

Beyond Bigger Leaner Stronger

*The Advanced Guide to
Shattering Plateaus, Hitting PRs,
and Getting Shredded*

Second Edition

By Michael Matthews (www.legionathletics.com)

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There may be risks associated with participating in activities or using products mentioned in this book for people in poor health or with preexisting physical or mental health conditions.

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Specific results mentioned in this book should be considered extraordinary, and there are no "typical" results. Because individuals differ, results will differ.

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Also by Michael Matthews

*Bigger Leaner Stronger: The Simple Science
of Building the Ultimate Male Body*

*Thinner Leaner Stronger: The Simple Science
of Building the Ultimate Female Body*

The Little Black Book of Workout Motivation

The Shredded Chef

Praise for *Beyond Bigger Leaner Stronger*

“This isn’t your typical fitness book full of fluff and pseudoscience. It’s a unique and compelling combination of time-proven diet, exercise, and supplementation strategies and techniques that’ll help you get bigger, leaner, and stronger than ever before.

“Mike shares tips in *Beyond Bigger Leaner Stronger* I’ve never seen before, and if any of my friends craved simultaneous fat loss and muscle gain, this is the evidence-based handbook I’d grab for them first.”

—Ben Greenfield, CEO of Kion, and *New York Times* bestselling author of *Boundless*

“*Beyond Bigger Leaner Stronger* provides effective, practical, and scientifically proven diet and training strategies and techniques for maximizing your body composition.”

—Ethan Suplee, host of *The American Glutton* podcast

“Beyond Bigger Leaner Stronger provides a great blueprint for novice and intermediate lifters who want to take their physique to the next level using a sustainable, evidence-based approach that is presented in a manner that’s easy to read, understand, and apply.”

—Eric Trexler, PhD, professional natural bodybuilder, and Director of Education at Stronger by Science

“Mike’s books do a great job of distilling effective and evidence-based information into simple and practical tools for getting bigger, stronger and leaner. I can confidently say Mike is one of the good guys in the field.”

—Menno Henselmans, published scientific researcher, writer, and trainer

“I highly recommend *Beyond Bigger Leaner Stronger*! It’s an enjoyable read packed with scientific and practical training and nutrition advice you can use to make massive progress. Keep it as a reference and let it guide you toward a bigger, leaner, stronger (and more confident) version of yourself!”

—Doug Larson, MS, founder of the popular strength and conditioning podcast, Barbell Shrugged

“In *Beyond Bigger Leaner Stronger*, Mike sifts through mountains of research and decades of time-honored traditions and gives you an easy-to-follow guide that packs a heavy punch. Unbiased and uncompromising, this book is the truth.”

—Dr. Jordan Shallow D.C., Stanford University Rugby strength and conditioning coach, and elite international powerlifter

“Beyond Bigger Leaner Stronger contains no filler or fluff. Every chapter is packed full of powerful and science-based insights, tools, and strategies. This book delivers a tremendous amount of value.”

—Marc Perry, CSCS, CPT, founder and CEO of BuiltLean

“Beyond Bigger Leaner Stronger is comprehensive and straightforward. No nonsense, and no filler—just a ton of science-based, practical information for getting maximal results.”

—Alan Aragon, published scientific researcher, writer, and trainer

“Beyond Bigger Leaner Stronger is the whole package. It’s informative, clear, and practical, and its methods are backed by decades of scientific research and thousands of success stories. A must-read for serious weightlifters.”

—Mark Divine, founder of SEALFIT, and *New York Times* bestselling author of *The Way of the SEAL*, *Unbeatable Mind*, and *8 Weeks to SEALFIT*

“Beyond Bigger Leaner Stronger is meticulously researched, clearly written, and utterly practical. Matthews has a knack for turning complex ideas into simple actions.”

—Dr. Spencer Nadolsky, board certified family, obesity, and lipidology physician

“*Beyond Bigger Leaner Stronger* gives an exact plan for how to create the body you’ve always wanted. This is a must-read for anyone who wants to reach their fitness goals, and I’m living proof that what Mike says works!”

—David Nurse, NBA Optimization Coach, and author of *Pivot & Go*

“*Beyond Bigger Leaner Stronger* is a blueprint for succeeding as an intermediate or advanced weightlifter. It’s informative, well written, easily digestible, and supported by up-to-date scientific evidence.”

—Kyle Hunt, host of the Absolute Strength Podcast,
and author of *Bodybuilding for Beginners*

“*Beyond Bigger Leaner Stronger* is easy to comprehend and based on solid scientific information. Think you aren’t big, lean, or strong enough? This book will get you to that next level.”

—James Krieger, MS, CEO of Weightology,
Co-CEO of Fit Pro Financial

“In *Beyond Bigger Leaner Stronger*, Matthews breaks down the science of getting as jacked as possible in terms anyone can understand. Highly recommended!”

—Jeff Nippard, pro natural bodybuilder, powerlifter,
and YouTube fitness leader

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Thank you to everyone who helped me create this book, including Armi, who assisted tremendously with the programming in particular, and Mary, who made me sound smarter than I am.

And thank you, dear reader, for your support, and thank you to all the guys and gals who have carried my banner over the years and made this book possible.

This is for you.

Free Bonus Material:

(Videos, Tools, and More!)

THANK YOU FOR reading *Beyond Bigger Leaner Stronger*.

I hope you've found it insightful, inspiring, and practical, and to make sure you receive as much value from this book as possible, I've put together several additional free resources to help you, including:

- A reference guide to save, share, and print, with all of this book's key takeaways, checklists, and action items.
- Links to form demonstration videos for all *Beyond Bigger Leaner Stronger* exercises.
- An entire year's worth of workouts, neatly laid out and provided in several formats, including PDF, Excel, and Google Sheets. If you'd prefer the workouts in a digital or hard-copy book, check out *The Beyond Bigger Leaner Stronger Challenge* (www.bblsbook.com/challenge). And if you'd prefer to use an app, check out my free workout app Stacked (www.getstackedapp.com).
- Over twenty meal plans for losing fat and gaining muscle following traditional dieting, intermittent fasting, and calorie cycling protocols.
- A list of my favorite tools for getting and staying motivated and on track inside and outside of the gym.
- And more.

To get instant access to all of those free bonuses (plus a few additional surprise gifts), go here now:

⇒ www.bbbsbook.com/bonus

Also, if you have questions or run into difficulties, just shoot me an email at mikem@legionsupplements.com, and I'll do my best to help.

Part One

What's In This for You?

1

The Promise

No matter how stuck you feel, no matter how bad you think your genetics are, and no matter how many “advanced” diets and workout programs you’ve tried and abandoned ...

... you absolutely, positively can break through muscle and strength plateaus, set new personal records, and build your best body ever.

WHAT IF I GAVE YOU A SCIENCE-BASED, time-proven, and failsafe formula for eating and exercising that’ll make putting on your next ten to fifteen pounds of quality lean mass run like clockwork ... and what if it produced real results in your first three months?

What if I showed you how to get bigger, leaner, and stronger without following restrictive or exotic diets, putting in long hours at the gym, or doing crushing workouts that leave you aching from tip to tail?

And what if I promised to be at your side the entire way, pushing you to discover what you’re truly capable of, helping you overcome obstacles and setbacks and avoid pitfalls—basically doing everything I can to see you achieve your fitness goals faster?

Imagine waking up every morning, glancing in the mirror, and being

downright impressed by your reflection. Imagine going into every workout downright excited, like when you were a beginner.

Imagine, just twelve weeks from now, seeing real muscle and strength gains again, looking forward to your workouts again, knowing your fitness is *finally* under your control again.

Well, you can have all these things, and it's neither as difficult nor as complicated as you probably think.

It doesn't matter whether you've been working out for two years or ten, it doesn't matter how long you've been stuck for, and it doesn't matter what's in your DNA. No matter who you are and where you've been, you can become a model of peak fitness.

Just ask the thousands of men whose lives have been changed by my work. They accepted my help, and now they look and feel better than ever before. They are the proof that this book can help you look and feel your best, too.

So, would you like my help?

If you answered "Yes!" you've taken a *leap*, not a step, toward the new you—the biggest, leanest, and strongest you.

Your journey begins as soon as you turn the page.

2

Who Is Mike Matthews and Why Should I Care?

Nothing in the world is worth having or worth doing unless it means effort ,pain ,difficulty.

—THEODORE ROOSEVELT

I'M MIKE, and I believe that every person can build the body of their dreams.

My mission is to give everyone that opportunity by providing time-proven, evidence-based advice on how to gain muscle, lose fat, and get and stay healthy.

I've been training for almost two decades now. I've read thousands of pages of scientific literature and tried just about every type of workout program, diet regimen, and supplement you can imagine. And I can confidently say that while I don't know everything, I do know what works and what doesn't.

Like most people, I had no clue what I was doing when I started out. I turned to fitness magazines for help, which told me to work out a couple of hours per day and spend hundreds of dollars on pills and powders per month. This went on for years, and I jumped from diet to diet, workout program to workout program, and supplement to supplement, only to make mediocre progress and wind up in a rut.

I then hired personal trainers for guidance, but they had me do more of the same. After spending thousands of dollars, I still hadn't gained any more muscle or strength to speak of, and I still had no idea what to do with my diet and training to reach my goals. I enjoyed working out too much to quit, but I wasn't happy with my body and didn't know what I was doing wrong.

I finally decided something had to change, so I set out to learn the actual physiology of muscle growth and fat loss. I threw the magazines away, fired the trainers, got off the internet forums, and searched out the work of top strength and bodybuilding coaches, talked to scores of natural bodybuilders, and examined the scientific literature.

Several months later, a clear picture was emerging.

The real science of getting into incredible shape is very simple—much simpler than the fitness industry wants us to believe. It flies in the teeth of a lot of the stuff we see on Instagram and YouTube and read in books and blogs.

Here's the truth:

- You don't need supplements to build a great physique.
- You don't need to constantly change up your workout routine to "confuse" your muscles.
- You don't need to "eat clean" to be lean.
- You don't need to stop eating carbs and sugars to lose weight.
- You don't need to eat small meals every few hours to "boost your metabolism."
- You don't need to grind out hours of boring cardio every week to get six-pack abs.
- You don't need to live in the gym and sacrifice your relationships with your friends and loved ones.

Based on what I learned, I completely changed my approach to eating and exercising, and my body responded in ways I couldn't believe. My strength skyrocketed. My muscles started growing again. My energy levels soared. And here's the kicker: I was spending less time working out, doing less cardio, and eating foods I liked.

Along the way, my friends and family noticed how my physique was improving and began asking for advice. I became their coach. I took “hardgainers” and put thirty pounds on them in a year. I took people who were baffled why they couldn’t lose weight and stripped away piles of fat. I took men and women in their forties, fifties, and sixties who believed their hormones and metabolisms were beyond repair and helped them get into the best shape of their lives.

A year or two later, these people started urging me to write a book. I dismissed the idea at first, but eventually, I warmed up to it. “What if I’d had a good book as a beginner?” I thought. It would have saved me who knows how much time, money, and frustration, and I would have built my best body much faster. I also enjoyed helping people with what I had learned, and if I wrote a book and it became popular, what if I could help thousands or even hundreds of thousands of people?

That gave me a wild hair, and so I wrote *Bigger Leaner Stronger* and published it in January 2012. It sold maybe twenty copies in the first month, but within a couple of months, sales grew, and I began receiving emails from readers with high praise. I was ecstatic. I started making notes on how I could improve the book based on feedback, and I outlined ideas for several other books to write.

Fast-forward to today, and I’ve now published multiple books, including *Bigger Leaner Stronger* for men, *Thinner Leaner Stronger* for women, and a “flexible dieting” cookbook (*The Shredded Chef*). Altogether, my books have sold nearly two million copies, and my work has been featured in publications like *Men’s Health*, *Muscle & Strength*, *Elle*, *Esquire*, and more.

Moreover, every day I get scores of emails and social media messages from thankful readers who are gobsmacked by the results they’re experiencing. They’re just as shocked as I was years ago, when I first discovered just how straightforward and enjoyable getting fit can really be.

This is why I continue to write books and articles, record podcasts and YouTube videos, and do everything I can to be as helpful to as many people as I can. It’s motivating to see the impact I’m having on people’s lives, and I’m incredibly inspired by the dedication and determination of so many of

my readers and followers. You guys and gals rock.

I have bigger ambitions that I want to realize, too.

First, I want to help a million people get fit and healthy. “Help a million people” just has a sexy ring to it, don’t you think? It’s a big goal, but I know I can do it.

This goes beyond merely making people look hotter, too.

I want to make a dent in the alarming downward trends we’re seeing here in the West—in particular, the decline of people’s physical and mental health and performance, which has significant and negative downstream effects on their family lives, careers, and personal happiness and satisfaction. Helping people to get strong and fit is a great way to counter this.

Second, I want to lead the fight against diet and exercise pseudoscience and BS.

Unfortunately, this field is full of misinformation, disinformation, idiots, liars, and hucksters. I want to help change the status quo. In fact, I’d like to become the go-to guy for practical, easy-to-understand advice grounded in solid science and real results.

Third, I want to help reform the sports nutrition industry.

The pill and powder pushers use many scams and deceptions to foist their junk products on unwitting consumers. They use fancy-sounding-but-worthless ingredients; they cut their products with junk fillers like flour and useless amino acids; they include tiny, ineffective doses of otherwise good ingredients (“pixie dusting”) and hide it with the notorious “proprietary blend”; and they rely on fake science, overhyped-marketing claims, and steroid-fueled meatheads to convince people they have the “secret sauce.”

And thanks to the support of people like you from all over the world, I’m making inroads toward these three goals.

So, that’s me. From this point, it’s all going to be about you.

I hope you enjoy this book, I hope it helps you reach your health and fitness goals faster, and I hope to hear from you along the way.

Mike Matthews

Vienna, Virginia

December 18, 2019

P.S. If you're on social media, come say "Hi!" Here's where you can find me:

Instagram: @muscleforlifefitness (www.bblsbook.com/instagram)

Facebook: @muscleforlifefitness (www.bblsbook.com/facebook)

YouTube: @muscleforlifefitness (www.bblsbook.com/youtube)

Twitter: @muscleforlife (www.bblsbook.com/twitter)

3

Why Beyond Bigger Leaner Stronger Is Different

*Whenever men and women straighten their backs up,
they are going somewhere, because a man can't
ride your back unless it is bent.*

—MARTIN LUTHER KING JR.

IT WAS FOUR A.M., and I hadn't slept in three days.

I was holed up in a basement lab in the Cloud Forests of Guatemala, surrounded by reams of not-yet-published scientific literature, doing things frowned upon by the FDA.

But I was on the verge of a discovery that would change everything we knew about human metabolism. If my hypothesis proved true, the world of health and fitness would enter a new era.

I'm talking massive muscle and strength without having to step foot in a gym, effortless fat loss without ever having to diet, and superhuman health and longevity without taking a single supplement.

Yes, a true magic bullet breakthrough, a watershed moment. A miracle, even.

...

So yeah, none of that happened, but I thought it would be a cute way to show what this book isn't.

I won't claim to have gained exclusive insights into our physiology and biochemistry, I won't share "biohacks" for supercharging muscle growth, melting belly fat, or optimizing your hormones, and I won't reveal esoteric pills and powders as the "X factor" in getting superfit.

Instead, I want to tell you something that the kings and queens of the multibillion-dollar health and fitness industry don't want you to know:

Getting bigger, leaner, and stronger than ever before isn't as complicated as they'd like you to believe.

You don't need newfangled diets like intermittent fasting, keto, or carb cycling. Such "advanced" protocols are no more effective than traditional dieting. Chances are you won't enjoy them, either, and forcing yourself to follow a diet you don't like is how you undermine your compliance and long-term results.

You don't need to eat an absurd amount of protein every day or change up your calories or macros every week. All this will give you is rancid farts and spreadsheet fatigue.

You don't need to crush yourself with long, grueling workouts that leave your muscles and joints feeling like your dog's chew toy. This is, however, a great way to develop nagging aches and pains, and even injuries that derail your progress.

You don't need to learn strange new ways to do exercises or do a bunch of "special" variations. Nor do you need to incorporate a bunch of "sophisticated" training techniques into your workout routine like supersets, drop sets, giant sets, and so on. The exercises and methods that got you this far are probably all you need to get to the promised land.

You don't need to fill your cabinet with exotic pills and powders that claim to boost your body composition. Supplements are still supplementary by definition, and most still do nothing but drain your bank account.

And you don't need to take steroids to achieve your genetic potential for muscle and strength, either.

Those are just a few examples of the harmful lies and myths that keep

men from successfully navigating the “middle years” of their fitness journey and stick them in a deep, depressing rut. And I can tell you firsthand—when you’re spending hours in the gym every week only treading water, it’s awfully discouraging.

Where did all this misinformation come from, and why are long-debunked lies still trafficked by mainstream celebrities, social media “influencers,” authors, and gurus?

Well, the “long story short” is this:

When millions of people are motivated to solve a problem and willing to spend large amounts of money to do it, there will always be an abundance of things to buy and brilliant marketers to sell them.

It’s simple, really. Where do most people get diet and exercise advice? Social media, TV, articles, friends, and personal trainers, right? Much of what’s learned this way is virtually useless.

How can I make such a bold claim?

Let’s start with mainstream fitness magazines, websites, and books, which reach many millions of people every year. Their editors and publishers aren’t diabolical scum, but they have to grapple with a couple of dilemmas.

The first is this: Publications offer information and need to keep people buying and subscribing. What’s the best marketing button to do this?

“New.”

The easiest way to keep customers hooked is to give new advice continually—diet and training “tricks,” research “breakthroughs,” advanced “biohacks”—the list yammers on.

New information isn’t bad per se. Health and fitness are vast subjects with myriad trails, tunnels, and caverns to explore. Most of it won’t sell books, magazines, or website subscriptions though. Your average guy or gal just wants to lose some belly fat—not learn about the nuances of training periodization.

Look at it this way. Which do you think will make a better magazine cover splash: “How to Understand Your Body Weight Set Point,” or “How to Build Bigger Biceps?”

This is why *Men's Health* has been using the same handful of cover lines for years now.¹ They know their target market wants, more than anything else, abs, bigger arms and a bigger chest, and more sex, money, confidence, intelligence, and health. Hence, the endless repetition of cover callouts like “Six-Pack Abs!” “Dress for More Sex!” and “Build Wealth Fast!” and the endless supply of rehashed ... er, *reimagined* ... articles to go with them.

The truth, however, is that it doesn't take thirteen different articles to teach someone how to add thirty pounds to their bench press or get bigger arms or better pecs. If magazines told the simple truth, they'd have maybe twenty-five articles they could reprint, verbatim, over and over. The articles wouldn't sound exciting, either. They might have titles like:

- Fellas! How to Build 45 Pounds of Lean Muscle in Your Lifetime
- Do More For Less—The “Secret” to Advanced Muscle Building
- Why the Latest and Greatest Muscle-Building Supplements Do Absolutely Nothing

What's more, these pieces would teach you “inconvenient truths,” like you can't gain muscle or strength like a newbie again, you can't “recomp” anymore, and you can't look like that mountain of muscle on Instagram.

And that's a horrible business plan for a publishing company.

As you'll learn in this book, most of what you want to achieve with your body comes down to diligent and consistent application of the basics. It also takes time. Not a lifetime, but longer than some want you to believe. The sooner you accept these realities, the sooner you can make real progress again.

The second problem most publications face is the nature of their revenue: advertising.

For example, many of the fitness magazines you see on the shelves of your local bookstore are little more than mouthpieces for supplement companies, which either own the publications outright or buy the lion's share of their very pricey advertising inventory.

If these periodicals are to stay in business, they must give their sponsors a strong return on investment, and they've gotten quite good at this.

They feature flashy ads that promise far more than any pill or powder can deliver, cleverly written "advertisorials" designed to sell products, and long-form pieces on diet, nutrition, and exercise that also contain supplement tie-ins.

So, much of what you're "learning" in these magazines (and their online counterparts) is geared toward selling you stuff, not helping you achieve your goals efficiently and effectively. And as long as this media keeps attracting eyeballs, supplement companies will keep paying, and the show will go on.

A great plan if you love convincing people to pay to be lied to.

Let's move on and talk trainers. As a coach and trainer myself, I hate to say this, but many of my kind are a waste of money. Their hearts are often in the right place, but very few have the know-how required to get beginners into great shape, let alone help more experienced weightlifters take their fitness to the next level.

This is why so many people, who pay hundreds of dollars per week or even per hour, have so little to show for their efforts.

You've probably also noticed that many trainers aren't even fit themselves. How can they claim to be a fitness expert when they're a skinny-fat weakling? Why should anyone believe them? These coaches always have clients, though, who almost always stay flabby, too.

Personal training isn't a complete sham, though. There are many fit instructors out there who know how to get results and deliver what they promise. If you're one of them, I applaud you, because you're carrying the weight of the entire profession on your shoulders.

Another popular but hit-or-miss (and miss ... and miss ...) resource people turn to is the internet.

I've worked with thousands of people over the years, and here's how it usually goes: someone finds a blog article, podcast, or social media post, or chats with a trainer or jacked guy or gal in an online forum, and rushes to use what they've learned.

The availability and accessibility of such information is great in principle—my work thrives on it—but the results depend on the information’s accuracy and validity. And much of it is flawed and misleading.

This book, and everything you’ll learn in it, is different, because I have other incentives and payoffs. I’m a self-published author, so my work and livelihood is not beholden to mainstream publishers, advertisers, or trends. Instead, my lifeblood comes from you, based on how well I serve you and your interests.

Because of this, *Beyond Bigger Leaner Stronger* can go against the grain and recommend science-based diet and exercise strategies that make editors and marketers yawn. This is why much of what you’ll learn in this book differs from what you’re used to hearing.

I can understand if you’re skeptical. Take heart, though, because I’m not going to ask you to make a big leap of faith. Most of what you’ll learn in this book has been around for decades and stood the test of time, but nobody has connected the dots for you like we will here.

Beyond Bigger Leaner Stronger is all about getting results, and fast. That means you’ll see real, tangible improvements in your body within the first three months of starting this program. Your strength and weight will move in the right direction, your muscles will poke through your clothes more than usual, and you’ll see cuts where there were few before. I promise.

And if, for whatever reason, you’re not seeing these types of results, I still have good news for you. It’s not because *Beyond Bigger Leaner Stronger* is just another overhyped hoax that can’t deliver or won’t work for you. It only means you need some help with the implementation, and I’d be happy to give it. Simply email me at mikem@legionsupplements.com.

So, if you’re ready to begin, here’s the first step:

Forget what you think you know about succeeding as an intermediate weightlifter.

That may sound harsh, but it’s for your own good. Just let it all go, suspend your disbelief for the next few days, and approach *Beyond Bigger Leaner Stronger* with an open mind.

Along the way, you’ll discover that some of the things you’ve been doing

are right and others are wrong, and that's okay. I've made about every mistake, so don't be discouraged.

Just follow this program and the results will speak for themselves.

Good luck. Have fun. And enjoy the body- and life-changing transformation that awaits you.

Part Two

Your “Inner Game” Just Got Better

4

What Got You Here Won't Get You There

People forget your promise ,remember your performance.

—MARSHALL GOLDSMITH

IN HIS TIMELESS BESTSELLER *The Inner Game of Tennis*, Tim Gallwey explained that every game is composed of two parts: an outer game and inner game.

The outer game is played against an external opponent to overcome external obstacles, and to reach an external goal, and the inner game takes place in the mind of the player and is played against such obstacles as lapses in concentration, nervousness, self-doubt, self-condemnation, and any other habits of mind that inhibit excellence in performance.

How fitting that is to fitness.

Most books, magazines, trainers, and influencers focus mostly on the outer game of losing fat and building muscle. They talk about how to eat, exercise, supplement, and so forth, but they give little attention to the inner game, which is arguably more important, because simply knowing what to do is not enough. You then have to actually do it—and keep doing it—every day, week, month, and year.

If you ask me, mastering the outer game of fitness is straightforward. It's mostly just understanding how to pull the right physiological levers and press the right buttons to achieve your intended results and then doing just that.

Acing the inner game can be much trickier, however. It's what sets the "fitness elite" apart from everyone else. Building and maintaining an outstanding physique requires an orderly approach to not just your diet and exercise, but your life. And for many people, this comes as easily as shaving with an axe.

Time, discipline, and motivation are the biggest inner-game barriers. Every week, guys and gals launch into new fitness programs with full tanks of resolve and energy, but it often doesn't take long for their enthusiasm to sputter.

They struggle to squeeze long workouts into their hectic schedules; they don't enjoy their training as much as they used to; and as the days and weeks pass, they see no appreciable change on the scale or in the mirror.

In short, it's a lot of pain for very little gain, and so goes the skid down the slippery slope toward the status quo of stagnation.

I don't want this to happen to you. I want to do everything I can to give you your best shot at success on the *Beyond Bigger Leaner Stronger* program.

In fact, if I'm being honest, I want this to be the weightlifting program that finally makes all the difference and delivers the goods. Heck, maybe even the last regimen you ever need.

That's why I want to work with you to sharpen both your inner and outer game and provide you with workable principles, strategies, and tools for winning in not just the physical realm of fitness, but the mental and emotional realms as well.

So, in this chapter, we'll begin our discussion of how to develop a successful mindset that'll empower you to overcome the obstacles, resist the temptations, and surmount the setbacks that lie ahead as an intermediate or advanced weightlifter.

Then, in the rest of this book, we'll dig into the outer game and discover the nuts and bolts of the program.

So, let's start our mastery of the inner game by tackling the first hurdle you must clear to get to the finish line: building better systems for achieving your fitness goals.

In 1969, a man named Laurence J. Peter published a book on business management called *The Peter Principle*. Its central hypothesis is simple:

In a hierarchy, every employee rises to
his level of incompetence.

In other words, employees are promoted until they're outmatched by their job ("incompetent") and incapable of earning another promotion.

"Look around you where you work, and pick out the people who have reached their level of incompetence," Peter wrote. "You will see that in every hierarchy the cream rises until it sours."

Moreover, Peter asserts in the book that this phenomenon is "the key to an understanding of the whole structure of civilization."

The Peter Principle struck a chord and became a runaway hit, staying on the *New York Times* bestseller list for over a year, and it's still in print today, forty-five years later, with over one million copies sold.

It caught the eye of academia as well, and several studies have since demonstrated its validity. For instance, research conducted by scientists from the Carlson School of Management, MIT Sloan School of Management, and Yale School of Management found that high-performing salespeople in 214 American businesses were more likely to be promoted to managerial roles and then fail as managers.¹

Perhaps more surprising is the fact that *The Peter Principle* started as a joke. The entire book was satire. Peter's "evidence" came from a "Hypothetical Case File" that contained named employees like Miss Oval, Mrs. Cylinder, and Mr. Eclipse, among others.

The irony produced plenty of laughs, but many readers also knew that Peter was onto something real that was going on in businesses everywhere: The higher they looked in organizations, the more incompetence they found. And it turns out that Peter's hypothesis helps explain why.

For my part, I think Peter's Principle holds true in more than just business. I believe that in life, we don't rise to the level of our ambitions but to our incompetence. In other words, we can only get so far in any area, activity, or endeavor with the mindset, knowledge, and skills that we have.

Moreover, chances are those boundaries are well short of where we hope to arrive. And that's okay. It happens to the best of us.

Take Ray Dalio, the billionaire founder of one of the world's largest hedge funds, Bridgewater Associates.

Imagine this for a minute: You're Dalio, it's 1982, and you and your growing team have spent eight years scrabbling to build an investment firm, which is well on its way to becoming a world-class enterprise.

Based on your understanding of the economy, you're certain that a catastrophic financial crash is on the horizon, and the Federal Reserve's strategy to avert it is going to fail, and sooner rather than later.

In fact, you're so sure of your insights, you testify before Congress that there's a 95 percent chance the Fed's efforts won't save us, and a 5 percent chance they'll work but also trigger hyperinflation. Then you stake your entire bankroll on your prognosis.

You're dead wrong. The economy responds to the intervention and inflation falls while growth rises. The stock market soars and begins what'll become a historic bull run, along with the most painful episode of your life.

Here's how Dalio described the downfall in his penetrating 2017 memoir-cum-compendium *Principles*:

My experience over this period was like a series of blows to the head with a baseball bat. Being so wrong—and especially so publicly wrong—was incredibly humbling and cost me just about everything I had built at Bridgewater. I saw that I had been an arrogant jerk who was totally confident in a totally incorrect view.

So there I was after eight years in business, with nothing to show for it. Though I'd been right much more than I'd been wrong, I was all the way back to square one.

At one point, I'd lost so much money I couldn't afford to pay the people who worked with me. One by one, I had to let them go. We went down to two employees—Colman and me. Then Colman had to go. With tears from all, his family packed up and returned to Oklahoma. Bridgewater was now down to just one employee: me.

Losing people I cared so much about and very nearly losing my dream of working for myself was devastating. To make ends meet, I even had to borrow \$4,000 from my dad until we could sell our second car. I had come to a fork in the road: Should I put on a tie and take a job on Wall Street? That was not the life I wanted. On the other hand, I had a wife and two young children to support. I realized I was facing one of life's big turning points and my choices would have big implications for me and for my family's future.

Dalio didn't merely "rise to the level of his incompetence"—he loaded himself into a cannon, pointed it to the sky, and blasted himself into smithereens.

What do you think you'd do if you were in his shoes? Would you knuckle under?

Dalio refused to give up. Instead, he turned the catastrophe into an invaluable learning experience by setting out to discover why his systems failed him and how to fix them for another run at the markets.

I won't spoil the entire story here (read his book!), but this process led to the development of a revolutionary new investment strategy, or *system*, that would catapult Dalio to greater success than ever before and set the trajectory for the rest of his life.

Three key lessons we can learn from Dalio's experiences:

1. No matter who we are, the Peter Principle can strike any of us down.
2. We should give just as much attention to our level of incompetence as our goals.
3. The better our systems, the higher we can rise before reaching our limits.

We can also observe that the greater the goal, the more robust the system must be for achieving it. Mere “hustle” isn’t enough, because that’s just energy that can move the machine, not determine the outcome. It’s a means, not an end.

So know this: As important as goal setting is, *system building* is far more so. No matter how beautifully we populate the landscapes of our futures with lush dreams and desires, only equally magnificent systems can bridge the chasm between what is and what could be.

Maybe your goal is to build a successful business. Your system would involve how you create and sell products and services, recruit and keep employees, and use and manage finances.

Or maybe your goal is to learn a new language. Your system would involve how often you practice, how you grow your vocabulary, and how you learn grammar.

If your goal is to increase your powerlifting numbers by fifty pounds, your system would involve the way you eat, train, recover, and supplement.

The power of systems, especially in athletics, can’t be denied. A textbook example is the story of the legendary college basketball coach John Wooden, who won ten NCAA Championships in twelve years and went on an unprecedented sixty-one-game winning streak.

What many fans don’t know, however, is that Wooden coached his Bruins for fifteen years before securing his first championship. During this time, he worked in relative obscurity to assemble his system piece by piece, from recruiting the right players to developing his coaching method and philosophy, to advancing the full-court-press style of play. No one quite understood or appreciated what Wooden was doing until, “suddenly,” the humble coach and his team started trouncing every competitor.

So my point is this: While formulating goals is an important aspect of successful living, effective systems are what produce achievements. And too many people focus too much on ideation and too little on systematization.

How do we build better systems, though? Systems that will enable us to achieve everything we want to do inside and outside of the gym? Answering those questions would require an entire book, but that doesn’t

mean we can't briefly discuss some of the more important insights.

Let's begin by first answering a simpler question: what is a system?

In her incisive 2008 book *Thinking in Systems*, MIT scientist and pioneer Donella Meadows defines a system as “an interconnected set of elements that is coherently organized in a way that achieves something.”

By definition, then, a system comprises elements (parts), interconnections (how the parts affect each other), and a function or a purpose (the effect produced).

In systems theory lingo, an element that you can see, feel, count, or measure is referred to as a *stock*. Examples are the food in your pantry, the people in a town, the nutrients in a plant, the money in your bank account, and your happiness.

Interactions (interconnections) can be harder to spot and learn about, but are entities that make stocks increase or decrease, like a faucet or drain that changes the stock of water in a bathtub. This movement of material is known as a *flow*.

In many cases, flows involve the transfer of information, like the concepts you're learning through my use of the system of language, but they can also involve physical flows, such as the blood moving through your veins.

When viewed this way, a basketball team is a system. Its elements include players, coaches, a court, and a ball; its interconnections include the game's rules, the coaching strategies, the communication between players—even the laws of physics that govern how the ball and players move; and its purpose can vary by team and player, including winning games, having fun, making money, or all or none of these and something else altogether.

Diet and exercise regimens are systems for muscle, strength, and vitality. Their elements include calories, macronutrients, intensity, volume, and frequency; their interconnections include dietary and training strategies and techniques and the principles they're based on like energy balance, macronutrient balance, and progressive overload; and a common purpose is safely and healthily enhancing body composition and well-being.

So, that's a system, and how it relates to fitness.

The next question to answer is: how do we make better systems?

Two of my favorite methods are *quantification* and *ritualization*. Quantification refers to measuring and paying attention to things that are important, and ritualization to developing and maintaining the right habits.

Let's review each in more detail.

Quantification and the Power of Counting

In his bestselling 2008 book *Better: A Surgeon's Notes on Performance*, Atul Gawande wrote the following:

Count something. Regardless of what one ultimately does in medicine—or outside of medicine, for that matter—one should be a scientist in this world. In the simplest terms, this means one should count something. ...It doesn't really matter what you count. You don't need a research grant. The only requirement is that what you count should be interesting to you.

Counting is crucial, because it's a powerful way to determine whether a system is fulfilling its stated purpose.

If your goal is to gain muscle and strength, and you don't record your workouts or body measurements, you won't have the raw data required to know with certainty whether your diet and exercise systems are working.

You might have intuitions or educated guesses, but these can be faulty and uncertain, which can sap your motivation and will to continue dieting and training.

By quantifying and tracking at least one thing that's important, however, you're installing in your system what's known as a *feedback loop*, which is a significant component of all complex systems.

A feedback loop is formed when the change in a stock of a system affects the flows into or out of that same stock. In other words, it's a mechanism

whereby an output can “loop” back to and affect the thing that produced it.

When you assess the balance of your bank account (stock), if you feel the level is too low, you may adjust your work hours upward to bring in more cash (flow in) or curtail spending (flow out) or both. On the other hand, if you’re feeling flush, you may work less, earn less, spend more, or all three. Without such an assessment, however, you might change nothing in the system until outside factors come into play, like bouncing a check or wanting to make a large purchase, like a home. Thus, a simple bank statement can help form a feedback loop.

Similarly, by tracking your workouts and body measurements, you can assess the changes occurring in your whole-body strength and muscle (stocks) and know whether your system needs upgrading. If you’re not sure how to do this properly, refer to the chapter in *Bigger Leaner Stronger* titled “The Right and Wrong Ways to Track Your Progress.”

The same goes for any goal and system. A cardinal rule of good systems is you should always track something, and ideally, the thing that best measures the fulfillment of the function or purpose.

This can be difficult, because what matters most sometimes isn’t easy to quantify. If the purpose of a system is to increase your happiness, that’s harder to measure than let’s say, improving your golf game.

That doesn’t mean it can’t be done, however. For example, “The Oxford Happiness Questionnaire” is a comprehensive and evidence-based quiz that can help you quantify your subjective sense of wellbeing. As of this writing, you can take it online for free.

Whatever you do, don’t fall into the trap of setting goals around things that are easy to measure instead of important. Our culture is obsessed with numbers and pays the most attention to whatever can be clearly defined and counted, and it disregards what can’t, like qualitative aspects. Sometimes quality should be the focus, though, not quantity.

Ritualization and the Power of Habit

If you review the most common New Year's resolutions of the last decade, you'll find most people are struggling with the same things.

Year after year, millions of people resolve to improve their health (eat better, lose weight, exercise more), save more money, and read more, only to fall well short of the mark again and again.

When viewed through the lens of systems theory, none of these goals should strike us as particularly complex undertakings. Moreover, thanks to the staggering amount of high-quality information available on how to do any of these things, they require little in the way of creativity, either. So why are these ambitions so thorny?

One primary reason is the systems that produce them usually demand major deviations from habitual behavior patterns. And all of us know how difficult it can be to stop doing the things we shouldn't be doing and start doing the things we should.

The new routines (systems) require such large changes that they often lack *resilience*, or the ability to survive or persist in an ever-changing environment.

It can take a tremendous amount of thrust to escape the gravity well of what's familiar, and once we have, it can be easy to fall back into it due to stress, temptation, or malaise. Thus, the better we can ingrain the right habits and avoid the wrong ones, the better our systems will operate.

Here's how Charles Duhigg explains it in his blockbuster 2012 book *The Power of Habit*:

Habits are powerful, but delicate. They can emerge outside our consciousness or from deliberate action. Habits often occur without our permission, but can be reshaped by fiddling with their parts. They shape our lives far more than we realize—they are so strong, in fact, that they cause our brains to cling to them desperately.

Indeed, according to research conducted by scientists at Duke

University, habits dictate as much as 40 percent of our daily actions. Biologically, this makes sense. By “habitualizing” activities, our brain can conserve energy and perform common tasks more efficiently.

So, how can we get better at wielding the power of habit and increase the resilience of our systems for positive change? The following three strategies can help:

1. Start easy and small
2. Improve gradually
3. Expect failure

Let's discuss each.

1. Start Easy and Small

For building and breaking habits, consistency is the name of the game. The more often you do or don't do things, the easier it becomes to continue doing or not doing them.

Therefore, you should avoid overreaching when you begin any new endeavor. Instead, start with something so easy and small you can't say no.

Want to get more and better sleep? Start with going to bed fifteen minutes earlier than usual each night. Want to eat a healthier diet? Start with eating one additional healthy meal per week. Want to increase your net worth? Start with saving just 1 percent more of your income each week.

Remember in the beginning, the goal is getting in motion, not a radical transformation. That comes later, through consistent and enduring effort.

2. Improve Gradually

Once an easy, simple habit has taken root, you can enhance it by adding difficulty or complexity.

Don't try to do too much too fast, though, lest you trip yourself up. Be patient and strive for small, incremental improvements that in and of themselves seem almost trivial, but that can amount to significant changes over time.

Think of it this way: If you were to improve something, anything, by just 1 percent per day for a year, it would be nearly *38 times* better than when you started. Just 1 percent better per day for a month yields a 135 percent improvement. This is the power of compound interest applied to our lives and explains why making regular small refinements to our habits is a surefire path to stellar outcomes.

Let's take another look at the habit of going to bed fifteen minutes earlier mentioned above. Once that's on automatic, you could increase the difficulty and complexity by pushing your bedtime forward another fifteen minutes and ending screen exposure fifteen minutes earlier than usual.

By repeating this process of acclimating to conditions and then adding difficulty or complexity, you can put a powerful system in place for being well rested.

For the purpose of eating a healthier diet, you could increase the number of healthy meals per week, have fewer servings of sugar, start taking a high-quality multivitamin supplement, and so on.

And as for increasing your net worth, you could start diverting some of your savings to a retirement account and then raise contributions. Then you could begin building a fund for buying a home.

You get the idea.

Many people view successes as distinct events—as things that materialize, like flash floods unleashed by hurricanes. This is almost never the case. Instead, most wins are the natural and inevitable result of the slow and steady accumulation of marginal progress—the raindrops that trickle into the reservoir until it overflows.

3. Expect Failure

Dan John, an author and record-holding strength and conditioning coach, often tells his new athletes they're "not good enough to be disappointed."

This goes for anyone starting anything new and challenging. What is there to be disappointed about? That we didn't experience immediate breakthroughs? That we made the same mistakes as everyone else?

Instead of expecting perfection and scolding ourselves as soft, stupid, or unskilled when we can't live up to that standard, we should cut ourselves some slack and focus our energies on getting back on target again.

We haven't earned the right to be disappointed yet, so why jump the gun?

The fact is failing in an attempt doesn't make us a failure. It makes us normal. Every system has its flaws and challenges. What matters more is how you rebound and resume normalcy.



If you're reading this book, I think it's fair to assume that you want to get better, and not just in the gym.

You probably also realize you must change your life to improve—that doing the same things you've been doing won't get you to where you want to be.

This requires you to be more than a good worker—you must be a good designer as well. You'll need better systems that can transform your energy and effort into better outcomes.

As for your fitness, that means better methods of dieting, training, and supplementing—all things we'll discuss in this book. First, however, let's address an often overlooked system that greatly influences our ability to implement our intentions in the kitchen and gym: our environment.

Key Takeaways

- We don't rise to the level of our ambitions but to our incompetence. In other words, we can only get so far in any area, activity, or endeavor with the mindset, knowledge, and skills that we have.
- While formulating goals is an important aspect of successful living, effective systems are what produce achievements.
- Two of the most effective ways to make better systems are quantification and ritualization.
- Quantification refers to measuring and paying attention to things that are important, and ritualization to developing and maintaining the right habits.
- By tracking your workouts and body measurements, you can assess the changes occurring in your whole-body strength and muscle and know whether your system needs upgrading.
- Habits dictate as much as 40 percent of our daily actions. By “habitualizing” activities, our brain can conserve energy and perform common tasks more efficiently.
- You can improve your ability to form new habits and increase the resilience of your systems by starting easy and small, improving gradually, and expecting failure.

5

How to Optimize Your Environment So You Need Less Willpower

*Show me a man who is not a slave!
One is a slave to lust, another to greed, another
to ambition, and all men are slaves to fear.*

—SENECA

MOST PEOPLE KNOW WHAT'S GOOD

for them and what's not.

Most of us know that we should eat well, exercise, drink less alcohol, stop smoking, and spend less time on social media and in front of the television.

Most of us have also tried to apply what we know and failed, only to fall back into our old, dysfunctional ways.

If you're like me, you've chalked up some of your failures to a lack of willpower, self-control, or grit. Those things matter, but they're rarely the only culprit.

What few of us spot is something far more influential than we realize, and far simpler to change than our personalities. Something inescapable that pushes and pulls at our ideas, feelings, and actions, every minute of every day.

Our environment.

This invisible hand molds our attitudes, decisions, habits, and over time, our life, and sways us to continue in the same unwanted behaviors.

