than a pound of cure.

The language of movement: *a prelude to Section III*

The first section of this manual spoke to the theory and understanding of both diet and exercise. The second then focused on the feeding and passive maintenance of our bodies. This final section is perhaps the most critical, as it addresses exercise and our bodies in motion. Though I've said it before, it bears repeating: the physical movement of our bodies is how we express our will and personality on the world. No matter how quick the wit or brilliant the mind, without a mouth to express its ideas, a deft hand to write a line, paint a stroke, or strum a guitar, or feet to dance, we are lost to our own fantasies. Our physical being is how we share ourselves with those we love, how we stand for what we believe in, and how we earn what we receive. The use and care of our bodies should be pleasure, not work. This is what we are.

So before we get into the meat of this section, let's take a minor detour into your past, searching for a specific time in your life. Picture yourself playing on the beach, running in a park, flying a kite, chasing a friend playing tag, or climbing on a jungle gym. Remember when riding a bike or roller-skating was something you did for fun? Remember when the surge of adrenaline and heady rush of endorphins was something you thrilled at? (If this was not a part of your youth, it's never too late.) At what point did exercise turn to the dark side? When did it go from something to do specifically for fun, or at the very least as a method to get to get to the fun, and become a chore to avoid whenever possible?

As technology accelerates, for the current and coming generations, friends are starting to become online nicknames, and play is done more often in front of a screen than outside. From deep in the recesses of our genetic heritage comes a wordless desire which manifests most clearly when our bodies react under physical stress. And I believe it is a favorable and desirable reaction, not one to be avoided. It is that response which causes me to put forth this question: *must* exercise truly be a miserable, dreaded item on your day planner, to check off like the dry cleaning, the dentist, or a visit to the in-laws? Or might it be possible for exercise to gradually become the prize, the reward that you look forward to giving yourself and to enjoy at your leisure? I challenge you to try to recapture this attitude, or, if you believe you've never had it, to discover it for yourself.

- 1 **Make time to play.** Regardless of your life or career, you can find the time. And it's *play*; if you're not enjoying yourself, it's time to change it up. Keeping it fun not only provides entertainment, but it helps you push yourself harder. Now make no mistake, there are times when your body is yelling at you to stop and you may wish to quit. That's why it's important you *want* to be doing it; rising to that challenge is what will give you results.

- 2 **It doesn't matter.** Seriously, it doesn't. Your age, your gender, your current level of fitness, your career prospects—all unimportant when it comes to exercise. If you can move, move. Work at your own pace, but always be looking to challenge yourself. Life is transition, not stasis. Your goal is to grow and improve until they start shoveling dirt on you; behave accordingly.
- 3 **It ain't that serious.** Whatever your station in life or the gravity it may hold, it is not worth crippling your ability to savor what life offers. If being the head of a company or community group or religious order means you must not dash through the parking lot or people will think you're crazy, perhaps it's time for a reevaluation of priorities. Live first, be important second.

I will make minimal assumptions about your current level of fitness; should you find some of the introductory exercises too easy, feel free to increase the difficulty at your own pace. If you are completely untrained, let yourself ease in while your body adapts and progress from there. But keeping the preceding three principles in mind will help you stay interested and invested in each day and workout, in addition to your progress and long-term goals.

Methods of movement

There are three different types of exercise discussed in this chapter, each a major contributor to total health and each essential in its own way. They vary in intensity, frequency, and load, and work synergistically to provide different, complementary functions.

- **General movement** is the first, and covers every type of low-intensity exercise, such as pushing a grocery cart, walking across a parking lot or around a park, taking the stairs or bringing in the groceries. General Movement is staggered throughout your day, and you should attempt to enhance or increase the frequency of such expenditures as often as possible.
- **Interval exercise** typically lasts around ten minutes, can be done more than once a day, and will consist of fragmented, headlong bouts where you work, lift, or run as hard and fast as possible, interspersed with periods of slow walking or movement to enhance recovery. This is your dash, your sprint, your games of tag and your races up the hill, and they can be exactly as fun or as miserable as you wish them to be.
- **Resistance Training** is the subtle and nuanced art of grabbing on to something heavy and moving it about, usually in a large movement that involves most or all of your body. Suggested workouts run approximately 15-20 minutes in length, with a frequency of approximately once every other day. Relax, you will most likely be doing two simple movements a session; there are no machines or preacher curls here.

“Cardio” aka jogging doesn’t do what you think it does

Many people are under the impression that jogging on a treadmill or around the park is how you ‘burn fat’ or even ‘turn fat into muscle’. The problem (as you will begin to see as the three types of exercise in this program are defined) is that the only variable you can manipulate regularly with steady-state cardio (going at the same moderate pace) is how long you do it. This quickly leads to stagnation as your body adapts to the stimulus, and there are very few ways to increase the difficulty. The body’s hormones also respond much more readily to intense exercise, as both chapter 8 and 9 explain. Those responses are part of that instant gratification, get-it-now-or-we-die survival mechanism.

And with consistent long-distance running (up past 30 minutes), the body may begin to break down under repetitive wear. The first concern is that under the effects of regular long-distance running, the body will inherently convert strength muscle into endurance muscle; many untrained individuals can develop more power and jump significantly higher than an Olympic level marathon or distance runner, due to this conversion. Second, and worse, the constant pounding on the joints and connective fibers can exacerbate into a form of Repetitive Strain Injury. The body’s protective systems and fluids that work amazingly well under high-intensity exercise deplete over long and continuous use.

Some exercise trends have focused on bashing cardio and proscribing its use completely. My take on it is this: if you really enjoy jogging, go for it. It certainly counts as general movement and in moderation and with proper preventative care, you can preserve your joint health and mobility just fine. Just don’t try and use it as some generic fat-loss or calorie-burn method; the following exercise forms will do a much more efficient job.

Overtraining

Yet another fitness term being haphazardly thrown around is ‘overtraining.’ In fact, many self-described experts may look at the modest amounts of exercise recommended herein and denounce it shrilly. “You can’t do high-intensity training every day, you will overtrain!” Now, overtraining is an actual problem... but it’s a problem for a few Olympic athletes who have been training at inhuman levels for years on end. And overtraining may require several months of physical therapy to recover from. It’s unlikely that you’ve even met someone who’s overtrained.

Now what *is* more common for average people is central nervous system fatigue. If you do the same thing over and over without proper recovery, your ability to properly activate your muscles (not the muscle itself) can begin to wane. The key here is proper recovery, which the first type of exercise, General Movement, is based on. Additionally, you gain generous levels of recovery from full and suffi-

cient rest, from proper nutrition, from hydrating yourself adequately, from dynamic stretching and massage, and so on. You know, everything we've covered so far.

This is more than just nitpicking a term that's in vogue; people are somehow terrified that exercising daily or even multiple times daily will somehow break down and exhaust their bodies. The truth is it very well could, at least when combined with poor or inadequate rest, bad food choices, high stress, shallow breathing, and low muscle quality. But with increased levels of activity, both with active recovery and active training, you're not breaking yourself down—you're building yourself up.

This concludes our intermission. Hopefully you've had time to visit the bathroom (assuming you're not there already), and to get a (healthy) snack. You may now return to your seats for the conclusion of our show.

7: General Movement

"Our nature consist in motion; complete rest is death."

-Blaise Pascal

General Movement (GM) is the basic increase of movement and energy expenditure throughout your day. While moving around at low intensity will increase your metabolic rate, the primary goal is to 'feed' your body with exercise. Basic GM actually serves as a form of rest (as referenced in the previous chapter); it stimulates the body into recovery mode, circulates nutrients, and provides a proactive level of repair and recuperation alongside the higher levels of activity, metabolism, and energy states. Simply put, this form of exercise will help provide increased results and recovery from the following two forms of Interval and Resistance training, as well as improving overall health and well-being.