This is why organizing your environment to support your values and goals constitutes one of the simplest and most powerful ways to increase your chances of embodying and realizing them.

Don't believe me?

To understand the surprising power of the environment, let's start by reviewing a study conducted by scientists at Columbia University that analyzed organ donors by country.¹

They found that donation rates differed around the world, with countries like Denmark and Germany as low as 4 and 12 percent and others like France and Poland with near-perfect scores of 99.91 and 99.5 percent. Even more puzzling were the rates of culturally homogeneous states like Denmark (4 percent) and Sweden (85.9 percent), and Germany (12 percent) and Austria (99.98 percent).

If not for meaningful geographical, cultural, or social differences, what could explain this? As it happens, the extraordinary discrepancies stemmed from the most ordinary of things: the forms used to recruit donors.

In the low-donation countries, the forms contained this line: "If you want to be an organ donor, check here." In other words, you had to volunteer for the program. In the high-donation countries, however, the forms read like this: "If you don't want to be an organ donor, check here." That is, you had to decline the program.

Think about that for a second. The way you're asked a question can dictate your decision on something as personal as what to do with your body when you die. Imagine how much time, money, and effort politicians might spend trying to increase organ donation rates with education, incentives, or even coercion, when all they need to do to reach nearly perfect compliance is change a single line of text in a humdrum government form.

The researchers of that paper concluded the following about human psychology, which also applies to how our environments inform our lives: "In most cases, the majority of people choose the default option to which they were assigned."

Put differently, most of us go along with the design and flow of the people and things that surround us—the paths of least effort. If a box on a form is unchecked, we'll leave it unchecked. If cars are lining up in a lane on the highway, we'll join them. If we display fruit in our kitchen instead of junk food, we'll eat more fruit.

This isn't shocking, but what came as a surprise to me is just how many aspects of our lives run on near autopilot, guided by the scores of cues provided by our environment.

For instance, studies show that high-priced entrées on restaurant menus lure us into ordering more expensive items.² At the supermarket, we're more likely to buy things at eye level, and showing men pictures of bikini-clad women makes them act more impulsively.³ People who are dieting will skip a "milkshake" on a menu and turn down "candy chews" in the checkout aisle, but have no qualms about drinking a "smoothie" or eating "fruit chews."⁴

Curious, isn't it? Also surprising is how many elements of our environment have been carefully and scientifically engineered to elicit desired responses—responses that rarely benefit us.

In their bestselling 2009 book *Nudge*, Richard Thaler and Cass Sunstein referred to this as "choice architecture," and they believe powerful organizations like corporations and governments can—and should—help create environments that incline us toward personally and socially responsible behaviors. A "soft paternalism," if you will.

I say, why wait for someone else to do it? Why not design our own environments as a personal project, so they nudge us toward the specific outcomes we desire? Why not prearrange better default choices for ourselves, so we can better stay on course, even when we're cruising on autopilot?

Start by thinking about how you can change your environment to make good habits easier to adopt and bad habits harder to continue. A simple way to do this is to remove steps from the former and add them to the latter.

For example, if you'd like to eat more nutritious foods, place them front and center in your refrigerator, kitchen, and pantry. This makes them easier

to grab when you're hungry. And if you'd like to eat less junk food, tuck it away in a cabinet you don't open, making it harder to access.

If you'd like to get better about doing your morning workouts, set your clothes out the night before, removing an obstacle that might dissuade you from leaving the warm embrace of your bed.

If you'd like to drink more water, keep a water bottle at your desk at work instead of soda, and fill it up every time it's empty. But if you want soda, you have to go to the kitchen or vending machine.

The options here are endless. All you have to do is brainstorm ways to make whatever you want to do more visible and convenient and the things you want to stop less so.

If you take the time to do this—to sprinkle your environment with cues that lead to positive behaviors and remove their destructive counterparts—it might surprise you how much easier it is to change your life.

Remember too that throughout this powerful, transformative, and occasionally miserable fitness journey, you'll meet many people who'll tell you many things. In fact, these fleshy automatons will have so much advice that if you scribbled it all down on pieces of paper, you'd singlehandedly decimate entire swaths of the world's forests.

Keep your eyes and ears open, but don't let their moonshine move you off target.

"You shouldn't do that," they'll say, wheeling out a litany of reasons why it won't work out, why you should put time and effort elsewhere, and why you'll regret it if you keep going.

And then you'll say, "Screw it, I'm doing it anyway."

"Screw it, I'll wake up an hour early and get in my workouts every day."

"Screw it, I'll follow a proper meal plan for a couple of months."

"Screw it, I'll drink less alcohol and eat less junk food."

You might be anxious, too. Uncertain. Afraid, even. All that is normal. Remember the first time you rode a bike? This is no different.

You move past all the head trash by getting to work. You put in effort, and you get better. You get better, and you build confidence. You build confidence, and you want to do more. It's a virtuous cycle.

The hobgoblins of fear and doubt will always hop around in your mind, sometimes more noisily than others, and that's okay. Some of it's even good; it keeps you moving, doing, working. It reminds you that the way out is always the way through.

And it's striking what you can accomplish if you just don't stop, so think long term. Don't overestimate what you can do in one year and underestimate what you can do in ten.



No matter how much we try to strengthen and develop our willpower and self-control, the more time we spend in environments that discourage positive habits and encourage harmful ones, the less likely we are to flourish.

If we spend most of our time in environments that prompt us to do things we want to do and abstain from those we don't, however, acting on our best intentions becomes a lot easier.

To get a taste of this, write three things you want to start or stop doing, like drinking less alcohol, exercising more often, or getting into the gym on time in the morning. Next, write three ways you can adjust your environment(s) to help facilitate the things you want to do and curb the things you don't.

For instance, with exercising on a regular schedule, let's say you want to start your days with a twenty-minute walk. What simple changes could you make to your environment to make this easier?

Here are some ideas ...

- Put your walking shoes and headphones in front of your bedroom door or in your car, so you see them when it comes time to walk (early morning or after work, for instance).
- Find a podcast or audiobook so you have something else to look forward to while walking.

- Go straight to the park after work and do your walk before going home.

Any of these things could help make the habit stick and become an automatic, integrated part of your life.

Let's look at eating less at dinner. You could ...

Plate your meal and pack away the leftovers in the fridge before you eat.

Take your dog on a walk after eating the amount of food you intend to eat.

Brush your teeth after eating the intended amount.

These would work well because they make it harder or impossible to keep eating.

And for morning workout punctuality, you could ...

- Go to bed thirty minutes earlier than usual, so you have an easier time waking up in the morning.
- Prepare your pre-workout meal the night before, so all you have to do in the morning is eat it and head to the gym.
- Set two alarms so you can snooze one and still get up in time to work out.

These things may seem trivial, but don't discount their effectiveness. By removing all excuses you might try to find or make instead of acting, you can multiply your chances of following through. Sometimes, something very minor like setting out your workout clothes can be the difference between getting out of bed and into the gym, or sleeping another hour or two.

Another example: Many people want to drink less caffeine and more water. Here you could ...

- Downsize your coffee mug so you have to get up more for refills.
- Make a smaller pot of coffee in the morning.
- Make sure you drink at least two liters of water before you drink coffee.

And what about eating a salad for lunch instead of takeout? Some ideas:

- Find some salad recipes you like, so you can enjoy eating them every day.
- Prepare the ingredients for the week in one go—Sundays are good for this—so you don't have to chop lettuce and vegetables every day.
- Prepare the salads at night (sans dressing) and place them in the fridge, so you can just grab them in the morning and go.

One final case, just to make sure this is crystal clear: “I want to get thirty minutes more sleep every night.”

- Remove the TV from the bedroom, so you're not tempted to watch it instead of sleep, and so you can develop better sleep hygiene. (Sleep scientists say we should use the bedroom for sleeping and sex, and nothing else.)
- Use software like Cold Turkey to block access to your favorite websites an hour before bedtime, which is when you should avoid screens if you want to optimize your sleep.
- Set an alarm on your phone to remind you when it's time to get ready for bed.

Here's what I'm getting at:

We don't need to make our health and fitness harder and more complex than they already are, and by making small, almost imperceptible changes to our environments, we can greatly increase our chances of success.

Remember—every day is not a new day. Over time, our lives take shape like a sculpture, carved by our habits and routines, one strike of the chisel at a time, and because of this, where we are is far less important than where we're going.

No matter how diligent we are in designing our environments and preserving our habits, however, we'll experience hardship and setbacks

because of work, family, pain, injury, and every other curveball life can throw at us.

How can we navigate these experiences successfully? How can we cultivate a toughness of mind, body, and spirit that'll see us through even the roughest periods? Keep reading to find out.

Key Takeaways

- Organizing your environment to support your values and goals constitutes one of the simplest and most powerful ways to increase your chances of embodying and realizing them.
- Start by thinking about how you can change your environment to make good habits easier to adopt and bad habits harder to continue. A simple way to do this is to remove steps from the former and add them to the latter.
- It's striking what you can accomplish if you just don't stop, so think long term. Don't overestimate what you can do in one year and underestimate what you can do in ten.

6

The Real Secret to Toughness

Every normal man must be tempted ,at times ,to spit on his hands ,hoist the black flag ,and begin slitting throats.

—H.L.MENCKEN

IT'S EARLY 1916, AND WORLD WAR I has been raging for nearly two years.

This is a cataclysm unlike any other in history. The advances of industrial and military technologies and the horrors of trench warfare are producing unprecedented levels of carnage and destruction—millions are dead and thousands are dying every day from chemicals, fire, shells, bullets, bombs, famine, and disease.

Troops, medics, and nurses on the front lines are surrounded by piles of decaying corpses and chunks of rotting flesh. At night, they sleep to a symphony of machine guns, mortars, and artillery with their dead comrades strewn around them.

And then there are the rats swarming everywhere. Well-fed rats that grow as large as cats, that spread disease-ridden fleas and lice, that can eat a wounded man if he can't defend himself.

How can you maintain your marbles under such conditions, let alone your morale? What can sustain your sanity, let alone your spirit?

For many, humor is the only answer—the armament as essential as their rifles or bayonets, their last psychological defense. By laughing at what they fear most and raising two middle fingers to the Grim Reaper, ordinary people find a way to endure extraordinary hardships.

Pilots joke about joining the “sizzle brigade,” soldiers bleat like sheep as they march toward German machine guns, and fighters on both sides give shells cutesy nicknames like “cook pots,” “blue cucumbers,” and “Jack Johnsons.”

“We’re here because we’re here because we’re here because we’re here” goes the song sung every day. Trench newspapers mock both the enemy and one’s own officers, politicians, and home front propaganda.

How could mere wit and insouciance save so many people from a dark descent into derangement? And how can we tap into that power to raise our spirits when the going gets tough?

Virtually all cultures, stretching back to the beginning of recorded time, have known of the relationship between humor and health. The benefits of joy appear in the Bible, which states in Proverbs 17:22, “a cheerful heart is good medicine, but a crushed spirit dries up the bones.” Ancient Greek physicians prescribed visits to comedy shows to help patients heal faster. Early Native Americans used laughter as an adjunct to various types of treatment and therapy.

In later times, doctors found that humor could distract from the pain of surgery, promote recovery, and treat depression as well as other psychiatric disorders.

Humor wasn’t considered a legitimate field of scientific study, however, until 1964, when Dr. William F. Fry, a professor of psychology at Stanford University, suggested that mirth had tremendous potential for impacting physical and mental health.

His peers mostly ignored his assertions and denied his requests for funding, but Dr. Fry moved forward on his own steam and dime. In time, he produced landmark studies demonstrating several positive physiological

mechanisms similar to the effects of exercise associated with laughter, including the activation of muscles, elevation of heart rate, and increase in oxygen exchange, as well as vasodilation and the release of endorphins.¹

Word spread of Dr. Fry's discoveries, which attracted other pioneering scientists to what he was now calling *gelotology* (from the Greek word for laughter, *gelos*), and together they produced many breakthroughs.

For instance, studies conducted by Dr. Lee Berk and colleagues from Loma Linda University found that laughter lessens the negative effects of stress by reducing cortisol and catecholamine levels and boosts the immune system by increasing the production of antibodies, which protect against disease and dysfunction.²

More recent research conducted by scientists at the University of Maryland Medical Center found that laughter improves blood vessel health and blood flow, which can reduce the risk of heart disease.³

These findings and others help explain why laughter is strongly correlated with significant health benefits, including improved cardiovascular performance, increased pain tolerance, reduced joint inflammation, elevated mood, blunted feelings of fear, and improved quality of life and wellbeing.⁴

These are just a few examples from the growing body of evidence that joy is a powerful, but often overlooked, force immediately available to any of us who wish to uncork it. It's a primal, instinctive, and universal emotion that creates positive feelings and softens the impact of stress.⁵

What's more, we don't have to wait for something to tickle us—we can "fake it 'til we make it." Find something—anything—to laugh at, and the constructive process begins.

Before you scoff at the idea that it's so straightforward, consider this: if soldiers on the battlefield of an unthinkably gruesome war could find comedy in the absurdity of their existence, we can, too.

And by doing this, we can defuse stress by distancing ourselves from threatening circumstances and reappraising them in more positive, meaningful, and growth-oriented ways, including perceiving them as challenging rather than menacing.⁶

In other words, you can use humor and laughter to become more resilient. The more you chuckle at the vicissitudes of life, no matter how unfair, undeserved, or unreasonable they may seem, the less sway they have over you.

As the Roman emperor Marcus Aurelius wrote in his *Meditations*:

Choose not to be harmed—and you won’t feel harmed.

Don’t feel harmed—and you haven’t been.

When I first read that line, the message resonated with me, but I struggled to *feel* it when confronted with highly destructive people, actions, and forces.

For example, some time ago, I invested a significant amount of money in a promising residential real estate venture being organized by a longtime “friend” of my family’s.

On paper, it looked like a home run: it had a prime location, buyers were already trying to put down deposits, and banks were already lining up to underwrite the project.

As time went on, however, the plans kept changing. The development got bigger and bigger, requiring more and more capital purportedly for more land, staff, contractors, and services.

As the financial demands continued to grow with no clear end in sight, so did suspicion among the investors. Eventually, several filed lawsuits, and we all learned the operation was a sham. The developer had embezzled much of the money raised and never intended on building anything.

What’s more, because I was a relatively small player in the game, there was little chance I’d receive any restitution. Then, to rub salt in the wound, the founder shrugged my loss off as collateral damage. “Let this be a lesson in chasing after easy money,” he said.

The whole fiasco stung. This crook didn’t need my cash and knew there were many other productive and meaningful things I could’ve done with it. He only took the money because he could.

And so I was upset. A part of me didn’t want to turn the other cheek. A

part of me didn't want to look past the dishonesty, disdain, and depravity, not to mention the economic and emotional costs.

Fortunately for me, I have a funny bone and it won out. After cooling off, I had a good laugh. At the predicament. At him. At myself. What a ridiculous experience with a clownish parasite. A pure comedy of errors.

Even though I had “every reason” to seethe, I split my sides instead. And I no longer felt harmed.

“So other people hurt me?” Aurelius said. “That’s their problem. Their character and actions are not mine.”

Such is the power of what scientists refer to as *self-enhancing humor*—using humor to relieve stress and foster a cheerful outlook in the face of adversity.⁷

So try not to take yourself or your circumstances too seriously, even when the chips are down. You never know how your good spirits and tenacity might pay off as time goes on.

In my case, losing that money not only taught me important lessons about due diligence, but also allowed me to meet several other successful entrepreneurs and investors who have since helped me grow my businesses in various ways.

There's a Chinese fable titled “We'll See” that expresses this message beautifully:

A farmer had a horse, and one day, it ran away.

His neighbors consoled him. “I’m so sorry. This is such bad news. You must be so upset.”

The man just said, “We'll see.”

A few days later, his horse returned with twenty wild horses in tow, and the man and his son corralled them all.

His neighbors celebrated. “Congratulations! This is such good news.

You must be so happy!"

The man just said, "We'll see."

A few weeks later, a stallion kicked the man's son, breaking one of his legs.

His neighbors reeled. "I'm so sorry. This is such bad news. You must be so upset."

The man just said, "We'll see."

The following month, the farmer's country went to war and drafted legions of able-bodied young men to fight their enemies. Casualties were high but didn't include the man's son, since the army had no use for a lame boy.

The neighbors couldn't believe the family's luck. "Congratulations! This is such good news. You must be so happy!"

The man just said, "We'll see."

Remember everything you've read here when you're rolling out of bed in the morning like a log off a truck, dreading the workout that's supposed to follow. And when you're doing that workout, grinding and grunting through every set and rep. And especially when the winds of fate conspire to challenge and complicate your carefully laid plans.

In this way, the gym is a training—and testing—ground for the body, mind, and soul. It calls on us to demonstrate how we respond to the greater struggles of life—adversity, pain, insecurity, stress, weakness, and disadvantage—and, in some ways, to demonstrate who we really are.

So find the humor. Force yourself to laugh if you have to, even if it's only to show the cosmos you won't bend the knee—that you're the type to

return either with your shield or on it.

Embrace the fact that the universe, in all its apparent tranquility, is a carefully balanced chaos of forces that we barely understand. Turmoil is inherent and unavoidable. Only the toughest among us survive the rigors of existence, and even they have a time of it.

And remember, no matter how difficult things get, time will tell whether our trials are curses or blessings. Will, as Aurelius once said, what stands in the way become the way?

We'll see.



Now that we've worked to upgrade your inner game, let's move from the abstract to the concrete—to the outer game—and discuss how to eat, train, and supplement to maximize your health, performance, and body composition.

We'll start with food and supplements and learn new dietary strategies for losing fat, gaining muscle, and enhancing well-being, including mini-cuts, intermittent fasting, and calorie cycling; and then take a masterclass in muscle building and discover how big and strong you can get according to your genetics, how to pinpoint your physique's strengths and weaknesses, and exactly what you need to do in the gym to accomplish your full physical potential.

Onward ho!

Key Takeaways

- Virtually all cultures, stretching back to the beginning of recorded time, have known of the relationship between humor and health.
- Research shows several positive physiological mechanisms similar to the effects of exercise associated with laughter, including the activation of muscles, elevation of heart rate, and increase in oxygen exchange, as well as vasodilation and the release of endorphins.
- If you can find the humor in a situation, you can defuse stress by distancing yourself from threatening circumstances and reappraising them in more positive, meaningful, and growth-oriented ways, including perceiving them as challenging rather than menacing.
- The gym calls on us to demonstrate how we respond to the greater struggles of life—adversity, pain, insecurity, stress, weakness, and disadvantage—and, in some ways, to demonstrate who we really are.
- No matter how difficult things get, time will tell whether our trials are curses or blessings.

Part Three

You Are What You Eat

7

Why a “Good Enough” Diet Is No Longer Good Enough

We’re tight-fisted with property and money, yet think too little of wasting time, the one thing about which we should all be the toughest misers.

—SENECA THE YOUNGER

IT’S A FRIDAY NIGHT and you want to get tacos with a friend, but you aren’t sure where to go.

How would you choose?

Would you be fine with whatever’s closest? Would you pore over reviews in search of the best joint in town? Or would you fall somewhere in the middle, like finding a spot that’s close enough with good enough ratings?

Believe it or not, your answer can reveal a lot about how you make decisions and even predict how likely you are to experience happiness and satisfaction.

If you’d decide quickly and decisively where to eat based on simple criteria, like up to five miles away with a four-star average on Yelp, you’d be engaging in what psychologists refer to as *satisficing*. And chances are you’d end up enjoying your food and feeling content with your selection.

If, however, you'd analyze the possibilities from many angles in hopes of finding the "best" one, you'd be pursuing the strategy of *maximizing*. And chances are you'd end up dissatisfied with the meal and irked you didn't spend more time investigating the alternatives.

This holds true for all decisions you make. The more you satisfice (go for good enough), the more likely you are to enjoy what you get and the more you maximize (seek and accept only the best), the more prone you are to disappointment.

Here's a silly example you can probably relate to: When my wife Sarah and I would sit down to watch TV, I'd suck her into a tedious weighing of options to find the "best" choice. We watch little TV, so we should try to make the most of the time, right?

I'd check a site or two online to see what's new and popular, skim reviews, canvass Sarah, and hem and haw. This didn't make for a pleasant wind down. Either I'd lose interest in watching TV altogether, and get "the look," or end up dissatisfied with our pick, wondering if another would've been better.

I've since changed my tack. Where before I was a TV maximizer impossible to please, I'm now a satisfied satisficer, fine with watching the first movie, documentary, or show that checks two basic boxes:

- It's a genre we like.
- It looks interesting.

If it turns out to be good, great. If it doesn't, oh well, we'll try again next time. Either way, we're pleased with the experience, which is more about relaxing together than riveting ourselves to a screen anyway.

This is one of the many types of situations we face in life where the strategy of settling for less than perfect, even when the stakes are higher, is superior to striving for the best. Here's how psychologist Barry Schwartz explained the problem of maximizing in his excellent 2009 book *The Paradox of Choice*:

Maximizers need to be assured that every purchase or decision was the best that could be made. Yet how can anyone truly know that any given option is absolutely the best possible? The only way to know is to check out all the alternatives. A maximizer can't be certain that she has found the best sweater unless she's looked at all the sweaters. She can't know that she is getting the best price unless she's checked out all the prices. As a decision strategy, maximizing creates a daunting task, which becomes all the more daunting as the number of options increases.

...

If you're a satisficer, the number of available options need not have a significant impact on your decision making. When you examine an object and it's good enough to meet your standards, you look no further; thus, the countless other available choices become irrelevant. But if you're a maximizer, every option has the potential to snare you into endless tangles of anxiety, regret, and second-guessing.

...

Whereas maximizers might do better objectively than satisficers, they tend to do worse subjectively. Imagine a maximizer who succeeds in buying a sweater after an extensive search—a better sweater than any but the luckiest satisficer would end up with. How does he feel about the sweater? Is he frustrated at how much time and work went into buying it? Is he imagining unexamined alternatives that might be better? Is he asking himself whether friends of his might have gotten better deals? Is he scrutinizing every person he passes in the street to see if they're wearing sweaters that look finer? The maximizer might be plagued by any or all of these doubts and concerns while the satisficer marches on in warmth and comfort.

...

Getting the best objective result may not be worth much if we feel disappointed with it anyway.

In other words, while maximizing can produce a better result than

satisficing—a softer pillow, a more delicious mustard, a sharper picture—the cost in time, attention, and effort is often much higher and the fruit of your labor often tastes inadequate.

The crux of the matter is this:

Good enough is almost always good enough. A good enough cup of coffee, a good enough bagel, a good enough pair of jeans.

Unless it's not. Some decisions are important enough to warrant deliberation, like whether to go to college or trade school, who to marry, and where to work. Sometimes, the opportunity cost of maximizing—in time, effort, money, and stress—can be well worth it in the long run.

Knowing when to satisfice or maximize, then, is a vital skill to develop if we want to not only experience better outcomes but be more satisfied with them. Because while maximizing produces better results, they may not be worth much if we feel disappointed with them, anyway.

Now, you might be thinking, “This is neat and all, but what does it have to do with getting jacked?”

While the “good enough” method of loosely planning and tracking your calories and macros (satisficing) can work fine as a beginner, it becomes a recipe for stagnation as you continue training. How you approach your diet as an intermediate weightlifter is a more important decision than many people realize. Eventually, you need to shift to the maximizing mindset.

The reason? Your body has several balancing feedback loops that limit muscle growth, and the primary dietary ones relate to calorie, protein, and carbohydrate intake, in that order.

The physiological mechanisms impacted by these nutritional factors are covered in detail in *Bigger Leaner Stronger*, so I won’t rehash them here. They don’t change as you accumulate training experience, either, but how they affect your body does.

Once your “newbie gains” are well behind you, and you’re in a lean bulking phase, even short but regular periods of insufficient calorie and protein intake can hinder muscle growth. Also, periods of lowered carbohydrate intake can reduce performance in the gym (further impairing muscle gain). And when you’re in a cutting phase, restricting your calories too

aggressively and eating too little protein can lead to significant muscle loss.

Therefore, you need to keep a much closer eye on your calories and macros as an intermediate weightlifter.

For instance, when you’re hoping to maximize muscle gain, you need to maintain a calorie surplus and eat enough protein every day. When you want to minimize fat gain, however, you also need to ensure that your calorie surplus is not *too* large. And when you want to maximize fat loss and retain muscle, you need a substantial (but not reckless) calorie deficit and plenty of protein.

Whether you accomplish these things through meal planning or on-the-fly tracking, intuitive eating, or some other system, the method isn’t important. We’ll talk more about viable options in the next chapter, but you’ll need to find what works for you.

This can require major adjustments for many people as they move from their beginner (first year or so) to intermediate phases.

Often, beginners have gotten used to paying little attention to their calories or macros, while still enjoying consistent results. Again, when you’re new, “good enough” is good enough. Until one day, you’re no longer progressing in the gym or mirror.

Most times, people don’t realize they’re stuck because of dietary imprecision, and instead, think the fault lies in their training program. They then make major changes to their workout routines, and unless they’ve gone from poor to outstanding programming, they remain stuck in the same rut. Even when they improve the quality of their training, they see marginal improvements that level off.

This often leads to the search for a new, even more “sophisticated” style of training, which only produces more of the same. Offbeat dietary strategies are sure to follow, and as they rarely address the real problems (too much variance in calories and macros), they rarely right the ship.

In time, many of these people develop a bad case of “fuckarounditis,” as author Martin Berkhan likes to say, and can waste months and even years hopping from one style of eating and exercising to another with little to show for it. I should know, because I was once one of them!

What's more, that time we waste floundering becomes more precious as the years drag on. As we get older, it only gets harder to give our fitness the attention it needs to flourish, what with the increasing demands of work and family and the decreasing results because of the physical disadvantages of aging, including an increased risk of injury and overtraining.

The good news is by the end of this book, you'll know exactly what to do to make it through the slowdowns and earn handsome returns on the time and effort you invest in your diet and training.

Now, the nutritional quality of your diet is another aspect you must maximize as time goes on, because while you don't need a high-quality diet to lose fat and gain muscle, it makes it many times easier.

For instance, a diet deficient in various micronutrients can make it more difficult to lose fat. Take zinc, which is one of the most commonly reported nutrient deficiencies among bodybuilders and is required in adequate amounts for optimal thyroid function.¹ As the thyroid hormone influences metabolic rate, when levels drop, weight loss can slow.²

A good example of this comes from a case study conducted by scientists at the University of Massachusetts.³ Researchers took two zinc-deficient college women and gave them 26 milligrams of zinc per day for four months. They also took careful measurements of the women's resting metabolic rate (RMR), as well as zinc and thyroid hormone levels at the beginning of the study, and then again after two and four month periods of supplementing daily.

By the end of the study, the women's RMRs increased by 194 and 527 calories per day. Yes, per day.

That's the energy equivalent of about thirty and sixty minutes of moderate to intense cardio, or put differently, an increase of about $\frac{1}{2}$ and 1 pound of fat loss per week—from correcting a zinc deficiency caused by a poor diet.

Now, these women could've lost plenty of fat and stayed lean without addressing their nutritional deficiencies, but it would've been much harder than it needed to be.

Another body composition benefit to eating mostly whole, minimally processed foods is a higher Thermic Effect of Food (TEF), meaning the body

burns more calories digesting them than it does highly processed foods.

For example, whole grain bread with cheddar cheese has a TEF of around 20 percent, meaning that about 20 percent of the calories in the food are burned during digestion.⁴ So, if the food contains, let’s say, 200 calories, about 40 are burned thanks to TEF. On the other hand, a slice of white bread with processed cheese has a TEF of only 11 percent, so 200 of these calories only “cost” about 20 to process.⁵

While a difference of 20 calories in a single meal is insignificant, it can add up meal after meal, day after day.

If you’re getting, let’s say, half of your calories from highly processed, low-TEF foods, you might burn several hundred more calories per day by swapping most of them for less processed foods.

The bottom line is it’s easier to lose fat and gain muscle if you mostly eat whole, nutritious, less processed foods, and this is particularly true for intermediate weightlifters who want to keep gaining muscle and strength.



So then, if a “good enough” diet is no longer good enough as an intermediate or advanced weightlifter and it’s time to strive for the “best,” what does that look like?

Fortunately, the answer isn’t what most people do—fad diets, extreme protocols, dubious supplements, and the like. It’s far more straightforward than that.

Keep reading to find out.

Key Takeaways

- The more you satisfice (go for good enough), the more likely you are to enjoy what you get and the more you maximize (seek and accept only the best), the more prone you are to disappointment.
- While maximizing can produce a better result than satisficing—a softer pillow, a more delicious mustard, a sharper picture—the cost in time, attention, and effort is often much higher and the fruit of your labor often tastes inadequate.
- Knowing when to satisfice or maximize is a vital skill to develop if we want to not only experience better outcomes but be more satisfied with them.
- How you approach your diet as an intermediate weightlifter is a more important decision than many people realize, and eventually requires you to shift to the maximizing mindset.
- Most times, people don't realize they're stuck because of dietary imprecision, and instead, think the fault lies in their training program.

8

The Almost Nearly Perfect Diet

The heights by great men reached and kept were not attained by sudden flight, but they, while their companions slept, were toiling upward in the night.

—HENRY WADSWORTH LONGFELLOW

THE TRUE “SECRET” TO SUCCESSFUL long-term dieting for optimizing your health and body composition is summarized by an influential figure in Japanese Zen Buddhism, Hakuin Ekaku, who said the following about the path to enlightenment:

It's like chopping down a huge tree of immense girth. You won't accomplish it with one swing of your axe. If you keep chopping away at it, though, and do not let up, eventually, whether it wants to or not, it will suddenly topple down. When that time comes, you could round up everyone you could find and pay them to hold the tree up, but they wouldn't be able to do it. It would still come crashing to the ground.... But if the woodcutter stopped after one or two strokes of his axe to ask the third son of Mr. Chang, “Why doesn't this tree fall?” And after three

or four more strokes stopped again to ask the fourth son of Mr. Li, “Why doesn’t this tree fall?” he would never succeed in felling the tree. It is no different for someone who is practicing the Way.

The way to dietary nirvana is much the same: conscientiousness and consistency are the keys, and impatience and impulsivity are the enemies.

Here’s a situation that’s all too common:

A guy starts lifting weights and is thrilled at how his body responds. Every week, he gets a little stronger, and every month, a little bigger and more defined, like clockwork.

Even better, while he understands the fundamentals of proper dieting (energy balance, macronutrient balance, and the like), he isn’t following a meal plan or tracking his calories closely. He’s just making sure he eats a fair amount of food and protein, does his workouts, and lets his body take care of the rest.

As time goes on, progress slows. He’s no longer adding weight to the bar every week, his workouts are growing more difficult, and his progress pictures are losing their luster. He soldiers on.

Soon, progress grinds to a halt. He’s lifting the same weights he was a couple of months ago, and more or less looks the same. He has to accept that what was once working well is no longer producing results.

Off to the Internet our guy goes to find out why, and before long, he feels like he’s on the floor of the stock exchange at the closing bell. Facing an overwhelming cacophony of contradictory opinions, orders, and objections, he wonders what the heck to do next.

So begins this poor fellow’s search for the elusive “better way”—the silver bullet that’ll get the needle moving again—and his descent into a confusing morass of complexities.

A couple of weeks later, he has overhauled his diet and training to conform to the recommendations of one “guru” or another. Maybe it’s intermittent fasting or reverse pyramid training—or other “sophisticated” methods of eating and exercising—all promising that he’ll gain like a newbie again.

In a couple of months, the air is out of his balloon. Nothing has changed, and he doesn't understand why. What did he do wrong? Is it just his genetics? Or are more strength and size not in the cards for him?

And then the next shiny object appears in his social media feed. A new guru with new methods and new promises. Maybe it's not too late after all? Maybe *this* is the better way?

On to another regimen he goes, only to be disappointed again. And again. And again. Until his ambitions drift away, and he either quits or settles for going through the motions.

I was once that guy, and while it wasn't agonizing—we *are* just talking about working out, after all—it wasn't fun or encouraging. I no longer had a clear vision and plan for my body, looked forward to my training, or wanted to further optimize my diet. Working out and eating well had become chores.

What I, and everyone else who has walked in those shoes, was missing, is that the solution wasn't hiding in esoteric theories or advanced tactics, but waiting in the spotlight of the fundamentals—the 20 percent of the information and techniques that produce 80 percent of the results.

This is true of any activity. Mastering the basics produces most of your growth, and only those who've summited that mountain have the wisdom and experience to benefit from more elaborate ideas and methods.

As far as diet and performance, health, and body composition are concerned, the 20 percent comes down to doing just four things well:

1. Managing your energy balance
2. Managing your macronutrient balance
3. Managing your micronutrient balance
4. Maximizing your compliance

In other words, maintaining positive, negative, or neutral energy balances as desired, regulating how those calories break down into protein, carbohydrate, and fat, emphasizing nutritious foods, and remaining consistent.

If your dietary habits revolve only around those targets and nothing else, you can't go wrong, regardless of how ambitious your fitness goals are. The real "trick" to intermediate- and advanced-level dieting is paying attention to the details that many beginners overlook, not following strange or "special" eating rituals and routines.

Energy balance will always influence what "mode" your body is in (losing or gaining weight), macronutrient balance the quality of the weight gain and loss (in terms of muscle and fat), micronutrient balance the quality of your overall health and wellbeing, and compliance the quantity (pounds and inches) of your long-term results.

To go back to the tree-felling analogy, you can think of energy balance as the strokes you make to cut down the tree, macronutrient balance as the force you apply to those strokes, micronutrient balance as the sharpness of the blade, and compliance as your persistence at the task.

So long as you keep striking the tree with enough force for enough time with a sharp enough blade, the tree will fall as sure as water's wet and fire burns. Similarly, so long as you control your calories, macros, micros, and consistency, your body will respond to your training.

In fact, research shows dietary compliance (consistency) alone is one of the single best predictors of long-term weight loss success.

A salient example of this comes from a study conducted by scientists at Merck.¹ The researchers combed through all the research they could find on obese people on low-calorie diets who failed to lose as much weight as expected, including papers on just about every weight loss diet you can think of—Weight Watchers, the Zone Diet, the Ornish Diet, the Atkins diet, low-carb diets, low-fat diets, and others.

The scientists analyzed many reasons why weight loss was impaired, including decreased metabolic rates or activity levels and increased calorie absorption from food. In the end, they concluded the culprit was simply "poor patient adherence."

In other words, the reason these people didn't lose much weight wasn't due to metabolic hobgoblins, hormonal disruptions, or digestive dysfunctions—it was because they weren't sticking to their diets.

What's more, the researchers also found that when they looked at the participants in these studies who lost almost no weight, these people were also the least consistent with their diets. And the ones who lost the most weight? You guessed it—the most consistent.

Several other studies have echoed this finding.² In almost every case where people said they “couldn’t lose weight,” the real problem was they couldn’t stick to their diets.

Although there’s no scientific research available on the topic, dietary adherence is a major factor in successful long-term muscle gain as well. Here’s how Dr. Eric Helms, a natural bodybuilder, coach, researcher, and member of the Scientific Advisory Board of my sports nutrition company Legion, explains it:

Adherence is rarely talked about in terms of muscle gain. People don’t struggle with a calorie surplus the same way they do with a deficit, and the barriers of combating hunger, social pressure, and physiology don’t occur when trying to gain muscle.

However, consistency is still the most important thing for putting on mass, just like it is for taking it off.

The hard fact is, once you’re no longer a novice, gaining muscle and strength takes not only effort, but time. Meaning, you can’t have the same “bomb-and-blast” attitude toward training, follow the “see food” diet, or program-hop from influencer to influencer and expect much to happen.

What’s left? It isn’t sexy. It’s consistency.

Gain up to 1 percent of your bodyweight per month, eat enough protein every day, sleep at least eight hours each night, make small increases in load or reps mesocycle to mesocycle, remember to take your creatine, don’t go out drinking on the weekends, and get in your fruit, vegetables, and water.

Simply put, lifestyle changes accumulated over years allow you to achieve your potential. Remember, whether you are dieting or gaining, consistency is always key.

What strategies, techniques, and tools can you add to your bag of tricks to improve your ability to manage your energy, macronutrient, and micro-nutrient balances better and maximize your compliance and consistency?

The four most popular and effective strategies are:

1. Meal planning
2. Mini-cuts
3. Intermittent fasting
4. Calorie cycling

Let's learn about each.

Meal Planning

If you've read *Bigger Leaner Stronger*, you know all about meal planning and have experienced its benefits firsthand.

Meal planning is the easiest way to guarantee long-term results, because it helps minimize errors. By planning the food you eat every day, you're less likely to accidentally under- or overeat or screw up your macros, which are major pitfalls that become more punishing as time goes on.

This is why I'm such an ardent proponent of meal planning for those beginning their fitness journeys—it's the easiest way to increase their chances of success, regardless of whether they want to lose or gain weight.

Many people tire of it, however, and choose to eat more intuitively, especially after they've achieved their first major body composition milestone or two. They don't want to weigh and measure everything they cook; they don't want to fiddle with My Fitness Pal every day; and they don't want to bother with trying to count macros on the fly.

Instead, they just want to eat a few balanced, enjoyable meals every day, without gaining weight or ruining their body composition.

And that's understandable. No matter how devoted you are to your fitness, it's nice to put the Tupperware and food scale away for a while and reclaim your Sunday afternoons that you used to spend meal prepping.

Moreover, as an experienced meal planner, it's much easier to eat according to your body's natural appetite, because now you have a better awareness of how the foods you like to eat relate to your energy and macro-nutrient balance.

Additionally, studies show that people who are good at eating this way are leaner, healthier, and less likely to gain weight than those who aren't.³ They're also better at sticking to their diets and less stressed and happier with their bodies.⁴

That said, this style of dieting also has significant downsides if you're trying to optimize fat loss or muscle gain. While it's great for staying lean without having to crunch numbers, it's not well suited to building your ideal physique. Meal planning is far better for this.

To understand why, let's talk about intuitive eating, because, despite what many people think, it's not eating whatever you want whenever you want. That's more like "anarchic" eating, which will result in weight gain and other non-optimum health conditions.

Intuitive eating is a system of controlling what you eat based on your body's internal cues, rather than meal plans or other external means. It's a scientific term, and we can summarize it in three precepts:⁵

1. Eat when you're hungry.
2. Stop eating when you're full.
3. Don't restrict your food choices (except for medical reasons).

It sounds simple enough, but it's also easier said than done for most people. For instance, studies show that many people eat a sizable portion of their daily calories for reasons other than hunger.⁶ Boredom, procrastination, peer-pressure, hedonism, and convenience are all common triggers

that sway us to eat more than we should and often food we don't even want.

As you well know, meal planning and calorie counting are effective countermeasures for dealing with these temptations to overeat.

A good example of this is a study that found that intuitive eating helped people lose weight just as fast as calorie counting at first.⁷ Eventually, though, weight loss ground to a halt among the intuitive eaters, but continued at a steady clip in the calorie counters.

There are two primary reasons for this.

1. It's tricky to eat our true calorie needs, because it's easy to think we're eating only to satisfy our hunger when that's not the case.⁸

We're highly susceptible to small triggers in our environment that encourage overeating. Take portion sizes, for example. A study conducted by scientists at the University of Technology Sydney found that for every doubling of portion sizes, most people subconsciously ate about 35 percent more.⁹ That is, if someone serves themselves two cups of macaroni instead of one, they'll likely eat more.

Other research shows that eating from bigger packages and plates can result in eating more calories.¹⁰ Our hunger levels are influenced by what we see. Even when we know we've eaten enough, if someone shows up with a plate of fresh-baked cookies, our brain can shift back to "hungry."¹¹

Another potent trigger for overeating is food variety. Scientists have known for decades that giving people more food choices, especially when those foods are tasty and calorie dense, can encourage overeating.¹²

We can only handle so much of the same flavor, texture, smell, etc. before we get bored with it and stop eating, so food companies present us with a cornucopia of chow that has been painstakingly

engineered to look, smell, and taste delightful.

Faced with this abundance, it's all too easy to turn into Augustus Gloop from *Willy Wonka and the Chocolate Factory*, gobbling up one goody after another.¹³

2. The more weight we lose, the more our body becomes resistant to further weight loss.¹⁴

This is because of various physiological mechanisms known as “metabolic adaptation” that work to increase our energy intake and decrease our energy expenditure. The main mechanism at play here is hunger, which rises as you lose weight, making it more difficult to maintain a calorie deficit when “eating by feel.”¹⁵

Intuitive eating doesn't work well for gaining weight, either, because this requires eating more food than you want to. You don't have to drink a gallon of milk per day (in fact, don't do that), but there's truth in the body-building adage that you have to “eat big to get big.”

That's easy to do. For a bit. In time, however, your calorie intake will creep downward without you even realizing it, and so will your progress in the gym. That's just how the appetite works. Your body doesn't want to overeat for long periods of time.¹⁶

Yet another drawback to intuitive eating is it makes it hard to get your macros right. You must be a skilled “flexible dieter” to wing it and get enough protein every day, let alone optimal amounts of carbs and fats, too.

All this is why intuitive eating is best for maintaining your body composition and not transforming it. That is, when you're more or less happy with your physique and aren't striving to get bigger, leaner, or stronger, you can do well with intuitive eating. But if you're looking to lose fat or gain muscle quickly and effectively, a more structured approach to dieting (like meal planning) will serve you better.

I've learned this lesson several times and now eat intuitively when I'm

maintaining a comfortable body fat percentage (about 10 percent), but still create and follow exact meal plans when cutting and lean bulking. I recommend you do the same.

Mini-Cuts

No matter what you do with your training, macros, meal timing, or anything else, a calorie surplus is a calorie surplus and your body fat level will rise.

Many people struggle with this. They want to gain more muscle and strength, but don't want to lose their tight waist, washboard abs, and vascular arms. And I understand. There's a strange satisfaction that comes with being very lean. You look good and you know it. You love what you see in the mirror. You get more attention from others. You feel special.

It's hard to give all that up for glacial changes in your physique, especially when the chirpy devil on your shoulder reminds you of it every chance he gets. "Wouldn't it be nice to have that six-pack again? Is this lean bulking stuff really necessary? There's got to be a better way ..."

Unfortunately, there isn't a better way. No amount of (natural) pills or powders or changes to your dietary and training protocols can stand in for a calorie surplus. "Lean gains" of all muscle and no fat is a mirage that only leads you deeper into the desert. "Leanish gains" of a bit of muscle and fat is the oasis to set up camp in.

That's where mini-cuts enter the picture: They're an effective tool for reducing fat gain during a lean bulk phase, without sacrificing much in the way of muscle gain. This prevents your body fat from ever going too high, which is aesthetically pleasing, and eliminates the need for longer cutting phases, which can be draining.

As you might have guessed, a mini-cut is a shorter-than-usual cut, normally between three and four weeks. This is long enough to produce a couple of pounds of fat loss, but not so long that your body lights the after-burners on its weight loss countermeasures.

With mini-cuts, then, you get to spend several months building muscle on a lean bulk phase, flip into a deficit to carve off a bit of the fat gained, and then switch back to a surplus before the penalties catch up with you.

Now, there are plenty of people who lean bulk successfully without using mini-cuts, and I've done it before, too. You can just maintain a steady surplus until reaching the body fat "ceiling" of 15 to 17 percent and then begin a cutting phase, but there are two downsides to this approach:

1. As you get deeper into your lean bulk, you'll probably become more uncomfortable with your body fat levels.
2. Once it comes time to cut, you'll have a rather long journey back to lean ahead of you.

This is why many people find that mini-cuts make lean bulking more enjoyable. They help keep your body fat in a more attractive range and minimize the time you have to spend in an ongoing calorie deficit.

For instance, let's say you're a 190-pound guy at 10 percent body fat, and you're starting a lean bulk phase. As a natural intermediate or advanced weightlifter, you should look to gain around 0.25 to 0.5 percent of your body weight per month while lean bulking, and if you have ordinary muscle building genetics, about half of that weight should be lean mass and half fat.

That means that on average, you should gain 0.5 to 1 pound per month, consisting of 0.25 to 0.5 pounds of lean mass and fat per month.

Many people gain weight faster than this while lean bulking, because they overeat too often (vacations, holidays, accidents, and so forth), but let's say you execute your gaining phase flawlessly. Here's how it should play out if you're an intermediate weightlifter:

Month	Starting Body Weight	Starting Body Fat %	Ending Body Weight	Ending Body Fat %	Lean Mass Gain	Fat Gain
1	190	10%	192	10%	1	1
2	192	10%	194	11%	1	1
3	194	11%	196	11%	1	1
4	196	11%	198	12%	1	1
5	198	12%	200	12%	1	1
6	200	12%	202	12%	1	1
7	202	12%	204	13%	1	1
8	204	13%	206	13%	1	1
9	206	13%	208	13%	1	1
10	208	13%	210	14%	1	1
11	210	14%	212	14%	1	1
12	212	14%	214	15%	1	1
13	214	15%	216	15%	1	1
14	216	15%	218	15%	1	1
15	218	15%	221	16%	1	1
16	221	16%	223	16%	1	1
17	223	16%	225	16%	1	1
18	225	16%	227	17%	1	1
19	227	17%	230	17%	1	1
20	230	17%	232	17%	1	1

Weight Gained	Body Fat % Gained	Lean Mass Gained	Fat Gained
40 pounds	7%	20 pounds	20 pounds

This is a simplistic view, but it's accurate enough for our purposes here. And the key takeaway in this best-case scenario is that you'd be able to lean bulk for nearly twenty months before having to call it quits, gaining somewhere around 40 pounds of body weight with a 50/50 split between lean mass and body fat.

In reality, you're more likely to reach the finish line somewhere around the twelve- to sixteen-month mark (and sooner if you overeat too much), but either way, this plan would be a fantastic opportunity to gain a significant amount of muscle and strength.

The bad news, however, is you must go without abs for a while, as they

fade around 13 to 14 percent body fat. And then, after celebrating your gains, you have to face the music and strip away all the fat you gained along the way.

To get back to 10 percent body fat, you now have to lose about 20 pounds of fat, which will take anywhere from eighteen to twenty-five weeks to accomplish, depending on how well you stick to your diet and training plans and how many breaks you take. Also, if you don't properly manage your calorie and protein intake, sleep hygiene, and cardio, you're likely to lose at least some muscle, too.

A picture-perfect cut back to 10 percent, then, would entail losing about 30 pounds—20 pounds of fat and around 10 pounds of intramuscular water and glycogen (as well as some food weight), which technically counts as lean mass.

So, by the end of this castle-in-the-sky case, in just over two years, you've gained about 10 pounds of muscle tissue, which is outstanding progress for an intermediate weightlifter.

Let's now look at how mini-cuts can change things.

If you were to do one four-week mini-cut after every four months of lean bulking (a reasonable strategy), lose 2 to 3 percent of your body weight on each mini-cut (a reasonable target), and maintain flawless discipline and compliance throughout (a tall order), here's how it plays out:

Month	Starting Body Weight	Starting Body Fat %	Ending Body Weight	Ending Body Fat %	Lean Mass Gain/Loss	Fat Gain/Loss
1	190	10%	192	10%	1	1
2	192	10%	194	11%	1	1
3	194	11%	196	11%	1	1
4	196	11%	198	12%	1	1
5	198	12%	194	10%	1	3
6	194	10%	196	11%	1	1
7	196	11%	198	11%	1	1
8	198	11%	200	11%	1	1
9	200	11%	202	12%	1	1
10	202	12%	198	11%	1	3
11	198	11%	200	11%	1	1
12	200	11%	202	11%	1	1
13	202	11%	204	12%	1	1
14	204	12%	206	12%	1	1
15	206	12%	202	11%	1	3
16	202	11%	204	11%	1	1
17	204	11%	206	12%	1	1
18	206	12%	208	12%	1	1
19	208	12%	210	12%	1	1
20	210	12%	206	11%	1	3
21	206	11%	208	11%	1	1
22	208	11%	210	12%	1	1
23	210	12%	212	12%	1	1
24	212	12%	214	12%	1	1
25	214	12%	210	11%	1	3

Weight Gained	Lean Mass Gained	Fat Gained
20 pounds	15 pounds	5 pounds

Again, this is a fanciful, reductionist view, but it's also illustrative. As you can see, the lightly-shaded cells are lean bulking months, and the darkly shaded cells are those spent cutting.

During those two years, then, your body fat percentage hovered around 11 percent, and you've gained about 15 pounds of lean mass and just 5

pounds of body fat. In other words, you've gained almost as much muscle tissue as you would have continuously lean bulking and then cutting, but you didn't have to sacrifice your abs along the way.

In reality, you'll probably gain more fat when lean bulking and lose less when cutting, mostly because of compliance, but using mini-cuts properly can help you gain almost as much muscle as continuous lean bulking with significantly less fat gain.

At this point, you may be wondering, why not use mini-bulks, too? Why not stay in a calorie surplus for 4 to 8 weeks, gain a little body fat and muscle, and then strip away the fat with a mini-cut?

Unfortunately, this rarely works well. We don't need to get into the nitty gritty details, but it takes time for your body's "muscle-building machinery" to warm up and get into high gear when you enter a calorie surplus. Thus, by entering a calorie deficit too often, you prevent this from happening.

Or put differently, muscle-building is a slow process that takes time to gain momentum, and you'll hamstring this by pumping the brakes every month or so with mini-bulks. This is why you should aim to lean bulk for at least 12 weeks at a time.

Intermittent Fasting

Intermittent fasting is simple. At bottom, you don't eat for most of the day, then you cram all of your calories into an "eating window" that can last anywhere from 4 to 8 hours.

If that sounds stupid, uncomfortable, or even unhealthy, I understand. I thought the same thing when I first heard about it years ago.

Eat nothing for 16, 18, 24, or even 36 hours and then "feast?" That will help you lose weight, build muscle, improve mental performance, age slower, and prevent sickness? Come on. That's a diet that sounds like it belongs in the bargain bin with the rest of the faddish nonsense that health "gurus" churn out every January.

It surprised me to learn, however, that intermittent fasting can be an

effective tool for improving dietary compliance. It has good science on its side, and it doesn't have to be unpleasant. In fact, many people enjoy intermittent fasting more than traditional eating patterns, because it allows them to have fewer, larger meals.

Scientific research on intermittent fasting has also helped tip some of the biggest, doddering sacred cows of diet and nutrition.

Accordingly, intermittent fasting is here to stay. What it isn't, however, is the quantum leap in dieting that some people would have you believe. It won't automagically help you "recomp," burn away belly fat, or stave off aging.

It can, however, help you stick to your diet better and improve your long-term results. That's why you should understand what it is, how it works, and how to use it.

To get there, let's start at square one: why is it called "intermittent fasting"?

Well, the term is only a semi-perfect description of what it is. You fast, but depending on the protocol, not necessarily "intermittently"—sometimes, you do the opposite and fast on a regular schedule.

And what is "fasting?" Many people assume it means "not eating food" or "having an empty stomach," but it's more than that.

When you eat food, it gets broken down into various molecules that your cells can use, like amino acids, glucose, and fatty acids. These molecules find their way into your blood and are met by the hormone insulin, which shuttles them into cells.

Insulin levels rise in proportion to the size and composition of the meal. The larger the meal and higher in protein and carbohydrate it is, the larger the insulin response.¹⁷ The size and composition of the meal also determines how long insulin levels remain elevated (anywhere from two to six+ hours).¹⁸

When your body is digesting and absorbing the food you've eaten, and insulin levels are "up," you're in a "fed" or "postprandial" state (*prandial* means having to do with a meal). Once your body has finished processing the food and nutrients, however, insulin levels drop to a low, baseline level, and you're now in a "fasted" or "postabsorptive" state.

As intermittent fasting is a style of dieting that concerns itself most with *when* instead of *what* you eat, the general goal is to spend more time in a postabsorptive (low insulin) state than postprandial (high insulin) one.

So for instance, with a normal diet, you might eat food every few hours from, let's say, 8 a.m. until 9 p.m. That is, every day you'd eat food intermittently for ~13 hours and eat nothing for ~11 hours.

Because of the time required to process food, and depending on the size and composition of your final meal of the day, most of your body's time in a postabsorptive state occurs when you're asleep.

With intermittent fasting, you flip this around. For instance, with the protocol I recommend, you eat food intermittently for 8 hours and eat nothing for 16 hours. This way, your body spends more time in a postabsorptive state.

Why all the emphasis on fasting? This is why I was skeptical. One of the easiest ways to invent a fad diet is to isolate some aspect of eating and hang everything else on it.

For example, low-carb crusaders hold up carbs as the gateway drug to obesity, disease, racism, *Keeping Up with the Kardashians*, and everything else wrong in the world. Paleo advocates claim that our dietary habits should follow a flawed understanding of what our ancient ancestors ate. Gluten-free muppets bang on about how a protein harmless to the vast majority of the population is destroying our bodies and must be stamped out of existence.

Then there's intermittent fasting, which puts fasting up on a pedestal. Hence my early cynicism.

And I wasn't entirely wrong. The health and body composition benefits of intermittent fasting are wildly overblown, and many claims (reduced acne, increased longevity, and others) are essentially made up out of whole cloth.

That said, if you have a hard time sticking to your diet with a traditional eating pattern, intermittent fasting may be able to help.¹⁹ For instance, the single biggest hurdle we face when cutting is controlling calorie intake, and if intermittent fasting makes that even slightly easier, it's worth considering.

Despite what intermittent fasting fanboys would have you believe,

however, there isn't much else to be said about this style of eating.

For instance, a study conducted by scientists at Texas Tech University split eighteen active men with an average age of twenty-two into two groups:²⁰

1. Group one ate all of their calories in a four-hour window, four days per week. They could eat whatever and as much as they wanted, but couldn't eat outside of those four hours on those days, and on the other days, they could eat whenever they wanted.
2. Group two followed their normal eating habits and schedules.

Both groups lifted weights three days per week, and before and after the study, the researchers measured their total body fat and lean mass with dual x-ray absorptiometry (DXA), their barbell bench press and leg press strength, and their biceps and quadriceps muscle thickness.

After eight weeks, there were no statistically significant differences between the groups on any measure except calorie intake—group one ate several hundred calories per day less than group two and lost some weight as a result (though not enough to be statistically significant).

Perhaps the single best study conducted on intermittent fasting to date was performed by scientists at Kennesaw State University.²¹

In this case, the researchers divided twenty-six resistance-trained men with an average age of twenty-three and an average weightlifting experience of five years into two groups:

1. Group one consumed all of their calories in an eight-hour feeding window, eating their meals from noon to 8 p.m. or 1 p.m. to 9 p.m.
2. Group two consumed their calories whenever they wanted throughout the day.

A nutritionist created meal plans for the participants that ensured they ate 25 percent fewer calories than they needed to maintain their weight and at least 1.8 grams of protein per kilogram of body weight per day.

The men also did three full-body weightlifting workouts per week that resembled those you'll do in the *Beyond Bigger Leaner Stronger* program, and the scientists took extensive measurements before and after the study, including body composition, upper arm and thigh thickness, bench press and leg press one-rep max, muscular endurance, and many more.

And again, no statistically significant differences were found between the groups on any measure.

Yet another study performed by scientists at the University of Padova found almost identical results.²² In this case, people using intermittent fasting gained the same amount of muscle and strength as people following a normal meal schedule, but lost slightly more body fat. The reason for this, though, was they were eating about 200 fewer calories per day than the people following the normal meal schedule, which is enough to explain more or less all of the difference in fat loss.

Another issue with intermittent fasting is research shows that pre-workout carbs enhance performance and pre-workout protein may enhance recovery.²³ The better you can perform in your workouts and recover from them, the better your progress.

Finally, studies suggest that eating at least 30 grams of protein across at least three to four meals per day is probably better for gaining muscle than having one or two large meals containing most of your daily protein (as many people do when intermittent fasting).²⁴

All this is, again, why I only recommend intermittent fasting if it helps you better stick to your meal plan.

“But won’t I lose muscle and slow down my metabolism by going for 12, 14, or 16 hours without food”? A good question and long-standing belief among bodybuilders.

Thanks to scientific insights into what happens when we fast, however, we now know that’s not the case.²⁵ To understand why, let’s review how fasting relates to muscle tissue breakdown.

Glucose, or blood sugar, is a great source of energy for your cells and organs. The easiest way to provide your body with glucose is to eat carbs, but it can also create glucose out of other substances, such as amino acids

(found in proteins) and glycerol (found in body fat).

When you're fasting, your body must rely on its own energy stores to obtain glucose and survive, and it has two primary sources for this:

1. Glycogen stored in the liver. Glycogen is a form of carbohydrate that can be converted into glucose.
2. Body fat. When fat cells are mobilized, fatty acids are released into the blood, which many of your cells can burn for energy, along with glycerol, which can be converted into glucose.

So long as the body can turn to these two energy sources to sustain itself, it has no reason to break down muscle tissue. When the liver runs out of glycogen, however, the body won't continue burning body fat alone—it'll also cannibalize muscle to obtain amino acids for conversion into glucose.

For example, a research review conducted by Dr. George F. Cahill, Jr. found that amino acids produced by the breakdown of muscle tissue were responsible for about 50 percent of glucose maintenance at the 16-hour mark of fasting, and 100 percent at the 28-hour mark.²⁶

For this reason, many intermittent fasting protocols designed for athletes and bodybuilders don't involve fasting for over 16 hours at a time.

The other fable intermittent fasting has dispelled is the claim that it can cause your metabolism to faceplant.

Most people connect hunger and starvation ("I'm starving," they say, just a few hours after their last meal), but physiologically, these are very different things. Hunger is a spark, while starvation is a four-alarm fire. And it takes a lot of hunger to turn into real starvation.

Case in point: a study conducted by scientists at the University of Rochester found that metabolic rate didn't decline until 60 hours of fasting, and the reduction was a mere 8 percent.²⁷

What's more, research shows that the metabolism *speeds up* after 36 to 48 hours of fasting, which makes sense from an evolutionary perspective.²⁸

If we haven't eaten in some time, what does our body want? Food, of course. And how does it stimulate us to find food? By increasing production

of two chemicals that sharpen our minds and urge us to move around: adrenaline and noradrenaline. Incidentally, these chemicals also increase our metabolic rate.

Studies show that true “starvation” begins at about three days (72 hours) of not eating, at which point the primary source of energy becomes muscle tissue.²⁹ This causes muscle loss, but even that tapers off as time goes on, because lean mass is vital to preserving health and life.³⁰

So, here’s the bottom line:

Like any popular brand of dieting, intermittent fasting is a victim of unreal hopes and expectations. People will always hunt for shortcuts and “hacks,” and there’ll always be astute marketers ready to oblige them.

It would be great if manipulating your eating schedule alone could significantly improve muscle gain, fat loss, and health, but it can’t. Only a lifestyle that includes regular exercise, nutritious foods, minimal alcohol, and good sleep hygiene can move the needle in a major way.

What intermittent fasting can do, though, is make eating fewer calories easier and more enjoyable. That’s it.

Calorie Cycling

Calorie cycling is a method of eating that involves planned increases and decreases in calorie intake, usually by eating more or less carbohydrate.

There are many calorie cycling protocols to choose from, but most alternate between high-, medium-, and low-calorie days throughout the week.

- On high-calorie days, you typically consume more calories than you burn.
- On medium-calorie days, you typically consume as many calories as you burn.
- On low-calorie days, you typically consume fewer calories than you burn.

The exact mix of your high-, medium-, and low-calorie days depends on your goals and preferences.

For example, if you want to lose fat, you could maintain a calorie deficit for five days per week, and eat at maintenance on the remaining two days to give your body a break. As an advanced weightlifter, this can help with muscle retention as you get leaner, especially if you're dieting to very low levels of body fat.

If you want to gain muscle and strength while minimizing fat gain, you can flip this layout around and maintain a slight calorie surplus five days per week, and eat at maintenance or even a deficit on the remaining two days of the week.

Proponents of calorie cycling claim it's superior to traditional dieting in several meaningful ways, including faster fat loss and muscle gain and fewer unwanted side effects when cutting and lean bulking.

Unfortunately, it's not that cut-and-dried. Calorie cycling is a minor improvement over the norm for some people under some circumstances, but definitely not a breakthrough in diet and nutrition.

Let's start by looking at how calorie cycling affects weight loss, which is its most powerful draw.

Calorie Cycling and Weight Loss

As you know, any diet that has you maintain a calorie deficit over an extended period will cause weight loss, regardless of when and how you consume those calories. According to some people, calorie cycling augments calorie restriction by boosting your metabolism and fat burning, resulting in more fat loss.

This is hogwash.

To understand why, you first have to understand what happens at a cellular level when you lose fat.

When you restrict your calories for fat loss, several chemical, hormonal, and metabolic changes take place in your body. Chief among these

fluctuations is a drop in a hormone produced by body fat known as *leptin*.³¹ This drop in leptin underlies the constellation of side effects associated with dieting known as *metabolic adaptation*, or more inaccurately, *metabolic damage*.³²

Leptin plays an important role in many bodily functions, but its main job is to keep the brain alert to how much energy is available for survival. The brain pays close attention to the relationship between the energy burned through basic metabolic function and activity and the calories available from food and body fat.

In the short-term (hours, days), leptin rises and falls based on your daily calorie intake (especially your carb intake).³³ It increases after you've eaten a meal and energy is plentiful, signalling your brain to reduce hunger, increase physical activity levels, and maintain a high metabolic rate; and it decreases as the energy provided by a meal begins to run out and body fat must be tapped, signalling the need for more food.

In the long-term (weeks, months, years), leptin rises and falls based on your body fat percentage.³⁴ When body fat levels are high, leptin levels are high, and your brain responds by bolstering fullness after meals, physical activity levels, and metabolic rate.

When leptin levels are low and remain so for at least several days, as they do when dieting, this sends a strong signal to the brain that it should take measures to increase food intake and conserve energy.³⁵

You've likely experienced this firsthand. In the early stages of dieting—the first three to five weeks for most people—it's duck soup. The scale keeps ticking downward, your waist keeps shrinking inward, you're rarely hungry, and you feel like your normal self.

Sometime around the two-month mark, though, you begin to feel "it"—the bodybuilding equivalent of "bonking." Your energy levels, motivation to train, and dietary compliance start to sag, and your hunger, cravings, and irritability spike.

As far as your body's concerned, you're starving to death, and it's ready to fight hammer and tongs to survive. And its prime directive has become to *eliminate the calorie deficit*.

Sadly, this is something you can only manage, not cure. So long as you're dieting, your body is going to resist your efforts to get leaner.

Now for the good news: When you eat more, leptin levels rise, and you feel like someone "turned the lights back on." In a sense, that's what's happening—your body is "rewarding" you for shrinking or erasing the calorie deficit it perceives as a threat to its survival.

Once you've stopped dieting altogether, your leptin levels will be lower than they were when your body fat levels were higher, but they can still be high enough for you to feel healthy and vital again.

That's true of the lower body fat levels people pursue for "aesthetics"—10 to 15 percent for men and 20 to 25 percent for women. At such levels of body fat, leptin production stabilizes, creating a new normal or *settling point*, as scientists call it.³⁶ As long as you stay sufficiently active and eat plenty of nutritious foods, you can maintain such a physique with relative ease.

What if you want to plumb the lowest levels of body fatness, though? What if you want to get "shredded"? You know, sub-10 percent body fat for men and sub-20 percent for women?

This is different and more difficult territory, the stuff of low-leptin bugbears. Once your body fat reaches these levels, leptin production becomes vanishingly low, and for many, this means unyielding hunger, lethargy, and irritability.³⁷

There's nothing much they can do about it, either, because aside from injecting synthetic leptin—which costs around \$1,000 per day—there's no way to nullify the leptin-mediated side effects of low body fat levels besides ... gaining body fat.

You can stick to your guns, but it'll take its toll in the form of energy, mood, strength, and hormonal health. Basically, you just have to choose between being "peeled" and feeling like a normal human.

I've been there myself several times. It's fun to look "photoshoot ready," like this ...



... but it's not so fun to deal with the fallout:

- Losing about 5 percent of my strength on the big compound exercises.
- Less drive, energy, and enthusiasm in my workouts.
- Careful and consistent control of my calorie intake, which meant little in the way of “cheating,” and especially not with high-fat foods.
- Never feeling fully satisfied from meals despite eating enough to maintain my weight.

Now, I'm not saying you shouldn't get shredded—in fact, I think most intermediate and advanced weightlifters should experience the process at least once. It's a game of discipline, perseverance, and delayed gratification, and those are always skills worth honing.

But anyone who says you can flaunt a “shrink-wrapped” physique 365 days per year without sacrificing some of your health and wellbeing is lying. And anyone who appears to be doing it effortlessly is posturing or using steroids.

The latter point deserves emphasis because with the right drugs, everything changes. Suddenly, you can maintain ridiculously low body-fat levels, crush workouts, gain muscle and strength, and eat a good 20 to 30 percent more calories than you'd be able to otherwise.

For instance, it's not uncommon for "enhanced" bodybuilders to spend just 10 to 12 weeks getting stage-lean, eating upward of 3,000 calories per day (just shy of my lean bulking calories) and doing little cardio.

We mortals, however, have a much harder time of it, but we get a consolation prize: Our body doesn't go to pieces. Steroids are a sexy but sinister mistress that wreaks physiological and psychological havoc.

There is a way for us natural weightlifters to at least ease the pain of low-leptin living, though: calorie cycling.

Recall that leptin levels rise and fall based on two factors:

1. Your daily calorie intake (in the short term).
2. Your body fatness (in the long term).

When you're dieting to get lean, there's nothing you can do about number two, but you can exploit number one to raise your body's leptin production temporarily.

Specifically, by periodically raising your calorie intake, you can increase your leptin levels for a few hours or even days, and this can ease some negative side effects of calorie restriction in particular.³⁸ Think of it as coming up for a breather before going heads-down for another lap around the pool.

Calorie cycling can help when you're maintaining low body fat levels as well, but it's of limited utility because no matter how much food you eat, your body can only produce so much leptin with so little body fat.

Either way, to calorie cycle correctly, you need to follow two rules:

1. You must get most of your extra calories from carbs.

Research shows that eating dietary fat has no effect on leptin levels, whereas significantly increasing carbohydrate intake causes a

substantial spike in leptin production that can persist for as long as you maintain your higher-carb eating.³⁹

It's unclear what effect protein has on leptin levels, but it's likely insignificant compared to carbs.⁴⁰ That said, some research suggests that high-protein dieting may improve leptin sensitivity, so it's a good idea to keep protein intake high when using carbs to boost your body's leptin production.⁴¹

2. You must eat at maintenance calories for two to three days per week.

Why not just eat a very high-carb diet when cutting or maintaining low body-fat levels? If carbs boost leptin levels, wouldn't this keep leptin production perpetually elevated?

Unfortunately, that won't do the trick, because the leptin-enhancing effects of carbs are short-lived.⁴² Thus, over time, your average leptin levels will be about the same, regardless of how much or little carbohydrate you're eating every day.

A single high-carb meal or day won't make the grade, either, because it doesn't raise leptin levels enough to impact your physiology.⁴³ It takes at least a couple of days (and sometimes up to a week or two) for your brain to recognize and "trust" the increase in leptin and respond positively.⁴⁴

Therefore, by raising your calories to maintenance two to three days per week and staying in a deficit otherwise, you can make getting ripped more tolerable.

So, in summary, calorie cycling can make cutting more enjoyable, especially when you're lean and working to get very lean. It's not a game changer, but when leptin levels get low, every bit of help counts.

Calorie Cycling and Muscle Building

Calorie cycling isn't for people new to weightlifting who want to maximize muscle gain. So long as they eat enough calories and protein every day, they'll make rapid progress, and complicating things with calorie cycling will only detract from that.

Even an intermediate lifter is better off keeping it simple when lean bulking. He should eat about 10 percent more calories every day than he burns, do a lot of heavy weightlifting, and once he's around 15 to 17 percent body fat, cut down to around 10 percent body fat. Rinse and repeat until he's an advanced weightlifter (someone with at least several years of productive training who has achieved 80 percent or more of their genetic potential for muscle growth).

Only then does calorie cycling become useful for muscle building. When an advanced lifter wants to make slow, steady muscle and strength gains while staying lean (10 to 12 percent body fat), calorie cycling can help.

It works well for advanced weightlifters, because once they've gained most of the muscle and strength available to them genetically, progress slows to a crawl.

After four or five years of proper dieting and training, you'll be lucky to gain a pound of muscle every six months. And by the time you've been training as long as I have—nearly 17 years now—you'd have to sacrifice a kid to the Dread Lord Cthulhu just to gain a pound of muscle per year.

We'll talk more about this in chapter eleven, but basically, when you start lifting weights, your body's muscle-building machinery is ready to run at full throttle, whereas later in your bodybuilding journey, it never gets out of first or second gear.

Thus, for your first six to even twelve months of training, you can get great results with a larger daily calorie surplus—upward of 500 calories above maintenance—because of the substantial muscle-building demands being placed on the body. As those demands shrink, however—and they do as you progress regardless of what you do in the gym—your body doesn't need as many additional calories to meet them.

In other words, it requires a much larger calorie surplus to build 20 pounds of muscle (which many guys can do in their first year) than a couple of pounds. In the latter case, 200 to 300 calories over maintenance is sufficient.

The good news is while muscle growth becomes more elusive as we get bigger and stronger, the smaller calorie surplus required to keep progressing diminishes fat gain. So much so that you can lean bulk for many months before your body-fat levels rise high enough to warrant a cutting phase.

And if you use calorie cycling when lean bulking, you can go even longer. By placing your body in a calorie surplus four to five days per week and a deficit on the remaining days, you create a “maintenance with benefits” scenario where you can gain muscle slowly with very little fat storage.

Here’s how I like to do it:

First, you want to be in a calorie surplus on the days you train. The surplus doesn’t need to be large—5 to 10 percent above maintenance is enough.

Then, you restrict your calories on your rest days to lose the fat gained while in a surplus. As roughly half of the weight gained while lean bulking is muscle, and your body needs to utilize a portion of the extra calories to build that muscle, you don’t need to offset the entire calorie surplus for the week, but only half of it.

For example, my total daily energy expenditure is around 2,900 calories on my lifting days (five per week) and 2,500 on my rest days (two days per week), putting my total weekly calorie expenditure around 19,500.

Thus, if I were cycling my calories, I’d eat about 3,200 on my training days (~10 percent surplus), producing a total surplus of around 1,500 calories come my first rest day (300 calorie surplus x 5 days).

As it’s fair to assume about half of those surplus calories went to muscle building and the other half to fat storage, I’d eat 700 to 800 fewer calories than I burn on my rest days (about 2,100 calories per day) to lose fat gained during the week.

The overall effect of this is slow but steady progress in my workouts with no visible change in body fat levels. Which is great ... but not without its downsides.

For one thing, muscle growth is a process that begins in the gym and completes several days later, not several hours. By restricting your calories even a couple of days per week, you tap the brakes on muscle growth and sacrifice some potential gains.

Additionally, many people find it difficult to stick to the plan, because it takes some enjoyment out of lean bulking. Even if you're not much of a foodie, it's nice to eat a bit off-plan now and then. When you're calorie cycling, however, you must pay closer attention to your day-to-day calorie intake. Also, as many people train during the week and take the weekends off, eating in a deficit on rest days can make dinner outings, social events, and off days less enjoyable.

As with everything fitness, however, you don't have to be perfect to make calorie cycling worthwhile.

If you eat a bit too much on a surplus day or two, you can always eat less on your deficit days to compensate. And if you eat too much on a deficit day, putting you closer to or even over maintenance calories, you can always correct it by eating less on your next deficit day or turning your next surplus day into a deficit day.

The fewer mistakes you make, the better your results will be in the long term, but so long as you get things mostly right most of the time, you can still benefit from calorie cycling.

If you're wondering about eating in a slight surplus on training days and maintenance on rest days, this can make sense if you're only training two or three days per week, because it'll noticeably reduce fat gain. If you're training more than that, however, it's not going to help much, so I'd recommend either choosing the lean bulk and mini-cut approach or eating in a surplus on training days and deficit on rest days.

It's also worth noting that if your primary goal is to stay lean while making gradual progress, you can simplify things and opt for mini-cuts and mini-bulks. This isn't optimal for maximizing muscle growth, but if you just want to hover around the same body fat percentage while nudging your numbers up in the gym, it can work well (at least for a time).

One reason I like this approach is it makes your day-to-day routine

much simpler. You eat more or less the same amount of food every day, and I'd argue the time spent micromanaging the exact amount of calories you're eating every day to be over, under, or at maintenance would probably be better spent squeezing a few more sets into your workouts, getting a bit more sleep, or doing basically anything else that's even halfway pleasurable or productive.

So, to maintain body composition with mini-bulks and cuts, I like to lean bulk for 4 to 8 weeks and cut for about 4 weeks to get rid of the minimal amount of fat I gained (if I did it right). In a sense, this approach is a longer-term style of calorie cycling that's spread over months instead of days.

Another option if you don't want to overthink it is to simply stay in a slight surplus and deficit a few days per week while keeping an eye on your body weight and strength on your key lifts. If your weight creeps up too quickly or too much, dial back your calories, and if your weight is falling and you're stagnating in your training, dial them up.



Out of all the “advanced” dietary methods and tactics out there—including many popular ones we didn’t discuss here, like Paleo, ketogenic, “alkaline,” and carnivore dieting, as well as strategies like reverse dieting, carbohydrate cycling and backloading, and others—I’ve shared with you the four that matter the most:

1. Meal planning
2. Mini-cuts
3. Intermittent fasting
4. Calorie cycling

Unlike the other techniques I mentioned (and many I didn’t), these four can make a positive difference in your body composition, training, and progress.

None are necessary, of course—you can simply stick with the fundamentals taught in *Bigger Leaner Stronger* and do fine—but chances are incorporating at least one of those four methods into your regimen will improve your long-term results (and in chapter twenty, we'll talk more about how to do this).

Beware “experts” who say otherwise and insist on the importance or superiority of their pet diet or restrictive form of eating. In fact, this is often a reliable way to spot a charlatan. If they’re promoting one style of dieting, training, or supplementing as optimal for everybody under all circumstances, give them the gimlet eye.

Personally, I beat the drum for flexible dieting and heavy compound weightlifting, but I also understand that these aren’t the health and fitness master keys. They work well for most people looking to get and stay fit, but there are cases where flexible dieting leads to more overeating than more rigid, restrictive dieting, and where heavy squatting, deadlifting, and pressing doesn’t make as much sense as more moderate forms of resistance training.

So, my point is this: If you’re reading this book, you’ve likely made it farther in your fitness journey than most guys ever will. Don’t lose sight of what got you here—consistent application of the fundamentals—and fall into one of the many open manhole covers strewn about the rest of the road.

Stay curious but skeptical, rigorous but flexible, and patient but vigilant, and you’ll make it all the way.

None of that means you can’t further enhance your eating and exercising, though, and in the next chapter, we’ll discuss evidence-based methods of “supercharging” your meal plans for more health, performance, and longevity.

Key Takeaways

- The real “trick” to intermediate- and advanced-level dieting is paying attention to the details that many beginners overlook, not following strange or “special” eating rituals and routines.
- Energy balance will always influence what “mode” your body is in (losing or gaining weight), macronutrient balance the quality of the weight gain and loss (in terms of muscle and fat), micronutrient balance the quality of your overall health and wellbeing, and compliance the quantity (pounds and inches) of your long-term results.
- Consistency is just as important for gaining muscle as it is for losing fat.
- The four most popular and effective strategies for managing your energy, macronutrient, and micronutrient balances and maximizing consistency are: meal planning, mini-cuts, intermittent fasting, and calorie cycling.
- While intuitive eating—eating according to your body’s natural appetite—can be a healthy, sustainable, enjoyable approach to maintaining your body composition, meal planning is far better for building your ideal physique.
- “Lean gains” of all muscle and no fat is a mirage that only leads you deeper into the desert. “Leanish gains” of a bit of muscle and fat is the oasis to set up camp in.
- A mini-cut is a shorter-than-usual cut, normally between three and four weeks.
- Using mini-cuts properly can help you gain almost as much muscle as continuous lean bulking with significantly less fat gain.
- Intermittent fasting can be an effective tool for improving dietary compliance, but it’s not the quantum leap in dieting that some people would have you believe.
- If you have a hard time sticking to your diet with a traditional eating pattern, intermittent fasting may be able to help.
- Many people who practice intermittent fasting also train fasted, but

research shows that pre-workout carbs enhance performance and pre-workout protein may enhance recovery.

- Calorie cycling is a method of eating that involves planned increases and decreases in calorie intake, usually by eating more or less carbohydrate.
- Calorie cycling isn't for people new to weightlifting who want to maximize muscle gain, and even intermediate weightlifters are better off keeping it simple when lean bulking.
- When an advanced lifter wants to make slow, steady muscle and strength gains while staying lean (10 to 12 percent body fat), calorie cycling can help.
- To calorie cycle correctly, you need to follow two rules: you must get most of your extra calories from carbs, and you must eat at maintenance calories for two to three days per week.
- To calorie cycle when lean bulking, you want to be in a calorie surplus on the days you train. The surplus doesn't need to be large—5 to 10 percent above maintenance is enough. Then, you restrict your calories on your rest days to lose the fat gained while in a surplus.
- To maintain body composition with mini-bulks and cuts, I like to lean bulk for 4 to 8 weeks and cut for about 4 weeks to get rid of the minimal amount of fat I gained (if I did it right).

9

“Superfoods” for “Supercharging” Your Body (That You’ll Actually Enjoy)

Thou should eat to live, not live to eat.

—SOCRATES

IMAGINE IF EATING A HANDFUL of special foods every day could maximize your brainpower, metabolism, energy levels, immunity, physical performance, muscle building, libido, skin, hair, and nail health.

Keep imagining it—because that’s as real as it’ll ever get.

There are no individual foods that can single-handedly transform your health and wellbeing. Only a lifestyle can do that—one that revolves around eating nutritious foods, exercising, maintaining good sleep hygiene, and balancing stress and relaxation.

Food and supplement marketers won’t let a pesky fact like that thwart their designs on our paychecks, though, and so we have the “superfood” phenomenon.

You’re struggling with acne, you say? You don’t need to work out and stop eating all those sugary treats you love. Vapid male celebrity #2343

says eat some avocado, salmon, turmeric, and blueberries, and you'll have photoshop-perfect abs just like his (which are totally not photoshopped).

You want to lose more fat while you're at it? Forget counting calories. Apples, almonds, olive oil, grapefruit, and oatmeal are the ticket, especially if you mix them in this overpriced blender.

Feeling down and dull? It can't be the hours of social media, YouTube, Netflix, and porn every day. Indulge in some beets, grass-fed beef, eggs, and walnuts, and your mood and IQ will totally soar.

I think you get the point: Marketers coined the term “superfood” to sell stuff, and it has worked remarkably well. Spinach, quinoa, kale, berries, and tea are in their heyday. And while the superfood white lie has encouraged many people to eat somewhat better, it has also confused many about how their body works and how to make it work better.

Why is this chapter about “superfoods” and “supercharging” your body then?

Because while you should be skeptical about the exaggerated claims surrounding specific foods, certain ones added to an otherwise nutritious diet can further improve your health, performance, wellness, and longevity.

It would be disingenuous to call them “superfoods,” but they are a cut above your average “healthy” fare, and if you’re looking to squeeze more high-quality living out of your body, you should eat them.

Let’s call them “functional foods” instead, because that sounds more reasonable and accurate, and here they are:

- Fish
- Garlic
- Blueberry
- Cranberry
- Oatmeal
- Cruciferous vegetables
- Spinach
- Dark chocolate
- Black seed

Let's learn about each.

Fish

Seafood is a great source of protein as well as various vitamins and minerals, such as magnesium, phosphorus, selenium, and vitamins A and D. It's also one of the few foods that provides vital omega-3 fatty acids, which are sorely lacking from many people's diets.¹

You can increase your intake of omega-3 fatty acids either with supplementation or by eating more fatty fish.

When purchasing fish, your first consideration should be mercury content. The Natural Resources Defense Council offers the following guidelines for minimizing fish-based mercury in your diet.²

Low-Mercury Fish	Anchovies	Butterfish	Catfish	Clam
	Crab (Domestic)	Crawfish/Crayfish	Croaker (Atlantic)	Flounder
	Haddock (Atlantic)	Hake	Herring	Mackerel (N. Atlantic)
	Mullet	Oyster	Perch (Ocean)	Plaice
	Pollock	Salmon (Canned)	Salmon (Fresh)	Sardine
	Scallop	Shad (American)	Shrimp	Sole (Pacific)
	Squid (Calamari)	Tilapia	Trout (Freshwater)	Whitefish
	Trout (Freshwater)	Whiting		
Moderate-Mercury Fish	Bass (Striped, Black)	Carp	Cod (Alaskan)	Croaker (White Pacific)
	Halibut (Atlantic)	Halibut (Pacific)	Jacksmelt (Silverside)	Lobster
	Mahi Mahi	Monkfish	Perch (Freshwater)	Sablefish
	Skate	Snapper	Tuna (Canned chunk light)	Tuna (Skipjack)
	Weakfish (Sea Trout)			
High-Mercury Fish	Bluefish	Grouper	Mackerel (Spanish, Gulf)	Sea Bass (Chilean)
	Tuna (Canned Albacore)	Tuna (Yellowfin)		
Highest-Mercury Fish	Mackerel (King)	Marlin	Orange Roughy	Shark
	Swordfish	Tilefish	Tuna (Bigeye, Ahi)	

Besides choosing your fish based on mercury content, you'll see different fish being advertised as "wild-caught" or "farm-raised." Though wild-caught sounds like the healthier option, the science is ambiguous. In terms

of nutritional profiles and contaminant levels, few significant differences exist between wild-caught and farm-raised fish.

Regardless of which fish you choose and how it was caught or raised, keep the following guidelines in mind:

- Purchase from a reputable supplier. A highly regarded local fish market is likely to offer better-quality products than a large-chain grocery store.
- Give the fish the smell test. Fresh, unfrozen fish should smell of seawater or cucumber. Avoid fish that gives off a strong, unpleasant odor.
- Look for fish with elastic flesh. If possible, press a finger into the fish. The flesh of fresh fish will bounce back. If the indentation remains, the fish is past its prime.
- Look for liquid on the meat. Milky liquid present on a fish fillet is often a sign of rot.
- Examine the quality of the skin. When purchasing fillets with the skin intact, scales should be smooth and shiny. Ruffled scales or a dull appearance are signs of age.

If purchasing fresh fish isn't an option for you, frozen fish, whether bought locally or from an online retailer, may be a viable alternative.

- Look for "frozen-at-sea" (FAS) designations. These fish are flash-frozen as soon as three seconds after being brought onboard the ship, giving them a superior flavor and quality over longer-processed fish.
- Watch out for freezer-burn. White, dehydrated spots or visible ice crystals indicate moisture loss, usually as a result of thawing and refreezing.
- Look for moisture-proof, vapor-proof packaging. Fish packaged this way fare better than over-wrapped ones.

If you're not taking an omega-3 supplement, try to have fish high in omega-3s, like salmon or mackerel, at least once per week.

Garlic

Garlic has a long and illustrious history in traditional medicine for treating everything from blood disorders to infections to aging.³ It's even thought to be the first dietary performance enhancer.

Garlic gets its mojo from its abundance of sulfur, which helps the body produce *hydrogen sulfide* (H₂S).⁴ H₂S is a gas-like substance that relaxes blood vessels, improving blood flow, and activates a protein that signals cells to absorb and burn energy known as *AMPK*.⁵

Over time, however, garlic fell out of medicinal use, because it's a handyman of sorts that can do many mild things in the body, as opposed to a specialist with fewer significant effects. Modern medicine thrives on specialization and specificity, not generalization, and so prefers treatments that do one thing very well, like metformin for glucose control and warfarin for blood thinning.

Garlic's still an outstanding functional food, though, and most studies showing benefits used aged garlic extract at around 600 to 1,200 milligrams.⁶ This is the equivalent of about one to three garlic cloves per day, depending on their size.⁷

Ideally, you'd eat garlic raw, as heat destroys the enzyme that helps create the bioactive compounds that give garlic most of its special properties. For instance, research shows sixty seconds in the microwave, forty-five minutes in the oven, or fifteen minutes in boiling water can eliminate this enzyme.⁸

That said, heating garlic doesn't render it worthless, but it relegates it to the level of a more basic antioxidant, like blueberry or cranberry, as opposed to a source of uniquely beneficial molecules.