While GM is the least physically intense type of exercise, for some the lack of direct challenge may also make it the least exciting. Therefore, it is strongly advised that you incorporate it automatically into your daily routines to avoid cheating, getting bored, or quitting early. By applying this method to your day you can increase the amount of low-intensity activity without it being intrusive. Fortunately, this sort of increase can be done almost anytime and anywhere. Following are a few suggestions for adding GM to your day. This list is by no means exhaustive; improvisation is the key to keeping it relaxing and fun.

- **Take the stairs:** Taking the stairs instead of the elevator, for the most part, can be an effective and quick inclusion to up your activity levels. Whether it's a single flight at a store, shop or airport, making yourself walk up stairs, or up multiple flights at your home or office, it is over before you know it. Don't let yourself cheat and say you'll do it next time. The exception here is if you happen to work or live on say the 50th floor; in this case, you should get off the elevator a few (or several) floors earlier and hoof it. An interesting way to spice this up is to get off at the first stop on the ride made by someone else, regardless of which floor it is.
- **Take the first spot available:** It can be mesmerizing to watch people circling a parking lot persistently, looking for a still closer spot, spending as much as 10-15 minutes extra in the car to avoid a 45-second walk from their car to the store. Parking in the first available spot (on the skirting edge of a lot, for example) not only has you walking further to get in (and takes all of 90 seconds in most cases), but in the case of a grocery store, can also have you pushing a loaded cart the return distance.

While it may seem unnecessarily obnoxious, it's done and over before you know it, and after the initial tryout many people realize how painless it actually is. What if it's raining? If you're not shopping for anything that might be damaged by the rain, consider walking the distance anyway. Didn't we play in the rain when we were young? What made it so detrimental to our dignity? We might not need to jump into every puddle but how different might our lives be if we didn't flee in terror under threat of dampening? Please Note: If you will melt, take all precautions.

- **Go for a walk:** A pleasant, leisurely walk is an easy way to incorporate general movement to your day. A lot of compulsive information junkies abhor the 'boredom' that comes with going outside and being away from the television or computer, but sunshine and exercise are proven mood elevators and fighters of depression. Additional options include pushing a stroller or wrangling a dog, dogs, or children too big for the stroller. The common mistake people make is focusing on the end of the walk and grimly hurrying to finish. The trick is to casually and leisurely enjoy what you're doing while you're doing it.
- **Pace on the phone:** While doing anything involving a phone, including texting or reading email, move constantly. The peripheral awareness required will involve your brain in the movement and wake up your nervous system. Nielsen reported that in the second quarter of 2008, U.S. mobile subscribers sent and received, on average, 357 text messages per month, compared to making and receiving 204 phone calls per month (though teens skew that with 1742 text messages per month)!¹ That's a lot of not-sitting-still you can do.
- **Break dancing:** Not to be confused with break-dancing, which can be considered an Interval Exercise (Chapter 8) due to its intensity, break dancing is dancing while taking a break (how novel). Useful as a treat when you've finished a chore such as laundry, dishes or vacuuming, finished up a project or some homework, or did some other mundane task that you're elated to have done and gone. Pick a song (or put it on shuffle) and fox trot, shimmy or tango—go nuts.
- **Game night:** Lawn games like croquet, catch, badminton, and red rover, as well as indoor games like charades, hot potato, musical chairs, and hide and seek, and even boxed games like Twister™ can be a great way to move your body through space while involving your friends and family.

Any of these low-intensity exercises (as well as most any you might make up on your own) may be augmented with a spicy dash of interval simply by bursting into a full sprint while doing them. Yelling 'go' at your companion while doing the

¹ Covey N. Flying Fingers: Text-messaging Overtakes Monthly Phone Calls, *Consumer Insight Nielsen Telecom Practice Group Issue 12, 2008*

laundry can make for a fun (and biochemically thrilling) wake-up and rush. If the thought of suddenly sprinting across the grocery store parking lot horrifies you, I recommend you try it the very next trip. While it will seldom be intense enough to count as an interval session (and hence will not qualify for a Peak meal), it can only serve to benefit you... and it can be refreshingly fun and amusing. And if anyone looks at you oddly, just challenge them to a race.

8: Interval Exercise

"There comes a pause, for human strength will not endure to dance without cessation; and everyone must reach the point at length of absolute prostration."

-Lewis Carroll

Interval training, otherwise known as High Intensity Interval Training or HIIT, is the application of your maximal strength for as long as your stamina can hold out. This is, in essence, a type of Resistance training, except instead of moving a heavy weight a few times, you're using explosive power and moving it dozens or even hundreds of times. For the crest part of the exercise, you are running, swimming, squatting, or performing whatever movement you have chosen at your maximum possible speed, as if you were running after something you really wanted to have (or running away from something you really had to escape).

This type of exercise requires a very go-for-broke attitude. You should move as if it were the only time it would matter, and not try to 'keep some gas in the tank' for successive sprints. Going all out is the key. On the opposite side is a rest period, or the trough. In this you continue to move but at a much reduced pace. Do not stop or sit; continuing to move is key to recovery, and keeps the blood circulating much needed nutrients and oxygen. Good air in, bad air out.

The optimal period for most types of maximal exertion is around 20 seconds; the length of recovery is dependent both on the type of exercise and on the condition of the participant. As a rule of thumb, if after 20 seconds you feel that you could continue, the exercise is not difficult enough or you are not exerting enough force. For a beginner's recovery, 40 seconds might be appropriate; for a moderately trained individual, 25 might be better. What you are aiming for is eight or so 'sets' of 20-second sprints, sandwiched around the rest period you have chosen. So if you choose to do 40 seconds of rest for every sprint, your total workout will be eight minutes, sprinting for 20 seconds or 1/3 of every minute.

The Tabata Protocol, a method of "supra-aerobic cardio" developed by Tabata Izumi, PhD, describes the ideal state for an advanced trainee to be 20 seconds of maximal exertion with only 10 seconds of recovery;¹ be warned that this method also has the moniker "4 minutes of hell". If you do not fall to the ground and feel like throwing up everywhere after completing this, you didn't do it right.

¹ Terada S, Tabata I, Higuchi M. Effect of high-intensity intermittent swimming training on fatty acid oxidation enzyme activity in rat skeletal muscle*. *Japanese Journal of Physiology* 54(1):47-52, 2004. * Tabata Izumi has done numerous studies to develop and design this method; this is the most commonly cited.

Note: During most exercises, a stopwatch is difficult to operate, so a partner can be of great help. Alternatively, mp3s and podcasts are available, both with music and without, that are automatically divided into nearly any interval protocol one could ask for. Or make your own.

As mentioned previously, you are not honor-bound to respect these particular times, and you will not get drastically reduced results if you do seven or nine intervals, or if you rest a little long for one of them. The timing is to help keep yourself honest as well as to motivate you; many people find that without the structure they quickly lose the will to even go through the motions.

Freestyle

There are countless ways to ‘play’ as your exercise for a given day; hopefully, the following suggestions will inspire you. Some of them may be unappealing to your particular interests, while some may fill you with the compulsion to drop everything and go try it out right now. Whatever your particular age, gender, race, or demographic, I encourage you to try not only what’s listed, but to compel yourself to adapt, improve, and invent new ways to amuse yourself while challenging your physical abilities. If there were more CEOs doing pull-ups on a playground instead of at million dollar health clubs, more elderly people confident to race their grandchildren around the park rather than somberly power-walking around malls at 6am, and more homemakers swinging sledgehammers at old tires in the backyard, I dare say the world wouldn’t be any worse for the wear.