If the thought of putting down a clove or three of raw garlic every day turns your stomach, you have another option: Crush, chop, or mince it, and then let it sit at room temperature for at least ten minutes before cooking. This releases an enzyme in garlic known as *alliinase* that boosts the creation of health-promoting sulphur compounds and helps protect them from being damaged by heat.⁹

I incorporate garlic into more or less every dinner I make. Typically, I'll chop it up, let it sit for ten or fifteen minutes while I cook up a stir fry or veggie casserole or heat up a soup, chili, or stew, and add the garlic last, when the dish is ready. This way, the garlic is mostly raw when I eat it.

Crushed garlic is also a tasty topping for oven-baked fish and chicken (cover it with aluminum foil if it starts to turn brown while cooking, because it can taste funky if overcooked).

Blueberry

Blueberries (and all dark, blue-black berries) are a superior fruit because of their *anthocyanin* content, which is a powerful antioxidant linked to improved memory, mood, and immunity, as well as less DNA damage, which helps protect against various types of disease and dysfunction.¹⁰

The dose required to produce benefits isn't small, but it's still workable—60 to 120 grams of fresh blueberries, or about ½ to 1 cup per day.¹¹ The highest doses used in studies are around 250 grams, which would be a chore to eat but easily turned into a juice.

You can also opt for frozen blueberries, and aim for about 175 grams per day.¹² The process of freeze-drying causes minor losses in antioxidant capacity, but this isn't a cause for concern, because antioxidant levels rise in berries after they're frozen.¹³

If you're buying a premade blueberry juice, make sure it's not just blueberry-flavored, but made with blueberries. The first ingredient should be blueberry.

I typically eat blueberries fresh and raw. They're especially good when mixed with oatmeal, and make a nice addition to salads as well.

Cranberry

Cranberries have been associated with improved urinary health for

years now, and recently, high-quality evidence has emerged to support this.¹⁴

How cranberry accomplishes this is neat, too—rather than killing the bacteria that cause urinary tract infections, it prevents them from adhering to the urinary tract.

Moreover, results have been seen with as little as 500 milligrams of cranberry fruit powder, which is just dehydrated cranberries stuffed into capsules.¹⁵ In another study conducted at University Hospital, scientists found that a dose of just 1.5 grams of dried cranberries was effective.¹⁶ Even cranberry juice has been shown to work.¹⁷

Like most berries, cranberries have a high water content, so an effective dose of fresh cranberries would be about 11 grams (a small handful).

Oats

Despite what the Paleo folk would have you believe, we humans have been enjoying oats for a very long time. For instance, a 2015 study conducted by scientists at the University of Florence found our ancient ancestors were eating oats 33,000 years ago.¹⁸

There are good reasons this grain has stood the test of time, too.

It grows easily in many different environments and stores well, has a mild, pleasant taste that goes well with many other foods, and it’s an excellent source of several minerals, including magnesium, potassium, and phosphorus, as well as *beta-glucan*, a soluble fiber linked to improving cholesterol and blood glucose levels and boosting heart health.¹⁹

Oats are cheap, too. At about 10 to 15 cents per serving, they’re hard to beat in overall value.

A common slur on oats, however, is they contain *phytates*, which makes them unhealthy to eat. Phytate is a compound found in plant foods that hinders absorption of minerals, but using that fact to attack oats is silly.

First, oats aren’t uniquely high in phytates. In fact, they have about the same amount as similar grains like barley and rye, and much less than legumes like kidney beans, peanuts, walnuts, almonds, and cashews.²⁰

Second, although phytates in oats block some mineral absorption, it's not enough to lead to mineral deficiencies or health problems.²¹ Moreover, oatmeal is rich enough in minerals that its phytates only knock it down a rung from exceptional to average in this regard.

Ironically, phytates aren't all bad, either. Research shows they have positive effects on calcification and kidney stone formation, digestion, blood glucose and lipid levels, as well as anticancer effects.²²

I eat oats in the form of oatmeal when I'm lean bulking (and particularly like baked oatmeal dishes), but occasionally I'll work them into my meal plan when cutting or maintaining, too.

You can also replace some of the flour in many baked goods with oats to sneak more into your diet (it often boosts the moisture content, increasing chewiness, and gives the food a pleasant malty taste).

Cruciferous Vegetables

Cruciferous vegetables include cauliflower, cabbage, kale, garden cress, bok choy, broccoli, Brussels sprouts, and similar green leaf vegetables. They're called "cruciferous," because they're a part of the *Brassicaceae* family, which was formerly called *Cruciferae*.

The primary reason this vegetable family finds itself on many "super-food" lists is because its members contain three molecules known as *isothiocyanates*.²³

1. Indole-3-carbinol
2. Sulforaphane
3. PEITC (phenethyl isothiocyanate)

All cruciferous vegetables contain these molecules, but amounts and ratios differ. For example, broccoli sprouts have the highest ratio of sulforaphane, whereas mature broccoli and watercress are rich in PEITC.

Unlike other antioxidants, isothiocyanates don't combat reactive

oxygen species, but stimulate the production of three powerful antioxidant enzymes: *glutathione*, *catalase*, and *superoxide dismutase*.²⁴

The primary benefit associated with eating cruciferous vegetables is a lower risk of cancer, and colon cancer in particular.²⁵

Many people also claim they have anti-estrogen effects because of their indole-3-carbinol content, which turns into a molecule called *diindolylmethane* (DIM) in the body. While it’s true these substances interact with estrogen molecules to make them less potent, the effects are too mild to appreciably impact body composition.²⁶

Although I don’t know of any studies on the optimal amount of cruciferous vegetables to include in our diet, one serving per day is a reasonable recommendation to positively impact our health and wellbeing.

I eat cruciferous veggies every day at dinner, typically in a stir fry, soup, chili, stew, or casserole, and sometimes have them alongside fish or meat (steamed broccoli with a squirt of lemon juice is a go-to).

Dark Chocolate

Yes, I’m telling you to eat chocolate, and I have science on my side!

Dark chocolate derives most of its health benefits from molecules called *catechins*, which are antioxidants also abundant in green and white tea.²⁷

These molecules have several effects in the body, including improved blood flow, photoprotection, and oxygenation of the brain (in youth, at least).²⁸

Fortunately for your meal plan, too, you only need a little dark chocolate to profit—research shows just 20 to 50 grams (about 110 to 270 calories) of 70 percent (or higher) dark chocolate per day is enough.²⁹

One thing to be mindful of with dark chocolate, though, is its caffeine content. One square of 60 percent (or higher) dark chocolate (~13 grams) has about 15 milligrams of caffeine, which can interfere with your sleep if you eat too much too close to your bedtime.

Black Seed

Black seed (also known as *Nigella sativa*) is a plant whose seeds have been used as a spice and medicine for over 2,000 years. The popular supplement black seed oil comes from this plant.

It stands out among other cumins and seeds because of its *thymoquinnone* content, which is a molecule associated with many favorable effects in the body, including hepatoprotective, anti-inflammatory, antioxidant, and anti-cancer properties.³⁰

Black seeds are also tasty, with a flavor similar to black pepper (great for stir fry recipes), and you don't need to eat much to reap rewards, either. One study conducted by scientists at Sam Ratulangi University School of Medicine found just 3 grams of seeds produced mild benefits on many parameters, including an increase in overall mood.³¹ And if you want to reach a higher effective dose, double that to about 6 grams.

I like to include 3 to 6 grams of black seeds as seasoning in a stir fry, soup, chili, stew, or casserole. Sometimes, if a recipe calls for black pepper, I'll reduce or remove it if I'm adding black seeds to avoid too much of that flavor.



That's it for my list of notable foods you should consider incorporating into your diet.

If you don't like most or any of the foods covered in this chapter, you don't have to eat any of them to be healthy, but if you want to optimize your physiology, I challenge you to expand your gustatory horizons. It's easy to do, too.

First, by eating a food repeatedly, you're more likely to develop a liking for it. Research with children, for example, shows it can take up to fifteen exposures to a new food before they adjust to it.³²

Second, you can cultivate a taste for foods you don't like by combining them with ones you enjoy. For instance, if you struggle to eat cruciferous

vegetables but love cheese, combine them! Then, as you get used to eating the vegetables that way, you can reduce the amount of cheese until it’s no longer needed.

Third, recipes are another fantastic tool for learning to enjoy foods. By sprucing up the offending grub with a recipe, you can turn it into a tasty dish you’ll be happy to come back to again and again.

Fourth, the right perspective helps with adjusting your palate. If you view food primarily as a source of flavor, comfort, and pleasure, it’s much harder to eat a lot of what’s good for you versus what makes you feel good. If, however, you consider it mainly a supply of nutrition and sustenance—“fuel,” as some people like to say—you’ll develop an inclination toward nutritious foods and an aversion to overindulging in junk calories.

In the next and final chapter of this section of the book, we’ll discuss the least important aspect of diet: supplementation.

Ready to learn why most supplements are still a waste of money, and why only a select few are worth including in your regimen? Let’s do it!

Key Takeaways

- There are no individual foods that can single-handedly transform your health and wellbeing.
- Seafood is a great source of protein as well as various vitamins and minerals, such as magnesium, phosphorus, selenium, and vitamins A and D, and it's one of the few foods that provides vital omega-3 fatty acids.
- If you're not taking an omega-3 supplement, try to have fish high in omega-3s, like salmon or mackerel, at least once per week.
- Most studies showing benefits of garlic used aged garlic extract at around 600 to 1,200 milligrams—the equivalent of about one to three garlic cloves per day, depending on their size.
- If you don't want to eat raw garlic, crush, chop, or mince it, and then let it sit at room temperature for at least ten minutes before cooking it.
- Blueberries (and all dark, blue-black berries) are a superior fruit because of their *anthocyanin* content, which is a powerful antioxidant linked to improved memory, mood, and immunity, as well as less DNA damage, which helps protect against various types of disease and dysfunction.
- The dose required to produce benefits isn't small, but it's still workable—60 to 120 grams of fresh blueberries, or about $\frac{1}{2}$ to 1 cup per day, or about 175 grams of frozen blueberries per day.
- Cranberries have been associated with improved urinary health for years now, and recently, high-quality evidence has emerged to support this.
- Results have been seen with as little as 500 milligrams of cranberry fruit powder or 1.5 grams of dried cranberry, which is the equivalent of around 11 grams of fresh cranberry (a small handful).
- Oats are an excellent and economical source of several minerals, including magnesium, potassium, and phosphorus, as well as *beta-glucan*, a soluble fiber linked to improving cholesterol and blood glucose levels and boosting heart health.

- Cruciferous vegetables contain three molecules known as *isothiocyanates*, which are associated with a lower risk of cancer, and colon cancer in particular.
- One serving per day of cruciferous vegetables is a reasonable recommendation to positively impact our health and wellbeing.
- Dark chocolate derives most of its health benefits from molecules called *catechins*, which have several effects in the body, including improved blood flow, photoprotection, and oxygenation of the brain (in youth, at least).
- Research shows just 20 to 50 grams (about 110 to 270 calories) of 70 percent (or higher) dark chocolate per day is enough to see benefits.
- Black seed (also known as *Nigella sativa*) contains *thymoquinone*, which is a molecule associated with many favorable effects in the body, including hepatoprotective, anti-inflammatory, antioxidant, and anti-cancer properties.
- The effective dose of black seed is 3 to 6 grams.

10

How to Upgrade Your Supplementation (and What to Avoid)

The path of least resistance is a terrible teacher.

—RYAN HOLIDAY

INTERMEDIATE (OR BEYOND) weightlifters are a prime target for supplement slicksters.

They take their fitness seriously; they're no longer progressing by leaps and bounds and are often stuck (or at least feel that way); and they're willing to spend a tremendous amount of time and money to gain that next bit of muscle and strength.

And that includes swallowing just about any kind of pill or powder that sounds even remotely promising.

This is why there are many sophisticated sounding supplements that purport to influence specific (and often obscure) aspects of your physiology. "Advanced" lifters need "advanced" supplements, marketers claim.

But that's all smoke and mirrors. As I explained in *Bigger Leaner Stronger*, out of all the supplements you could take, most of the major benefits will

come from the fundamentals, including protein powder, fish oil, vitamin D, a multivitamin, caffeine, creatine, citrulline, and a couple of others.

If you stopped there and never took another supplement as long as you live, you wouldn't be missing out on much (especially in terms of your body composition).

For instance, conjugated linoleic acid (CLA) is a popular supplement among experienced gym-goers for losing fat faster.

It gained popularity back in the 1990s after research in mice and rats showed it could induce fat loss. As humans are more genetically similar to furry rodents than most people realize, scientists hoped CLA could produce the same effects in humans. It's also non-stimulatory, which was particularly attractive at the time because of the "fen-phen" (phentermine) scandal that led to over 50,000 product liability lawsuits.

Supplement sellers smelled blood and, as usual, played fast and loose with the facts. They talked a lot about CLA's proven fat-burning effects, but didn't mention such results had only been seen in lab animals.

Then, in subsequent human research, results were all over the map. Most studies showed no fat loss effects, some found large and small increases in fat loss, and rather strangely, one study noted an *increase* in fat gain.¹

Thus, when you take CLA, your most likely outcome is no change, but you may also lose or gain fat and not know why. That hasn't stopped Big Supplement from continuing to push it as an effective weight loss aid, though (natch).

Carbohydrate and fat blockers are another example of niche supplements, often promoted to fitness lovers as an effective way to increase weight loss (or prevent weight gain) by hindering the body's ability to absorb and use the calories in the food you eat.

There are substances that can block the absorption of carbs and fat either by binding with them, rendering the molecules unassimilable, or by inhibiting enzymes needed to process the macronutrients.

There are three major problems with these supplements, however:

1. They can't cause fat loss, as often promoted—only prevent fat gain. This means they provide no more benefit than fork put-downs and table push-aways.
2. They reinforce bad habits, because many people use them to eat more junk food.
3. Their potency and side effects go hand-in-hand, including nutrient malabsorption, gassiness, cramping, and even incontinence (search “Orlistat horror story” if you don’t believe me).

Carb and fat blockers are like triangular wheels. They can work but ... they’re triangular wheels. Why bother with them when you have so many other better options, starting with proper meal planning that allows you to lose weight without impairing and even damaging your gut function?

The story is more or less the same for several other supplements marketed to the “hardcore” fitness crowd, including ...

- Post-workout carbohydrate drinks, which are often just cheap simple sugars that have no special properties
- Collagen protein, which has a crappy amino acid profile and won’t make your skin, hair, and nails prettier
- MCT oil, which won’t boost weight loss, exercise performance, or brain function²
- Natural estrogen blockers, which don’t work and wouldn’t help you gain muscle faster even if they did
- L-carnitine, which can help with muscle soreness but not fat loss, as is often claimed³
- Essential amino acids (EAAs), which, like branched-chain amino acids (BCAAs), offer no benefit when you’re eating enough protein

Those supplements, and many others are a lot of sizzle with little steak. That doesn’t mean all supplements but the six I shared in *Bigger Leaner Stronger* aren’t worth considering, however. There are four additional supplements intermediate and advanced weightlifters should consider

taking:

1. Sleep support
2. Joint support
3. Stress support
4. Immunity support

And in that order.

The most important supplements you can add to your regimen enhance your sleep, because this upgrades every aspect of your health as well as your performance.

The second-most important supplements improve your joints, because aches and pains kill progress and motivation.

The third-most upgrade your body's response to stress, because this will allow you to get in (and recover from) more high-quality training.

And fourth on the list are those that boost your immune system, because getting sick impedes everything.

The individual supplements I'll recommend in each category are listed in the same way—from most to least important—but all are effective enough to warrant consideration. We'll review each of these types of supplements in this chapter, and then, in chapter twenty-two, talk specifics (products and protocols).

Let's start at the top.

Sleep Support

In 2014, the Center for Disease Control declared that insufficient sleep is a public health epidemic.⁴

According to a National Sleep Foundation poll conducted in 2019, just 16 percent of Americans said they didn't feel sleepy at all in a typical week (excluding bedtime and after waking up), and about half felt sleepy anywhere from three to seven days a week, impacting their activities, mood,

mental acuity, productivity, and more.⁵

The consequences of this can be dire. Sleep poorly for too long and just about every important physiological function and system becomes compromised, and your body starts breaking down.

On the other hand, the benefits of sleeping well are extensive, including

...

- Improved memory, learning, and problem solving⁶
- Lower levels of systemic inflammation⁷
- Better dietary compliance⁸
- Enhanced immunity⁹
- Elevated mood¹⁰
- Increased athletic performance¹¹
- Greater longevity¹²

Good sleep hygiene is like a good exercise routine—it improves your life in just about every way.

This is why many people turn to hypnotics and sedatives to combat sleep troubles, but these drugs are habit forming and associated with a rather scary set of side effects, including depression, delirium, nightmares, hallucinations, and an increased risk of infections, cancer, and overall mortality.¹³

A smarter approach to getting better sleep is to first address lifestyle. For instance, the most effective measures include ...

- Avoiding caffeine, alcohol, nicotine, and other chemicals that interfere with sleep. We all know that caffeine and nicotine are stimulants, but alcohol can disrupt our shut-eye as well. Although it can help bring on sleep, it then acts as a stimulant and increases the number of wakings during the night.¹⁴ As a general rule, don't consume any sleep-disrupting chemicals four to six hours before going to bed, and if you're sensitive to them (like I am), you'll probably want to allow for more time. For instance, I go to bed around 10 p.m., and if I have

caffeine any later than 10 or 11 a.m., it'll likely disrupt my sleep.

- Making sleep a priority. The more you view getting to bed on time as a non-negotiable part of your life, like diet and exercise, the better your sleep will be.
- Keeping your bedroom dark, quiet, and cool, which are all cues for the brain to put the body to sleep. Also, avoid bright lights while you're getting ready for bed, because they can suppress the production of a sleep-inducing hormone known as *melatonin*.¹⁵
- Turning off the TV, computer, tablet, or smartphone at least an hour before bed. These devices emit a light called *blue light*, which is a powerful melatonin suppressant.¹⁶
- Exercising regularly. Studies show that regular exercise improves sleep quality in people both with and without sleep problems.¹⁷
- Not exercising too late. Finish your workout at least three hours before bedtime to allow your body to “wind down” before going to sleep.
- Establishing a relaxing pre-sleep routine. Soothing activities like taking a bath, reading a book, listening to calming music, and stretching or doing breathing exercises can help you sleep better. Additionally, try to avoid stressful or stimulating conversations or activities before bed.
- Not lying in bed and staring at the clock. This can make you feel stressed, which keeps you awake. Instead, ignore the clock, and if you're unable to fall asleep in a reasonable amount of time, get up and occupy yourself with a quiet, soothing activity like reading or listening to music until your eyes become droopy. Then go back to bed.
- Keeping your body's internal clock regulated by going to bed and waking up every day at the same times. Waking up at the same time despite when you went to bed or fell asleep is the best way to maintain your body's clock.

Supplementation can help as well. My three favorite sleep supplements are ...

1. Melatonin
2. Glycine
3. Lemon balm

Let's review each.

Melatonin

Melatonin is a hormone produced by the brain and found in foods like tomatoes, walnuts, strawberries, and olive oil.

It has powerful sedative and sleep-inducing effects, which is why research shows that supplementation with melatonin before bed ...

- Reduces the time it takes to fall asleep¹⁸
- Can improve sleep quality for those with insomnia¹⁹
- Reduces symptoms of jet lag²⁰
- Can improve memory function²¹

That said, it's not worth supplementing with if you sleep well (fall asleep quickly, experience few or no wakings, and wake up feeling refreshed), except in cases of jet lag.

And don't worry—although melatonin is a hormone, it's safe for short-term use (and isn't necessarily unsafe for long-term use, but the research is lacking).

Glycine

Glycine is an amino acid found in foods that contain gelatin, like meat and seafood.

It acts as a mild sedative, which is why research shows that supplementation with glycine before bed reduces the time needed to fall asleep and improves sleep quality.²²

Additionally—and scientists aren't sure why yet—studies show that glycine improves cognitive performance and reduces feelings of fatigue when sleep is impaired.²³

Lemon Balm

Lemon balm (also known as *Melissa officinalis*) is an herb that has been used since ancient times to relieve anxiety and agitation and promote sleep.

It enhances the effectiveness of a sedating chemical produced by the brain known as *gamma-Aminobutyric acid* (GABA), and research shows that supplementation with lemon balm ...

- Improves sleep quality²⁴
- Reduces feelings of anxiety and stress and induces feelings of calmness²⁵
- Improves memory²⁶
- Reduces symptoms of anxiety-related insomnia²⁷

There's a catch, however: you must ensure the lemon balm supplement is standardized to contain at least a certain amount of *rosmarinic acid* by weight, which is a biologically active substance in the plant likely responsible for much of its sleep benefits.

Joint Support

"An ounce of prevention is worth a pound of cure," wrote Ben Franklin.

Those of us who are physically active should take this maxim to heart. Many fitness folk will rush to buy muscle builders, fat burners, protein powders, and hormone boosters, but often overlook products designed to improve general health, function, and longevity, like multivitamins, fish oil, and joint supplements.

This is unfortunate, because over fifty-two million Americans suffer from arthritis, and if your joints are inflamed or damaged, all aspects of your performance decline. You lose speed, strength, power, and agility; you often have to quit certain exercises and activities altogether; and your days are plagued by nagging aches and pains.

Like good sleep, healthy joints are something people just don't appreciate until they're gone.

Improving and supporting joint health starts with healthy living. This is one of the many reasons to be a stickler about eating right, training properly, and ensuring you get adequate rest and recovery. In some ways, your joints reflect how well you take care of your body on the whole.

Supplementation can help too, mostly by reducing inflammation and preserving cartilage, which is a flexible tissue that lubricates joints and absorbs physical impacts.

Many people assume exercise speeds up cartilage loss through repetitive use and general wear and tear. Research shows otherwise, though—forms of exercise usually assumed to be harmful to the joints like weight-lifting and even long-distance running are not associated with cartilage loss or osteoarthritis.²⁸ In fact, regular exercise appears to help preserve healthy cartilage levels.

Why do so many long-term exercisers and athletes suffer from joint problems, then? And what can be done about it? To answer those questions, let's take a closer look at how joints lose their structural integrity and become arthritic.

Two common forms of arthritis are *osteoarthritis* and *rheumatoid arthritis*, and both involve the painful inflammation of the joints resulting from the gradual loss of cartilage. This was long believed to be a natural consequence of aging, but we now know that both conditions are at least partially caused by an unwanted immune response to joint collagen that eats away at joint cartilage.²⁹

What happens is your body's immune system targets and attacks joint cartilage as a foreign and undesirable substance. This triggers a degenerative cycle that, over time, causes irreparable damage to the joints.

After discovering this, scientists wondered what would happen if they could somehow stop or slow this internal assault on the joints. Theoretically, this could improve joint health and reduce the risk of disease and dysfunction. And that's what later research found.

Specifically, studies show that "teaching" the immune system to stop attacking proteins in joint cartilage improves joint health and function and can, in some people, alleviate or even eliminate pain and swelling.³⁰

There are several supplements that do this, as well as a few that simply reduce inflammation, which also helps your joints:

1. Undenatured type II collagen
2. Curcumin
3. Boswellia serrata
4. Grape seed extract
5. Glucosamine

Let's review each.

Undenatured Type II Collagen

Collagen is the main protein in the various connective tissues in animals, and type II collagen makes up your joint cartilage.

"Undenatured" is often a meaningless marketing buzzword, but in this case, it's a vitally important component of the supplement.

Denaturation is the alteration of the natural structure of a substance, usually by the addition of another chemical or heat. Common processing methods used to prepare collagen for supplementation denature it, and research shows that denatured collagen has no beneficial effects on joint inflammation.³¹

Undenatured collagen, however, is a more natural form of the substance, and studies show that it's effective for regulating the immune response that inflames joints and destroys cartilage and bone. It accomplishes this by

training the immune system to stop attacking collagen in the joints.³²

It gets better, too: These effects have been demonstrated in both people with arthritic conditions and healthy joints. That is, whether you have joint problems or not, you can benefit from supplementing with undenatured type II collagen.

Curcumin

Curcumin is the orange pigment found in the turmeric plant, which is the main spice in curry. It has been used therapeutically in Ayurvedic medicine for thousands of years, and its health benefits are extensive.

For instance, scientists around the world are investigating curcumin's effects on a variety of diseases, including cancer, cardiovascular disease, osteoporosis, diabetes, Alzheimer's, and more.³³

Curcumin also produces healthier, less painful joints by inhibiting a pro-inflammatory enzyme known as *cyclooxygenase* (COX), and this has powerful anti-inflammatory effects in the body.³⁴

Unfortunately, curcumin is poorly absorbed in the intestines.³⁵ So much so, studies show that to enjoy most of its benefits, you must take a patented (and expensive) form of curcumin that's combined with a natural substance known as *phosphatidylcholine* (Meriva) or combine generic curcumin with another ingredient to enhance absorption, like black pepper extract, which increases its bioavailability twentyfold.³⁶

Boswellia Serrata

Boswellia serrata is a plant native to much of India and Pakistan. It produces an aromatic substance known as *frankincense*, which has been used for thousands of years in Ayurvedic medicine to treat various disorders related to inflammation.³⁷

Thanks to modern science, we now know why. Frankincense contains

molecules known as *boswellic acids*—including one in particular, *acetyl-11-keto- β -boswellic acid* (or AKBA)—that inhibit the production of several proteins that cause inflammation in the body.³⁸

This effect extends to the joints, and studies show that *Boswellia serrata* reduces joint inflammation and pain and inhibits the autoimmune response that eats away at joint cartilage.³⁹

When supplementing with *Boswellia serrata*, it's important to ensure it's standardized to contain at least a certain amount of AKBA by weight. 20 to 30 milligrams per dose is known to work well.

Grape Seed Extract

Long used in European medicine, grape seed extract is a substance derived from the ground-up seeds of red wine grapes.

It contains a powerful antioxidant known as *procyanidin B2*, which remains in the body for much longer than other similar molecules and improves blood flow to the joints.⁴⁰ Research shows that grape seed extract helps protect joints from damage caused by the destructive autoimmune response we've discussed.⁴¹

Studies also show that supplementation with grape seed extract provides other benefits, including ...

- Protecting eye health⁴²
- Reducing the risk of heart disease⁴³
- Improving blood glucose control⁴⁴
- Enhancing blood flow to the extremities, which can reduce the appearance of varicose veins⁴⁵
- Potentially reducing the risk of cancer⁴⁶

Glucosamine

Glucosamine is a natural compound found in joint cartilage and the shells of shellfish.

Despite its widespread popularity, glucosamine isn't as practical for relieving joint pain and improving joint health as many people think. Studies show that it can provide minor, but unreliable, pain relief from arthritis and slightly reduce the rate of collagen loss in physically active people.⁴⁷

Glucosamine is cheap, however, so if your budget allows, I think it's a worthwhile addition.

Stress Support

Most people consider stress in purely negative terms, assuming they should avoid it at all costs. This is wrongheaded.

Like with exercise, our body was designed to use the “fight-or-flight” response to deal with stress, and it wouldn’t be far off the mark to say that regular bouts of stress are conducive to our overall health and well-being.

For instance, as you’ll learn in the next section of this book, to continue making progress in your fitness, you’ll need to work a lot harder in the gym than when you were a beginner. And that means subjecting your body to more exercise-induced stress.

This is fine and necessary, but chances are your workouts aren’t the only source of stress in your life. Like most of us, you’re also dealing with other difficult situations, ranging from finances to politics, work, relationships, health issues, and whatever else is fraying your nerves.

This isn’t inherently unhealthy, but our body and mind can only take so much before the wheels start to fall off. When we endure too much stress, we remain on high alert and age faster, become more susceptible to disease, and experience elevated levels of systemic inflammation.⁴⁸

The solution isn’t to avoid stress as much as possible, then, but to manage it. That starts with lifestyle, including making time for rest,

recovery, and relaxation. Supplementation can help as well, and there are three supplements in particular I recommend to fend off the negative effects of stress:

1. Ashwagandha root extract
2. Rhodiola rosea
3. L-theanine

Let's review each.

Ashwagandha Root Extract

Ashwagandha root extract is a substance derived from a plant root important in Ayurvedic medicine.

It's known as an *adaptogen*, which is a compound that causes an imperceptible level of stress that trains the body to better handle future stresses.

Ashwagandha contains more than a dozen molecules known as *withanolides*, and although scientists aren't sure how they work yet, research shows they produce several beneficial effects in the body.

For instance, in one study, when given to people with chronic stress, ashwagandha reduced anxiety as assessed by self-report questionnaires and cortisol levels.⁴⁹ Along the same lines are impressive reductions of cortisol ranging between 14.5 and 27.9 percent, and in one case, additional weight loss in obese people by reducing stress-induced overeating.⁵⁰

Studies also show that supplementation with ashwagandha can ...

- Increase power and strength⁵¹
- Improve sociability (willingness and eagerness to participate in social activities)⁵²
- Restore fertility in men⁵³
- Enhance immune function⁵⁴
- Increase cardiovascular endurance⁵⁵

Rhodiola Rosea

Rhodiola rosea is a plant that grows in cold regions of the world, including the Arctic zones of Europe, Asia, and North America.

Like ashwagandha, rhodiola rosea is an *adaptogen*, and it contains the molecules *rosavin* and *salidroside* that appear to be responsible for most of its benefits, with the major one being a reduction in fatigue from prolonged stressors.⁵⁶

In other words, rhodiola rosea helps you avoid feelings of burnout from long (and stressful) periods of intense work, and also appears to improve, or at least sustain, cognition during these times.⁵⁷

Studies also show that supplementation with rhodiola rosea can ...

- Reduce post-exercise muscle damage⁵⁸
- Improve exercise performance⁵⁹
- Alleviate depressive symptoms⁶⁰
- Enhance defense against viral infections⁶¹

L-Theanine

L-theanine is an amino acid found in tea that's responsible for some of its health benefits.

It helps balance the levels of two chemicals in the brain that transmit nerve impulses (*glutamate* and GABA), and research shows that supplementation with L-theanine helps reduce anxiety and high blood pressure.⁶²

Studies also show it increases production of nitric oxide, which improves blood flow, and when paired with caffeine, improves mood, memory, and attention.⁶³

Immunity Support

Pity our poor immune system.

It works twenty-four hours a day, seven days a week to protect us against harmful bacteria, viruses, fungi, and parasites, and because of the circumstances of modern living, its job is getting harder and harder.

The forces working against our body's defense system are powerful and prevalent:

- Excessive stress
- Insufficient sleep
- Insufficient exercise
- Insufficient nutrition
- Poor hygiene

Hence, the tens of millions of people here in America who live with compromised immune systems, suffering compromised health and wellbeing.

Moreover, you can't solve this by taking supplements to "boost" your immunity, any more than you can swallow pills to "detox" your body.

First, the over-simplified terms "immune boosting" and "detoxing" refer to complex physiological systems that can't be easily influenced through nutrition or lifestyle "hacks" or other quick fixes. For example, the immune system uses hundreds of types of cells to do a variety of jobs, ranging from identifying threats to carrying messages, eliminating bacteria, and learning how to fight new enemies.

Second, the best way to strengthen both your immune and "internal cleansing" mechanisms isn't supplements, but regular exercise, nutritious food, and adequate rest (especially restful sleep). And despite what supplement marketers would have you believe, no amount of vitamins and herbs can take the place of healthy living.

Furthermore, while there are natural substances proven to help the body purge toxins and pathogens, you won't find the best of them in most

immunity or detox supplements. For instance, most immune boosters contain large amounts of one or more of the following ingredients ...

- Vitamin C
- Vitamin D
- Echinacea
- Elderberry
- Probiotics

While these substances can provide some immune-related benefits, they're also known to be mildly effective (vitamin C), unreliable (echinacea), overhyped (elderberry and vitamin D), or downright ineffective (probiotics).

Why do you find them front and center in most immunity formulations, then? Because they're cheap. And why have these products gotten a bad rap? Because they don't work as advertised.

We shouldn't throw the baby out with the bathwater, however, because several natural ingredients have been proven to enhance immune health, function, and balance. Here are my go-tos ...

1. *Pelargonium sidoides*
2. Aged garlic extract
3. *Panax quinquefolius*
4. *Tinospora cordifolia*
5. Zinc
6. Vitamin C

Let's discuss each.

Pelargonium Sidoides

Pelargonium sidoides (also known as *African geranium* and *black geranium*) is an herb long used in South African traditional medicine.

It contains several molecules, including *umckalin* and related substances, that prevent bacteria from adhering to cells, making it harder for them to infect you.⁶⁴

Research shows that supplementation with *Pelargonium sidoides* ...

- Dramatically reduces the duration and severity of respiratory infections associated with dry cough⁶⁵
- May reduce the duration and severity of the common cold⁶⁶

Aged Garlic Extract

Aged garlic extract is a substance made from garlic that has been aged for several weeks or months to reduce odor and enhance nutritional properties.

It contains the antioxidant *S-allylcysteine* and various molecules that supply the body with sulfur, which aids the immune system's ability to fight off pathogens.⁶⁷ According to research, supplementation with aged garlic extract reduces the severity of colds and flus and improves vitality and well-being when sick.⁶⁸

Studies also show that it can ...

- Lower blood pressure⁶⁹
- Improve blood flow and arterial health, which reduces the risk of heart disease⁷⁰
- Improve cholesterol profile, which also reduces the risk of heart disease⁷¹
- Reduce oxidative stress in cells⁷²

Panax Quinquefolius

Panax quinquefolius (also known as *American ginseng* and *North American ginseng*) is an herb that grows in North America and China and has

long been used in traditional Chinese medicine.

It contains molecules called *saccharides* that stimulate the immune system, and research shows that supplementation with it reduces cold and flu infection rates.⁷³

Tinospora Cordifolia

Tinospora cordifolia (also known as *guduchi* and *amrit*) is a shrub native to India that has been used in Ayurvedic medicine for centuries.

It contains molecules known as *polysaccharides* and *terpenoids* that increase the killing capacity of *macrophages*, which are cells that help destroy harmful bacteria and viruses.⁷⁴

Research shows that supplementation with *Tinospora cordifolia* reduces nasal congestion and discharge and sneezing.⁷⁵

Zinc

Zinc is a mineral involved in the creation of enzymes, proteins, and cells, releasing vitamin A from the liver, and supporting immune health by enhancing the development and function of several types of vital cells.

Research shows that a zinc deficiency increases infection rates of various pathogens, and supplementing with it when sick reduces the duration and severity of sickness.⁷⁶

Vitamin C

Vitamin C is an antioxidant that helps maintain healthy tissues, teeth, and gums, promotes wound healing, and boosts immune function by assisting with the creation and activity of several types of vital cells.

Inadequate vitamin C intake increases the risk of infection, and

supplementing with it when sick with the common cold reduces the duration of the illness.⁷⁷

Studies also show that in athletes, daily supplementation of vitamin C reduces the risk of the common cold.⁷⁸



There you have it—supplementation for intermediate and advanced weightlifters.

You don't have to add any of the supplements we've discussed in this chapter to your regimen, but if you do, you'll benefit in several ways both inside and outside the gym. By enhancing and supporting many of your body's vital processes and functions, you can enjoy more energy, mental clarity, and focus, less stress, improved mood and workout performance and recovery, and more.

You also don't have to take all the supplements given here. As I mentioned in the beginning of this chapter, I listed everything in descending order of importance, both in terms of categories and individual supplements.

That means if you want to try one or two supplements I've recommended, you can start with a sleep supplement, like melatonin or glycine, and a joint supplement, like undenatured type II collagen or curcumin. You could then swap your choices for others after a couple of months and see how your body responds.

Or, if you have the budget and inclination, you can go all-in and take many or all of the supplements I've recommended.

I should also mention that just because I didn't bring up something here doesn't mean it has no merit. It simply means it's not one of the 20 percent of "secondary" (not fundamental) supplements that'll provide 80 percent of the benefits we're most after.

If you want to learn more about the science of supplementation, and how you can further optimize your mental and physical health and performance,

head over to the supplements category of my blog at www.bblsbook.com/supplements.

This also wraps up the diet section of the book, which means you now have in your possession all the know-how and tools needed to align your eating and supplementing with your long-term health and body composition goals.

You won't accomplish those goals without the same level of expertise in your training, however, and that's what the next section of this book will give you. Are you ready?

Key Takeaways

- Out of all the supplements you could take, most of the major benefits will come from the fundamentals, including protein powder, fish oil, vitamin D, a multivitamin, caffeine, creatine, citrulline, and a couple of others.
- There are four additional supplements intermediate and advanced weightlifters should consider taking: sleep support, joint support, stress support, and immunity support.
- Supplementation with melatonin before bed reduces the time it takes to fall asleep, can improve sleep quality for those with insomnia, reduces symptoms of jet lag, and can improve memory function.
- It's not worth supplementing with melatonin if you sleep well, except in cases of jet lag.
- Glycine acts as a mild sedative and reduces the time needed to fall asleep, improves sleep quality when taken before bed, and improves cognitive performance and reduces feelings of fatigue when sleep is impaired.
- Lemon balm improves sleep quality, reduces feelings of anxiety and stress, induces feelings of calmness, improves memory, and reduces symptoms of anxiety-related insomnia.
- Forms of exercise usually assumed to be harmful to the joints like weightlifting and even long-distance running are not associated with cartilage loss or osteoarthritis. Regular exercise appears to help preserve healthy cartilage levels.
- Undenatured type II collagen is effective for regulating the immune response that inflames joints and destroys cartilage and bone.
- Curcumin produces healthier, less painful joints by inhibiting a pro-inflammatory enzyme known as *cyclooxygenase* (COX).
- Boswellia serrata reduces joint inflammation and pain and inhibits the autoimmune response that eats away at joint cartilage.
- Grape seed extract helps protect joints from damage caused by the same autoimmune response.

- Glucosamine can provide minor, but unreliable, pain relief from arthritis and slightly reduce the rate of collagen loss in physically active people.
- Ashwagandha reduces anxiety and cortisol levels, increases power and strength, improves sociability, restores fertility, enhances immune function, and increases cardiovascular endurance.
- Rhodiola rosea protects against feelings of burnout from long (and stressful) periods of intense work, and also appears to improve, or at least sustain, cognition during these times.
- L-theanine reduces anxiety and high blood pressure and increases the production of nitric oxide, which improves blood flow.
- When paired with caffeine, L-theanine improves mood, memory, and attention.
- *Pelargonium sidoides* dramatically reduce the duration and severity of respiratory infections associated with dry cough and may reduce the duration and severity of the common cold.
- Aged garlic extract reduces the severity of colds and flus and improves vitality and well-being when sick.
- *Panax quinquefolius* (also known as *American ginseng* and *North American ginseng*) reduces cold and flu infection rates.
- *Tinospora cordifolia* (also known as *guduchi* and *amrit*) reduces nasal congestion and discharge and sneezing.
- A zinc deficiency increases infection rates of various pathogens, and supplementing with it when sick reduces the duration and severity of sickness.
- Inadequate vitamin C intake increases the risk of infection, and supplementing with it when sick with the common cold reduces the duration of the illness.

Part Four

A Masterclass in Muscle Building

11

How Much Muscle Can You Really Gain (Naturally)?

It is not difficult to wield a sword in one hand; the Way to learn this is to train with two long swords, one in each hand. It will seem difficult at first, but everything is difficult at first.

—MIYAMOTO MUSASHI

SOME PEOPLE SAY that with enough hard work, patience, and food, you can get as big and strong as you want. That there are no hard limits to your potential for whole-body muscle gain.

Others say all it takes to more or less max out your size and strength is a few years of proper training, unless you have elite genetics and a penchant for pain.

Both sides often have persuasive physiological arguments, which can be difficult to evaluate as a layman. The meteoric rise of steroid use has complicated matters further, because while some guys (and gals) are so big and strong that steroids are obviously involved, many drug users fly under the radar and represent unrealistic expectations.

To avoid the issue of secret anabolic use, often people point to the exceptional muscularity of bodybuilders before the advent of synthetic

testosterone and other steroids in the late 1930s, like the great Eugen Sandow:

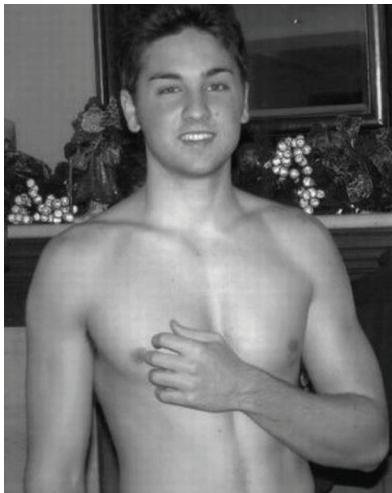


This, they say, is the purest, cleanest example of what's possible without drugs.

If only it were that simple. The home truth is this: We can only gain so much muscle naturally, and no amount of training, eating, or supplementing will raise that ceiling. Furthermore, it's impossible to calculate or predict that ceiling precisely, but there are several research-backed methods for estimating how jacked we can get.

There's good news, too: Chances are you haven't reached your peak muscularity yet. In fact, you're probably nowhere close.

My progress is a good example of this. Here's what I looked like after 1.5 years of following traditional bodybuilding training and diet advice:



I'd gained about 20 pounds (~175 pounds here), which isn't very impressive considering most of it was gained in the first ten months—the “newbie gains phase.”

Here's another shot of me taken several years later:



At this point I'd been training for about seven years, weighed around 195 pounds, and was about 16 percent body fat. I'd gained a fair amount of size along the way, but was stuck in a rut—I hadn't made any real progress in size or strength for years and thought maybe this was it.

Soon after taking that last picture, however, I dramatically changed the way I was eating and training, and here's me just a few years later:



That's me at about 185 pounds and 7 percent body fat, so I had gained another 10 pounds of muscle, despite thinking I was an "intermediate" or even "advanced" weightlifter (I wasn't). And just in case it needs saying, I've never used steroids, prohormones, SARMs, clenbuterol, or any other cutting or anabolic drug (besides caffeine, synephrine, and ephedrine).

The moral of the story is you may think your DNA dealt you a busted flush, but it probably didn't. Although you can only gain so much muscle, the amount is likely a lot more than what you see in the mirror and certainly more than enough to look and feel great about your body.

And in this chapter, you'll get clear answers to all your most pressing

questions about your muscle building potential, including ...

- How much muscle can you gain naturally?
- Why can some people gain more muscle than others?
- What's the most surefire way to reach your genetic potential for muscle growth as fast as possible?
- And more

Let's get started.

What Determines How Much Muscle You Can Build Naturally?

There are many calculators and formulas floating around online that claim to show how much muscle you can add to your frame. While some can give you a ballpark estimate, don't put too much stock into their estimations, because there's no perfect way to predict how big you can get. There are too many physiological variables. This is why even genetic testing provides only an informed guesstimate.¹

That said, science has revealed two physical traits that are highly correlated with the genetic potential for muscle gain:

1. Bone structure
2. Muscle structure

Let's review each.

Bone Structure

It's true—some big people are just “big boned.”

Research shows that those with larger, denser bones tend to have more

muscle than people with smaller frames.² Furthermore, they also tend to have higher testosterone levels and respond better to training.³

This relationship is so strong that some scientists believe that how much bone you have is *the* limiting factor in natural muscle building. One researcher in particular, Francis Holway, has even gone as far as calculating what he believes is the exact ratio of how much muscle you can gain according to how much bone you have.

Here's how David Epstein explains it in his 2014 bestselling book *The Sports Gene*:

In measurements of thousands of elite athletes from soccer to weight lifting, judo, rugby, and more, Holway has found that each kilogram (2.2 pounds) of bone supports a maximum of five kilograms (11 pounds) of muscle.

In other words, according to Holway, most people can gain about 5 pounds of muscle for every pound of bone in their bodies.

Epstein likens the human skeleton to a bookcase, and the muscle to books, writing, "One bookcase that is four inches wider than another will weigh only slightly more. But fill both cases with books and suddenly the little bit of extra width on the broader bookcase translates to a considerable amount of weight."

Also worth noting is the ratio seems to be slightly lower—about 4.1 pounds of muscle to 1 pound of bone—in women, which may help explain why women's potential for muscularity is less than men's.

You might now be wondering how to accurately measure your total bone mass and thereby muscular potential.

Unfortunately, it involves a trained anthropometrist (body measurer) taking twenty-two different measurements across your body, which is expensive and inconvenient. Some people say you can use a full-body x-ray called a DXA scan instead, but that's not a workable solution either. DXA determines the mineral content of your bone, not the total weight, which includes marrow, blood, and other components.⁴

So, while the muscle-to-bone ratio is probably the best method we have for determining the maximum amount of muscle we can build naturally, it's unfeasible.

Instead, however, we can use two scientifically validated proxies for our overall bone mass: The circumferences of our wrists and ankles. These measurements work because height being equal, people who have wider wrists and ankles tend to be more muscular, gain muscle faster through training, and have a higher potential for muscle growth.

We can thank a researcher named Dr. Casey Butt for figuring this out. He parsed thousands of data points from surveys, clinical studies, and case studies, and found the single best indicator of bone mass and thus muscle-building potential was the thickness of the wrists and ankles.

Why these two points of the body?

It's likely that you could also find a similar relationship using other bones like the femur (thigh bone), humerus (upper arm bone), and clavicle (collar bone), but they're too draped in flesh to allow for easy measurement. That isn't the case with the wrists and ankles, though.

Muscle Structure

Every muscle has two main parts:

1. The “belly,” which is the part that contracts and that you want to grow.
2. The tendon, which connects the belly to your skeleton.

The main way muscle bellies and tendons vary in people is length. Muscles can't grow longer, only wider, so the longer your muscle bellies and the shorter your tendons are, the more muscle mass you'll be able to gain.⁵

Similarly, the shorter your bellies and the longer your tendons are, the lower your potential for muscularity. Here's a good example of someone with very short muscle bellies and long tendons:



While he has good muscle definition, he will have a hell of a time getting bodybuilding-big arms. Just to compare, here's a shot of my arm, which has a longer muscle belly:



If you want to know how your biceps stack up, bend your arm to 90 degrees, flex your biceps, and see how many fingers you can comfortably fit between your biceps and forearm. If you can fit three fingers, your muscle

bellies are below average length. If you can fit two, you're about average. If you can fit one, you're one of the lucky few with longer than average muscle bellies.

If you're on #TeamSmallBelly, don't worry, you aren't SOL. Take heart because ...

- Small muscle bellies in one muscle group (your biceps) doesn't mean the same will hold true in other muscle groups.
- Although your potential for raw size might be more limited than some, you can always develop great muscle definition.
- There are other factors that are better predictors of how muscular you can get (which you'll learn more about).

And let's face it: there isn't a natural bodybuilder in the world with 10 out of 10 size and definition in every muscle group, so let's be thankful for our strengths (yippee, chest and biceps for me) and accepting of our weak points (screw you, calves).

So, How Much Muscle Can You Build Naturally?

By this point, you've probably had enough appetizers and are ready for your entrée. So let's serve it up. How can you determine how much muscle you can gain?

Most formulas for this are solely based on height. The theory is the taller you are, the more "room" you have to add muscle to your body. There's truth here, but it's too simplistic to produce accurate estimates for people of all sizes and types. For example, what if you're below-average in height but above-average in bone size? You'd be able to gain more muscle than a height-based formula would predict. That's why I prefer Casey Butt's formula.

Casey Butt's Model for Predicting Muscular Potential

Butt's equations are widely considered the most accurate way to estimate your genetic potential for muscle growth as well as the maximum potential size of each major muscle group.

Here's what they look like ...

$$\begin{aligned}\text{Maximum Lean Body Mass} &= H1.5 \\ (\sqrt{W \div 22.667} + \sqrt{A \div 17.0104}) (\%bf \div 224 + 1)\end{aligned}$$

$$\begin{aligned}\text{Maximum Chest Circumference} &= 6.3138W \\ (\%bf \div 340 + 1) (+1\%) \end{aligned}$$

$$\begin{aligned}\text{Maximum Biceps Circumference} &= 2.3008W \\ (\%bf \div 265 + 1) (+2.2\%) \end{aligned}$$

$$\begin{aligned}\text{Maximum Forearm Circumference} &= 1.8514W \\ (\%bf \div 340 + 1) (+3.8\%) \end{aligned}$$

$$\begin{aligned}\text{Maximum Neck Circumference} &= 2.2574W \\ (\%bf \div 340 + 1) (+3.4\%) \end{aligned}$$

$$\begin{aligned}\text{Maximum Thigh Circumference} &= 2.6785A \\ (\%bf \div 190 + 1) (+1\%) \end{aligned}$$

$$\begin{aligned}\text{Maximum Calf Circumference} &= 1.7780A \\ (\%bf \div 210 + 1) (+3.1\%) \end{aligned}$$

H = Height in inches

A = Ankle circumference at the smallest point

W = Wrist circumference measured on the *hand* side of the styloid process

%bf = Body fat percentage at which you want to predict your maximum lean body mass

Chances are that's gobbledegook to you, which is why I made a nifty calculator that does all the math for you, which you can find at www.bbbs-book.com/muscle.

You should also know that although the formulas are based on records from "natural bodybuilders," many may have been using drugs. It's easy to cheat drug tests in most sports, bodybuilding especially, and steroids were legal and generally not tested for until about the 1980s. Thus, it's safe to assume that Butt's numbers may be slightly inflated because of undisclosed steroid use.

Additionally, much of the data came from top-level bodybuilders who comprise the genetic elite for muscle gain. Therefore, it's smart to look at your numbers from the calculator as an absolute ceiling of what you could achieve if you did everything right with your training and nutrition for years, rather than middle-of-the-road expectations.

I think it's reasonable to subtract 5 percent from the calculator's results for a more conservative estimate of how big we can get, without more or less devoting our lives to lifting weights.

For example, when I plug in my numbers, the calculator pegs my ceiling at 210 pounds at 10 percent body fat. I'm sitting at 192 pounds right now at 9 percent body fat, and based on my nearly twenty years in the gym, I can say with some certainty that I have a snail's chance in saltwater of reaching 210 pounds and lean.

If I subtract 5 percent from 210, however, I get 199, which would require just a few pounds of muscle and fat gain. And I'd agree that I've gained more or less all the muscle available to me, regardless of what I do in the kitchen or gym going forward.

Also, this calculator uses a formula derived from data collected solely from men, so it won't work for any women in your life who might be curious. There *may* be a similar correlation between bone and muscle mass in women just as in men, and if so, then Butt's formula would predict potential

muscle gain just as well in women as in men. We just don't know yet, though.

There's one other evidence-based way to estimate how much muscle we can gain that's worth discussing. It was developed by Alan Aragon, a published researcher and fitness consultant who's been designing programs for improving body composition and athleticism for over twenty years.

Based on his experience working with everyone from everyday gymgoers to Olympic athletes, most men can gain muscle at about this rate:

Category	Potential Rate of Muscle Gain Per Month
Beginner (Year One)	1 to 1.5 percent of body weight per month
Intermediate (Year Two)	0.5 to 1 percent of body weight per month
Advanced (Years Three and Beyond)	0.25 to 0.5 percent of body weight per month (until you reach your genetic potential)

Women, Alan says, should aim for about half of those rates of progress for several reasons, including less bone mass, a smaller and weaker starting point, and others.

I should also mention that those numbers assume you're doing the most important things with your eating and training mostly right. If a guy has been in the gym for many years but only gained, let's say, 15 pounds of muscle, he's essentially a beginner ready to start his second year.

So, according to this model, a 150-pound male beginner can gain about 1.5 to 2.25 pounds of muscle per month, or 18 to 27 pounds in year one.

Let's say he does well and gains 20 pounds of muscle in his first year and is now an "intermediate lifter" who can expect to gain 0.85 to 1.7 pounds of muscle per month, or 10 to 20 pounds in his second year in the gym.

Let's say he now really dials in his diet and training and gains another 15 pounds of muscle in year two, putting him at 185 pounds (assuming the same body fat levels as when he began) as he enters his "advanced" phase.

Thus, his year-three potential gains are about 5 to 10 pounds of muscle, and from there on out, his progress diminishes to the vanishing point.

This example mirrors my journey in a way. Although it took much longer than it should've, I started weightlifting at about 155 pounds and 13 percent body fat and am now 192 pounds and 9 percent.



If this chapter has let some air out of your balloon, I understand.

You probably follow quite a few bodybuilders, fitness models, and “influencers” who put your potential for muscle gain to shame. And that’s okay. In fact, it’s good you’re coming to this realization now, before unrealistic hopes can sink their hooks in and set you up for major disappointment and failure later (or worse, drug use).

That said, no matter your genetic potential for muscle growth, know this: you *can* build an outstanding physique.

I’ll use myself as an example again. I may have better-than-average genetics for strength and muscle gain, but I’m no outlier. Despite that, however, I’ve built a physique that might make people think otherwise. What they don’t know is it’s taken me a very long time to get where I am today, as well as thousands of hours of punishing workouts.

In contrast, the Director of Amazon Marketing for my sports nutrition company Legion maintains a weight of about 210 pounds at 18 to 20 percent body fat at 5’10”—pegging his total lean mass within a few pounds of mine—by working out a couple of times per week.

Moreover, he pays no attention to his calories or macros, hasn’t used steroids, and has taken several multiple-month breaks from the gym in the last few years because of injuries. Being big and strong is just in his genes.

So my point is this: It doesn’t take stellar DNA to build a body you can be proud of. Hell, if a guy new to weightlifting gains 30 to 40 pounds of muscle and stays around 10 percent body fat, he’ll look like a Greek god to most people. And with the information in this book (and *Bigger Leaner Stronger*), just about anybody can do that.

In your case, it may take longer than you’d like to get the body you really

want, and you may never be as muscular or defined as your Instagram idols, but you absolutely can transform your physique into something special.

What about strength, though? How strong will you be able to get given your genetics?

That's the topic of the next chapter, which will explore an evidence-based method for estimating how much strength you can gain throughout the entirety of your weightlifting journey.

Key Takeaways

- We can only gain so much muscle naturally, and no amount of training, eating, or supplementing will raise that ceiling.
- Research shows that those with larger, denser bones tend to have more muscle than people with smaller frames, and they also tend to have higher testosterone levels and respond better to training.
- Height being equal, people who have wider wrists and ankles tend to be more muscular, gain muscle faster through training, and have a higher potential for muscle growth.
- Muscles can't grow longer, only wider, so the longer your muscle bellies and the shorter your tendons are, the more muscle mass you'll be able to gain.
- Casey Butt's equations are widely considered the most accurate way to estimate your genetic potential for muscle growth as well as the maximum potential size of each major muscle group.
- Go to www.bblsbook.com/muscle to find a calculator for estimating how much muscle you can gain naturally.
- One other evidence-based way to estimate how much muscle men can gain was developed by Alan Aragon, and it works like this:

Beginner (Year One)

1 to 1.5 percent of body weight per month

Intermediate (Year Two)

0.5 to 1 percent of body weight per month

Advanced (Years Three and Beyond)

0.25 to 0.5 percent of body weight per month (until you reach your genetic potential)

12

How Much Strength Can You Really Gain (Naturally)?

*Real self-respect comes from dominion over self,
from true independence.*

—STEPHEN R. COVEY

FOR MANY WEIGHTLIFTERS, the bench press is the ultimate benchmark of strength. If you have a big bench, you’re strong, and if you don’t, you’re not.

This is shortsighted.

The bench press is a good measure of pushing strength, but what about the back and legs, which contain some of the largest muscles in the body? Would you say that someone with a strong bench press, but weak deadlift and squat, is truly “strong”?

Thus, if you want to gauge your strength, you want to evaluate your *whole-body* strength, and an effective way to do that is by appraising your performance of the following movements:

- Push
- Pull
- Squat

There are many pushing, pulling, and squatting exercises you could use to test your strength, but leading experts and strength coaches have settled on three:

1. Barbell Squat
2. Barbell Bench press
3. Barbell Deadlift

The barbell squat proves your lower body and back strength, the bench press your chest, shoulder, and arm strength, and the deadlift your back, hamstring, and glute strength. Thus, if you add your squat, bench press, and deadlift one-rep maxes, you'll have an accurate and practical estimate of your whole-body strength.

That said, while the sum of these lifts—referred to as your *total*—gives you a quantitative view of your strength in terms of absolute numbers, it doesn't give you a qualitative one in terms of how those lifts relate to your size and stature.

In other words, if all you're looking at is the weight on the bar, a squat of 600 pounds is far stronger than 400 pounds. But what if the guy squatting 600 pounds is 6'2" and weighs 300 pounds, while the other is 5'8" and weighs 200 pounds? Which lift should we consider more impressive?

This is where *relative strength* enters the picture, which also accounts for body weight, and therefore allows us to compare the strength of people of different sizes. In this way, someone who's 5'5" and 130 pounds can see how their numbers stack up against someone who's 7'2" and 400 pounds, and determine who's getting the most out of what they've got.

You can't just divide totals by body weights, though. Because of quirks of physics and biology, the mass (weight) of the human body increases faster than its strength. For example, if I magically doubled my body weight, I wouldn't be twice as strong, and likewise, if I shrunk to half my current size, I wouldn't be half as strong.

So how much do increases or decreases in body weight impact strength? To find the answer, we can use a technique known as *allometric*

scaling, which is a method that helps scientists understand how different characteristics change in an organism as size changes.

For instance, thanks to this line of research, we know that for most animal species, as the body size increases, the metabolic rate per unit of mass decreases.¹ (Good news for elephants, who still need to eat 200 to 600 pounds of food every day!)

Powerlifter, researcher, and writer Greg Nuckols gets all the credit here, as he's the one who figured out how to make allometric scaling work for predicting strength in humans. With a formula he created, you can calculate a number that represents your relative strength and then compare it to the figures of others to see where you stand.

The only problem is it looks like double Dutch to most of us, so instead of wading through the math, you can find a calculator that'll do the "heavy lifting" for you at www.bbbsbook.com/strength.

There are other formulas out there for calculating relative strength, such as the Wilks, Glossbrenner, and Schwartz/Malone coefficients, but they're less accurate than Nuckols' method. For example ...

- It's well known the Wilks coefficient misestimates the relative strength of people who weigh between 150 and 200 pounds.
- The Schwarz/Malone coefficient often overestimates the relative strength of people who weigh less than 150 pounds.
- The Glossbrenner coefficient more or less just averages the results from the Wilks and Schwarz/Malone coefficients, but this doesn't overcome their flaws.

As Nuckols explains in his extensive article on the topic, allometric scaling may not be perfect, but it's a better, scientifically-validated system for computing relative strength than the other popular methods.²

How Strong Can You Get Naturally?

Your ability to gain strength depends on a few factors, with the chief ones being your ...

- Skill and attitude
- Bone length
- Muscle structure
- Muscle size

Let's take a closer look at each.

Skill and Attitude

Strength is a skill. Lifting large amounts of weight with proper technique requires outstanding balance, coordination, and timing, and that's why your first squat, bench press, and deadlift sessions felt awkward, uncoordinated, and weak.

Accordingly, your strength is limited by not only your musculature but also your movement patterns, which are flawed and inefficient in the beginning.

After a month or two of regular practice, though, your technique can rapidly improve along with your strength. In fact, research shows that most of the strength people gain in their first month of lifting weights is the result of improvements in coordination and technique, not muscle growth.³

These "technique gains" taper off quickly, though, and after a year of regular lifting, your ability to perform key exercises is about as good as it'll ever be. You can still improve your skill as time goes on, but the process will be slow and subtle.

Your attitude in the gym matters, too, because approaching your genetic limit for strength requires a bit of piss and vinegar.

To get there, you will need to do a lot of heavy weightlifting, which means getting comfortable being uncomfortable, pushing yourself to add

weight to the bar, and staying focused through weeks, months, and years of strenuous training.

In short, showing up and going through the motions isn't enough. You have to strive to make every rep, set, and workout count.

Bone Length

Every exercise involves moving a weight a certain way for a certain distance. For example, a squat follows a simple sequence:

1. Standing position with the legs straight.
2. Sitting position with your thighs more or less parallel with the floor.
3. Standing position with the legs straight.

While small differences in individual anatomy don't change this basic pattern, they can alter how easy or difficult the exercise is by changing how far the weight needs to move to perform each rep.

For example, if your femurs are longer than average, you'll find the squat and deadlift more difficult, because the bar will have to travel a few inches farther every rep. For the same reason, if your arms are longer than average, you'll find the bench and military press more difficult, but the deadlift will be easier, because the bar won't have to move as far to lock out.

Being 6'1" with long legs and arms, I've experienced this firsthand. The squat, bench press, and military press have always been the hardest to progress on, and my current personal bests are respectable, but nothing to write home about: a 365-pound squat for two or three reps, 295-pound bench for two reps, and 225-pound seated military press for two or three reps.

Deadlifting, however, has been somewhere in the middle for me, as my long legs make it harder, but long arms make it easier. My personal best is still just middling (435 pounds for two reps), but was easier to achieve than the other lifts.

I can't blame my anatomy too much, though, because structural

differences don't have as big of an impact on strength gain as many people claim. First, every inch of height only increases the distance the bar needs to move by a small amount, and second, even having to move the bar an inch or two more doesn't always significantly increase the difficulty of the exercise.

To understand why, you must understand that every exercise has a *sticking point*. This is a point in the movement where the exercise becomes more difficult, and it typically makes up about three to six inches of the total distance the weight needs to travel.

(It would be more accurate to describe this as a *sticking range*, since it's a few inches, but I'll stick with the more common term for the sake of familiarity.)

Despite comprising a fraction of the total exercise movement, the sticking point more or less dictates how difficult a rep will be. If you can move through this spot quickly, you'll probably complete the rep without a hitch, and if you can't, you'll probably grind to a halt.

For instance, most people's sticking point on the bench press is when the bar is three to six inches off their chest and continues for another three to six inches. Once you get the bar through this span of the ascent, the rest feels easy.

How does this relate to bone length and strength?

I'll use myself as an example again. Compared to my 5'10" lifting partner, I have to move the bar about two to three inches farther to complete each rep of the bench press. Only an inch or two are added to my sticking point, though, while the rest of the additional distance isn't as difficult. And yes, that means my reps *are* harder than his and produce more fatigue as I get deeper into sets, but this isn't likely to put me more than a rep or two behind him on most sets.

Something else to consider is the fact that taller people can often gain more total muscle than shorter people, which can help mitigate anatomical disadvantages. Additionally, having long bones may be a disadvantage in one exercise, but an advantage in another. As I just mentioned, my long arms make bench pressing harder, but they also make deadlifting easier. My long femurs, on the other hand, make deadlifting and squatting harder

and don't help my bench press.

So all things considered, if someone can lift more weight than you, chances are that variations in height and proportions aren't the driving factors. Instead, it likely has more to do with the other reasons we'll discuss in this chapter, particularly muscle size.

Muscle Structure

While we all have the same muscles in our bodies, and they're all in the same general regions, there are differences in how they're attached to our skeletons. These discrepancies are usually small—only a centimeter or two—but they can translate into huge differences in natural strength.

We don't need to get too technical for this discussion, but what it boils down to is mechanical advantage. Because muscles function as levers, where they attach to our bones impacts how much force they can produce and thus how much weight they can move. This is why studies have found that, thanks to this type of anatomical variance, strength can vary by as much as 25 percent among people with identical amounts of muscle mass.⁴

If you're worried that you're in the disadvantaged camp, take heart, because this should only concern you if you're trying to become a competitive strength athlete. However, if you're here to build a strong, muscular, lean, healthy body, you can achieve your goals with or without a genetic leg up.

But do keep anatomy in mind when comparing yourself to other people of similar size—some bodies are just built better for strength than others.

Muscle Size

Generally, the biggest guys in the gym are also the strongest. Sure, there are exceptions, but more often than not, the people moving big loads are pretty jacked.

This is clear to anyone who has spent enough time with the iron, but it's also backed by scientific research. For instance, studies conducted by scientists at Indiana University and the University of San Martin found that muscle mass is strongly associated with strength among powerlifters.⁵

This doesn't mean that every pound you add to the barbell makes you a little more muscular, though, because strength and muscle gains aren't perfectly correlated. In other words, you can get stronger without getting bigger and vice versa.

For example, most of the strength you gain during the first few weeks of lifting comes from getting better at exercises—those “technique gains” I mentioned earlier.⁶ Your muscles contract harder and at the right times, your balance improves, and your technique becomes respectable. You still gain some muscle during this beginning period, but that only accounts for about 2 percent of the rather large jump in strength.⁷

After you've worked out the bugs in your form, however, which happens in the first few months for most people, further increases in strength become largely dependent on gaining muscle. And after a couple of years of consistent training, research shows about 65 percent of your strength gain will come from muscle gain.⁸

So, once your newbie gains are behind you, if you want to keep getting stronger, you'll have to keep getting bigger. And once you reach your genetic potential for muscle growth, you won't have much more strength available to you, either.

The best way to think of the relationship between muscle and strength is this: the amount of muscle you have represents your potential for strength.

For instance, let's say you use lighter weights and higher reps during a lean bulk and gain five pounds of muscle. Since you weren't using heavy loads and lower reps and are a bit “rusty” at that type of training, when you attempt to set new one-rep maxes, you fall short of your previous bests.

This might leave you confused or even crestfallen, but here's the good news: if you were to train with heavy weights and low reps for four to six weeks, you'd likely beat your previous lifts.

Why? Because those five additional pounds of muscle will allow you to

generate more force than before. You just have to readapt your muscles to heavier loads and fewer reps.

So ... How Strong Can You Get Naturally?

I hate answering important questions like this with “it depends,” but that’s the truth here.

It’s hard to determine how strong you’ll be able to get, because there are too many factors in play. Unlike the potential for muscularity, there isn’t one individual variable that we can isolate and use as a guidepost for potential strength.

That said, there is a way to estimate how strong you can get. It sounds simplistic, but it’s also commonsensical: Look at the performance of many other weightlifters similar to you in size. Chances are, you’ll fall somewhere in the middle.

While there are no comprehensive studies on strength potential, Greg Nuckols has conducted an unofficial study of the matter that lends some insight.⁹

Nuckols collected survey responses from 1,800 experienced weightlifters of all sizes, used the allometric scaling method you learned about earlier to assess their relative strength levels, and then assigned their squat, bench press, and deadlift one-rep maxes, and total, into six categories:

1. Beginner
2. Novice
3. Intermediate
4. Advanced
5. Elite
6. World Class

He also created a calculator that allows you to discover what category you’re currently in, which you can find at www.bblsbook.com/strength.

For instance, when I plug in my height and weight, it says “beginner” level lifts for my size are 319 pounds on the squat, 213 pounds on the bench, and 359 pounds on the deadlift. My all-time best one-rep maxes are 375 pounds on the squat, 300 pounds on the bench, and 445 pounds on the deadlift, which puts me in the novice category. And that’s not too shabby considering I’ve never trained to maximize my strength.

If I focused on nothing but strength training for a while, the best I (and most others, including you, probably) could hope for—regardless of how hard I tried—would be somewhere between intermediate and advanced (the middle of the curve).

With enough drugs, maybe I could reach the advanced tier, but no matter how much vitamin S I took, I’d never be able to put up elite or world class numbers. It’s not in my bones (literally).

And I’m cool with that. This data is based on a bunch of hardcore powerlifters, so as a natural recreational “bodybuilder,” high-level novice strength is decent and intermediate would be impressive.

Now, if this calculator’s numbers seem unrealistically high to you, remember—it’s using the averages of people who’ve been training for years and have likely achieved much or all of their genetic potential for muscle and strength. Moreover, this data was collected anonymously through the Internet, so it’s very possible (all but guaranteed) that some people were on steroids or lied about their numbers.

Still, despite the obvious limitations, Nuckols’ calculator is one of the few of its kind that takes your personal anatomy into account, making it plenty useful.



You now know how to estimate how strong you can get naturally, and no matter your numbers, remember that you don’t need to get extremely strong to have a great physique—you just have to get much stronger than when you started. And anyone can do that.

Even better, by the end of this book, you'll have everything you need to realize the bulk of your genetic potential for muscle and strength. It'll take time, but if you keep putting in the work, you *will* get there.

To that end, in the next chapter, you'll learn the single most important "advanced" training technique there is—the one that'll dictate your progress more than any other. It's probably not what you think, either, because it's simple, unsexy, and unforgiving, which is why it's also unpopular.

Embrace it, however, and you'll be well on your way to more muscle and strength than ever before.

Key Takeaways

- An effective way to evaluate your whole-body strength is appraising your performance of the following movements: push, pull, squat.
- Relative strength also accounts for body weight, and therefore allows us to compare the strength of people of different sizes.
- Go to www.bblsbook.com/strength to find a calculator for determining how much strength you can gain naturally.
- Your ability to gain strength depends on a few factors, with the chief ones being your skill and attitude, bone length, muscle structure, and muscle size.
- Every exercise has a sticking point, which is a point in the movement where the exercise becomes more difficult, and it typically makes up about three to six inches of the total distance the weight needs to travel.
- Taller people can often gain more total muscle than shorter people, which can help mitigate anatomical disadvantages, and having long bones may be a disadvantage in one exercise, but an advantage in another.
- Because muscles function as levers, where they attach to our bones impacts how much force they can produce and thus how much weight they can move.
- Studies have found that, thanks to this type of anatomical variance, strength can vary by as much as 25 percent among people with identical amounts of muscle mass.
- Strength and muscle gains aren't perfectly correlated—you can get stronger without getting bigger and vice versa.
- After a couple of years of consistent training, research shows that about 65 percent of your strength gain will come from muscle gain.
- Once your newbie gains are behind you, if you want to keep getting stronger, you'll have to keep getting bigger, and once you reach your genetic potential for muscle growth, you won't have much more strength available to you, either.

- The amount of muscle you have represents your potential for strength.
- Go to www.bblsbook.com/strength to find a calculator for determining how your strength compares to weightlifters of a similar size.

13

The “More for Less” Method of Maximum Muscle Gain

An ant has no quarrel with a boot.

—LOKI (*THE AVENGERS*)

IF I WERE A CHARLATAN, this chapter’s title would be different. Something that suggests oh, you know, the exact opposite—less for more.

I’d start by promising to share with you my proprietary, patent perpetually pending breakthrough method of training “they” aren’t telling you about that’ll turbocharge your muscle and strength gain like you’ve never seen.

“Learn radical training techniques from ancient Greece for packing on brain-shrinking amounts of muscle in 30 days flat!” I’d declaim, followed by more dumb words, like a Ponzi schemer generating grist for his people mill of false hopes and dashed dreams.

Instead, I’m going to just tell it like it is, even though it may not be what you’d like to hear.

The first thing you need to understand as an intermediate or advanced weightlifter is this: There are no shortcuts, hacks, or even detours for where you want to go. So stop looking for them and shun anyone who tries to tell you otherwise.

Here's what's next for you: Diminishing returns. A lot of freaking work for less and less reward. Hence the title of this chapter.

You probably guessed as much after reading the previous two chapters, but just to illustrate my point, let's revisit the total muscle gain available to men in their first, second, and, let's say, fifth years of training. In year one, most men can gain around 20 to 25 pounds of muscle, and in year two, 10 to 15 pounds, and by year five, they'll be lucky to gain just a few pounds.

There's a kicker, too: Not only does muscle and strength gain slow down as you progress toward your genetic limits, you have to work harder to keep the needle moving. There are many ways to make workouts harder, but for our purposes, the two we need to focus on are progressive overload and volume.

In other words, if we're going to continue to eke out more muscle and strength, we must ensure that no matter what we do with our diets, workout programming, and supplementation, we're continuing to add weight to the bar over time and doing a sufficient amount of work per major muscle group per week (volume).

Let's take a moment to elaborate on that principle, because it's crucial to understanding why the *Beyond Bigger Leaner Stronger* program is laid out the way it is.

Technically, *volume* refers to the total amount of work an athlete is doing over a period of time, and in weightlifting, it can be measured in several ways.

One popular method of calculating training volume is to multiply the weight used by the sets and reps performed on an exercise. This is referred to as *volume load*. So, for example, if you do 3 sets of 5 reps of squats with 315 pounds, your volume load would be 4,725 pounds ($3 \times 5 \times 315$).

This formula produces big, impressive numbers that can be fun to track, but changes in volume load don't correlate well with muscle or strength gain, so it's not a practical programming tool.

For example, let's say you switch from 3 sets of 5 reps of squats with 315 pounds to 3 sets of 12 reps of squats with 185 pounds. This bumps up your volume load to 6,660 pounds—a 40 percent increase—but research

shows that this isn’t likely to produce more muscle growth and will probably result in less strength gain.¹

Why is that?

According to a systematic review conducted by scientists at Auckland University of Technology, any weightlifting set taken close to failure in the range of 6 to 20 reps will produce about the same amount of muscle gain.² That is, a set of 6 reps taken just shy of failure will produce similar results as a set of 20 reps taken just shy of failure.

That means wildly different volume loads can produce more or less the same amount of muscle gain, so how are you supposed to use those numbers to optimize muscle growth? You can’t.

Another way to track your training volume is total repetitions, but this is flawed for the same reason volume load is. Using the same example as earlier, 3×5 reps gives you 60 percent fewer reps than 3×12 reps, yet both of these workouts are likely to produce similar amounts of muscle growth.

So, what’s the best way to quantify volume for the purposes of workout programming? Most research shows that the answer is *hard sets*, which are sets taken close to the point of muscular failure, regardless of the number of reps performed.³

This measure is useful because a growing body of evidence indicates that optimal volume for muscle gain is in the range of 10 to 20 hard sets per major muscle group per week with moderately heavy weights (60 percent of one-rep max or higher) and adequate rest in between sets, with the lower number of sets being suitable for beginners and the higher end for advanced weightlifters.⁴

Irrespective of volume loads or total repetitions, someone new to proper weightlifting probably doesn’t need to do more than 10 hard sets per major muscle group per week to gain plenty of muscle and strength, and intermediate and advanced weightlifters probably need to do upward of fifteen to 20 hard sets per week to continue making progress.

Now, as you’ll learn in this chapter, there are benefits to working in different rep ranges (and thus volume loads). For example, research shows that you’ll gain more strength by training with heavier weights and fewer

reps, and we know the primary goal as a natural weightlifter is to increase whole-body strength over time.

Research also shows, however, that higher-rep sets may activate certain muscle-building processes more than lower-rep sets and cause less fatigue and wear and tear on your joints.⁵

Ideally, then, you'd alternate systematically between doing more and fewer reps, instead of working in the same rep ranges for long periods. And that's exactly what you'll do in the *Beyond Bigger Leaner Stronger* program.

More importantly, however, you'll keep progressively overloading your muscles.

Recall from *Bigger Leaner Stronger* that progressive overload is the primary mechanical driver of muscle growth. This doesn't fundamentally change as we get bigger and stronger—muscle gain will skid to a halt if we stop gaining strength—it just gets harder to achieve.⁶ While a man new to weightlifting can add as much as 400 pounds to his big lifts in his first year, 50 pounds added in year five would be a victory.

As for volume, research shows that although it isn't as powerful a muscle-building stimulus as progressive overload, it's in the same ballpark.⁷ Additionally, studies show that highly developed muscles require more volume to continue growing than less developed ones.⁸

Someone new to weightlifting can gain tremendous amounts of muscle and strength for the first couple of years on minimalistic training programs like *Bigger Leaner Stronger* and *Thinner Leaner Stronger*, which prescribe just 9 to 12 hard sets per major muscle group per week.

While most people new to lifting could recover from more volume, it won't produce better results, so why bother?

That approach works swimmingly—until it doesn't anymore. Eventually, 9 to 12 hard sets per major muscle group per week becomes more than sufficient for maintaining muscle and strength, but not progression. For that, you have to work harder.

“What if you’re still achieving progressive overload with 9 to 12 sets per major muscle group per week? Won’t you continue gaining muscle?”

Yes, but depending on your programming, you may struggle to keep

your one-rep maxes trending upward, and even if you do, you’d still be missing out on the additional muscle gain that more volume could provide.

And how much more volume are we talking about? As I mentioned earlier, the current weight of the evidence suggests that 15 to 20 hard sets per major muscle group per week is ideal for most intermediate and advanced weightlifters.⁹

Remember, though—without progressive overload, muscle growth will lag regardless of the amount of volume performed. It’s not sufficient to merely go through enough of the motions to continue getting bigger and stronger—those motions must involve more muscle tension over time, which is best accomplished by getting stronger.

As the old saying goes, working out never gets easier—you just have to get better.

Chances are this isn’t news to you, but you might be skeptical about my prescription for how to get better, which mostly comes down to doing more hard sets per week and continuing to add weight to the bar.

What about “advanced” training techniques like periodization, muscle fiber optimization, pre-exhaustion, blood flow restriction, supersets, cluster sets, rest-pause sets, drop sets, forced reps, partial reps, cheat reps, negatives, and others?

Most of these training techniques aren’t useful and often just distract from the primary aim of increasing progressive overload and doing sufficient volume. That said, if used intelligently, one of these tools can enhance your results and is part and parcel of the *Beyond Bigger Leaner Stronger* program: periodization.

The Power of Periodization

Periodization refers to how you organize your training over time, typically leading up to a competition or an attempt to set a new personal record. At bottom, periodization splits your training into different *periods* (hence the word) in which you focus on different aspects of your fitness.

For example, if you're preparing for a powerlifting meet, you want to focus on heavy, low-rep compound training in the month or two before the competition, so your muscles are primed for the demands of the meet. The month or two before that, however, you might do lighter, higher-rep training, with more accessory exercises to strengthen the same muscles you use to squat, bench press, and deadlift.

Hence, your training would be periodized, as you'd be working in different rep ranges on different exercises over two to four months as you focus on different goals.

While there are many theories on the best way to periodize your weightlifting, the most viable ones are all based on a few simple principles:

1. Your training involves progressive overload in the form of more weight, sets, or reps (with weightlifting), or faster pacing, longer distances, more complex movements, less rest, or some other method in other activities.
2. Your training shifts from less specific to more specific as you progress through the plan. With weightlifting, since competitions involve lifting very heavy weights for single reps, this principle generally means progressing from lighter weights and higher reps (less specific to the sport) to heavier weights and lower reps (more specific).
3. Your training includes planned breaks to allow for additional rest and recovery.

When used correctly, this approach allows you to thread the needle between stress and recuperation, by providing enough stimulus in the way of volume and weight to keep progressing, but not so much as to court injury, overtraining, or burnout.

This is why athletes of all stripes, including bodybuilders, gymnasts, runners, basketball, football, and soccer players—even surfers—use periodization in their training.¹⁰

How Does Periodization Work?

To understand how periodization works, it helps to grasp a bit of its history, which stretches back to research conducted in the early 1950s by a Hungarian endocrinologist named Hans Selye.¹¹

Selye developed a theory about how we respond to stress known as the *general adaptation syndrome*, which states that the body responds to stress—including exercise—in three phases:¹²

1. *Alarm*, where the body initially responds to the stressor (increased heart rate, stress hormones, etc.).
2. *Adaptation*, where the body recovers and gets stronger if given enough rest.
3. *Exhaustion*, where the body fails to recover and gets weaker because of too little rest.

As an athlete or someone who just hopes to get more jacked, you want to repeatedly alarm your body and then allow it to adapt, while staying away from the exhaustion phase.

Inspired by Selye’s findings, Russian physiologist Leo Matveyev began analyzing the training programs of successful and unsuccessful Soviet athletes from the 1952 and 1956 Summer Olympics.¹³ He found that either deliberately or accidentally, the most successful athletes in a variety of sports trained according to the principles of Selye’s theory.

They pushed themselves to become stronger, faster, and more skilled, often to the limits of their ability, and then reduced training intensity or volume to allow for more rest and recovery. Additionally, their training was planned in undulating cycles of first honing the fundamentals and then focusing on competition-specific workouts.

Matveyev organized and codified these practices, creating a system we now know as *linear periodization*. With weightlifters, this approach called for increasing intensity and decreasing volume as they approached their competitions, with planned breaks throughout to avoid overtraining.

Matveyev's system was adopted across the USSR and East Germany to great effect—these countries quickly became the dominant forces in Olympic lifting and many other sports, and they stayed on top for the next several decades.

Although later systems of periodization implement these principles in slightly different ways, virtually all have their origin in Matveyev's work. In most cases, training is broken up into three distinct phases or periods.

First, you have the longest phase, the *macrocycle*, which is a long-term view centered around preparing for a particular event or improving body composition or physical conditioning. For recreational weightlifters, this generally means setting a new personal record or gaining muscle or losing fat.

Macrocycles can last anywhere from a few months to several years, depending on the activity, individual, and goals. In bodybuilding, they typically last three to six months (around the length of a typical lean bulking or cutting cycle).

The second longest phase is the *mesocycle*, which focuses on developing a particular skill or quality (muscle growth, strength, etc.). A mesocycle usually lasts one to four months, so in bodybuilding, there are often a couple of mesocycles within each macrocycle.

The shortest phase is the *microcycle*, and it's typically defined as a several-day period of vigorous training followed by a short period of lighter training or rest. For example, you might train five days per week and take two days off, which would be a seven-day microcycle. A microcycle normally comprises a week's worth of training, but some people use shorter or longer microcycles.

You don't have to set up your training this way to periodize it, but that's how most people go about it, and how the *Beyond Bigger Leaner Stronger* workouts are programmed.

Furthermore, this book uses a more sophisticated method of periodization than *Bigger Leaner Stronger*, because when you're new to lifting, all you need is a simple, linear style of periodization that has you striving to add reps to sets and weight to the bar (or dumbbells) for a couple of months before deloading and repeating.

That’s also why in *Bigger Leaner Stronger*, you …

- work within specific rep ranges;
- take hard sets to within a rep or two of *technical failure* (the point where you can’t do another rep with proper form);
- push to gain reps over your previous week’s workouts;
- increase the weight when you reach the top of your rep range; and
- deload and change up your exercises every eight weeks.

This method of training is simple, fun, and powerfully effective, as evidenced by the hundreds of success stories from men of all ages and circumstances I’ve featured on my website (www.legionathletics.com) and social media accounts.

After your first year or two of that style of training, however, the game changes, and a more complex periodization plan makes more sense.

Good evidence of this is a study conducted by scientists at Appalachian State University that analyzed fifteen studies comparing periodized training programs to non-periodized programs.¹⁴ The researchers found that in thirteen out of the fifteen cases, people got stronger or improved their performance more with a periodized training plan versus a non-periodized one.

What’s more, the two studies that found periodization didn’t improve performance were shorter than the others and involved inexperienced trainees, who are the least likely to benefit from periodized training.

A meta-analysis conducted by scientists at the University of Alabama also supports these findings.¹⁵ The researchers reviewed eighteen studies from 1988 to 2015 on periodized and non-periodized training and strength gain.

After examining eighty-one datasets from these papers, the scientists concluded that “… the magnitude of improvement in 1RM [one-rep max] following periodized resistance training was greater than non-periodized resistance training.”

In other words, on average, people who followed a periodized training plan got stronger than those who didn’t.

Finally, another piece of evidence in favor of periodization comes from

an unpublished meta-analysis of just about every study on periodization and strength gain in the literature, conducted by Greg Nuckols.¹⁶

After parsing through twenty-seven studies on the matter, Nuckols concluded that on average, periodized training plans helped people gain strength 22 percent faster than non-periodized plans.

He also addressed several studies whose abstracts seemed to show periodization isn't helpful for gaining strength.

In almost every case, the scientists agreed periodized training leads to more strength gain and performance enhancement in most sports. What they questioned were the most effective ways to use and study periodization and measure its benefits. Their disagreements were regarding the technical details of periodization, not its fundamental merits.

Another claim you may have heard is that periodization is good for improving strength, but not muscle growth. This isn't entirely off base, but it isn't exactly correct, either.

It's true that most of the studies on periodization show it's more effective for gaining strength than muscle, but most of these studies also only lasted four to eight weeks. Because you can gain strength faster than muscle, this isn't enough time for the muscle-building benefits of periodization to manifest in a statistically significant way—especially considering how slowly intermediate and advanced weightlifters gain muscle.

For example, let's say periodization can increase muscle gain by up to 10 percent over non-periodized training and that subjects in an eight-week study could gain 2.5 pounds of muscle with periodized training and about 2.25 pounds without periodization. In most cases, that difference wouldn't be statistically significant, but over enough time, it would add up to a real advantage.