- **Jump rope:** This may be inappropriate as the first on the list due to difficulty, but it’s deceptively simple to acquire as a skill, and once you can jump rope with basic form and reliability, it is nearly effortless to augment and upgrade the difficulty and challenge by varying techniques and styles. Double- and triple-swing jumps, single-legged jumping, and tricks will always serve up interesting dynamics. Multi-person jump rope with two people twirling and one jumping can be incredibly fun, even to watch; if you don’t believe me, find a couple videos of professional rope jumping to bear witness to just how great it can be. (And if this is too embarrassing or childish for you, may I suggest once again you reevaluate how seriously you take yourself.) Having a few short single-person ropes is inexpensive and having individuals each jumping independently can be a fun competition. Solo jump rope works just fine.
- **Foot races:** Racing against someone can be highly motivating, competitive, and exhilarating. Full out sprinting followed by periods of walking are the best application of this, and can be done in virtually any environment: on an indoor or outdoor track, on a nature trail, directly across a park or field (or even better, up a hill), on a sidewalk (being mindful not to be a jerk and run down some poor old man carrying his groceries). The buddy system is obviously preferred here; be conscientious enough

to give a head start or handicap to your partner if she or he isn't quite at your level of fitness at that point (i.e., please don't completely smoke your child or spouse, you big meanie). Picking arbitrary points such as a stop sign, post, or tree, sprinting full out to the goal, and then walking until the next goal is called makes the time melt away, takes your mind from the exertion to the competition, and is just plain old fun.

- **Hill sprints:** To really learn good form for sprinting usually takes an experienced coach and a lot of practice. However, a respectable alternative is to charge up a hill at full speed, as the hill itself forces you to bring your knees up high and boost off your rear foot, or else you'll eat dirt. The added difficulty is also a nice change of pace over raw speed. Sprint to the top of the hill as a race, and then saunter back down casually before doing it again.
- **Stair sprints:** These are similar to Hill Sprints, and provide the same bonus of forcing you to have good form. One caveat before attempting: it really, really sucks to miss your sprint and get a shin, chest, or face full of stair. It is recommended you start with hill sprints first and work your way up to this activity, and to use caution when performing either of them. These are also incredibly effective (i.e., exhausting), especially with multi-flight races.
- **Tag:** Similar to the footrace, tag incorporates the maximal exertion of a race and enhances it with sudden vector changes, along with the psychological and chemical thrill of the chase. Whether you're pursuing or being pursued, (and be sure to alternate for greatest effect) the neurological activation of this exercise and the strenuous excitement make for a great Interval exercise.
- **Bicycling:** On-road, trail, and off-road bicycling is just the right prescription, especially if you live or ride in a hilly area. Uphill difficulty is great for the sprint, while the downhill coast is a great recoup. If you already own and ride a bicycle, realize that most styles of biking are closer to the General Movement type of exercise; however, by pedaling as hard as you possibly can (perhaps by up-shifting to make it more difficult), you can certainly convert this to an Interval exercise.
- **Swimming:** At a moderate pace it's a great General Movement, but swimming is also incredible as an Interval if you really go all out. The butterfly stroke is great for this, but regular style will do. Turning over for the rest period and just idling along by fluttering your legs keeps the blood moving. The only downside to swimming is it's harder to keep accurate track of your timing.
- **Stationary machines:** This is generally recommended for solitary work, because comparison of mileage, resistance levels and so forth is after-the-fact and serves little in the way of motivation. The same basic application is useful for elliptical ma-

chines, stairmasters, and exercise bicycles—increase the resistance and crank it out as strong and quickly as you can for the ‘sprint’ phase, then reduce the resistance and continue idle motion for the recoup phase. Treadmills are harder to work with; crank the incline up as high as it will go and then barrel along full speed at your own risk for the sprint phase. Increasing speed rather than resistance can be dangerous, so don’t come crying if you buckle and get shot through a window. Also, don’t be that moron at the gym who’s pounding the bejeezus out of the platform; it’s like being the dude that shouts and drops heavy weights, only you’re doing it constantly.

As always, purchasing equipment often isn’t necessary, but if you’ve already acquired a piece of stationary machinery (or have access to one) this is a good way to get some use out of it.

- **Bludgeons:** Taking a sledgehammer to an old tire (or a baseball bat to a canvas bag full of towels or foam, or you get the picture) is not only a high-intensity exercise but can also be great for stress relief. The axe-chopping motion is surprisingly versatile and you can work up a most sincere lather chopping away. Try not to angrily shout anyone’s name while you’re doing this exercise...at least, not if there’s a possibility they’ll hear you.

Do it now

There are some exercises you can do when seriously pressed for time, but they aren’t particularly fun and I strongly advise against getting in the habit of using them or you risk ‘choring’. But if you’ve got to leave soon and want to knock out a fast workout on the living room floor, these will do the trick.

- **Burpees:** If you’ve ever served in the military, you will probably never want to do another one of these again. You squat down and place your hands directly in front of your feet, and then you kick your feet backward like a mule to put yourself in a pushup position with your arms extended. Then by activating your abs and hips, you bounce your feet back up near your hands and stand up straight. Repeat as quickly as possible. Cue remorse.
- **Ski-squats:** Hold your hands out in front of you while standing, then swing your arms back and out to your sides as you squat down, as if cross-country skiing. Snap them back up to your front as you stand up, using the momentum of your arms to assist you as much as you need. By holding modest weight in either hand you can actually make this somewhat easier. Holding heavy weight will (obviously) add a different sort of challenge.
- **Thrusters:** Holding a weight either against your chest or (with dumbbells) to either side of your head, squat down. As you stand up, use your body’s momentum to press

the weight(s) over your head. Repeat. These will not go as fast as the ski-squats, obviously. Though you probably won't need to increase the difficulty too often, simply add more weight to do so.

Foregoing structure

These last methods will still get you what you're looking for, although they require considerably more of a time investment. With basketball, for example, it's not often you're going to charge the net for 20 seconds and then dribble for 10. However, by playing for 20-30 minutes you still provide a significant challenge for your muscles and nervous system. The irregular bursts of maximal intensity and rest, along with the awareness required to play effectively, are benefits in and of themselves and as such are worth doing if only occasionally to change things up.

- **Playgrounds:** Many public playgrounds are sadly under-utilized, both by children and by adults. There are often numerous bars, ropes, rings and obstacles in parks and they can help to take some of the serious, "chore-esque" edge off of a workout. It's also great for parents to bring their kids along, as both can benefit. Caution: do not be a stinker and displace children for your own use of the equipment. Kids need exercise more than ever nowadays and I'd like to believe children are our future while you, friend, are our present. If there is ever a conflict, you make way for the kid. Additionally, if you believe you are too old or too sophisticated to be seen at a playground other than ironically, perhaps helpful to you would be the accompanying seriousness-depletion that comes with hanging from monkey bars. All that said, there are times of the day when playgrounds are empty. Consider a playground a free gym, or at least one that you pay for with your taxes rather than with a membership contract you can't seem to cancel. Or is that the same thing?
- **Wrestling and Boxing:** There are many contact styles of grappling and wrestling sports that allow you an adrenaline-charged workout without too much danger of cauliflower ears or a broken nose. You can do speed bag and heavy bag work after gaining a minimal amount of instruction for the sake of safety and injury prevention. You don't need to be a qualified pugilist to hit a bag; contrary to the frowning population of armchair Mixed Martial Arts enthusiasts, it doesn't matter in the least if you aren't developing proper combat technique, as long as you're having a good time. Feel free to approach martial arts classes in the same way you would a yoga class—you're there for the exercise and enjoyment, not to try to learn the ultimate technique to win any fight. The risk of actual combat or the application of a fighting art in the average person's lifetime is miniscule; even professional fighters commit to months and years of training for a mere 10-minute session in the ring every few months. Should you ever be unfortunate enough to be involved in a physical encounter, intelligence, awareness and the ability to push away and run fast will serve you better

than hoping your fighting style or technique is superior to your assailant's. So ignore the detractors, elitists and nay-sayers and do what's fun for you, whether it's Muay Thai or Tae Bo; just don't fatten your lip or sprain your wrist with sloppy technique.

An additional option in boxing or sparring is using 'kick shields' or strike pads held by a partner. This provides ample improvisation, including striking at the other person's command or having the target in motion. An inexpensive option to the commercially available kick shield is a bag stuffed with old towels. Try not to kick your partner. You know, unless that's part of the deal.

- **Dancing:** Ballet, break-dancing (the real one this time), even pole dancing—the raw athletic demand from these sports is surprising. As such, it's more than obvious that you will want some instruction before beginning them, and it will likely be apparent what movements you can use for high-intensity work.
- **Traditional sports:** There are numerous team-based sports one can play alone or with partners or friends, allowing you to apply the alliance techniques discussed previously. These sports can range from a single opponent or partner up to a large coalition of organized players. Many sports are also perfectly fine for pickup games and in no way require a static team. If team sports aren't your bag, still consider playing singles or doubles of sports like racquetball, tennis or basketball. Variety will keep your mind engaged and help to distinguish it as an activity you're seeking to do rather than complete.

9: Resistance Training

“The full squat is a perfectly natural position for the leg to occupy. That’s why there’s a joint in the middle of it, and why humans have been occupying this position, both unloaded and loaded, for millions of years. Much longer, in fact, than quasi-intellectual morons have been telling us that it’s ‘bad’ for the knees.”

- Mark Rippetoe

Much to the dismay of some readers (though I soon hope to assuage your fears), physical training by carrying and moving substantial weight is an essential part of any proper program, and virtually everyone can and will benefit from weight training. Resistance training is critically important for both males and females (and everyone in between) of any age, from five to eighty-five and up.

As a precaution, you should consult your doctor prior to beginning resistance training. But let’s be straight: millions of people don’t have health insurance to begin with, and there are plenty of miseducated quacks running around telling people contrary or even harmful information. So, if you have health problems that would be exacerbated by doing anything that follows, please don’t do it. But virtually anyone will benefit greatly, so that probably includes you. When it doubt, check with someone who knows you better than I do. Like a doctor.

To some, resistance training, also known as ‘weight-lifting’, conjures up the intimidating scene of iron plates and bars, banging and clanking about under the guidance of straining and grunting ape-men with sweaty, creased faces and anger management problems. Others might see it as an endless sea of padded machines designed to mimic every little possible isolated movement of the body.

In actuality, you can be an accomplished weight-lifter and have a healthy, lean, and powerful body without ever touching an iron weight (or a machine). Utilizing resistance to challenge your body can (and should) be done in a variety of ways, with objects of different sizes, shapes and weights. From bottles and bags filled with water or sand, wheel barrows, and even other people, your home and the world at large is full of obnoxiously heavy things, and several reputable training methodologies suggest that moving cumbersome or unwieldy objects actually enhances more significant progress than lifting a similar amount conventionally (and still better than any machine can mimic). This would lend credibility to the ‘underground strength’ and Strongman communities that orient around lifting kettle-bells, flipping tractor tires, throwing kegs and other unconventional (and arguably more imaginative and engaging) types of weight and resistance.

A word on weight training

Despite having stipulated that conventional weights are unnecessary, the reality is that since weight equipment itself is specifically designed and engineered for lifting, it is extremely convenient to control, manage, manipulate and put to use.

Training with free weights, specifically barbell and dumbbell training, is as much a sport, a hobby, or a way of life as baseball or cross-country running. While I (and many other iron enthusiasts) can and will fantasize of a world filled with gymnasiums, and a picturesque citizenry not unlike moving Greek sculptures, replete with massive shoulders and chiseled abs, the plain truth is that not everyone has the same dream, and even fewer want to commit the time and effort required to achieving that dream. In that spirit, allow me to once again reiterate some common misconceptions and concerns before we get to it:

- 1 **Do not worry about “getting big”.** Or “getting bulky” on any weight training program. If you’ve ever deliberately tried to get big, chances are you recognize it is a hard thing to accomplish at any rate. “Oh god I’m getting too big too fast” would get you a dirty look from anyone actually trying (or who has ever tried) to gain significant size. Women in particular have almost no chance of gaining *any* size of noteworthiness; lacking more than trace amounts of testosterone, women’s strength and ability increases with scarcely a nod toward hypertrophy. This means that women can lift in ratios similar to men without the accompanying increases in size or ‘bulkiness’. No one is in danger of losing any femininity by lifting real weights.
- 2 **‘Toning’ exercises are fiction.** ‘Toning’ is a persistent buzzword with no meaning. There are three basic stages or zones for resistance training: maximal strength, hypertrophy (size gains as applied to men), and muscular endurance. Anything beyond that is simply a grossly inefficient form of aerobic exercise. Please *never, ever* do workouts consisting of a great many repetitions with single-digit dumbbells; there are few bigger wastes of time available (short of doing nothing). Most ‘toning exercises’ (tiny dumbbells, high numbers of reps), especially upper arm exercises, aren’t even much good as a General Movement.
- 3 **To date, there is no gadget or device as good as just lifting up something heavy with your body.** Really. Despite the admittedly lackluster efforts of science and technology, you’d be better served by picking up a large rock, pushing a wheel barrow around, or doing squats with your child, spouse or friend on your back than doing any goofy late-night-infomercial video routine, wheel, chair, or other garbage. Don’t get me wrong; I love science and technology, but *Rocky IV* didn’t lie to you—Rocky’s honest, simple workout of sprinting up a snow-covered mountain and doing sit-ups from a hay loft served him better than all the scientific treadmill

chemical soldier antics of Ivan Drago. Machines are awful. Dumbbells, iron plates and ‘free weights’ are great for strength training, and have the simple convenience of measurement and manipulation; however, they are in no way mandatory.

At the end of the chapter is an afterword that briefly touches on gyms and fitness professionals. You should not feel obligated in any way to either purchase any equipment or to pay a monthly or yearly fee to a facility that provides such. However, should you already own or have access to such equipment, then by all means incorporate their use. I hope this chapter will provide you with enough working knowledge to qualify a trainer should you elect to employ one.

Regarding machines, cables, and devices

To maximize efficiency and success in physical strength training, the easiest solution is to just avoid machine weights entirely. This applies whether it is a cable-and-cam machine that uses a stack of weights, or a single-plane device such as a bench press on rails that is severely restricted in movement despite using plates.

Again, there is no machine, workout station, device, cam or cable apparatus that can give your body the stimulus it craves with greater precision or efficiency than simply grabbing something heavy and moving about. Although machines are not completely without merit, the orientation of this book is to get maximum results with the least amount of time and complication. Machines are contrary to that as it will take significantly more time, effort and complexity to achieve similar results to a free-standing movement (if results are achievable at all).

The issue with isolation exercises is the same as that of machine weights: when you eliminate stabilization from movement (such as with a track, rail, or pivot) and you do not load the skeleton and muscle with increased weight and challenge to compensate, you simply will not see similar results.