There's also a good reason to believe periodization would indeed increase muscle gain. In fact, we've already discussed it: As you become a more experienced weightlifter, the most reliable way to gain muscle is to get stronger. And as we know that periodization can boost strength gain, it's reasonable to assume it can boost muscle growth, too.

What method of periodization should you use though? Let's find out.

Types of Periodization

There are many ways to periodize your workouts, and many opinions on which is best.

Some people say classic *linear periodization* is all we need. Others say *undulating periodization* is better. And still others say methods like *block periodization*, *reverse linear periodization*, or *conjugate periodization* is the clear winner.

Who's right? Before we get into that, let's define the most popular periodization systems out there.

- *Linear periodization* involves increasing intensity (weight) and usually reducing volume (sets) over the course of a macrocycle.
- *Reverse linear periodization* is like linear periodization, except each macrocycle starts with heavier weights and less volume and progresses to lighter weights and more volume.
- *Undulating periodization* involves changing the weights, reps, and sets you use day to day or week to week, but not the exercises.
- *Block periodization* focuses on a handful of exercises for one mesocycle (generally a month or two).
- *Conjugate periodization* involves changing your exercises, weights, reps, and sets day to day or week to week. This is similar to undulating periodization, but more haphazard.

Each of these systems also involves increasing the weights lifted over time, usually according to a regular pattern, like every workout or week, for instance.

So which method is the best? None of them.

First, although they have different names and protocols, they're more alike than different in that each follows the same three principles you learned earlier:

1. Progressive overload in the form of more weight, sets, or reps.

2. Increasing specificity as you progress through the plan by moving from lighter weights and higher reps to heavier weights and lower reps or vice versa.
3. Planning breaks to allow for rest and recovery.

Second, each method has inherent advantages and disadvantages, so instead of wedging yourself to one, it's probably best to use a mix of different styles. And that's not just my opinion, either—there's strong evidence that mixing different periodization techniques is optimal for strength and muscle gain.

In a study conducted by scientists at Arizona State University, twenty 21-year-old weightlifters with an average of five years training experience were split into two groups:¹⁷

1. Group one followed a traditional linear periodization workout plan, which involved increasing intensity and decreasing volume throughout the study.
2. Group two followed a daily undulating periodization plan, with a mix of high-intensity, low-rep and low-intensity, high-rep training throughout the week.

The scientists ensured both groups did the same number of reps and sets and the same exercises with the same technique, and they tested everyone's bench press and leg press one-rep maxes before and after the twelve-week study.

Here's what the two training plans looked like:

	Weeks 1 to 4	Weeks 5 to 8	Weeks 9 to 12
Linear Periodization	3 sets of bench press and leg press at 8 RM (rep max), 3 days per week	3 sets of each at 6 RM, 3 days per week	3 sets of each at 4 RM, 3 days per week
	Day 1	Day 2	Day 3
Daily Undulating Periodization	3 sets of each at 8 RM	3 sets of each at 6 RM	3 sets of each at 4 RM

That is, everyone trained with weights between 80 and 90 percent of their one-rep max on each exercise, but group one spent a month at 80 percent, a month at 85 percent, and a month at 90 percent, whereas group two cycled through the different intensities each week.

The results:

	Group One	Group Two
Bench Press One-Rep Max	14 percent increase	29 percent increase
Leg Press One-Rep Max	26 percent increase	56 percent increase

Group two gained nearly twice as much strength as group one, despite doing the same amount of work and spending the same amount of time in the gym.

The takeaway from this study and several others like it is varying your rep ranges over a shorter period produces better results than over a longer period.¹⁸ It's not entirely clear why this is, but research suggests that training in different rep ranges stimulates different muscle-building mechanisms in the body. Therefore, by only training one rep range for long periods of time, you may fail to activate other “pathways” for muscle and strength gain.

So, should you reprogram your training to ensure you're rotating through rep ranges every week? Not necessarily.

Remember—the participants in the study we just reviewed only did two exercises: The bench press and leg press. Most workout routines will involve more exercises, and unless you're following a fairly high-frequency

powerlifting program, you won't be doing the same exercises more than once or twice per week.

For example, in the first week of the five-day routine of the *Beyond Bigger Leaner Stronger* program, you bench press on day one (usually Monday), military press on day three (usually Wednesday), and incline bench press on day five (usually Friday).

If you were to follow the same daily undulating periodization plan as in the above study, you'd work with 80 percent of your one-rep max on the bench press, 85 percent on the military press, and 90 percent on the incline bench press.

I don't like this setup for a couple of reasons:

1. You're changing your exercises as well as your intensity and rep ranges, which adds complexity to your programming and is unlikely to improve your results.

The point of varying your rep ranges is to stimulate your muscles in different ways. You can accomplish the same thing with different exercises, but doing both at the same time is overkill.

As a general rule, I want my programming to be as simple as possible (or no more complicated than it needs to be), and changing rep ranges, intensities, *and* exercises throughout the week adds an unnecessary layer of complexity.

2. Some exercises don't lend themselves to high- or low-rep training.

For example, most people find that anything above ten reps on the deadlift with heavy weight is grueling, if not dangerous, but not on the bench press. Similarly, a heavy set of five reps of dumbbell side raises is all kinds of awkward, whereas heavy biceps curling is perfectly viable.

Dumbbell exercises also rarely jibe with low rep ranges. For example, although you can do triples on the seated dumbbell overhead press with about 90 percent of your one-rep max, it's difficult to get the dumbbells into position and potentially dangerous as you approach technical failure.

The bottom line on daily undulating periodization is this: it can work well if you're doing the same exercises multiple times a week, like the people in the study mentioned were, but otherwise, there are better options.

What I prefer most is referred to as *weekly undulating periodization*. Instead of changing your rep ranges and exercises throughout the week, you change one or both from one week to the next. For instance, here's how you might use weekly undulating periodization with your bench press.

	Week 1	Week 2	Week 3	Week 4
Bench Press	8 reps at 75 percent of one-rep max (for all sets)	6 reps at 80 percent of one-rep max	4 reps at 85 percent of one-rep max	Deload

This approach has you increasing weight and reducing reps each week, which gives you the benefits of undulating periodization while also being easy to plan and track. It gives you a different challenge to look forward to each week, as well, which can help keep your training interesting.

Another key element to effective periodization is ensuring you're getting stronger. The weights you're handling should go up from one macrocycle to the next, even if it's just a slight increase.

My favorite way of accomplishing this is known as *wave loading*, which involves increasing the amount of weight you're lifting over the course of a mesocycle or macrocycle (or both), punctuated by periodic reductions in intensity or volume to enhance recovery.

This is how the *Beyond Bigger Leaner Stronger* program is designed, so in chapter nineteen, you'll see how wave loading works.

Many effective periodized training plans also involve swapping out exercises. For instance, substituting low-bar back squats for high-bar

back squats, or barbell bench press for dumbbell bench press, or standing military press for seated military press.

There are several reasons this is a good idea:

1. It reduces your risk of getting a *repetitive strain injury*, which results from repeating the same motion until your joints cry uncle. By rotating through similar exercises, however, you can reduce your chances of developing nagging pains.
2. It makes your workouts more interesting.

You know by now that as an intermediate or advanced weightlifter, progress is slow and hard-won. You might spend six months to add only 10 pounds to a one-rep max or a few reps with your previous year's training weights.

Periodically focusing on different exercises won't change this—your strength and physique will still only improve in small increments—but you'll find it's more enjoyable to work on, let's say, your back squat for three months and then your front squat for three months than to grind away at one or the other for six months straight.

3. It's probably better for strength and muscle gain.

Research shows that training a muscle group with multiple exercises may be more effective for gaining muscle and strength, likely because it better stimulates every portion of the muscle fibers.¹⁹

The evidence is light, but it's also supported by the fact that most successful bodybuilders and powerlifters have been doing this for decades now.

The key to effective exercise substitution is to approach it strategically, not willy-nilly, based on how you feel or what you see other people doing in the gym.

A good rule of thumb is switching only to exercises that directly train the same muscles and swapping every eight to twelve weeks. This way, you give yourself enough time to become proficient at those exercises and make progress before replacing them.

So, while there’s no single “best” kind of periodization for everyone, an ideal approach for most intermediate to advanced weightlifters is this:

1. Use weekly undulating periodization to increase the intensity and decrease the reps of your workouts throughout each mesocycle.
2. Increase your average intensity throughout your macrocycle by increasing your training weights each mesocycle.
3. Use lower reps for your compound exercises and higher reps for your isolation and accessory exercises.
4. Replace key exercises with similar variants every macrocycle.

And that’s what you’ll be doing in *Beyond Bigger Leaner Stronger*.



You now know what it takes to continue making progress as an intermediate or advanced weightlifter and what you have to look forward to with the *Beyond Bigger Leaner Stronger* program.

The path forward boils down to just working harder in the gym than when you were a beginner (and for a lot less muscle and strength gain), and that mostly means doing more hard sets per major muscle group per week and lifting heavier weights.

And that’s exactly what this program will entail.

Before we get you started on it, however, I want to ensure we’re crystal clear on our desired outcomes, because while you might say you just want

to get bigger and stronger, there's probably a bit more to it.

Specifically, if you're like most guys into weightlifting, you probably have a particular type of physique you want to build and proportions you want to achieve. What you may not realize, however, is those ideal proportions can be expressed mathematically in a series of formulas you can use to go from the look you have to the one you want.

It all awaits you in the next chapter!

Key Takeaways

- Not only does muscle and strength gain slow down as you progress toward your genetic limits, you have to work harder to keep the needle moving.
- There are many ways to make workouts harder, but for our purposes, the two we need to focus on are progressive overload and volume.
- Most research shows that the best way to quantify volume for the purposes of workout programming is hard sets, which are sets taken close to the point of muscular failure, regardless of the number of reps performed.
- Evidence indicates that optimal volume for muscle gain is in the range of 10 to 20 hard sets per major muscle group per week with moderately heavy weights (60 percent of one-rep max or higher) and adequate rest in between sets, with the lower number of sets being suitable for beginners and the higher end for advanced weightlifters.
- You’ll gain more strength by training with heavier weights and fewer reps, and higher-rep sets may activate certain muscle-building processes more than lower-rep sets and cause less fatigue and wear and tear on your joints.
- Without progressive overload, muscle growth will lag regardless of the amount of volume performed.
- Periodization splits your training into different periods (hence the word) in which you focus on different aspects of your fitness.
- While there are many theories on the best way to periodize your weightlifting, the most viable ones are all based on a few simple principles:

Your training involves progressive overload in the form of more weight, sets, or reps (with weightlifting), or faster pacing, longer distances, more complex movements, less rest, or some

other method in other activities.

Your training shifts from less specific to more specific as you progress through the plan.

Your training includes planned breaks to allow for additional rest and recovery.

- A macrocycle can last anywhere from a few months to several years, depending on the activity, individual, and goals (in bodybuilding, these usually last three to six months, or around the length of a typical lean bulking or cutting cycle).
- A mesocycle usually lasts one to four months, so in bodybuilding, there are often a couple of mesocycles within each macrocycle.
- A microcycle is typically a several-day period of vigorous training followed by a short period of lighter training or rest.
- Research shows that on average, people who follow a periodized training plan get stronger than those who don't.
- As you become a more experienced weightlifter, the most reliable way to gain muscle is to get stronger, and since periodization can boost strength gain, it's reasonable to assume it can boost muscle growth, too.
- With weekly undulating periodization, you change your reps or exercises from one week to the next, instead of changing one or both throughout the week as you do with daily undulating periodization.
- Another key element to effective periodization is ensuring you're getting stronger—the weights you're handling should go up from one macrocycle to the next, even if it's just a slight increase.
- My favorite way of accomplishing this is known as wave loading, which involves increasing the amount of weight you're lifting over the course of a mesocycle or macrocycle (or both), punctuated by periodic reductions in intensity or volume to enhance recovery.

- Many effective periodized training plans also involve swapping out exercises, which is a good idea for several reasons:

It reduces your risk of getting a repetitive strain injury.

It makes your workouts more interesting.

It's probably better for strength and muscle gain.

- A good rule of thumb is switching only to exercises that directly train the same muscles and swapping every eight to twelve weeks.
- While there's no single “best” kind of periodization for everyone, an ideal approach for most intermediate to advanced weightlifters is this:

Use weekly undulating periodization to increase the intensity and decrease the reps of your workouts throughout each mesocycle.

Increase your average intensity throughout your macrocycle by increasing your training weights each mesocycle.

Use lower reps for your compound exercises and higher reps for your isolation and accessory exercises.

Replace key exercises with similar variants every macrocycle.

14

How to Build the Mathematically Ideal Male Physique

You can't do it unless you can imagine it.

—GEORGE LUCAS

LET'S FACE IT: At least half of the reason most of us work out is to look great. You know, muscular, lean, proportional ... “aesthetic” as the “fitfluencers” like to say. To be specific:

- Broad shoulders with bulging biceps and triceps
- A big, flat chest on top of a V-tapered torso
- A narrow waist and ripped core
- Developed and defined legs

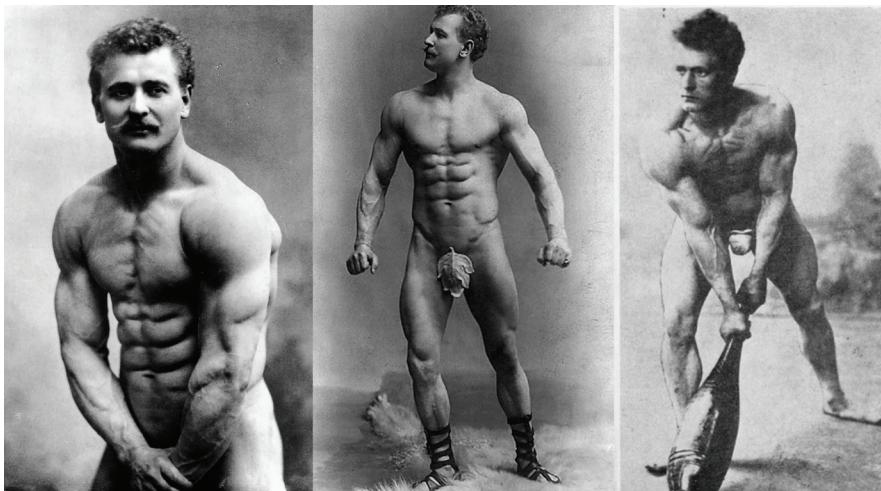
And there's nothing wrong with that. People are always searching for “hacks” and shortcuts to live a better life, and looking good is a big one. When you're physically attractive, you have more confidence and people like you more and treat you better, and this positively impacts every aspect of your life.

How do you build a beautiful body, though?

“Bodybuilding,” of course, but these days, that’s a loaded term, because top bodybuilders are all about packing on freakish amounts of mass in a quest to resemble a hybrid between a human and Belgian Blue cow.

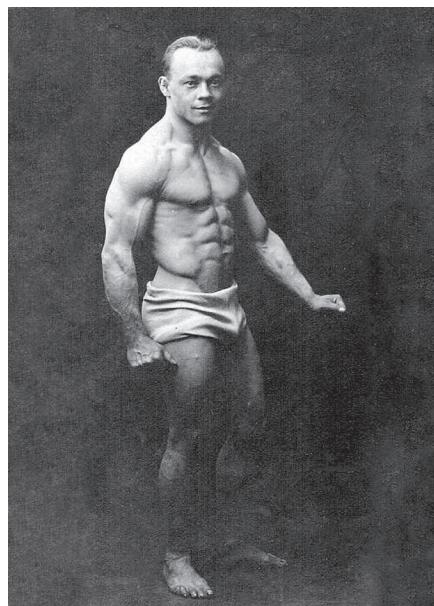
That wasn’t always the case. Once upon a time, before steroids, body-builders wanted to look like athletes in their prime or ancient warriors, not hulking mountains of anabolic-infused muscle.

For example, check out Eugen Sandow again from the late 1800s, before testosterone was synthesized:

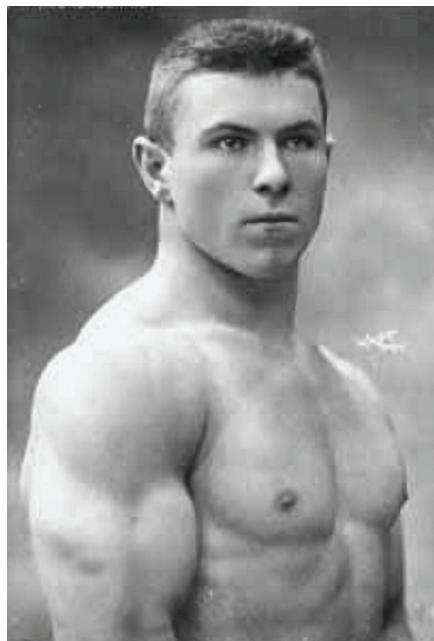


Small and fat by today’s bodybuilding standards, but his physique was outstanding in terms of overall muscularity, proportions, and body fat levels, and represents the pinnacle of what most natural bodybuilders can hope for. And that’s okay with most guys, who would pike a pod of baby seals to look like Eugen.

Another good example is the bodybuilding pioneer Otto Arco, who achieved this in the early 1900s:



And finally, here's George Hackenschmidt, a contemporary of Sandow and Arco (and the inventor of the barbell bench press):



These men couldn't just dial up their doses of #dedication to gain endless muscle, so instead, they pursued the ideal relationship between size and symmetry and became literal embodiments of the essence of male beauty—the right balance of overall muscular development, proportion, and definition.

What's more, nothing they did is out of reach for the average guy. While you and I can't forge our bodies into carbon copies of Eugen's, Otto's, or George's, we can get to their level through enough hard work and patience.

And that's what this chapter is all about—a deep dive into what creates that look and how to get there. It's far simpler than you might think, too. The key to it all is the application of a mathematical relationship known as the *Golden Ratio*.

The Golden Ratio and the Ideal Male Body

After spending most of his life constructing siege weapons, fortresses, and camps to support Julius Caesar's campaigns across Europe, the architect, author, and engineer Marcus Vitruvius published the book *De Architectura*.

It's since become one of the most important sources of modern knowledge of Roman building methods, planning, and design, including blueprints and materials for towns, temples, civil and domestic buildings, pavements, aqueducts, and more.

Vitruvius' publication also included ideal human proportions, which he believed should inform the structure of sacred temples. In fact, he claimed the human body corresponded to the hidden geometry of the universe itself and thus was a microcosmic representation of the physical realm.

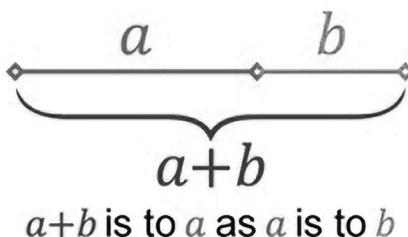
Over fifteen hundred years later, sometime around 1487, Leonardo da Vinci drew the human figure per Vitruvius' observations and named it the *Vitruvian Man*. Like Vitruvius, da Vinci was fascinated with human anatomy and believed that "man is a model of the world."

The Vitruvian Man would become an exemplar of perfect male proportions, and researchers would later discover that its balance and beauty

stemmed from its expression of a mathematical relationship known as the *Divine Proportion* or *Golden Ratio*.

Euclid first defined the Golden Ratio in his tour de force *Elements*, published in 300 BC. The concept is simple: two quantities are in the Golden Ratio if the ratio of the sum of the quantities to the larger quantity is equal to the ratio of the larger quantity to the smaller one.

Visually, it looks like this:



And numerically, it's expressed like this: 1:1.618 (1 to 1.618). In the case of the above image, b is 1 unit long, and a is 1.618 units long.

The fascinating thing about the Golden Ratio is it isn't an abstract thought experiment—it appears to be a natural law. Scientists have found it everywhere in nature, including the arrangement of branches along the stems of plants and in the veins of leaves, the skeletons of animals and disposition of their veins and nerves, and the composition of chemical compounds and the geometry of crystals. Researchers have recently reported the ratio present even at the subatomic level.¹

Nowhere is the Golden Ratio more exemplified than in the human body, however. The face, for instance, abounds with examples of the ratio. The head forms a golden rectangle with the eyes at its midpoint. The mouth and nose are each placed at golden distances between the eyes and the bottom of the chin. The spatial relationship of the teeth and construction of the ear each reveal the ratio, too.

We also find the Golden Ratio in the overall proportions of the human body, the different lengths of the finger bones, the makeup of the feet and toes, and even the structure of DNA.

Additionally, as da Vinci observed so long ago, the more the body embraces the Golden Ratio, the more beautiful it's perceived to be. And so for centuries, artists used it to design more appealing figures, while more recently, plastic surgeons and cosmetic dentists have used it to create more attractive faces and mouths.

The Golden Ratio is useful for our purposes, too. By adjusting the size of various body parts in relation to others to align with this ratio, we can improve our visual attractiveness. This isn't a new concept, either. Eugen Sandow was the first person to popularize this approach to bodybuilding, and he used it to build one of the most impressive physiques of his time.

Sandow was renowned for his resemblance to classical Greek and Roman sculptures, which were celebrated for their portrayal of the ideal male body—a small waist that expands upward into a broad, muscular chest and shoulders, balanced by a pair of powerful legs.

For instance, here's Sandow doing his best impression of Glykon's statue of Hercules, which depicted the apogee of physical perfection among the ancient Greeks:



This striking resemblance was no accident. Sandow measured the statues in museums he aspired to look like and found they had certain

proportions between body parts in common. From this observation, Sandow developed a blueprint for the perfect physique, which he called the “Grecian Ideal.”

Although he didn’t know it, his system revolved around the Golden Ratio, and it later served as a model for future bodybuilders who became known for their proportions, like Steve Reeves, Frank Zane, Serge Nubret, Bob Paris, and Arnold Schwarzenegger.

So what is this system? And how can it help us look like a Greek sculpture, too?

It starts with establishing reference points—parts of the body that’ll determine how large other parts should be to achieve a pleasing whole. Some of these points, such as the wrist and knee circumference, don’t change in size as you age or gain or lose body fat or muscle. Others, such as the waist, do.

For example, by measuring your wrist size, you can establish how large your upper arms should be, and from that measurement how big your calves should be. Your knee size determines how large your upper legs should be, and your waist size tells you how broad your chest and shoulders should be.

In other words, the recipe for the ideal male physique is a set of simple, formulaic relationships between body parts, starting with ...

1. Your flexed arms should be 150 percent larger than the circumference of your non-dominant wrist (wrist circumference x 2.5).

To measure the smallest part of your wrist, find the bony lump on the outside of it (the *styloid process*), open your hand, and wrap a tape measure around the space between that lump and your hand.

And to measure your flexed arms, wrap the tape around the largest part of them (the peak of your biceps and middle of your triceps).

Some people say you should only measure your non-dominant arm, but I like to measure both for more accuracy. This also helps you identify any muscle imbalances between your right and left arms.

Take these measurements under normal conditions, too (without a pump or carb loading to increase your muscle size). Otherwise, your numbers won't reflect your everyday level of muscularity, which is what matters most, not how you look for the thirty minutes following a workout or large meal.

Some people also say this wrist-to-arm ratio applies to an unflexed arm—not flexed—but I disagree. My wrist circumference is 7 inches, while my arms are 17 inches flexed and 14.5 inches unflexed, and they look balanced compared to my chest and shoulders. If I were to assume this ratio refers to an unflexed arm, however, my arms would have to swell to about 17 inches unflexed and 20+ inches flexed, which would look ridiculous and require copious steroid use.

So, even if you lack a prominent biceps peak, stick with flexed measurements.

2. Your flexed calves should match your flexed arms.

To measure a flexed calf, raise your heel, press your toes into the ground, and wrap a measuring tape around the largest part of the muscle.

3. Your shoulder circumference should measure 1.618 times larger than your waist (waist circumference x 1.618).

This produces the coveted V-taper that scientific research has proven to be attractive to women.²

To measure your waist circumference, circle your waist with a measuring tape at your natural waistline, which is above your belly button and below your rib cage. Don't suck in your stomach.

And to measure your shoulder circumference, stand upright with your arms at your sides (no flaring your elbows or spreading your lats), and have a friend wrap a tape around your shoulders and chest at its widest point. This is usually right around the top of your armpits.

4. Your chest circumference should be 550 percent larger than the circumference of your non-dominant wrist (wrist circumference x 6.5).

There are other ways to reach the ideal chest measurement, but this is the easiest and most reliable one.

To measure your chest circumference, stand upright with your arms at your sides (again, no flaring your elbows or spreading your lats), and have a friend place a measuring tape at the fullest part of one of your pecs and wrap it around the other, under your armpit, across your shoulder blades, under your other armpit, and back to the starting point.

Then, take in a normal breath (not overly expanding or deflating your chest) and note the result.

5. Your upper leg circumference should be 75 percent larger than your non-dominant knee circumference (knee circumference x 1.75).

A true Übermensch has an impressive set of wheels, and if you achieve this ratio, you'll check that box.

To measure your knee circumference, extend your leg and wrap a measuring tape around the middle of your kneecap.

To measure your upper leg circumference, flex your upper leg and wrap a tape around the widest part of your thigh and hamstring.

Comparing Your Body to the Grecian Ideal

Before you break out the tape measure, here's an important caveat: if your body fat level is too high, your measurements will be skewed, and this will affect some areas of your body more than others.

Thus, if you want to use everything you've just learned to see which parts of your body need improvement the most, you'll need to get lean first. Specifically, I recommend you get down to somewhere around 10 to 12 percent body fat, which is lean enough to showcase your physique without being impractical or unhealthy.

As for taking your measurements, it's straightforward. Take the following measures first thing in the morning, before eating or working out, and

note down your numbers:

- Your non-dominant wrist circumference
- Your arm circumference (both arms)
- Your shoulder circumference
- Your chest circumference
- Your waist circumference
- Your upper leg circumference (both legs)
- Your non-dominant knee circumference
- Your calf circumference (both calves)

Then, compare your figures to the formulas given earlier and note your strengths and weaknesses. For example, here are my current measurements:

- 7-inch non-dominant wrist
- 17-inch arms
- 51-inch shoulder circumference
- 43-inch chest circumference
- 32-inch waist
- 24-inch upper legs
- 14-inch non-dominant knee
- 15-inch calves

And here are my Grecian Ideal numbers:

- 17.5-inch arms
- 52-inch shoulder circumference
- 45.5-inch chest circumference
- 25-inch upper legs
- 17.5-inch calves

According to the above, I need to increase my shoulder, chest, upper

leg, and calf measurements, and I agree.

My shoulders can always use more goosing. (You can't have shoulders that are "too big" as a natural weightlifter). I'm happy with my chest development, but I could go in for more lats (which would expand my chest measurement). Per bodybuilding standards, my upper legs are a little behind, but I'm happy with where they are and, frankly, don't want bigger upper legs. (It's already hard enough to find jeans that fit!). And my calves need some size, but thanks to my genetics, that's a tough row to hoe.

This brings me to another important issue. While the Grecian Ideal gives helpful reference points, don't treat it like dogma. Sometimes, as in my case, the targets can be unrealistic (I'll never have 17-inch calves) or excessive (my chest already looks strangely big for my size, so there's no sense in trying to add more).

So, take your measurements, compare them against the model, see where you agree, and adjust your training accordingly (if necessary).

How Close Can You Get to the Grecian Ideal?

Applying the Golden Ratio to our body's proportions gives us objective standards to strive for, but as you know, our genetics will largely determine how close we can get to achieving those goals.

And while there's no way to calculate with absolute certainty how big each of our muscle groups can grow, there are formulas that give reasonable estimates.

For instance, in chapter eleven, you learned about the work of Dr. Casey Butt, which allows you to use your height, body fat percentage, and wrist and ankle measurements to gain insight into how big you'll be able to grow your chest, biceps, forearms, neck, thighs, and calves.

I also mentioned I created a nifty calculator that does all the math for you, which you can find at www.bbbsbook.com/muscle.

To be sure, this isn't a perfect tool, and it represents best-case outcomes, but if you reduce the results by about 5 percent, it'll give you a realistic

estimate of how close each of your muscles can get to achieving the Grecian Ideal proportions.

For example, I'm 6'1, about 10 percent body fat, and my wrist is 7 inches and my ankle is 8 inches. According to Dr. Butt's calculator, here are the maximum measurements I could hope to achieve under ideal circumstances:

- Chest: 47.3 inches
- Biceps: 17.6 inches
- Forearms: 14.1 inches
- Neck: 17.1 inches
- Thighs: 24.5 inches
- Calves: 16.4 inches

And when I scale these down by about 5 percent, that gives:

- Chest: 44.9 inches
- Biceps: 16.7 inches
- Forearms: 13.5 inches
- Neck: 16.2 inches
- Thighs: 23.3 inches
- Calves: 15.6 inches

Those numbers are spot-on and represent more or less what I've been able to achieve in about a decade of proper diet and training (and two decades in all).

Accordingly, it's fair to assume most of my body parts are about as big as they'll ever get. This agrees with similar calculations of my genetic potential for whole-body muscle gain that say there's little, if any, muscle left for me to gain, no matter what I do in the gym.

None of that means my training has to become a dreary, pointless grind, though. It just means my goals and expectations have needed to evolve with my body, and I've had to learn to appreciate what I've got and find a deeper

motivation to keep going than bigger biceps.

This can take many forms. It can be feeling more confident and competent inside and outside of the gym, being more productive at work, setting a good example for your kids, tackling new physical challenges like sports, hiking, biking, or running, avoiding disease and dysfunction, or slowing down the processes of aging and retaining a youthful vitality.

For me, it's several things. It's doing workouts I enjoy that'll allow me to stay in peak shape and health for the rest of my life, without pain or injury. It's keeping the spark alive in my marriage and helping my kids develop a positive relationship with food and exercise—lessons they can pass on to their kids, too. It's a matter of personal pride and responsibility, of physically expressing my values and worldview, of producing and presenting my best self.

I view all that as a privilege and prize, not a compromise or comedown. Something to celebrate, not tolerate.

So, here's to the next decade of maintenance and the decades to come. Do you want to join me?



It goes without saying that very few people will achieve “perfect” proportions, and this is nothing to fret about.

With the right plan and enough hard work, just about everyone can get a few key muscle groups like the chest, shoulders, and arms up to scratch, and this alone is enough to build a physique that's head and shoulders above the average weightlifter's.

If you can do that (and you can), plus ensure your legs aren't a glaring weakness and then maintain a relatively low body fat percentage, you'll look fantastic.

If you want to get there, however, you must do more than haphazardly lift weights, eat food, and take supplements. That'll get you size, but not proportion and symmetry, which is why you need to systematically develop

your muscles and your physique as a whole.

That's why the *Beyond Bigger Leaner Stronger* program pays special attention to how much work you put into the key upper and lower body muscle groups that most determine the overall look of your body.

The free bonus material that comes with this book (www.bbbsbook.com/bonus) also includes “remedial” protocols for fixing and preventing muscle imbalances that can not only spoil your looks, but hinder your progress in the gym as well.

Now that you have a better understanding of how big and strong you can get, how to gain that muscle and strength most effectively, and where additional size would most improve what you see in the mirror, let's put everything you've learned so far into action and start you on the program!

Key Takeaways

- The more the body embraces the Golden Ratio, the more beautiful it's perceived to be.
- The recipe for the ideal male physique looks like this:

Your flexed arms should be 150 percent larger than the circumference of your non-dominant wrist (wrist circumference x 2.5).

Your flexed calves should match your flexed arms.

Your shoulder circumference should measure 1.618 times larger than your waist (waist circumference x 1.618).

Your chest circumference should be 550 percent larger than the circumference of your non-dominant wrist (wrist circumference x 6.5).

Your upper leg circumference should be 75 percent larger than your non-dominant knee circumference (knee circumference x 1.75).

- Applying the Golden Ratio to our body's proportions gives us objective standards to strive for, but as you know, our genetics will largely determine how close we can get to achieving those goals.
- Go to www.bblsbook.com/muscle to find a calculator for estimating how close each of your muscles can get to achieving the Grecian Ideal proportions.

Part Five

The Beyond Bigger Leaner Stronger Program

15

A Body Beyond Amazing

That which we obtain too easily, we esteem too lightly. It is dearness only which gives everything its value. Heaven knows how to put a proper price on its goods.

—THOMAS PAINÉ

ARE YOU READY FOR EXACT, step-by-step plans for eating, exercising, and supplementing that'll add lean muscle to your physique without handfuls of unwanted fat?

Are you ready to make more progress in the next six months than you did in the last several years?

And are you ready to enjoy the gym again, like when you were a newbie?

If so, I'm excited to welcome you to the *Beyond Bigger Leaner Stronger* program!

I'm so glad you're here, because by the end of this section of the book, you'll be ready to put rubber on the road with a complete map to building your fittest and strongest body ever.

You'll get dietary, exercise, recovery, and supplementation instructions, as well as foolproof, premade templates you can use to get started right away.

In just a few months, when you see your strength and size moving up again, you'll realize the search is finally over. That you've finally found the missing pieces to the puzzle that'll allow you to complete your fitness masterpiece.

Imagine how good you'll feel when you can squat, bench, and deadlift like a powerlifter. Imagine how good you'll feel when the weak points in your physique finally catch up. And imagine how good you'll feel knowing you're doing it in a safe, sustainable way you'll be able to enjoy for the rest of your life.

That doesn't mean the process will be easy, however.

These days, too many people wear themselves to a frazzle chasing easy. They don't want processes and paradigms; they want shortcuts and stratagems. They don't want to plant in the spring and tend in the summer to earn a harvest in the fall; they want to shirk and slack and reap a bounty they didn't sow. This is particularly bad with today's youth: "Generation Why," as in "why's it gotta be so hard?"

Remember this: Nothing easy is worth doing or having. Easy is boring and bland. It's the wormy fruit that fell off the tree days ago. Nobody respects easy.

And so fitness isn't for the weak-minded and weak-willed. You can't slide by on BS. Your body doesn't care about your excuses or justifications. The only way to undo skipped workouts is to get in the gym and grind. The only way to overcome screwy dieting is to stop screwing up.

Fortunately, staying the course can be far less difficult than many people think. In fact, many of the troubles even dedicated fitness folk have with sticking to their diet and training plans don't stem from a lack of discipline or determination, but instead from critical flaws in those plans that make them far harder to follow and far less effective than they should be.

If you're reading this book, you almost certainly know what I'm talking about.

You can breathe a sigh of relief, though, because *Beyond Bigger Leaner Stronger* isn't another one of those clunkers. As you'll see in this section of the book, it's straightforward and streamlined, and soon, after you've given

the program a test drive, you'll also see superb results.

Let's hop to it, shall we?

16

The *Beyond Bigger Leaner Stronger* Diet Plans

Do what you can, with what you have, where you are.

—THEODORE ROOSEVELT

IF YOU WANT THE BEST RESULTS from the *Beyond Bigger Leaner Stronger* program, you can't just do the workouts—you also need to pay close attention to your diet.

Fortunately, that doesn't mean you have to follow a restrictive or exotic eating regimen you don't enjoy. You just need to double down on the fundamentals of good dieting, as we discussed in chapter eight.

That's why I shared with you four dietary strategies to improve your ability to manage your energy, macronutrient, and micronutrient balances better and to maximize your compliance and consistency:

1. Meal planning
2. Mini-cuts
3. Intermittent fasting
4. Calorie cycling

In this chapter, we'll learn how to use these techniques most beneficially.

Meal Planning

If you're reading this book, you probably have at least some experience with meal planning and know how to make plans that work. You've probably also encountered the main downside of meal planning as well—the monotony of eating the same basic foods every day to avoid the hassle of adding variety to your menu.

Meal prepping can help with this by allowing you to expand your options while also saving money and time. In fact, for many of us who live busy lives, strict adherence to a meal plan isn't possible without an efficient and affordable meal prep routine.

So let's talk about effective meal prepping, starting with how to make the whole process easier to implement.

1. Prep as much food as you can.

It's usually best to prep an entire week's worth of food in one go. Many people do it every Saturday or Sunday, which involves a lot of cutting, chopping, cooking, and packing, but it's also the most time efficient way to get the job done.

If that isn't workable for you, though, or sounds daunting, you can do well with two shorter prep sessions per week. For example, Sundays and Wednesdays work nicely. This approach also allows you to prep different foods in the second session than the first, if you prefer.

Or, you can prep the foods that reheat well in advance and those that don't as needed. For example, you could prepare a large amount of soup, steamed veggies, and grilled chicken ahead of time for your dinners (as they taste great reheated), and then oatmeal and eggs each morning (which taste much better fresh).

2. Even a little prepping can make a big difference.

If you don't have the time or inclination for an all-inclusive meal prep, that doesn't mean you can't benefit from any. If all you did was prep the meals that are hardest to control in terms of calories (lunch and dinner, usually), for instance, it can help with compliance.

3. Don't use your plan to experiment with new recipes.

When creating your meal plan, stick with recipes you know and make often. This prevents wasted time and money on ones that don't pan out.

If you want to expand your culinary repertoire, do it outside your planning and prepping. For example, you can leave a couple of dinner slots open each week to try new recipes to consider including in your plan.

4. Choose simple “prep-friendly” recipes.

Don't opt for recipes that take considerable time, skill, and money to make; that don't store and reheat well; or that are hard to quantify nutritionally.

Also, remember that in cooking, more—ingredients, steps, or time—isn't always better. A simple recipe made well beats a fancy recipe executed poorly every time (and if you want some of my favorite simple and fitness-friendly recipes, check out my cookbook *The Shredded Chef*).

This is why the best meal prep recipes are easy and fast to make, require few ingredients, and allow you to prepare large amounts of food with minimal equipment and work. One-pot recipes are particularly good for this.

5. Choose foods that reheat well.

When you reheat food regularly, you quickly learn what does and

doesn't do well the second time around. Some of my favorite "safe choices" are soups, casseroles, chicken dishes, rice and other grains, veggie medleys, and ground beef.

Foods I avoid when prepping are those that don't microwave well, like eggs, baked goods, and steak.

How to Meal Prep in 4 Simple Steps

As for the procedure itself, meal prepping has four steps:

1. Choosing your prep days
2. Grocery shopping
3. Cutting, cooking, and storing
4. Reheating

Let's discuss each.

1. Choosing your prep days

How long you'll need to prep will depend on your meal plan, but it shouldn't take more than a few hours per week to cut, cook, and store everything.

If you're going to prep one day per week, I recommend Sundays, because it helps ensure your food isn't funky by Thursday or Friday. If you're going to split it into two sessions, I prefer Sundays and Wednesdays, but the key is choosing days that are roughly equidistant.

2. Grocery shopping

To shop efficiently, create an organized grocery list by determining what you need to buy for the week and arranging the list by store

departments in the order you'll visit them. This will streamline your shopping by allowing you to take just one trip down each aisle.

Here are the categories I separate my shopping list into:

- Fruits
- Vegetables
- Meat, poultry, and fish
- Milk, yogurt, cheese, and eggs
- Bread, cereal, rice, pasta, dry beans, and nuts
- Fats, oils, and sweets
- Staples, condiments and miscellaneous foods (spices, baking powder, etc.)
- Health and beauty products
- Household items (laundry soap, light bulbs, etc.)

Another option—the most convenient of all—if you don't mind the added expense, is a delivery service like Instacart or Amazon Prime Now.

3. Cutting, cooking, and storing

The goal here is to prepare and organize everything so it's easy and convenient to transport and eat. Here are some tips that'll help you accomplish this:

- **Begin your prep as you put your groceries away.** This is an easy way to save time.
- **Use a food scale to ensure your calories and macros are accurate.** Weigh *before* cooking to determine calories and macros and after to determine portions, because weights can change with cooking. For example, if you need to cook a pound (454 grams) of chicken for four meals, first weigh it raw, cook it, and then divide it into four equal portions. The chicken won't add to 454 grams afterward because of moisture lost during cooking.

- **Do all your washing, cutting, and chopping in one go, then move on to cooking and storing.** This is faster than repeating the process meal by meal.
- **You don't have to cook everything if you prefer to eat certain foods fresh.** For instance, some people like to trim their meats of fat and chop their veggies, and then store them in bags raw (freezer or fridge, depending on when they'll be cooked) for quick stir-fry dinners.
- **Roast different vegetables with the same cooking time together.** Some vegetables cook quickly, like asparagus, mushrooms, and cherry tomatoes, while others take longer, like carrots, cauliflower, and potatoes. You can save time by pairing your veggies up based on cooking times.
- **Don't underestimate the utility of protein-rich snacks.** High-protein snacks like Icelandic skyr or Greek yogurt, beef (or another lean meat) jerky, and protein bars are perfect for on-the-go eating and beating the midday munchies.
- **Cook your meat and fish three different ways in the same pan.** Just because you'll eat chicken, beef, or fish every day doesn't mean it has to be the same. Use aluminum foil to create dividers in your pan and you can make three flavors at once.
- **Make hardboiled eggs in the oven.** Hardboiled eggs are a perfect meal prep food—they're easy to make, tasty and nutritious, and can be added to different meals like salads, sandwiches, and pasta, or eaten plain. The problem, though, is you can only fit a handful of eggs in a pot, and making several batches can take quite a bit of time. Avoid this by baking the eggs in a muffin tin. To do this, heat your oven to 350 degrees F, load the tin up with eggs (shells intact), bake for 30 minutes, and then place the eggs in a large bowl of ice water for about 10 minutes.
- **Get compartmented containers for separating your meals.** These are perfect for keeping your protein, starches, veggies, etc. separate for better reheating, and they're easy to clean and store.

- **Prevent “mindless eating” with “micro-portioning.”** When you have a big bag of goodies in your lap, it’s hard to stop with a handful. Therefore, if your meal plan contains small edibles like pretzels, nuts, or fruit, store them in smaller containers, jars, or little bags.
- **Use Mason jars to store your salads.** If you’ve tried to mix a salad and eat it later, you know the problem: it turns into a soggy mush. Mason jars are a perfect one-container solution. Put the dressing at the bottom of the jar along with other wet ingredients like fruit, then layer in the sturdier ingredients, and save the greens for the top, and you have a fresh salad on demand. Pack a paper towel at the very top if you’re storing the salad for several days.

4. Reheating

Some meals are far better fresh, but when reheated properly, many won’t lose much of their pizzazz in round two.