The human body is a complete machine, and with any correctly performed movement (for example, picking up a heavy object), your whole body is called into action. The squat down incorporates every muscle and pivot in your legs and hips, your torso becomes rigid, your shoulders tighten, elbows flex, and hands grip. The entire body as a whole is involved, and the reaction is immense. The single-plane push of a leg raise machine simply does not activate the same order of either musculature or nerves.

The use of machines should be reserved for specialized use, such as for those undergoing physical therapy or injury rehabilitation. Experts are in place to assist in such recovery but, simply put, if you aren’t hurt or disabled, you’ve got no business wasting your time with a machine (for exercise purposes, anyway).

Uh... then what do I use?

One answer is simply to use more of that human adaptability. You probably have some types of equipment already around your house, perhaps without even realizing it. That said, I will recommend a few methods either free or low in cost, and that will require considerably less space than a multi-gym or even a squat rack.

- **Engineer bag:** This is hands-down my favorite piece of workout equipment for resistance training. If you don't already own a durable canvas bag with a zipper, you can purchase one for between \$5-10 USD from any Army/Navy surplus store, or even cheaper online. Line it with old towels, and fill it with weight suitable to your ability. It's excellent for nearly any exercise, even to placing it between your shoulder blades for weighted pushups. It also builds your grip strength, is easy to store and transport, and can even be tossed or flipped for an interesting alternative stimulus.

Filling your engineer bag: In addition to the engineer bag (or any bag you prefer), you will need the following items: **pea gravel** from a home improvement or gardening store (you can buy gravel inexpensively in large sacks) and **tube socks** (buy these in bulk quantity, the bigger and sturdier the better). Simply put a sock inside another sock as reinforcement, then fill them with pea gravel. You can also wrap duct tape around the finished sock and it will last forever. You can weigh them on a scale for accuracy, but in all honesty it's just not that serious.

As I've mentioned previously, it's easy to develop a psychosomatic barrier that will prevent you from lifting over a certain amount because you *believe* it to be 'too much'. With this method you can simply add another sock of rocks if it is not heavy enough, or subtract socks if it is too heavy. No mess, no obsess.

Alternative filler: Just get a stack of rocks that are small enough for you to handle. You can add in as many as you want, it's easy to just take some out or put more in. Line the bag with some old towels if you'd like to make the outside softer.

- **Keg or water bottle:** Weight in either type of container can be adjusted simply by filling or emptying the container to your preference. A keg can be large and unwieldy, which is actually beneficial to neuromuscular activation, as will be the shifting movement of the contents of the container.
- **Other containers:** Milk crates, plastic boxes, storage containers, backpacks, and even suitcases can be filled with almost anything heavy, such as books, old magazines or newspapers. You'd be surprised (or maybe you wouldn't) by how much a milk crate full of old National Geographics actually weighs. More durable containers may also be filled with water, rocks, sand or anything else you have handy.

- **Free weights:** If you already own an Olympic bar and plates, or if you have access to a gym (school, work, or you actually enjoy being a gym member), by all means use them. Check the end of the section for methods to educate yourself about lifting iron.
- **Bodyweight:** With most exercises, such as the pull-up or one-legged squats, your own body can be sufficient weight. Just make sure it is appropriately challenging.
- **People:** Fun for intermediate trainees, lifting your partner can be a great workout in addition to a great party trick. Holding a person in a fireman carry or piggyback style to do a squat is also quite challenging due to the neuromuscular activation and balance required for the cumbersome load of a person, as well as the raw weight of another person's body. Children can help you work your way up to adults, and they tend to find it more amusing anyway.

Nearly anything heavy or cumbersome that can be safely gripped and moved may be used for exercise. Improvisation is a great variable to prevent workouts from getting stale or repetitive.

Weight, reps, rest, and sets

Numbers are to help you ensure you're being honest with yourself, and to give you a motivational framework by which to measure your success. Missing a rep won't cancel out your effort, and you are not bound by your numbers.

Your target is **20** total repetitions per exercise, divided into sets. Select a challenging weight or difficulty that allows you to do the movement six full times before your form breaks down and you end the set. If you complete more than eight reps on the first try, add more weight or difficulty. If you cannot do more than three, subtract weight, or make it easier. Perform as many reps as possible with good form for each set, for as many sets as necessary. Rest between each set for at least 45 but no more than 90 seconds, depending on the feedback from your body.

	Set 1	Set 2	Set 3	Set 4
Weight	100	120	120	120
Reps Completed	9	5	4	2
Total Reps	9	14	18	20

As an example, perhaps you are doing weighted push-ups. During the first set you are able to complete nine reps before you crumple to the floor. Add more weight during your rest (say for 60 seconds), then reposition the bag and begin again. In set 2 you complete five, totaling 14. You rest (60s). Then you perform four, equaling 18. Rest (45s). On your last set, do two. Completed, move on.

How often and which movements

Perhaps the simplest method is to work out three times a week, properly alternating days for recovery. Most people will find M-W-F to work best, but Su-Tu-Th is just as good (assuming then Saturday is your full-recovery day). Each workout consists of two contrasted movements, one pulling and one pushing, one for shoulders and one for hips (we will discuss the push/pull/hip/shoulder distinction immediately following this section). The workouts are staggered so as to properly conserve your grip strength and to allow proper recovery of each area.

	Hip	Shoulder
<i>Day A</i>	Push	Pull
<i>Day B</i>	Pull	Push

On day A, you do a pushing hip movement and a pulling shoulder movement, following the rep/set/rest guidelines. On day B, you do a pulling hip movement, and a pushing shoulder movement, again following the rep/set/rest guidelines. Go back to A for Friday, then start with B on Monday.

On with the show

Let us presuppose, then, that a strong and healthy body, tasty and, for all intents and purposes, physically fit and picturesque, may be properly earned and maintained with the application of the 80/20 principle to resistance training. Further, that such can be acquired without reliance on absurd machines, balls, chains or bands, or indeed even without benefit and/or convenience of iron bars or massive amounts of weight. To accomplish this, we select a few high-potential exercises and movements that will net the largest majority of results.

These highest-tier exercises will incorporate as much of the body as possible. Such movements, outlined in this chapter, work fundamentally with the two primary axes in the body: the hips and the shoulders. Working either (or both) of these primary axes with a loaded exercise (standing, rather than seated or positioned in a machine) will automatically incorporate the lesser subjugate joints. For example, performing a loaded, free-standing squat is a hip-axis exercise that also directly calls into play the secondary axis at the knee and tertiary axis at the ankle joint. Additionally, it incorporates the shoulders and upper body to properly hold and secure the load, and the back and torso to support it. The involvement of all these joints, the skeletal structure, the nervous system and the musculature, successively and collaboratively, are force multipliers that greatly increase the effectiveness and potency of the exercise.

Now before a self-described bodybuilder or powerlifter crashes through the wall like the Kool-Aid™ man, I am not speaking solely of the deltoids, but rather the socket joint of the shoulder itself, incorporating the chest, back, arms, and all other minor muscles involved in pulling toward and pushing away from the upper body.

There of course are benefits that can be gained by working the lesser axes in isolation, and in the quest of a bodybuilder seeking perfect symmetry and maximal size (not unlike being a sculptor with his body as the media) this is not only appropriate but a necessity. But in relation, the large majority of benefits in both growth and strength are gained from working the big muscle groups in compound movements on a dominant axis when compared to single-joint work, and as such is a perfectly acceptable foundation for training.

Resistance exercise, like Interval exercise, is also a useful method for incorporating neuromuscular activation. By lifting a considerable weight up and supporting it with your body, you cause an involuntary neurological reaction in your body and mind that essentially says, “If we drop this, we may die.” Such primal activation can only serve to further enhance muscle recruitment and maximal output.