Here are three easy tips for better reheating:

- **Drizzle water on top.** Flick some water on the food to prevent the moisture from being sucked out of it during heating (this is often why microwaved food is dry and rubbery).
- **Don’t microwave everything.** Microwaving is better suited for some foods than others, depending on moisture levels. Foods that are consistently moist throughout, like rice, vegetables, and soups, microwave well. Foods that aren’t, like those that are crisp on the outside but moist on the inside (like grilled steak), don’t. When the microwave isn’t ideal, opt for an oven or toaster oven instead. Broiling can be particularly effective (just keep a close eye on it to prevent burning).
- **Don’t “set it and forget it.”** If you pop a meal in the microwave for a few minutes straight, it’ll cook unevenly. Instead, after the first minute or so, remove the dish, give it a stir, and resume cooking.

That's it for effective meal prepping, which will make your meal plans easier to follow and more enjoyable and enhance your long-term results on the program.

Mini-Cuts

A reasonable strategy for mini-cutting is four weeks of dieting after every four months of lean bulking. Basically, once you've mostly lost your abs, you start your cut.

If you gain fat fairly easily, however, you may need to do a mini-cut after every three months of lean bulking, and if you don't, you may be able to go as long as five or six months of lean bulking before having to cut. Likewise, if you lose fat slowly, you may need to cut for up to six weeks before starting your next lean bulk, and if you lose fat quickly, you may only need three weeks.

If, however, you're going into a deficit after just two months or less of lean bulking, you're shooting yourself in the foot, because that's not enough time to make an appreciable amount of progress. And if your cuts are regularly stretching beyond six weeks, you're not following a mini-cut strategy but are just lean bulking and cutting.

You also need to ensure you don't get impatient and try to lose too much fat too quickly when executing a mini-cut. For instance, sometimes people try to cram four weeks of fat loss into two weeks, because they want to spend as much time in a surplus as possible or have too much fat to lose for four weeks of dieting. Don't do that.

The key is to be aggressive but not reckless in your mini-cuts, so you lose as much fat and as little muscle as possible.

Intermittent Fasting

As you know, intermittent fasting isn't going to magically help you gain muscle, lose fat, or get healthy faster than traditional dieting. The

primary reason to do it is to increase dietary compliance.

In other words, if intermittent fasting helps you regulate your calorie and macronutrient intake better, and you enjoy it, it's worthwhile. If it doesn't or you don't, it's not.

And so, if you've never tried intermittent fasting and suspect you may like it, or if you already know it works well for you, this section will show you how to do it correctly.

There are four steps:

1. Choose a protocol.
2. Calculate your calories and macros.
3. Create a meal plan.
4. (Optional) Train while fasted.

Let's look at each.

1. Choose a protocol.

Intermittent fasting has taken off in recent years, and there are several popular options to pick from, including Leangains, Eat Stop Eat, The Warrior Diet, and alternate-day fasting. There are many others, but they're often just derivatives of these.

Instead of reviewing each of the prevailing programs, I'll just get to the point: the Leangains method is the droid you're looking for.

It was designed by author and powerlifter Martin Berkhan for weightlifters and people who care about their body composition, and is why intermittent fasting has gained so much traction in the bodybuilding scene. It's also my favorite out of the bunch because it's simple, effective, and doesn't involve long fasts.

It's also one of the few forms of intermittent fasting that has been proven to work in scientific research, as you read about in chapter eight.¹

At bottom, Leangains involves fasting for 16 hours and eating during 8-hour "feeding windows."

Your fast begins after you've eaten your last meal of the day and ends with your first meal on the next. So, for example, if you eat your last meal at 9 p.m. at night, you won't eat your next meal until 1 p.m. the following day.

As you can see, Leangains more or less boils down to "skip breakfast," which many people like to do, anyway.

While fasting, you're not allowed to have any calories, but black coffee, zero-calorie sweeteners, diet soda, and sugar-free gum are permitted. It's also recommended that you maintain a consistent fasting and feeding schedule, because it'll help minimize hunger while you fast.²

2. Calculate your calories and macronutrients.

You may have heard you don't have to watch your calories or macros with intermittent fasting, but this isn't true.³ No matter what type of diet you follow, regulating your calories and macros is crucial.

As far as calculating your calories and macros goes, nothing in the principles or methods taught in *Bigger Leaner Stronger* changes when you're following an intermittent fasting protocol. You still work out your basal metabolic rate, total daily energy expenditure, and daily calorie and macro targets. The only difference is you'll eat on a new schedule.

3. Create a meal plan.

If controlling your calories and macros is still important when doing intermittent fasting, then following a meal plan still is as well.

In practice, the only significant difference between intermittent fasting and traditional meal plans is larger meals, because you're compressing your calories into fewer feedings.

If you'd like to see several examples of well-designed intermittent fasting meal plans for building muscle and losing fat, download the free bonus material that comes with this book (www.bblsbook.com/bonus).

4. (Optional) Train while fasted.

You don't have to do this (you can work out after breaking your fast), but you may find it more convenient. For instance, it's common for those doing intermittent fasting to train in the morning and break their fasts afterward with a big post-workout meal.

Many people also like to combine their fasted training with a few supplements discussed in *Bigger Leaner Stronger* (caffeine, synephrine, and yohimbine) to burn fat faster, and especially "stubborn fat" that clings to your abs and lower back.

That's all there is to getting the most out of intermittent fasting. Simple, right?

Calorie Cycling

There are many ways to configure a calorie-cycling meal plan, but depending on your goals, I recommend you rotate between three levels of calorie intake:

A high-calorie day of about 10 percent above maintenance calories

A low-calorie day of about 20 percent below maintenance calories

A medium-calorie day of about maintenance calories

There are extreme versions of calorie cycling out there that involve alternating between very-low and very-high calorie days, but I don't recommend these.

While such protocols can work, they're far more trouble than they're worth and usually produce worse results than the more reasonable, moderate method I'll teach you here. And if you'd like to see several examples of well-designed calorie-cycling meal plans for losing fat and building muscle, download the free bonus material that comes with this book (www.bbbs-book.com/bonus).

How to Use Calorie Cycling for Losing Weight

In chapter eight, you learned that if you're over 15 percent body fat, calorie cycling doesn't have much to offer over regular dieting (eating the same calories and macros every day).

If you're below 15 percent, however, you can benefit from cycling your calories when cutting by creating a meal plan that provides five low-calorie days and two medium-calorie days. You can arrange these days however you like, but I recommend you place your medium-calorie days on or before the days of your hardest workouts.

If you train first thing in the morning, as I do, or in the afternoon, schedule medium-calorie days so they precede training days. If you train in the evenings, schedule them on training days. This way, you give your body time to maximize muscle glycogen levels, which will boost your performance.

For example, here's how you might do it on the 5-day program:

Day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Workout	Upper Body A	Pull & Calves	Upper Body B	Legs & Calves	Upper Body C	Rest	Rest
Calories	Medium-calorie day	Low-calorie day	Medium-calorie day	Low-calorie day	Low-calorie day	Low-calorie day	Low-calorie day

And if you trained in the evenings, it could look like this:

Day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Workout	Upper Body A	Pull & Calves	Upper Body B	Legs & Calves	Upper Body C	Rest	Rest
Calories	Low-calorie day	Medium-calorie day	Low-calorie day	Medium-calorie day	Low-calorie day	Low-calorie day	Low-calorie day

As for working out your calories and macros, you can stick with the methods taught in *Bigger Leaner Stronger*.

So, using myself as an example, here's how a low-calorie day would look:

- 195 grams of protein (780 calories)
- 55 grams of fat (495 calories)
- 280 grams of carbs (1,120 calories)
- Totaling around 2,400 calories
- And a medium-calorie day:
- 195 grams of protein (780 calories)
- 65 grams of fat (585 calories)
- 410 grams of carbs (1,640 calories)
- Totaling around 3,000 calories

Once you have your numbers, all you have to do next is turn them into a meal plan that you enjoy and stick to it.

How to Use Calorie Cycling for Building Muscle

When you're calorie cycling on a lean bulk, I recommend:

- Four or five training days per week: Five high-calorie and two low-calorie days per week
- Three training days per week: Four high-calorie and three low-calorie days per week

As the size of your surplus on high-calorie days will be smaller than the size of your deficit on low-calorie days, your total weekly calorie intake will more or less even out to maintenance.

If, however, you find you're losing weight, swap a low-calorie day for a high-calorie one. Similarly, if you're gaining weight too quickly (more than 0.5 to 1 percent of body weight per month), turn a high-calorie day into a low-calorie one.

Where you place your high-calorie days doesn't matter much, and you can move them around week to week, but I like for them to fall on training days. I train Monday through Friday and take the weekends off, so here's how I'd do it:

- Monday: High-calorie day
- Tuesday: High-calorie day
- Wednesday: High-calorie day
- Thursday: High-calorie day
- Friday: High-calorie day
- Saturday: Low-calorie day
- Sunday: Low-calorie day

And for me, a high-calorie day would look like this:

- 195 grams of protein (780 calories)
- 75 grams of fat (675 calories)
- 460 grams of carbs (1,840 calories)
- Totaling around 3,300 calories

And a low-calorie day:

- 195 grams of protein (780 calories)
- 55 grams of fat (495 calories)
- 280 grams of carbs (1,120 calories)
- Totaling around 2,400 calories



You now have all the dietary knowledge and tools you need to get the most from the *Beyond Bigger Leaner Stronger* program and build your best body ever.

In fact, you've probably just learned the last major eating strategies and techniques you'll ever need, regardless of where you might want to go in your fitness journey.

Now it's time to talk training and see how to turn the maxims of muscle building you've learned in this book into practical programming you can take into the gym.

Key Takeaways

- It's usually best to prep an entire week's worth of food in one go, such as every Saturday or Sunday.
- If that isn't workable for you, though, or sounds daunting, you can do well with two shorter prep sessions per week, such as Sundays and Wednesdays.
- If you don't have the time or inclination for an all-inclusive meal prep, you can still prep the meals that are hardest to control in terms of calories (lunch and dinner, usually), which can help with compliance.
- When creating your meal plan, stick with recipes you know and make often.
- The best meal prep recipes are easy and fast to make, require few ingredients, and allow you to prepare large amounts of food with minimal equipment and work.
- Some of my favorite foods that reheat well are soups, casseroles, chicken dishes, rice and other grains, veggie medleys, and ground beef, and foods I avoid when prepping are those that don't microwave well, like eggs, baked goods, and steak.
- Use a food scale to ensure your calories and macros are accurate.
- Weigh before cooking to determine calories and macros and after to determine portions, because weights can change with cooking.
- A reasonable strategy for mini-cutting is four weeks of dieting after every four months of lean bulking.
- If intermittent fasting helps you regulate your calorie and macronutrient intake better, and you enjoy it, it's worthwhile. If it doesn't or you don't, it's not.
- If you're below 15 percent body fat, you can benefit from cycling your calories when cutting by creating a meal plan that provides five low-calorie days and two medium-calorie days.
- When you're calorie cycling on a lean bulk, I recommend:

Four or five training days per week: Five high-calorie and two low-calorie days per week

Three training days per week: Four high-calorie and three low-calorie days per week

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The Beyond Bigger Leaner Stronger Exercises

If you don't get what you want, it's a sign either that you did not seriously want it, or that you tried to bargain over the price.

—RUDYARD KIPLING

IN **Bigger Leaner Stronger**, I explained that of the hundreds of resistance training exercises you can do, a minority are far superior to the rest.

If you've followed that program or something like it, you know how effective these exercises are. With them, you can gain astounding amounts of muscle and strength and likely make it most or even all the way to your genetic finish line.

If you're like most intermediate or advanced weightlifters, though, you can also benefit from several other exercises and exercise variations for the reasons given in chapter thirteen (reducing the risk of injury, making workouts more interesting, and enhancing muscle and strength gain).

And so, in the *Beyond Bigger Leaner Stronger* program, you'll continue doing many of the exercises in *Bigger Leaner Stronger*, along with some new ones as well. They are ...

- Reverse-Grip Bench Press
- Push Press
- Machine Rear Delt Fly
- Trap-Bar Deadlift
- Sumo Deadlift
- Barbell Good Morning
- EZ-Bar Preacher Curl

Just a few, but enough to introduce variety into your training that challenges your body in new and productive ways.

We'll also categorize exercises as either "primary" or "accessory" exercises. Primary exercises are most responsible for your progress in the gym, because they train (and develop) the most muscle and produce the most whole-body strength.

Here are the primary exercises in *Beyond Bigger Leaner Stronger*:

- Barbell Bench Press
- Close-Grip Bench Press
- Incline Barbell Bench Press
- Reverse-Grip Bench Press
- Dumbbell Bench Press
- Standing Military Press
- Seated Military Press
- Push Press
- Barbell Deadlift
- Trap-Bar Deadlift
- Sumo Deadlift
- Romanian Deadlift
- Pull-up
- Chin-up
- Barbell Back Squat
- Barbell Front Squat
- Barbell Good Morning

Accessory exercises are secondary to primary exercises, and are used to further train muscle groups, bring up stubborn muscles, and help prevent and correct muscle imbalances or weaknesses that may limit your progress on your primary exercises.

Here are the accessory exercises in the program:

- Dip
- Triceps Pressdown
- EZ-Bar Skullcrusher
- Triceps Overhead Press
- Dumbbell Side Raise
- Dumbbell Rear Delt Fly
- Machine Rear Delt Fly
- Barbell Row
- One-Arm Dumbbell Row
- Seated Cable Row
- T-Bar Row
- Alternating Dumbbell Curl
- Hammer Curl
- Cable Curl
- EZ-Bar Preacher Curl
- Walking Dumbbell Lunge
- Bulgarian Split Squat
- Leg Curl (Lying or Seated)
- Leg Press Calf Raise
- Seated Calf Raise
- Standing Calf Raise

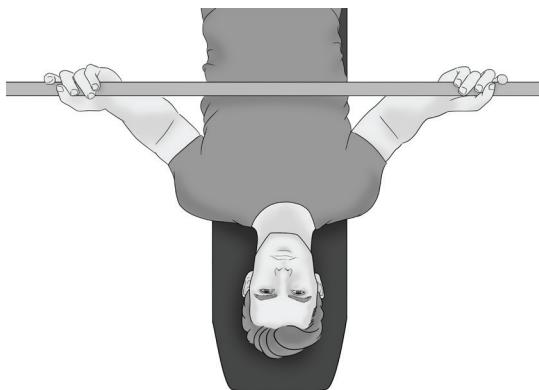
Let's now review the new exercises you'll be doing on the program, starting with the primary exercises.

If you're unfamiliar with any of the exercises we aren't discussing here, you can find explanations in the free bonus material that comes with this book (www.bblsbook.com/bonus) and *Bigger Leaner Stronger* (www.bbls.com).

biggerleanerstronger.com/bonus).

Reverse-Grip Bench Press

The reverse-grip bench press is an often-overlooked variation of the bench press that involves flipping your grip around on the bar (so your palms face you).



I've included it in *Beyond Bigger Leaner Stronger*, because research shows that it's not only easier on your shoulders than the regular bench press for most people, but also effective for targeting the upper portion of the chest muscle.¹

The downside of the reverse-grip bench press, however, is some people find it aggravates their shoulders and elbows more than the incline bench press, which also trains the pecs but emphasizes the "upper chest." You'll have to see how it feels for you.

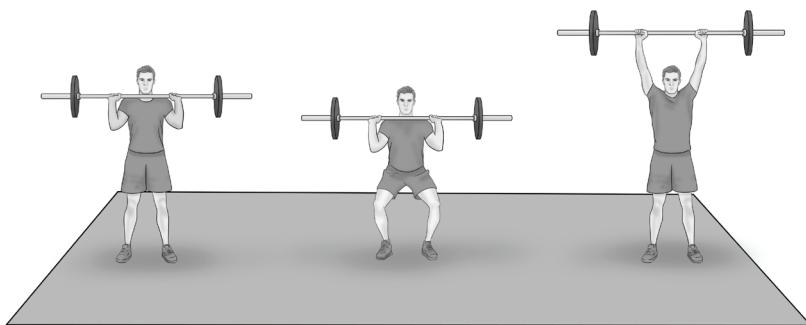
As for how to do the reverse-grip bench press, you set up just as you normally would for the ordinary bench press. Instead of gripping the bar overhand, though, you flip your grip around so your palms face you and then press. That's all there is to it.

I have two recommendations to make the exercise more comfortable, however:

1. Grip the bar a little wider than you would on the regular bench press. This helps prevent elbow discomfort.
2. Position your hands so the bar is more or less parallel with the “life-line” on your palms, and the knuckles of your index fingers point toward the plates. This might seem like an odd position, but it’s more comfortable than placing the bar horizontally across the palms.

Push Press

The push press is basically a standing military press that begins with a quarter squat to help move the bar upward. As you rise from the squat, you press the bar above you until your arms are locked overhead.



“So it’s just a sloppy standing military press?” you might be wondering. Not quite.

The point of the push press is to generate just enough momentum to help get the bar off the shoulders and through the first few inches of movement, where it’s most likely to get stuck. From there, your shoulders and arms do all the work.

This allows you to use heavier weights than with the standing military press without reducing range of motion much.

A downside to the push press, though, is it’s hard to judge your progress

if you don't duplicate the boost rep to rep, set to set, and workout to workout. If you often squat differently, your weights might go up, but your shoulders and arms might do less work.

The push press also makes it easier to "cheat" by giving the bar more of a boost than necessary, reducing the effectiveness of the exercise. That said, with practice you'll standardize the force generated by your squats, and you'll realize when you're helping a little more than you should.

As for how to do the push press, set up the same way you do for the standing military press, and instead of immediately pushing the bar straight up, drop your butt three to six inches, and then shoot your hips upward as explosively as you can.

Once you reach the top of the hip thrust, keep your heels on the ground and push the bar up with your arms. Keep pushing until your elbows are locked overhead.

Then, lower the bar back to the top of your shoulders as you would in a military press (some people like to bend their knees again to "catch" the bar as it descends), take a breath, and you're ready for the next rep.

Machine Rear Delt Fly

The machine rear delt fly is an exercise that mimics the same motion as the dumbbell rear delt fly, but it's performed sitting upright on a machine.

To do it, sit down on the machine with your chest facing the pad, and if possible, adjust the length of the machine's arms so your elbows are slightly bent with your chest on the pad. Then, adjust the seat height so your shoulders are at about the same height as your hands.

On most machines, you can grip the handles with your palms facing each other or facing down. I prefer facing each other, but choose which you like the most.

Once you're in position, perform your first rep by moving your hands away from each other for as far as the machine will allow. Keep your chest high and on the pad throughout the movement and focus on retracting

your shoulder blades. Then, return your hands to their starting place for your next rep.

Trap-Bar Deadlift

The trap-bar—or hex-bar—deadlift is one of the few back exercises that rivals the conventional deadlift. In fact, although they look different at first glance, they’re far more similar than most people realize.²

Both exercises do a phenomenal job of training your lower-back, glutes, and hamstrings, although the conventional deadlift puts more stress on the lower-back and hamstrings, and the trap-bar deadlift puts more stress on the quads. You can think of the trap-bar deadlift as a “squattier” version of the conventional deadlift.

Most people find it more comfortable, too, because it puts your back in a more upright position and your knees and ankles flex a little more, but otherwise, it’s biomechanically identical to the conventional deadlift.³

Additionally, most people can lift around 5 to 10 percent more on the trap-bar deadlift, which allows you to use maximally heavy weights. Some people dismiss this as merely evidence that the trap-bar deadlift is a “deadlift-with-training-wheels”—an exercise to help newbies learn how to pull properly.

This is wrongheaded. While it’s true the trap-bar deadlift is “easier” in that it allows you to lift more weight, you can make it just as hard as the conventional deadlift by … wait for it … lifting more weight.

So, if you can conventionally deadlift, let’s say, 300 pounds, and you then trap-bar deadlift 330 pounds, both will help you gain muscle and strength almost equally.

Most people also enjoy the neutral grip of the trap-bar deadlift more and can better keep the weight balanced over the midfoot while maintaining stability and strength throughout the entire movement.

I like to switch from the conventional to the trap-bar deadlift every other macrocycle to give the hips, back, knees, and shoulders (if you use a mixed grip) a break and to keep your training interesting.

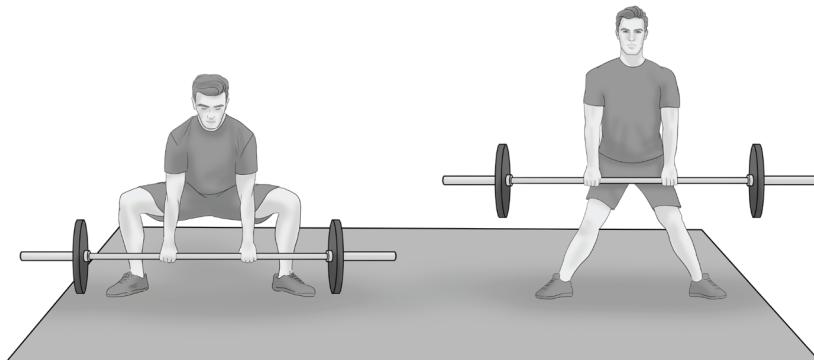
As for how to do the trap-bar deadlift, load up the trap-bar and position your feet about shoulder-width apart inside the rectangular center of the bar.

Then, squat down and grab the handles on either side of the bar. You have two options here: You can grip the “high handles,” which reduces range of motion, or you can grip the “low handles,” which gives the exercise the same range of motion as the conventional deadlift. Pick whichever is more comfortable for you, and stick with it workout to workout.

The rest of the exercise is the same as the conventional deadlift—flatten your back, pull your shoulder blades “back and down” (a good cue for this is to “crush oranges in your armpits”), grip the handles as hard as you can, and stand up. Reverse the motion to return the weight to the floor, and you’re ready for the next rep.

Sumo Deadlift

The sumo deadlift is like a conventional deadlift, except instead of placing your feet inside your arms, you place them outside your arms, like this ...



For most people, this means positioning their feet about twice as wide as they would for a conventional deadlift. Aside from your foot placement, there are three other key differences between the sumo and conventional deadlift:

1. Your toes will point out to the side more.
2. Your hands will likely grip the bar closer together.
3. Your hips will be closer to the bar when you begin the movement.

Some people say the sumo deadlift is easier than the conventional deadlift (“cheating”), because the bar travels about 20 percent less. Studies show it produces about the same amount of total muscle activation as the conventional deadlift, however.⁴ The sumo deadlift trains your quads more, while the conventional deadlift places more strain on your back muscles.⁵

Practically, the differences between sumo and conventional deadlifting are too small to say one is better than the other for gaining muscle and strength. The latter is easier to learn for most people, however, and that’s why I don’t recommend sumo deadlifting unless you’re an experienced weightlifter (or conventional deadlifting is too uncomfortable for you).

Like with the trap-bar deadlift, the main reason to include the sumo deadlift in your workout programming is to give your back a break from months of heavy conventional pulling.

As for how to do the sumo deadlift, you start by positioning your feet about six to twelve inches wider than your shoulders, with your toes pointed out by about twenty-five degrees. Next, lean over and grip the bar with your hands directly underneath your shoulders (usually a bit closer than you would grip the bar during the conventional deadlift). You can use a double-overhand, hook, or mixed grip, but I recommend you start with the first two and only use a mixed grip with your heaviest loads if you’re struggling to hold on to the bar.

Then, drop your butt, letting your knees bend slightly while staying in line with your feet, and keep your back straight.

If you have trouble doing this without bending your back, you may need

to adjust the width of your stance and the angle of your feet. There's a lot of room for individual variation here—some people with shorter legs and stiffer hips like their feet just outside of their arms in a “squat” position, and others with longer legs and more flexible hips like their feet so wide they're almost touching the plates in a “split” position.

No matter where you put your feet, though, your shins should be vertical when you pull, which is little more than taking a deep breath and standing up. Here are a few cues that'll help:

- Spread the floor apart with your feet.
- Keep your chest up.
- Pull your butt down to the bar.
- And once again, crush those oranges in your armpits.

One difference you'll notice with the sumo deadlift is it's much harder to get the bar off the floor but easier to lock out than with the conventional deadlift. You're more likely to get stuck on the first half of the lift (“breaking the floor”) when pulling sumo, whereas the second half (“lockout”) is the sticking point when pulling conventional.

A key to powerful sumo deadlifting, then, is ripping the bar off the floor as hard as you can. If you get through the first six to eight inches of the ascent, you're almost guaranteed to finish the rep.

You'll also notice when pulling sumo that any motion of the bar away from you (forward) throws your balance off. Thus, you must keep the bar moving straight up and down to sumo deadlift successfully. This makes the bar rub against your shins and thighs, so to protect yourself from road rash, you can wear pants, shin guards, or knee sleeves (my preferred method).

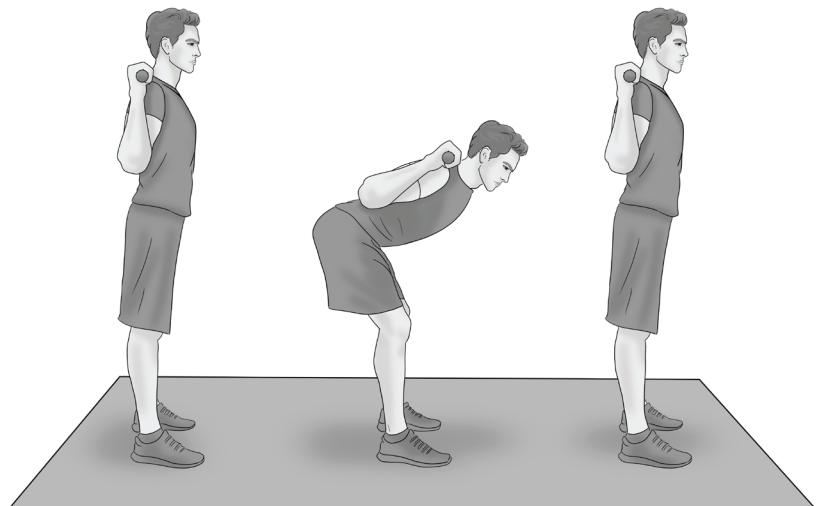
To reset for your next rep, let the bar descend in a straight line, reversing the movement you just completed. The wrong way to do this, however, is dropping the weight to the floor and bouncing into the next rep.

This allows you to squeeze a few more reps out of each set, but also makes the exercise easier, partially defeating the purpose, and increases the chances of your form slipping (thus increasing the risk of injury).

So instead, reset the hard way: Lower the bar quickly but under control to the ground, check and adjust your setup as needed, and then perform your next rep. This is more difficult and makes your sets take a little longer, but it's safer and better for improving technique and gaining muscle and strength.

Barbell Good Morning

The barbell good morning is like a Romanian deadlift, except instead of holding the bar in your hands, you hold it across your shoulders like a back squat.



If that looks to you like a brilliant way to snap your spine in half, you're not alone—many people new to the exercise feel the same way. Despite its appearance, however, it's safe so long as you use proper form.

More importantly, it's also effective—research shows that it can activate the hamstrings almost as well as the barbell deadlift.⁶

As for how to do the barbell good morning, step up to the bar as you would for the back squat. Place it across your mid-traps and rear delts, so it's resting right above the little ridges on the back of your shoulder blades (the low-bar position). You can also do a high-bar barbell good morning, but it's harder to learn, so I recommend you save it for after you're comfortable with the low-bar variation.

Next, grip the bar with either a thumbless (your thumbs resting on top of the bar next to your fingers) or a full grip (your thumbs wrapped around the bar). Use whichever grip feels most secure and comfortable to you.

Keeping your upper back tight, unrack the bar and take a step back from the squat rack. Then, position your feet about shoulder-width apart, like you're squatting (or slightly narrower with the toes pointed forward, if you find that more comfortable).

Now comes the tricky part. With your knees mostly straight (slightly bent), move your butt backward so your torso can "hinge" forward and lower the bar toward the ground in a straight line. Once you can't lower the bar any further without bending your back (usually when your back is at about a twenty-degree angle to the ground), push your butt forward and lift the bar with your back simultaneously.

Good cues for getting the whole movement right are to think of pulling the bar into the top of your feet during the descent and throwing the bar off your back during the ascent.

The most common mistakes people make with the barbell good morning are letting their spine bend forward at the bottom of the exercise, bending their head backward, and bending their knees too much.

If you make any of these mistakes, make sure you're not using too much weight, and work on one point at a time until you correct the flaws. It helps to have someone to record your form, too, so you can see what you're doing versus what you think you're doing.

EZ-Bar Preacher Curl

A preacher curl is a biceps exercise performed with your upper arms placed on a pad to prevent you from cheating and ensure your biceps do all the work. The downside is it requires a preacher curl bench.

Why bother with another type of curl? This one offers two benefits:

1. It produces slightly more muscle activation than dumbbell and barbell curls, which indicates it's minimally not inferior to either (which many people believe).⁷
2. It gives your wrists, elbows, and shoulders a break from dumbbell and barbell curling.

Cable Curl

Yes, more biceps!

The cable curl has been a staple among bodybuilders and powerlifters for decades: it's simple, effective, and different from free weights, because it maintains constant resistance throughout the entire range of motion.

It's not as effective as the barbell curl or EZ-bar curl, but there are two reasons for including it in your workouts:

1. It's easier on your wrists, elbows, and shoulders, which can help ward off joint aches.
2. It's easy to perform correctly when you're fatigued, which is nice later in a workout when your tank is running low.

Another benefit of the cable curl is you can do it in almost every gym, whereas you don't always have access to barbells, EZ bars, or even heavy enough dumbbells.

As for how to do the cable curl, find a cable machine that accepts various

handle attachments, and drop the pulley to the bottom position (so you'll be pulling the weight up).

You have a few options for the handle, and I recommend either the straight bar or EZ bar attachment. Some people use a rope, V-bar, or the cable itself, but these offer no advantages and can limit your performance because of discomfort.

After you've attached the handle, lean over, grip it with both hands, stand up, and take a half step back away from the cable machine to give yourself room. Curl the bar as high as you can and then return to the starting position in a controlled manner.

You don't have to lower the bar slowly, but you shouldn't drop it, either, because this eliminates the tension during the *eccentric* (lowering) portion of the exercise, decreasing the muscle-building stimulus.



That's it for the exercises you'll be doing on the *Beyond Bigger Leaner Stronger* program.

This is great news, because it means you can disregard most of what you see people doing in magazines, YouTube videos, and the gym, and focus on getting strong on the exercises we've discussed here.

Let's now see how to turn these exercises into challenging and effective workouts that'll help you get bigger, leaner, and stronger.

Key Takeaways

- Primary exercises are most responsible for your progress in the gym, because they train (and develop) the most muscle and produce the most whole-body strength.
- Accessory exercises are secondary to primary exercises, and are used to further train muscle groups, bring up stubborn muscles, and help prevent and correct muscle imbalances or weaknesses that may limit your progress on your primary exercises.
- The reverse-grip bench press is an often-overlooked variation of the bench press that's not only easier on your shoulders but also effective for targeting the upper portion of the chest muscle.
- The trap-bar—or hex-bar—deadlift is one of the few back exercises that rivals the conventional deadlift.
- Both exercises do a phenomenal job of training your lower-back, glutes, and hamstrings, although the conventional deadlift puts more stress on the lower-back and hamstrings, and the trap-bar deadlift puts more stress on the quads.
- Switching from the conventional to the trap-bar deadlift every other macrocycle can give the hips, back, knees, and shoulders (if you use a mixed grip) a break and keep your training interesting.
- The sumo deadlift produces about the same amount of total muscle activation as the conventional deadlift, but it trains your quads more, while the conventional deadlift places more strain on your back muscles.
- Like with the trap-bar deadlift, the main reason to include the sumo deadlift in your workout programming is to give your back a break from months of heavy conventional pulling.
- The barbell good morning can activate the hamstrings almost as well as the barbell deadlift.
- The two main benefits of the EZ-bar preacher curl are that it produces slightly more muscle activation than the dumbbell and barbell curl, and it gives your wrists, elbows, and shoulders a break

from dumbbell and barbell curling.

- The cable curl isn't as effective as the barbell curl or EZ-bar curl, but there are two reasons for including it in your workouts: it's easier on your wrists, elbows, and shoulders, which can help ward off joint aches, and it's easy to perform correctly when you're fatigued.

18

The Beyond Bigger Leaner Stronger Training Plans

*Superhuman effort isn't worth a damn
unless it achieves results.*

—ERNEST SHACKLETON

YOU NOW KNOW MORE about weightlifting than 99 percent of the people who'll ever step into a gym.

You understand the preeminence of progressive overload, the relationship between volume and muscle growth, and the benefit of periodization. You also know your newbie gains are in the rearview mirror, and you'll have to work harder and harder for less and less from here on out.

In other words, you're loaded for bear and ready to go great guns in the gym.

You could use everything you've learned so far to create your own training plan, but I recommend you follow mine for at least four months before going off on your own. Workout programming can be difficult, because there are several layers of periodization that must work together and several interdependent factors to consider, including goals, intensity, frequency, volume, recovery, and others.

Also, before creating your own training plans, a little experience with this new approach helps, so that you'll know firsthand what is and isn't likely to work.

That's why this chapter will give you an entire macrocycle of *Beyond Bigger Leaner Stronger* workouts. If you like them and would rather continue with my programming versus going solo, you'll find an entire year's worth of workouts in the free bonus material that comes with this book (www.bblsbook.com/bonus).

I also recommend you download and review this material, even if you don't end up following my workouts, because it'll help crystallize how to translate the theory into effective training.

You can also get all of my workouts in the training journal that complements this book called *The Beyond Bigger Leaner Stronger Challenge* (www.bblsbook.com/challenge), and my free workout app *Stacked* (www.getstackedapp.com).

So, let's start our review of how the training is periodized, and then we'll talk routines, the workouts themselves, how to progress and deload, and how to incorporate cardio into your regimen.

The *Beyond Bigger Leaner Stronger* Periodization Plan

The training plan consists of three periods:

1. Macrocycles

Each sixteen-week macrocycle will begin with lighter weights and more reps, and end with heavier weights and fewer reps, culminating in a "Strength Week," where you'll try to set new personal records on primary exercises, followed by a deload week.

2. Mesocycles

Each four-week mesocycle involves three weeks of hard training followed by a deload week. Similar to the macrocycle, each mesocycle begins with lighter weights and more reps, and moves toward heavier weights and fewer reps. This pattern repeats every mesocycle, with weights getting heavier as you progress through a macrocycle.

3. Microcycles

Each one-week microcycle involves three to five days of training (per seven days). There are also two types of microcycles in the program:

1. Training microcycles (three per mesocycle)
2. Deload microcycles (one per mesocycle)

And that's it for the basic overview of how the program is periodized. Let's now review the three training routines you can choose from.

The Beyond Bigger Leaner Stronger Training Routines

Whereas the different training periods—the macro-, meso-, and microcycle—determine how your rep ranges and intensities change over the course of the program, your training routine delineates how often you'll train and what you'll do in each workout.

In the program, you have three training routines to choose from: a five, four, or three day. Each is a weekly (seven-day) routine, so the most you can do is five strength workouts per seven days.

As far as results go, the five-day routine is better than the four- and three-day routines, and the four-day is better than the three-day. That doesn't mean you can't do well with the four- or three-day routines, though.

All three training routines can work for cutting, lean bulking, or

maintaining, but if you're cutting on the five-day routine and begin feeling rundown, you may want to switch to one of the other two routines to put less stress on your body.

Every routine trains each major muscle group one to three times per week, with the upper body receiving more attention than the lower body, because it takes a lot more work for most guys to get the upper body they want than their ideal lower body.

Try not to change training routines during a macrocycle, as this can alter volume and results. Ideally, you'll choose one routine and stick with it for an entire macrocycle. However, if you'd like to "upgrade" from the three- or four-day routine to the four- or five-day routine in the middle of a macrocycle, give it a go. Avoid "downgrading," however, unless you have to.

If you're not sure which routine to follow, pick the one you know you can stick to. If you're sure you can get to the gym four days per week but not five, go with the four-day routine.

Remember—consistency is key to results with any workout program, and this is especially true when you're using percentages of one-rep maxes like you'll do in this one.

All right, on to the routines!

The Five-Day Routine				
Workout 1	Workout 2	Workout 3	Workout 4	Workout 5
Upper Body A	Pull & Calves	Upper Body B	Legs & Calves	Upper Body C

If you have the time and inclination, start here for your first macrocycle. You can always try the other routines in later macrocycles.

Most people who follow this routine train Monday through Friday and take the weekends off, but you can incorporate your rest days however you'd like. The important thing is you do each of the workouts every seven days in the order given.

I recommend including at least one day of rest between workouts 5 and 1, as doing these workouts on back-to-back days is counterproductive. Your

larger upper-body muscles need more time to recover than smaller ones that can survive daily beatings, like the abs or calves.

So, for example, if you need to train on the weekends because of your schedule or lifestyle, you might work out Monday (push and arms), Tuesday (pull and calves), and Wednesday (upper body), rest Thursday, and then train Friday (legs and calves) and Saturday (upper body), and rest Sunday.

The Four-Day Routine			
Workout 1	Workout 2	Workout 3	Workout 4
Upper Body A	Pull & Calves	Upper Body B	Legs & Calves

The main difference between this and the five-day routine is less upper-body training. Here, you do two upper-body workouts per week plus a pull workout, and on the five-day routine, three plus a pull session.

Again, you can do these workouts on any days of the week, so long as you do each once per seven days in the order given.

The Three-Day Routine		
Workout 1	Workout 2	Workout 3
Push	Pull & Calves	Full Body

This is basically your time-proven “push-pull-legs” routine, with some extra upper body work on the legs day.

Once again, you can do these workouts on any days of the week, so long as you do each once per seven days in the order given. You’ll also want to put at least one day of rest between workouts two and three, so you don’t have to squat the day after you do several sets of heavy deadlifting. Most people like to put at least one day of rest between each workout.

That’s it for the training routines. Next, let’s review the workouts.

The *Beyond Bigger Leaner Stronger* Workouts

The workouts follow a simple pattern:

- You do four exercises per session.
- You do one or two primary exercises first, followed by two or three accessory exercises.
- You do warm-up sets as needed.
- You do four hard (working) sets per exercise (16 hard sets per workout).
- You do between 2 and 10 reps per hard set for primary exercises.
- You end hard sets of primary exercises 1 to 2 reps shy of *technical failure*, which is where your form begins to break down.
- You do between 6 and 12 reps per hard set for accessory exercises.
- You end hard sets of accessory exercises 1 rep shy of *technical failure*.
- You rest for two to four minutes between each hard set.

You'll also do the exercises one at a time and complete all hard sets for each before moving on to the next, like this:

Exercise 1

Hard set 1

Rest

Exercise 1

Hard set 2

Rest

Exercise 1

Hard set 3

Rest

Exercise 1

Hard set 4

Rest

Exercise 2

Hard set 1

Rest

And so on.

If you can't do an exercise for whatever reason, you can replace it with an alternate exercise from the previous chapter, do four more sets of an exercise already in your workout, or do more sets of the three exercises you can do for a total of sixteen for the workout.

Here are the workouts themselves ...

The Five-Day Routine Macrocycle 1				
Workout 1	Workout 2	Workout 3	Workout 4	Workout 5
<i>Upper Body A</i>	<i>Pull & Calves</i>	<i>Upper Body B</i>	<i>Legs & Calves</i>	<i>Upper Body C</i>
Barbell Bench Press Warm up and 4 hard sets	Barbell Deadlift Warm up and 4 hard sets	Standing Military Press Warm up and 4 hard sets	Barbell Back Squat Warm up and 4 hard sets	Incline Barbell Bench Press Warm up and 4 hard sets
Close-Grip Bench Press 4 hard sets	Pull-up 4 hard sets	Machine Rear Delt Fly 4 hard sets	Leg Press 4 hard sets	Barbell Bench Press 4 hard sets
Dumbbell Side Raise 4 hard sets	One-Arm Dumbbell Row 4 hard sets	Dumbbell Curl 4 hard sets	Leg Curl (Lying or Seated) 4 hard sets	Seated Cable Row 4 hard sets
Triceps Pressdown 4 hard sets	Seated Calf Raise 4 hard sets	Dumbbell Side Raise 4 hard sets	Leg Press Calf Raise 4 hard sets	Barbell Curl 4 hard sets

The Four-Day Routine Macrocycle 1			
Workout 1	Workout 2	Workout 3	Workout 4
<i>Upper Body A</i>	<i>Pull & Calves</i>	<i>Upper Body B</i>	<i>Legs & Calves</i>
Barbell Bench Press Warm up and 4 hard sets	Barbell Deadlift Warm up and 4 hard sets	Standing Military Press Warm up and 4 hard sets	Barbell Back Squat Warm up and 4 hard sets
Close-Grip Bench Press 4 hard sets	Pull-up 4 hard sets	Incline Barbell Bench Press 4 hard sets	Leg Press 4 hard sets
Dumbbell Side Raise 4 hard sets	One-Arm Dumbbell Row 4 hard sets	Seated Cable Row 4 hard sets	Leg Curl (Lying or Seated) 4 hard sets
Triceps Pressdown 4 hard sets	Seated Calf Raise 4 hard sets	Barbell Curl 4 hard sets	Leg Press Calf Raise 4 hard sets

The Three-Day Routine Macrocycle 1		
Workout 1	Workout 2	Workout 3
<i>Push</i>	<i>Pull & Calves</i>	<i>Full Body</i>
Barbell Bench Press Warm up and 4 hard sets	Barbell Deadlift Warm up and 4 hard sets	Barbell Back Squat Warm up and 4 hard sets
Close-Grip Bench Press 4 hard sets	Pull-up 4 hard sets	Leg Press 4 hard sets
Dumbbell Side Raise 4 hard sets	One-Arm Dumbbell Row 4 hard sets	Incline Barbell Bench Press Warm up and 4 hard sets
Triceps Pressdown 4 hard sets	Seated Calf Raise 4 hard sets	Barbell Curl 4 hard sets

And that's it for the first macrocycle of workouts.

Again, to get more workouts, download the free bonus material that comes with this book (www.bblsbook.com/bonus), pick up a copy of *The Beyond Bigger Leaner Stronger Challenge* (www.bblsbook.com/challenge), or check out my free workout app *Stacked* (www.getstackedapp.com).