Thus there are two major movements, along with two major axes: pushing and pulling, shoulders and hips, a total of four primary movements (pushing hips, pulling hips, pushing shoulders, pulling shoulders) that can be supplemented and modified at your discretion in endless ways for varied development, challenge and simply to keep it interesting.

Hips: the power axis

The hips are our first focus for weight training, and the major movements to train them are the *squat* and the *deadlift*. As the strongest axis on the body, the hips are where all our power begins and is channeled, and they act as the pivot for the two biggest muscle groups, the quadriceps (the thigh) and the glutes (the butt).

The chair (and all its nefarious iterations) is a prime destroyer of the human machine, second only to the french fry and the soda pop. Computers have greatly exacerbated this issue by increasing the amount of time someone spends hunched over at a desk. But even apart from the computer, numerous other factors, such as the extended time in cars or on planes (and sitting in the terminal waiting for them), mean people are more chair-bound than ever. And the seated position, specifically with legs raised, is one of the most detrimental to human physiology. The squat (and the pull-squat conditioning exercise in Chapter 6) will serve as the primary method with which to reclaim the mobility that your hips should naturally possess, and that modern convenience has stolen from you.

The squat: hip-push



This is my squat. There are many like it, but this one is mine. The squat is one of the most fundamental, powerful, and useful movements the body can perform. It is likewise one of the most maligned and misunderstood of exercise movements. Today, tens of thousands of people will go to their gyms, put far too much weight on the bar, and then proceed to perform partial squats that cause excessive stress on the knees, all while insisting the reason they don't perform full squats is that it's 'bad on the knees'. Also, because then they would have to lift less weight, and wouldn't that be a shame.

A critical factor to bear in mind when squatting is to keep your spine erect. This doesn't mean 'straight', nor does it mean perpendicular to the floor. What you want to do is tighten and compress your spine as if you were standing up straight. In an erect position the spine is incredibly strong and durable; it's when we fall out of proper posture and disobey physics that things start to go wrong. During a squat, your body will naturally tilt forward, both for the weight to redistribute and to allow your center of gravity to naturally stabilize. This is perfectly fine, just remember to tilt at the hips and keep your spine rigid.

In many gyms, clinics, magazines, books, and in basic word of mouth, there has persisted a nugget of misinformation regarding proper squat depth; some trainers, coaches, and even doctors (we'll address them later) advocate partial squats, or squatting to 'parallel'. It is claimed that squatting past that point is bad for the knees. In actuality, prematurely halting the squat before it has reached the bottom inflicts a much greater sheering force and impact on the knee joint. A deep and full squat allows the glutes, hamstrings and hip adductors to be utilized properly and, properly executed, results in one of the safest leg exercises available.

Many people, even trained athletes, lack full hip mobility, and have shortened or tight tendons and musculature in the hips and thighs. Recovering this mobility is your first task, not only when undertaking squats but as a greater step toward recovering your natural ability. Squatting is the recommended way to pick a heavy load up from the ground, and can be a preferable posture alternative to a seated or cross-legged position when at rest. Should you be unable to squat deeply, and to curl your toes up at the bottom of a squat (demonstrating that your weight is properly distributed and you are not perched on the balls of your feet), then your initial goal is to recover this mobility. The following movements are loosely arranged in order of difficulty; if you find one to be easy, simply move on to the next one.

Chair squats Find a low chair, and sit down on it. Then stand up. Try to stand directly up, driving off your heels, rather than rocking forward. Don't swing your arms. A more difficult version can be off a low stool or even a couch cushion on the ground. To provide a dynamic exercise, alternate between sitting down fully and taking the weight off your feet, and quickly standing up the moment you touch the chair.



Supported squats Utilizing a doorway, chair, table or any stable support, latch on and lower yourself into the proper squat position; if you are unable to fully complete it, go down as far as you can, and pause briefly before coming back up. Repeat the movement and attempt to achieve at least a nominally lower position each time. As your squat improves you will rely on the support less and less.

Bodyweight squats This is an excellent milestone on the path to recovering your mobility. Many untrained individuals are unable to perform an unsupported bodyweight squat without tipping over, and a surprising number of trained athletes and individuals who have lifted weights for years are unable to do it without support.



The ability to perform this movement and hold it comfortably at the bottom with feet flat demonstrates significant physical acuity and flexibility. This movement follows naturally from the supported squat. At some point you will find your depth sufficient, and you'll be able to let go of the support and stand on your own. Test your posture and weight distribution by curling up your toes; this checks if your weight is properly on your heels. If you quickly tire or get sore, stand back up and relax before settling back in. Building a solid groove and position in the bottom of the squat will help your overall mobility in numerous ways. If you are able to tuck your knees into your armpits and drape your arms over them like the wings of some flightless bird, then sit still for a few minutes (or waddle around if you're feeling frisky), you're pretty much good to go.

Zercher squats Hold a weight (your engineer bag, or whatever else you're using). Squat deeply and fully, achieving the entire range of motion for each rep. As you become stronger and more confident in your movement, you may increase the weight to maintain your repetition standards. Do not be afraid of lifting heavy things; when you can add more weight, do so.



Alternative movements

An often overlooked aspect of training are *unilateral movements*. By interspersing compound exercises that focus on one limb at a time, you can improve balance, coordination, and the ability to apply force when lifting something unwieldy or otherwise not so purposely or precisely balanced and positioned, especially in daily or active life.



Lunges Traditional lunges start from a relaxed standing position with feet side by side. You then step out deeply with one foot and stop yourself before your back knee connects with the ground. Walking lunges are performed as a continuous stride by alternating deep steps.

Split squats This unilateral movement challenges both legs in a significantly different way than the more stable and supportive two-legged squat. While holding the weight, lift the assisting leg and place the top of your foot on a chair, bench or shelf behind you. Then squat deeply on your primary leg and stand back up. After completing your set, switch to the other leg and repeat. Each side should have its own rep count and total.



Pistol squats Intended for the advanced practitioner, these are single-leg squats without even the supporting brace of the other leg. Initially, using a low chair or a doorway will help you to balance and coordinate your movement. This unilateral exercise is not only an interesting variation but can provide enhanced stimulus and ancillary conditioning when incorporated into a workout.



Jump squats The explosive jump out of a deep squat is also great for neuromuscular activity and can be fun to boot. Simply squat down, and then propel yourself upward as quickly and as high as possible. For added challenge, tuck your legs up for as much height clearance as possible, and then extend them as you come down.

Deadlift: hip-pull



The deadlift is the pull power movement for the hip axis. It combines drive via the glutes and hamstrings from the bottom half of the hip, and the muscles of the lower back at the top. Additionally, muscles in the torso are called upon to hold the body rigid, and muscles in the shoulders and arms are called upon to support the load.

As with the squat, proper posture is key to maintaining a good deadlift, and making sure the pivot is through your hips and not in curving or rounding of your lower back. Again, bear in mind that your spine should stay *erect*. This does not mean 'straight'. Tighten and compress your spine as if you were standing up straight and bore a heavy load on your shoulders. Your back may round ever so slightly to assist you in the lean forward to grab the weight initially, but when you actually lift the weight you should use your butt and your hamstrings to execute the movement, not your back.

Unlike the squat, most untrained individuals are able to perform the range of motion required for the deadlift. Again, being sure that it's your hips acting as the fulcrum for the lift is key. Also unlike the squat, there isn't a series of easy progressions for the deadlift; simply make sure you can do the movement properly without weight, and then start putting weight in your hands and lifting it.

Alternative movements

Stiff-legged deadlifts This technique simply takes the knees out of the equation. You bend over at the hips, not at the back, and while maintaining a neutral spine position, you bring the weight up into a standing position. The easiest visualization is to see your pelvis as a hinge. Pivot through the hips and upward, standing fully upright before descending.



Good mornings This deadlift variant repositions the center of gravity, and thereby modifies the torque, musculature and movement called upon to move it. This position requires more rigidity and strength in the back due to the longer load arm, thereby requiring greater effort to move the same weight. The variance in stimulus is useful for growth and to avoid stagnation. However, getting the weight onto that position is an exercise for the student.



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Single-legged deadlift This exercise is best done without weight prior to mastering the form. Shift your own weight through the axis of your hips and raise the hip of the off-leg. Then tilt the body forward while raising the straightened free leg toward the rear. The free leg should remain behind you, in a parallel line to the upper body as you lean forward and come back, as if there were a rod running

from your outstretched heel to your head. Once you are able to do that and maintain your balance, you may add weight and bend the leg at the knee rather than moving the entire leg. This is as much for development of balance and coordination as for strength.

Shoulders: the manipulation axis

To reiterate, this is actually the shoulder joint and not just the deltoids. This includes the chest and back, the two major upper-body forces, along with the biceps and triceps and everything else above the waist. Though there is strength developed in the shoulder axis, it is not at the level of the power generated by the hips. Rather, the shoulder may be thought of as a conduit used to project and transmit power generated at the hips. A throwing motion, whether a ball or a punch, begins in the soles of the feet and is generated by shifting, turning, or rotating the hips.

When working from a seated or prone position, the shoulder is still able to generate and bring a considerable amount of force to bear, but our shoulder axis, which includes the chest and back, through the arms and out to the hands, is still primarily a method of precision force direction and application.

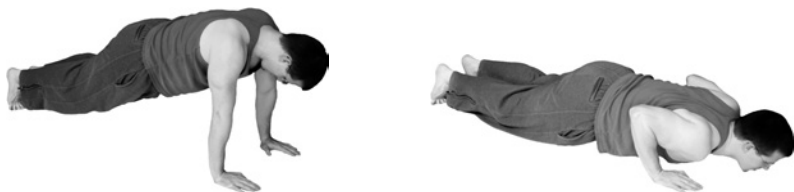
Push-up: shoulder-push

For the majority of these exercises, the humble and beloved push-up will serve well. Significant weight may be incorporated to increase resistance, and the variations for a push-up are endless, from hand position to angle of descent. You should seek a roughly 45-degree angle of your elbows, halfway between your sides and straight out. If your wrists ache from push-ups, consider a push-up frame or using hexagonal dumbbells to support your wrists in a more upright position.

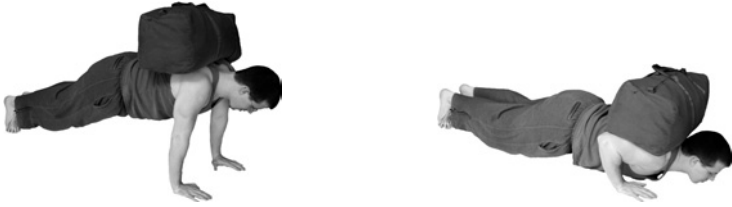
Wall push-ups Should you find yourself starting with a severe lack of upper body strength, simply place your hands against the wall about shoulder-width apart, and then slowly back your feet away to increase the angle. As it gets easier, you can increase the distance of your feet from the wall (up to around 45 degrees). After that point, it will be easier to go on to the next position than to go any lower on the wall.

Partial push-ups Put padding under your knees, straighten your back and hips out into a solid posture, and lower yourself almost to the floor. Then push up.

Traditional push-ups Most people know how to do these. Simply follow the opening guidelines, and do these until you are strong enough to exceed your target reps.



Weighted push-ups Put a weight between your shoulder blades (or have someone else do it), then push up, maintaining proper posture and supporting the load. As you gain in strength, you can increase the load, even up to another person.



Alternative movements

Push-up configurations You can do push-ups in many ways by altering the angle of your elbows to your body, your hand position, or the angle of your body by elevating your feet on a piece of furniture. Simply adjusting the positioning of your hands can be enough to provide a distinctly different stimulus. After experimenting and expanding your push-up arsenal, you can increase the challenge with weight.



One-hand push-ups Caution: these are not for the faint of heart or weak of body as they put significant stress on the shoulder joint, and should only be done by a well-prepared individual. Spreading your feet a little over shoulder-width apart and positioning your hand close to beneath your sternum will put you in the right position. This is a powerful exercise for unilateral training, but be careful.



Plyometric push-up This is the process of pushing up explosively, so that you are able to lift your hands briefly off the ground. A more advanced challenge for coordination, speed and height is to clap your hands between repetitions .

Overhead press Pressing the engineer bag or barbell (or vacuum cleaner or your cat, whatever you're using for weight) over your head with both hands is an excellent alternative movement for the shoulder-push position. Overhead presses work the shoulder joint in a completely different plane, thereby providing a different and new degree of stimulus, as do the following two shoulder press variations.



One-hand overhead press This unilateral shoulder press is slightly more accessible than the one-handed push-up. Smaller weights (about cat-sized) can be pressed in the seat of your hand. For heavier and unwieldier weights, adding a grip is helpful. You may wish to shift your hip slightly in order to maintain a pleasant vertical line through your center of balance, in a mechanically sound fashion.

Dips A functionally inverted press. Sit on the edge of a chair or bench and place your hands behind your hips. Lift up and support yourself on your arms and come forward. Lower yourself down to a 90° angle at your elbow, then press yourself back up to straight.

Back: shoulder-pull

The complement to the push-up is the pull-up, but for the untrained individual, pull-ups may be a bit out of reach. We'll begin with a few less intensive movements that will prepare you for pull-ups to come.

The row A horizontal pulling motion, and a good start for developing your back. Assume the deadlift position with your posture solid and locked in, and the weight in your hands. Now instead of deadlifting it up, simply bring the weight up to your chest just below your sternum, hugging it to your chest, and then lowering it back down. Your spine should remain in relatively the same neutral position.



Lawnmowers A unilateral version of the row, this movement requires some variable posture changes to help support your back and body. You draw the weight (in one hand) up along your center of gravity, pulling it up as if you were pulling the cord on a lawnmower (one cannot help but wonder how soon this analogy is hopelessly anachronistic). There is a twist both in the hips and torso, with the axis being through the center of the body. Lift as forcefully as you can without tossing the weight.



The joy of pull-ups

Once you are conditioned to the point you can hoist your bodyweight, you will find there are improvisational gyms everywhere. A local playground is (as for other types of exercise) an excellent choice, if only for the variety of protrusions and objects it offers. As a bonus, if you have children, grandchildren, young siblings or whatever, you can take them along. Nothing says High Intensity like energetic children who haven't yet learned to be lazy.

You may also have a bar in your garage or elsewhere in your home, a deck or landing that is easy to grab onto, or you may also acquire a pull-up bar for quite cheap that is mountable in almost any doorway.

How far apart you space your hands on a bar is at your discretion, but the more often you vary your grip (from a wide Army-style pull-up to a close, hands-together pull-up that is practically a biceps curl), the greater the stimulus will be. Some choose to change their hand placement between each set, while some use the same grip throughout a workout and then switch for the succeeding workout.

Grip should be varied regularly as well, though your options on a straight bar are typically limited to pronated (palms away, overhand) or supinated (palms toward yourself, underhand). You may also find neutral grips (palms toward each other) at the gym, playground, or on special pull-up bars and devices.

Low Rows A preliminary build-up to the pull-up, you may use a low bar at the playground or at your house or failing that, toss a rope or long towel over a bar and grip it firmly. Then leaning way back (the further back, the greater the challenge), and while keeping your body straight (the pivot being your heels on the ground), draw your arms to your solar plexus, mid-torso just under your chest, then letting your arms extend out fully. Sort of like the Row above, but inverted. Your bodyweight is the weight. You can add weight on your lap or chest.

Jump-assist pull-ups You can simply grab onto a bar that is at arm's length, and then give yourself a boost up with your calves. Assist your pull-up with as little leg muscle as possible, until you can reduce the involvement of your legs.

Negative pull-ups An alternative to jump-assists, you propel yourself to the top of the range of motion (chin above the bar) and then hold yourself in that position, letting yourself back down as slowly as you are able. Over time you will be able to descend more slowly.

Pull-ups There is no finer upper body exercise, not even push-ups. When you get to the point that you can belt out sets of body-weight, traditional pull-ups, you've achieved a respectable milestone for human ability.

Weighted pull-ups Once you've accomplished enough pull-ups that you are exceeding your rep target, you may wonder what comes next. You can easily add weight to your pull-up by putting weight (rocksocks, books or whatever's handy) in a backpack, by lacing your engineer bag's straps through your belt, or by simply clutching the bag (or object) between your thighs while you lift. If you can do pull-ups with a partner holding on to your legs, you can consider yourself fairly well set.

Afterword

Of gyms and fitness

As I've mentioned, within me lurks a secret fantasy of some future society of people who consider the gymnasium a central column for personal health, social interaction, and even a touch of spirituality. In my heart of hearts I picture entire families playing sports and lifting weights, with men and women from ages 8 to 80 powerfully executing olympic lifts. I'd like to see gyms frequented as often as fast food restaurants are at the time of this writing. I'm an idealist at heart, and I like to fantasize about a culture where everyone is healthy, strong and fit. Sue me.

That said, gyms with their clients' well-being as the focus are few and far between (should you belong to one, show appreciation). Not that I'm blaming anyone; there's always a balance to be sought between making a profit and properly serving your customers, and between providing effective exercise equipment while still maintaining safety standards to keep the foolish from injuring themselves. The problem is that the ideal business model for a successful (if unscrupulous) gym is where everyone is a client, but no one shows up. That way none of the machines wear down, nobody complains about not enough equipment, and the money rolls in.

In fairness, any gym, whether chain or private, has ex-clientele with their personal horror stories about contracts, poor educational standards for their em-

ployees, and worse. Without a doubt, great facilities exist, but fitness is something you can have with or without a gym. I am not discouraging you from joining a gym, but a gym is in no way a necessity. On the flip side, if joining a gym and paying that money serves as your motivation, for any reason, then by all means do it. In the end, it's simply a choice of preference.

'Experts'

As a culture we are bursting at the seams with knowledge. The Renaissance Man is no more; there's so much to know that even as you become an expert in a field it only serves to illustrate to the aware how much more they have yet to learn. Any sound professional learns (and unlearns) every day, and today's unmitigated truth is tomorrow's joke about our old, foolish ways of thinking.

The underlying problem that professionals encounter is the mistaken belief that being an expert in a field makes them an expert in all things related. And people seeking the advice of 'experts' are often even more under this delusion than the experts themselves. You can find otherwise learned and physiologically savvy medical professionals who swear up and down that a full squat will destroy healthy knees. But you can also find welders, police officers, and sous chefs who are incredibly knowledgeable and proficient powerlifters.

Doctors, nurses, chiropractors, physical therapists and athletic trainers, nutritionists, dieticians and many other experts may or may not know much that could help you. The best decision you can make when seeking the advice of a professional is to properly educate yourself and have the best understanding possible of what will work for you and what won't. Even the most skilled practitioners themselves still have to shop around for care from professionals who have similar philosophies.

Last and least, 'personal trainers'

Though chiropractors come in a close second as the highest fraud-to-legit ratio, the personal training racket is hands down the worst. For every brilliant and well-educated trainer (and they *do* exist), there are ten or a hundred sit-up counting muffin-topped airheads who took a correspondence course, or who just completed a short multiple choice test online and paid the fee. Most training credentials are dubious at best, and no credential is required to bill yourself as a 'personal trainer.' And as dubious as certifications may be, some fitness centers don't even require their employees to have one at all.

Though we are compelled to refer to authority when we do not feel experienced, be suspicious by default when you are dealing with a trainer, until they have

demonstrated otherwise. As I've said ad nauseum, you should not feel compelled to seek out a trainer, but if you choose to do so, be prepared. By random draw, odds are the trainer you're dealing with knows about as much as you did before you started reading this book. And at this point, they know significantly less than you. That's just statistically speaking, though, and statistics break down on the individual level. He or she may be a con man or woman, trying to take you for the proverbial ride. He or she may also be totally aces, and may be instrumental in assisting you yourself to not be a statistic, and instead to become the exception to the rule. We can always hope. As always, your strongest method is being knowledgeable yourself so you can dismiss the quacks and feel confident about the legitimate.

Or as Mark Rippetoe put it perhaps better than I, "You are right to be wary. There is much bullshit. Be wary of me too, because I may be wrong. Make up your own mind after you evaluate all the evidence and the logic."

Postscript

The original seeds for this book were planted not just by clients I've trained, but with almost anyone I've ever spoken with who sooner or later discovered I was a 'personal trainer'. The primary purpose was to dispel the persistent untruths I hear time and again, these same-y bits of misinformation that inadvertently spread like a juicy bit of gossip or 'hilarious' image or video. It was also to offer up useful nuggets of information that just about anyone can benefit from, like not sleeping with the TV on, and not being afraid of dietary fat. I'd also like to imagine that if anyone reading should happen to recall even one significant point, apply it consistently, and thereby have the quality of their life (and the lives of those around them) improve, I'd wager it was worth the effort.

It's a short book. Rather than having people feel that shortness somehow diminishes the value, I would like to point out I generously skipped all the complicated recipes that nobody's ever going to follow, and the 40 variants of biceps curls that somehow miss the point of exercise entirely. This book was written for anyone, young or old or (like many of us) in between, so they might sit down in their favorite chair and read it in an evening, or skim it during a few trips on the train, or knock out a chapter while waiting for an appointment.

Maybe I should have called it "All The Things I Wish You Knew", but it's not quite that ambitious in scope. It's simply those things I say time and again; when I reveal them, I am treated to startled gasps of surprise and disbelief. I'd like to make this book baby-sized, and simply hand out complimentary copies as we each exit the womb. Watch your head, have a great day. Who knows?

I'm sure in the not-too-distant future, as science progresses, some of the concepts presented herein will be antiquated, or even contrary to 'common knowledge' (not that there's anything particularly common about knowledge of any sort). I'm certain that some reputable experts would already disagree with some of the things I've said. However, the same could be said for any book regarding the ever-evolving state of fitness, and it's my humble opinion that this book will do much more good than harm. If I can help offset even one backward old coach or reactionary dance instructor or simply halt some hearsay that's got a decent and well-meaning person doing the wrong thing, then I'll sleep better for it.

It is my earnest hope that by reading my work, the quality of your life improves. Well, and I hope it was entertaining. Both. I hope you had a laugh, and I hope you feel better and live longer. Which doesn't mean I'm not selfish; perhaps one day I'll be shopping in your store or ordering your service or buying your product, and you'll be feeling so damned good because you slept well and ate a great meal that you give me a sweet discount just for the hell of it. We're all in this together, whether we like it or not. And I actually kind of like it.

Yours,
Clint Cornelius

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