The *Beyond Bigger Leaner Stronger* Progression Methods

In this program, you'll progress in three ways:

1. You'll increase the intensity (and reduce the reps per set) throughout each mesocycle, week by week (weekly undulating periodization).
2. You'll increase the average intensity (and reduce the average reps per set) throughout each macrocycle, mesocycle by mesocycle (wave loading).
3. You'll aim to increase your training weights (whole-body strength) as you progress from macrocycle to macrocycle (progressive overload).

Here's an example of how this might go: In the beginning of a macrocycle, let's say you can bench press 205 pounds for 10 reps. Then, a few months later, in your next macrocycle, if you've made progress, you might get 10 reps with 210 or even 215 pounds.

Let's take a closer look at each part of the progression system, and how they're implemented in the program.

Weekly Undulating Periodization

We recall from chapter thirteen that weekly undulating periodization involves changing your rep ranges week-to-week as opposed to day-to-day (daily undulating periodization).

In the *Beyond Bigger Leaner Stronger* program, you'll accomplish this by reducing your rep targets by 2 reps each week for your primary exercises (but not your accessory exercises—more on that soon).

For example, here are your rep targets for your primary exercises in the first mesocycle of the first macrocycle of the program:

Week 1: 10 reps @ 70 percent of one-rep max
Week 2: 8 reps @ 75 percent of one-rep max
Week 3: 6 reps @ 80 percent of one-rep max
Week 4: Deload

In later mesocycles, the weights will get heavier and rep targets lower, but you'll still always start with lighter weights and more reps and lift slightly heavier weights for fewer reps each following week and then deload.

For instance, here are your rep targets for your primary exercises in the third mesocycle of the first macrocycle of the program:

Week 9: 6 reps @ 80 percent of one-rep max
Week 10: 4 reps @ 85 percent of one-rep max
Week 11: 2 reps @ 90 percent of one-rep max
Week 12: Deload

Every mesocycle of every macrocycle works in the same basic way. Week by week, reps go down and weight goes up.

Wave Loading

Wave loading involves increasing the amount of weight you're lifting over the course of a mesocycle or macrocycle (or both), punctuated by periodic reductions in intensity to enhance recovery.

In the *Beyond Bigger Leaner Stronger* program, we apply this to both mesocycles and macrocycles. Just as the weights get heavier as you progress week by week through a mesocycle, they also get heavier as you progress mesocycle by mesocycle through a macrocycle.

Here's a chart showing what this increase in intensity looks like for an entire macrocycle of your primary exercises:

Week 1	Week 2	Week 3	Week 4 (Volume Deload)
70 percent of one-rep max	75 percent of one-rep max	80 percent of one-rep max	80 percent of one-rep max
Week 5	Week 6	Week 7	Week 8 (Volume Deload)
75 percent of one-rep max	80 percent of one-rep max	85 percent of one-rep max	85 percent of one-rep max
Week 9	Week 10	Week 11	Week 12 (Volume Deload)
80 percent of one-rep max	85 percent of one-rep max	90 percent of one-rep max	90 percent of one-rep max
Week 13	Week 14	Week 15 (Strength Week)	Week 16 (Full Deload)
85 percent of one-rep max	90 percent of one-rep max	95 percent of one-rep max	50 percent of one-rep max

As you can see, over the course of the macrocycle, you go from weeks of working with weights that are 70, 75, and 80 percent of one-rep max to 80, 85, and 90 percent of one-rep max. (Don't worry, we'll talk about the "Strength Weeks" and deloads soon.)

You may have also noticed you don't increase your weights in a perfectly linear way. For example, you'll end your first mesocycle using 80 percent of one-rep max on your primary exercises. But instead of starting week five with 80 or even 85 percent of one-rep max, you'll dial the weights back to 75 percent.

This increases your chances of succeeding on the program by helping your body better adapt to the heavier loads while still producing a small but steady increase in intensity over time. The gradual reduction in reps is important too, because trying to increase both intensity and reps simultaneously would lead to a plateau or injury or burnout.

The accessory exercises in the program use wave loading as well. Here's how it looks for each macrocycle:

Weeks 1 to 4 (Mesocycle 1)	10 to 12 reps
Weeks 5 to 12 (Mesocycles 2 & 3)	8 to 10 reps
Weeks 13 to 16 (Mesocycle 4)	6 to 8 reps

And why do you spend eight weeks in the 8-to-10-rep range and only four weeks in the 10-to-12- and 6-to-8-rep ranges? Three reasons:

1. The 8-to-10-rep range works well with most accessory exercises, being easy on the joints and allowing for consistent increases in weight.
2. The 10-to-12 rep range provides the benefits of higher reps you learned about in chapter thirteen.
3. The 6-to-8 rep range is for the benefits of heavier work.

Progressive Overload

You'll achieve progressive overload in two ways:

1. *Linear progression*, which you'll use with your primary exercises.

Here, you'll use percentages of one-rep max to dictate your training weights and rate of progression. The primary advantage of this method is it forces you to overload your muscles by gradually increasing your weights over time.

2. *Double progression*, which you'll use with your accessory exercises.

This is the same progression model used in *Bigger Leaner Stronger*. After working with a weight in a rep range, once you hit the top of that rep range for a certain number of hard sets, you increase the weight. The primary advantage of this method is its simplicity.

Why don't we use double progression with all exercises, like in *Bigger Leaner Stronger*?

This works well for beginners, but as an intermediate or advanced weightlifter, linear progression is better for primary exercises, because it

pushes you to get stronger no matter how hard your workouts feel.

With double progression, your performance is strongly impacted by how you feel during a workout, especially toward the end of your sets. Do you feel you can get that extra rep or two without reaching technical failure? Or does the weight feel too heavy today and you'll have to try again next time?

On one hand, this makes planning your training as easy as scrambling an egg. You work in a rep range until you hit the top of it for a number of sets and then you add weight. That's it. No spreadsheets required.

Where this can work against you, however, is when the weights get heavy on your primary exercises and your workouts get *hard*. It's difficult to stay motivated to keep pushing your limits voluntarily. Instead, you'll advance when you feel great and retreat when you don't, resulting in a lot of work for little ground gained.

Here's the rub, though: how tough a set or workout feels often has little bearing on how well we can perform, because how our training feels isn't merely a reflection of how physically capable we are of working out. There are powerful psychological factors in play as well, something you've undoubtedly experienced. (Ever step into the gym feeling crappy and expecting a horrible workout, only to be pleasantly surprised by your performance?)

The point is, assuming we've been eating and sleeping well, we can often accomplish more in our workouts than our minds would have us believe.

Linear progression allows us to tap into this potential, regardless of how we feel in the moment. We won't hit every set, and sometimes we will have to take one step back before we can take two forward, but more often, we'll be impressed by how well we did despite "feeling off."

Accessory exercises are another story, though. Not only are they less challenging than primary exercises, they aren't as important, either. Thus, why do the extra work required to use linear progression when you can do equally well with double progression?

Linear Progression in *Beyond Bigger Leaner Stronger*

On the program, you'll keep track of your one-rep maxes for your primary exercises and use these numbers to calculate how much weight to lift in every workout.

For example, my bench press one-rep max is about 275 pounds, so if a workout calls for 75 percent of one-rep max for 8 reps, I multiply 275 by 75 percent to get 206.25, which I would round down to 205 pounds on the bar.

I would then go for 8 reps with 205, regardless of how I felt or how the weight felt (light or heavy). I may not get the 8 reps (more on this in a minute), but I'd have to try.

This means for your average training weights to go up macrocycle to macrocycle (progressive overload), your one-rep maxes must go up. If they don't, average training weights will stagnate (along with your results).

Therefore, the program includes a Strength Week at the end of each macrocycle, where you test your strength on primary exercises to see if you've gotten stronger over the course of the macrocycle.

Here's how the Strength Week workouts look:

	Set	Intensity	Reps
Primary Exercise 1	1	95 percent of one-rep max	As many reps as possible
	2	85 percent of one-rep max	4
Primary Exercise 2	1	95 percent of one-rep max	As many reps as possible
	2	85 percent of one-rep max	4
Accessory Exercise 1	1	1 rep in reserve	6 to 8
	2	1 rep in reserve	6 to 8
Accessory Exercise 2	1	1 rep in reserve	6 to 8
	2	1 rep in reserve	6 to 8

As you can see, the primary differences on the Strength Week are ...

1. Your workouts entail two sets for each primary and accessory exercise instead of four (half of the normal workout volume).

2. Two of the sets call for *as many reps as possible* (AMRAP) with 95 percent of one-rep max and ending at technical failure (not absolute failure), followed by a *back-offset*, which involves doing 4 reps with 85 percent of one-rep max before moving on to the next exercise.

You're probably also wondering about *reps in reserve* (RIR). If you're like most experienced weightlifters, this is how you talk about your training. After a set of hard barbell curls, for instance, you might say, "Man, that was a grinder—I had maybe one rep left in the tank."

In other words, RIR is how we naturally express how hard a set feels, and research shows it's an accurate way to track how close we are to failure.¹

And so in the case of the Strength Week workouts, you'll take each set of accessory exercises to the point where you feel you can do one more good rep before your form breaks down (one RIR).

Why the AMRAP sets? Based on how many reps you get in these sets, you can then update your one-rep maxes for each of the primary exercises and use those new estimates for programming your next macrocycle.

For example, let's say you begin a macrocycle with a squat one-rep max of 315 pounds, and in the Strength Week, get 4 reps with 300 pounds (95 percent of 315). Plug that into the one-rep max calculator available at www.bblsbook.com/1RM and in my free workout app Stacked (www.getstackedapp.com), and you'll get your new approximate one-rep max of 327 pounds, which you can then use to determine your new training weights for your next macrocycle.

Why AMRAP with 95 percent versus one rep with 100 percent or even 105 percent, as you'll find in some programs? Because a true one-rep max attempt is time-consuming, risky, and exhausting.

- To test your true max, you need to train with lighter weights and lower volumes for several days to a week beforehand to make sure you're rested.
- You then have to push yourself very close to absolute muscular

failure, which means your technique is likely to falter and the risk of injury is higher.

- It leaves you feeling drained for at least a few days. Some advanced weightlifters say it takes one to two weeks until they feel normal again after a one-rep max test on the squat and deadlift.

So most of the time, true one-rep max tests are inappropriate. Instead, we can just use equations to predict our one-rep maxes based on how many reps we can get with lighter weights.

All right, that's it for Strength Week programming. Let's touch on one more important aspect of linear progression in the program.

What If You Miss Reps in Sets of Primary Exercises?

As I mentioned in the beginning of this section, you should end hard sets of primary exercises 1 to 2 reps shy of technical failure, or expressed differently, at one to two RIR. For most people, this is about 3 to 4 reps shy of absolute muscle failure, so your hard sets should be hard, but not gut-busting.

You want to avoid taking sets to technical failure, because it won't increase muscle and strength gain, often leads to bad form, and if done too often, hampers recovery as well.²

In practice, this means your goal in every set of primary exercises (except AMRAP sets in Strength Weeks) is doing the prescribed number of reps without reaching technical failure. And if you feel you can exceed the target without reaching technical failure, don't. Stop when you reach your rep target.

What's more likely, however, is failing to hit your target without reaching technical failure (or at all).

For me, this usually occurs in my third or fourth set of 8 or 10 reps (and less often with heavier weights), and it typically stems from the one-rep max calculations used to determine training weights. While they work well for most people, there's variability from person to person.

For instance, if you tell a group of people to get as many reps as they can with 80 percent of a calculated one-rep max, most will get about 8 reps before reaching absolute failure. However, there'll always be outliers—some may only get 4 or 5 reps before petering out and others may get 10 or more.³

One factor that heavily influences this is training experience. A one-rep max calculator will say you should be able to get 8 to 10 reps with 80 percent of one-rep max, but if you've focused on sets of 2 to 3 reps with 90 percent of one-rep max for years, you'd probably struggle with this. Likewise, if you've mostly done 10 to 12 reps with about 65 percent of one-rep max, you'll likely be unable to do a set of 2 to 3 reps with 90 percent of one-rep max as a calculator would predict.

As you gain experience working in different rep ranges (as you will on the program), however, you'll find your strength lining up well with the calculated targets. Even so, you can expect to miss rep targets now and then, so let's talk about how to deal with those scenarios.

If you fall short by even one rep on a first or second set of a primary exercise, reduce your estimated one-rep max by 10 pounds, and recalculate your training weight.

For instance, if my workout calls for 8 reps with 205 pounds on the bench press, and on my first set, I get 6 reps, I'd reduce my estimated one-rep max from 275 to 265 pounds, and recalculate my training weight to 198.75 pounds, which I'd round to 200 pounds.

Then, if I loaded the bar with 200 pounds, and on my second set, I still couldn't get 8 reps, I'd continue decreasing my estimated one-rep max and recalculating my training weight until I could get 8 reps.

If you miss your rep target by 1 or 2 reps on a third or fourth set of a primary exercise, don't change anything just yet. Maybe you didn't rest enough between sets, or didn't sleep or eat enough the day before, or maybe you just ended your set too soon.

If, however, you miss your reps again on the third or fourth sets the next time you do that workout, chances are the weight is too heavy, forcing you to take your first and second sets too close to failure.

Here, decrease your estimated one-rep max by 10 pounds, and recalculate your training weights as needed until you don't miss reps on any sets.

Double Progression in *Beyond Bigger Leaner Stronger*

In addition to linear progression, the program will include double progression, because it's simple and effective, especially with accessory exercises, which don't require more complex methods of periodization and progression.

Here's how to implement double progression in the program:

When you reach the top of the prescribed rep range for all four sets of an accessory exercise, increase the weight by 10 pounds (total). Then, work with that weight until you can hit the top of the rep range for all four sets, move up again, and so on.

For example, let's say you're doing barbell curls in the 10-to-12-rep range, and you get 12 reps with 90 pounds on all four sets. Great! The next time you do that exercise for 10 to 12 reps, up the weight to 100 pounds and use that until you can get 12 reps for all four sets.

Another important element of double progression is how hard your hard sets are supposed to be. Should you be pushing to the point of absolute muscle failure? If not, how close should you come?

As a general rule, end all sets of accessory exercises one rep shy of technical failure, but you don't have to adhere to this guideline perfectly.

At the beginning of the program, for instance, you may prefer to end most of your accessory sets 2 or 3 reps shy of technical failure as you get used to the exercises and rep ranges.

You'll also inadvertently take some of your sets of accessory exercises to technical failure now and then, especially as you attempt to move up in weight. This is fine so long as it's not happening often, which can speed up your progress in the short-term but get in the way later.

Now, what if you move to heavier weights and can't reach the bottom

of your rep range before your form starts breaking down?

For instance, in the barbell curl example I gave earlier, what if you can only get 8 or 9 reps with 100 pounds before reaching technical failure? Here, you have two options:

1. Increase the weight in smaller increments.

Most dumbbells and preloaded barbells advance in increments of 10 pounds (5 pounds per dumbbell), and sometimes this is too challenging. To work around this, you can buy a set of 2.5-pound magnetic microplates that attach to the barbells or dumbbells, allowing you to move up just 5 pounds total.

So, with the curls, this would allow you to move from 90 to 95 pounds, not 100.

2. Continue with the original, lighter load until you can get four clean sets of your rep target.

Often, when a progression fails to “stick,” it’s because the third and fourth sets were sloppy or “grinders,” almost reaching absolute failure.

When this is the case, an easy fix is to go back to the lighter weight and keep working with it until you can get four sets of the top of your rep range with good form, ending shy of technical failure in each.

Continuing with our example, this would mean going back to 90 pounds and curling it until you can get four sets of 12 reps without compromising your form or pushing to technical failure.

If following these instructions keeps you from progressing on an accessory exercise for some time, that’s okay. As far as results go, the quality

of your training matters just as much as the quantity, and it's not worth sacrificing the former for the latter.

How Long to Rest Between Sets

In *Bigger Leaner Stronger*, you learned that resting enough between sets helps you do more reps with more weight and continue to gain muscle and strength.⁴

As you also know after reading chapter thirteen, you have to work much harder as an intermediate or advanced weightlifter to keep getting bigger and stronger—you have to use “big boy” weights and do more hard sets per major muscle group per week than when you were a beginner. So it’s even more important now to ensure you’re resting enough in between sets.

For your primary exercises, rest three to five minutes between each set, and for accessory exercises, two to three minutes.

During your Strength Weeks, you may want to rest longer between your AMRAP sets—five minutes or even longer, if necessary. As these sets involve lifting heavy weights for as many reps as possible, it’s worth resting an extra minute or three to increase your chances of setting a personal record. (Plus, you’re doing half the normal sets per workout, so you have time to rest more.)

How do you know when you’re ready to do your next hard set?

1. Your breathing should be back to normal (you should be able to talk comfortably).
2. Your heart rate should have settled down (it’ll still be elevated, but it shouldn’t be racing).

Try not to rest too long, as well, mostly because it wastes time and hurts focus. You shouldn’t need over five or six minutes of rest between even your hardest sets.

How to Find Your Starting Weights

Before you can start the *Beyond Bigger Leaner Stronger* program, you must determine your starting weights for your primary and accessory exercises.

To find your starting weights for the primary exercises you'll be doing in your first macrocycle, review your workout logs and find your strongest set in the last two months for each. Your strongest set is the one that involved the most weight for the most reps.

For example, let's say your strongest set on the squat in the last two months was 235 pounds for 6 reps. When you plug that into the one-rep max calculator at www.bblsbook.com/1RM, it estimates your one-rep max at 273 pounds.

Going back farther than the two-month cutoff increases the likelihood of inaccuracy. If you use a set from six months ago, for instance, you might be stronger or weaker now, and thus won't get a correct estimate of your current strength.

If you haven't performed one or more of the primary exercises in the last two months, go back as far as you need to, but keep in mind the weights may need to be adjusted.

If you haven't performed one or more of the primary exercises in a very long time, use trial and error to find a weight you can get 4 to 5 reps with, with 2 or 3 reps in reserve. Then put your best set into the one-rep max calculator, and use the result(s) as your estimated one-rep max(es) for your first macrocycle.

Also, the weights may feel a little easy when you first start, but remember—they *will* get heavier as you continue on the program, and it's better to err on the side of starting a macrocycle with weights that feel a tad light rather than heavy.

To find your starting weights for the accessory exercises you'll be doing in the first macrocycle, review your workout logs and look at the most recent sets in the same rep range of the first mesocycle of the macrocycle, start there, and adjust as needed.

If you haven't performed one or more of the accessory exercises in a very long time, start light, try it out, and increase the weight for each successive hard set until you've dialed everything in.

Again, this is mostly trial and error, so don't worry if your first week is awkward as you calibrate your weights. This is normal, and by week two, you should be able to go whole hog on the program.

The final scenario to be addressed here is finding your starting weights on accessory exercises as you move from one mesocycle to the next.

For example, in the first mesocycle of a macrocycle, you'll be working in the 10-to-12 rep range on your accessory exercises. Then, in the second mesocycle, you'll be working in the 8-to-10 rep range. How do you determine your starting weights for that second mesocycle?

Easy—just add 10 pounds to the bar, machine, or dumbbells (total, 5 per side) and you'll lose 2 or 3 reps.

So, for instance, if you wrapped up a mesocycle doing sets of 10 to 12 reps of one-arm dumbbell rows with 95-pound dumbbells, you'd use 100 pounders in the next mesocycle, which calls for 8 to 10 reps per set.

How to Warm Up for Your Workouts

To ensure the major muscle groups you'll train in a workout are warmed up and primed for optimum performance, you'll do several warm-up sets with the first exercises for each muscle group.

For instance, let's say you show up to do a leg workout of squatting, leg pressing, leg curling, and calf raising, in that order (as you do on the leg day of the five-day routine).

You'd first warm up on the squat, and then do your hard sets. Next is the leg press, but you won't need to warm up first because the major muscle groups involved are the same as in the squat. The same goes for the leg curls and calf raises—your hamstrings and calves will be more than ready after the squatting and leg pressing.

In this way, your warm-up sets for the squat serve as your warm-up

sets for the entire workout.

Let's say you were going to do a full-body workout, however, of squatting, leg pressing, incline bench pressing, and barbell curling, in that order (as you do on the full-body day of the three-day routine).

In this case, you'd warm up on the squat, do your hard sets, followed by your hard sets of the leg press. Then, you'd warm up on the incline bench press before doing your hard sets, because squatting and leg pressing doesn't involve your "push" muscles. Next, you'd move directly into your hard sets of barbell curling, because the biceps will be warmed up after your incline bench pressing (the bench press doesn't *train* your biceps per se, but does stimulate them).

As for warming up on an individual exercise, here's an easy and effective routine that'll get the job done without compromising your performance on your hard sets:

1. Do 6 reps with about 50 percent of your hard set weight, and rest for a minute.
2. Do 4 reps with the same weight at a faster pace, and rest for a minute.
3. Do 2 reps with about 70 percent of your hard set weight, and rest for a minute.

And that's it. You're now ready to do your hard sets.

The *Beyond Bigger Leaner Stronger* Deload Week

Each four-week mesocycle of this program will conclude with a deload week where you do less stressful workouts to allow your body to catch up with recovery.

Some people say deloading by reducing workout volume is better than reducing intensity and vice versa. I'm in the middle. I think both methods

can work, but I lean toward deloading volume for two reasons:

1. Studies show that reducing volume instead of intensity is more effective for decreasing fatigue, which is the main goal of a deload.⁵
2. Research shows that reducing volume instead of intensity is more effective for maintaining performance, which makes it easier to pick up where you left off when you get back to your hard training.⁶

On the other hand, there are benefits to deloading intensity as well.

- Reducing intensity in addition to volume helps reduce fatigue even more than reducing volume alone.
- Reducing intensity helps eliminate any niggling aches, pains, or soreness before you start another stint of hard training.
- Reducing intensity gives you a mental break and can increase your enthusiasm for hitting the heavy weights again.

For these reasons, there are two deloads in the program:

1. The Volume Deload Week
2. The Full Deload Week

Let's review each.

The Volume Deload Week

This is what it sounds like: a reduction in volume.

In a Volume Deload Week, you cut your number of hard sets and reps per set in half, but use the same heavy weights as your previous week of hard training. If it's an odd number of reps, round down to an even one before halving it.

With this deload, you're reducing your number of hard sets and reps

for the week and staying well away from technical failure, which greatly reduces the stress placed on the body.

For example, if you did four hard sets of 6 reps of bench pressing with 80 percent of one-rep max in your third microcycle (week) of a mesocycle, in the following Volume Deload Week, you'd warm up and do two sets of 3 reps with 80 percent of one-rep max. And if you did 4 hard sets of 4 reps with 85 percent of one-rep max in your third microcycle, you'd warm up and do two sets of 2 reps with 85 percent of one-rep max in the following Volume Deload Week.

In this way, the training weights used during Volume Deload Weeks change from mesocycle to mesocycle (as intensities change).

Volume deloading works the same with your accessory exercises as well—reduce your sets and reps by half and use the same weights as the previous week of hard training.

Most of your deload weeks will be Volume Deload Weeks, except for the final deload week of a macrocycle following your Strength Week, which is a Full Deload Week.

The Full Deload Week

In the Full Deload Week, you reduce both your volume and intensity by cutting your hard sets in half, reducing your intensity to 50 percent of one-rep max, and doing just 5 reps for all of your hard sets.

Why 5 reps? You could do more or fewer than this number, but five is enough to get blood flowing, reinforce proper technique, and keep your workouts short.

Although you might feel rusty after you return from a Full Deload Week to start your next macrocycle, don't let that deter you. It's a small price to pay to ensure you're recovered and ready for more intense training.

Another option instead of a Full Deload Week is just taking a week off. If you're feeling particularly exhausted, sore, or beaten up after a Strength Week, or would just like a week of rest before starting the next macrocycle,

it's fine to stay out of the gym instead of deloading.

What About Cardio?

You don't need to do any cardio on the *Beyond Bigger Leaner Stronger* program.

In fact, if you go about cardio the wrong way—doing too much, at too high an intensity, or at the wrong times—it may do more harm than good.

Cardio does offer many health and fitness benefits, however, including better metabolic health, more stamina, significant calorie burning, and possibly even faster post-workout recovery.⁷ You don't have to do much cardio to enjoy these benefits, either—just forty-five to sixty minutes per week is enough, and this can even include walking.

In fact, walking is better than many weightlifters realize, because it's easy on the joints, causes little to no fatigue, and can even help reduce cortisol levels (when outside).⁸ It's also easy to do (and sometimes even enjoyable) when you're feeling tired or unmotivated.

Walking is about as low impact as it gets, too, so it won't impair your strength or muscle gains, and you don't need to fuss over how you incorporate it into your workout routine. You can walk on days you train your upper body, lower body, or your whole body, and it won't have any negative effect on your recovery or progress.

Finally, walking burns more calories than most people realize—about 200 to 400 per hour depending on your bodyweight and pace—and most of these calories come from body fat.⁹

That said, you may want to do moderate- or high-intensity cardio while on the program, and here's how to do it correctly:

- Limit these types of cardio workouts to no more than 50 percent of the time you spend weightlifting. If you lift weights for five hours per week, don't do over two and a half hours of moderate- or high-intensity cardio per week.

- Limit your cardio workouts to no more than thirty to forty-five minutes per session.
- Do your cardio and weightlifting on separate days if possible, and if you have to do them on the same day, try to separate them by at least six hours to minimize the cardio's "interference effect" on your weightlifting.¹⁰
- When lifting weights and doing cardio on the same day, try to schedule moderate- and high-intensity cardio workouts on days with upper-body training, and low-intensity cardio workouts on lower-body days. Additionally, do your cardio after your weightlifting, not before. This too will minimize the degree to which your cardio can interfere with your weightlifting.
- Choose low-impact types of cardio such as cycling, rowing, elliptical, and swimming over high-impact options like running or plyometrics. This will minimize muscle damage and soreness.
- Keep high-intensity interval training (HIIT) to a minimum and stick mostly to steady-state cardio. HIIT burns more calories per minute than lower-intensity cardio, but it also causes more fatigue, muscle damage, and wear and tear on the body.

To illustrate how this might work, let's say you're doing the five-day routine and want to do a couple of walks and higher-intensity cardio workouts per week. Here's how you could organize your schedule:

	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Weightlifting	Upper Body A	Pull & Calves	Upper Body B	Legs & Calves	Upper Body C	Rest	Rest
Cardio	30 minutes of cycling	Rest	30 minutes of walking	Rest	30 minutes of walking	30 minutes of cycling	Rest

Notice how this plan checks all the programming boxes we just discussed:

- The total weekly cardio volume is just two hours, and only one hour if you don't count the walking.
- The cycling workouts are just thirty minutes each and not on lower-body days.
- You're only doing low-impact forms of cardio.

And if you wanted to include HIIT in your routine (to maximize fat loss, let's say), you could take that layout and swap the cycling workouts for twenty to thirty minutes of HIIT cycling.



Well done on working your way through this doorstopper of a chapter. Can you hear me clapping for you? Bravo!

You may want to read this chapter again before continuing, because we're just about ready to get you started on the program, and that means you'll need a good grasp of the major moving parts you just learned about.

Also, if you haven't already, please take a minute to download the free bonus material that comes with this book (www.bblsbook.com/bonus) and peruse the workout spreadsheets. They'll boost your overall understanding of the program tremendously (and you can use them to track your progress).

So, what's next for us? A quick chat about supplementation, a quick review of some frequently asked questions, and a quick ask for a quick favor (pretty please?), and we're off to the squat rack!

Key Takeaways

- The *Beyond Bigger Leaner Stronger* training plan consists of three periods: sixteen-week macrocycles, four-week mesocycles, and one-week microcycles.
- There are also two types of microcycles in the program: training microcycles (three per mesocycle) and deload microcycles (one per mesocycle).
- All three training routines can work for cutting, lean bulking, or maintaining, but if you're cutting on the five-day routine and begin feeling rundown, you may want to switch to one of the other two routines to put less stress on your body.
- Try not to change training routines during a macrocycle, as this can alter volume and results.
- If you'd like to "upgrade" from the three- or four-day routine to the four- or five-day routine in the middle of a macrocycle, give it a go, but avoid "downgrading," unless you have to.
- If you can't do an exercise for whatever reason, you can replace it with an alternate exercise from the previous chapter, do four more sets of an exercise already in your workout, or do more sets of the three exercises you can do for a total of sixteen for the workout.
- In the *Beyond Bigger Leaner Stronger* program, you'll utilize weekly undulating periodization by reducing your rep targets by 2 reps each week for your primary exercises.
- In the case of accessory exercises, you'll work in one rep range per mesocycle, going from the 10-to-12-rep range to the 8-to-10-rep range and finally the 6-to-8-rep range.
- You'll achieve progressive overload in two ways: linear progression, which you'll use with your primary exercises, and double progression, which you'll use with your accessory exercises.
- The *Beyond Bigger Leaner Stronger* program includes a Strength Week at the end of each macrocycle, where you test your strength on primary exercises to see if you've gotten stronger over the

course of the macrocycle.

- Reps in reserve (RIR) refers to how many more reps you could've gotten in a set before your form breaks down.
- You should end hard sets of primary exercises 1 to 2 reps shy of technical failure, or expressed differently, at one to two RIR.
- If you fall short by even one rep on a first or second set of a primary exercise, reduce your estimated one-rep max by 10 pounds, and recalculate your training weight.
- To implement double progression in the program, when you reach the top of the prescribed rep range for all four sets of an accessory exercise, increase the weight by 10 pounds (total), and work with that weight until you can hit the top of the rep range for all four sets, move up again, and so on.
- As a general rule, end all sets of accessory exercises one rep shy of technical failure, but you don't have to adhere to this guideline perfectly.
- If you move to heavier weights and can't reach the bottom of your rep range before your form starts breaking down, you have two options:

Increase the weight in smaller increments.

Continue with the original, lighter load until you can get four clean sets of your rep target.

- For your primary exercises, rest three to five minutes between each set, and for accessory exercises, two to three minutes.
- To find your starting weights for the primary exercises you'll be doing in your first macrocycle, review your workout logs and find your strongest set in the last two months for each—the strongest set is the one that involved the most weight for the most reps.
- To warm up on an individual exercise, here's an easy and effective routine that'll get the job done without compromising your performance on your hard sets:

Do 6 reps with about 50 percent of your hard set weight, and rest for a minute.

Do 4 reps with the same weight at a faster pace, and rest for a minute.

Do 2 reps with about 70 percent of your hard set weight, and rest for a minute.

- Each four-week mesocycle of this program will conclude with a deload week where you do less stressful workouts to allow your body to catch up with recovery.
- In a Volume Deload Week, you cut your number of hard sets and reps per set in half, but use the same heavy weights as your previous week of hard training (if it's an odd number of reps, round down to an even one before halving it).
- In the Full Deload Week, you reduce both your volume and intensity by cutting your hard sets in half, reducing your intensity to 50 percent of one-rep max, and doing just 5 reps for all of your hard sets.
- If you're feeling particularly exhausted, sore, or beaten up after a Strength Week, or would just like a week of rest before starting the next macrocycle, it's fine to stay out of the gym instead of deloading.
- If you want to do moderate- or high-intensity cardio while on the program, here's how to do it correctly:

Limit these types of cardio workouts to no more than 50 percent of the time you spend weightlifting.

Limit your cardio workouts to no more than thirty to forty-five minutes per session.

Do your cardio and weightlifting on separate days if possible,

and if you have to do them on the same day, try to separate them by at least six hours to minimize the cardio's "interference effect" on your weightlifting.

When lifting weights and doing cardio on the same day, try to schedule moderate- and high-intensity cardio workouts on days with upper-body training, and low-intensity cardio workouts on lower-body days, and do your cardio after your weightlifting, not before.

Choose low-impact types of cardio such as cycling, rowing, elliptical, and swimming over high-impact options like running or plyometrics.

Keep high-intensity interval training (HIIT) to a minimum and stick mostly to steady-state cardio.

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The *Beyond Bigger Leaner Stronger* Supplementation Plan

Twenty years from now you will be more disappointed by the things you didn't do than by the ones you did do.

—MARK TWAIN

NOW THAT WE HAVE THE MOST essential aspects of the program buttoned up—the diet and training—let's go over supplementation.

As we discussed in chapter ten, this element of the program is optional and not terribly important, because most of your results will come from the work you do in the kitchen and gym. Supplements can give an edge in losing fat, building muscle, and getting healthy, but can't take the place of solid fundamentals.

Moreover, if you have the budget, supplementation can be worthwhile, because its advantages compound. The minor improvements supplements can provide in body composition, performance, and health can add up to significant upswings over months and years.

Earlier in this book, you learned about four valuable types of supplements you can include in your regimen:

1. Sleep
2. Joint
3. Stress
4. Immunity

And in this chapter, I'll show you how to use each most beneficially.

That doesn't mean you *need* to use each or any of these supplements, however. Take as many or as few as your budget and inclination allows. Personally, I take most of them, but that's because I demand a lot from my body and want to support it as much as possible, and I don't mind swallowing a bunch of pills every day.

Also, in the spirit of full disclosure, I want you to know that some of the products I'll recommend are not just what I use but are also from my sports nutrition company Legion.

If your eyes are rolling ("Oh great, here comes the sales pitch ..."), I understand, but let me explain.

Years ago, I was struggling to find high-quality supplements and companies I could trust. And so I wondered, should I "scratch my own itch" and create the products I've always wanted? Would anyone else want them as well?

This wasn't an easy decision. I've made my bones as an author and educator. I've sold over 1.5 million books, published over a million words of free content on my blog and hundreds of episodes of my podcast, and I've worked with thousands of people of all ages and circumstances. And many people think that's awesome. Go me.

What would happen if I were to sell supplements, though?

Considering the state of the supplement industry (a "wretched hive of scum and villainy," to quote Ben Kenobi), I feared that no matter how good my products might be or how honestly or fairly I might sell them, many of my readers and followers would assume I'd sold out, reach for their pitchforks and torches, and try to run me off the Internet.

So I was on the horns of a dilemma.

On the one hand, I saw an opportunity to do things differently and create 100 percent natural, science-based supplements that really work. On

the other, doing so would mean getting into the twenty-ton turd salad that is the supplement space and trying to convince people I wasn't a scammer like everyone else.

And so, after much deliberation and many sacrificial offerings to the gods of commerce and capitalism, I went with my gut and entered the fray.

I started a sports nutrition company called Legion (www.legionathletics.com), unsure of what to expect. Would people have enough faith in me, and appreciate the products and what makes them special? Would it be a flash in the pan, or would it have staying power?

Well, that was 2014, and now, Legion is the leading brand of all-natural sports supplements in the world with over 250,000 customers who have left over ten thousand glowing reviews on the Internet. I'm glad I took the leap.

The primary reason Legion is going gangbusters is our commitment to complete transparency, from formulating to scientific research, marketing and advertising, labeling, and more. Simply put, Legion outclasses everything else on the market and is becoming the yardstick by which other sports nutrition companies are measured.

The bottom line is I'm not just looking to sell pills and powders. I want to change the supplement industry for the better, and Legion is leading the charge.

So, with that out of the way, let's learn how to use the four kinds of supplements I've recommended.

Sleep Support

The three supplements I suggest for improving sleep are melatonin, glycine, and lemon balm.

Melatonin should only be taken if you have trouble falling or staying asleep. If you sleep fine, however, melatonin won't benefit you, so there's no need to take it.

Research shows that melatonin should be taken 15 to 30 minutes before bed and can be taken daily if needed. As for the dosing:

- 300 micrograms (0.3 milligrams) is usually seen as the lowest effective dose.
- 500 micrograms (0.5 milligrams) is also a low effective dose.
- 1 to 3 milligrams is the most common range with supplements. Some people benefit from these doses more than the microgram amounts, and some don't.
- 5 to 10 milligrams has been used to treat sleep impairments unresponsive to the 1 to 3 milligram range.
- Megadoses beyond the above, up to 40 milligrams, have been tested and appear safe, but aren't linked to any unique benefits.

So, with melatonin, more isn't necessarily better. If you're like most people, something between 500 micrograms and 3 milligrams will work best, and you might as well start with the smallest amount and work your way upward until you're satisfied with the results.

You may also want to try a "time-released" melatonin supplement, which slowly releases melatonin over several hours rather than 30 to 40 minutes. This is most effective at a dose of 3 milligrams and is designed for people (like me) who are light sleepers and wake up several times at night.

As for glycine, everyone can safely benefit from it regardless of how well they sleep, and research shows that the clinically effective dose is 3 grams taken around 30 minutes before bed.¹ It too can be taken daily or less frequently, if you prefer.

Lemon balm can also benefit everyone, and research shows that the clinically effective dose is between 300 and 1,200 milligrams depending on the rosmarinic acid content (shoot for about 50 milligrams of rosmarinic acid per dose) taken around 30 minutes before bed. Daily supplementation is fine here as well.

Supplement	When	Frequency	Clinically Effective Dose
Melatonin	30 minutes before bed	Daily (if needed)	0.3 to 10 milligrams
Glycine	30 minutes before bed	Daily (or less often)	3 grams
Lemon balm	30 minutes before bed	Daily	300 to 1,200 milligrams providing around 50 milligrams of rosmarinic acid

As far as specific sleep supplements go, I take a natural sleep aid produced by Legion called Lunar that contains clinically effective doses of melatonin, glycine, and lemon balm standardized to contain 7 percent of rosmarinic acid by weight.

Joint Support

The five supplements I recommend for joint support are undenatured type II collagen, curcumin, Boswellia serrata, grape seed extract, and glucosamine.

All five can help people with and without joint problems, so you can take as few or many as you desire.

Undenatured type II collagen should be taken daily, and research shows that the clinically effective dose is between 10 and 40 milligrams.²

Curcumin should also be taken daily, and research shows that the clinically effective dose is between 200 and 500 milligrams of an absorption-enhanced form like the phosphatidylcholine-curcumin complex Meriva or a generic curcumin with black pepper extract (which is often included at 20 milligrams per dose).³

As for Boswellia serrata, it should be taken daily, and research shows that the clinically effective dose is between 100 and 200 milligrams, depending on its boswellic acid content (20 to 30 milligrams of AKBA per dose is known to work well).⁴

With grape seed extract, it should be taken daily, and research shows that the clinically effective dose is between 75 and 300 milligrams.⁵

And for glucosamine, daily use is best, and research shows that the clinically effective dose is between 900 and 1,500 milligrams as sulfate, not hydrochloride.⁶

Supplement	Frequency	Clinically Effective Dose
Undenatured type II collagen	Daily	10 to 40 milligrams
Curcumin	Daily	200 to 500 milligrams paired with 20 milligrams of black pepper extract)
Boswellia serrata	Daily	100 to 200 milligrams providing 20 to 30 milligrams of AKBA
Grape seed extract	Daily	75 to 300 milligrams
Glucosamine	Daily	900 to 1,500 milligrams of glucosamine sulfate

I take a natural joint support supplement produced by Legion called Fortify, which contains clinically effective doses of undenatured type II collagen, curcumin, Boswellia serrata, and grape seed extract.

I also take glucosamine sulfate, which I buy from a company called Jarrow, because they've proven themselves to be a trustworthy source of high-quality ingredients.

Stress Support

The three supplements I recommend for stress support are ashwagandha root extract, rhodiola rosea, and L-theanine, and everyone can benefit from all three.

As for ashwagandha root extract, it should be taken daily, and research shows that the clinically effective dose is between 50 and 500 milligrams of the patented KSM-66 brand or 5 grams of the raw powder.

With rhodiola rosea, it should be taken daily as well, and research shows that the clinically effective dose is between 50 and 700 milligrams,

with higher amounts used for acute benefits and lower ones for chronic (long-term) supplementation.

L-theanine should be taken daily, too, and research shows that the clinically effective dose is between 200 and 800 milligrams.⁷

Supplement	Frequency	Clinically Effective Dose
Ashwagandha root extract	Daily	50 to 500 milligrams KSM-66 or 5 grams of raw powder
Rhodiola rosea	Daily	50 to 700 milligrams
L-theanine	Daily	400 to 800 milligrams

For my part, I take a natural sport multivitamin produced by Legion called Triumph, which contains a clinically effective dose of KSM-66 ashwagandha, and I buy L-theanine in bulk.

Immunity Support

The six supplements I recommend for immunity support are pelargonium sidoides, aged garlic extract, panax quinquefolius, tinospora cordifolia, zinc, and vitamin C.

Pelargonium sidoides should be taken daily when sick, and research shows that the clinically effective dose is around 800 milligrams of the raw plant per day.

As for aged garlic extract, it should be taken daily (and especially when sick), and research shows that the clinically effective dose is between 600 and 1,200 milligrams.

Like aged garlic extract, panax quinquefolius should also be taken daily (and especially when sick), and research shows that the clinically effective dose is between 400 and 1,125 milligrams split into several servings.

Tinospora cordifolia should be taken daily when sick, and research shows that the clinically effective dose is 300 milligrams per day split into several servings.

With zinc, take it daily (and especially when sick), and research shows that 30 milligrams is enough to help reduce the risk of sickness and 80 to 100 milligrams (as lozenges) helps reduce the duration and severity of sickness.

Finally, vitamin C should be taken every day (and especially when sick), and research shows that the clinically effective dose is 1 to 2 grams for preventing sickness in athletes and 1 to 8 grams for reducing the duration of the common cold, with higher doses used on the first day or two of sickness and followed by a lower daily amount.

Supplement	Frequency	Clinically Effective Dose
Pelargonium sidoides	Daily (when sick)	800 milligrams
Aged garlic extract	Daily (especially when sick)	600 to 1,200 milligrams
Panax quinquefolius	Daily (especially when sick)	400 to 1,125 milligrams
Tinospora cordifolia	Daily (when sick)	300 milligrams
Zinc	Daily (especially when sick)	30 milligrams to reduce the risk of sickness. 80 to 100 milligrams (as lozenges) to reduce the duration and severity of sickness.
Vitamin C	Daily (especially when sick)	1 to 8 grams for reducing the duration of the common cold. 1 to 2 grams for athletes wanting to prevent sickness.

And as far as specific immunity supplements go, I take one produced by Legion called Immune that contains clinically effective doses of all six of the ingredients I endorse.



That's a wrap on supplementation!

If you plan to use any of the supplements we discussed, take a break

now to order what you'll need. Then, when you're ready to continue, we'll address frequently asked questions about how to get the most out of the *Beyond Bigger Leaner Stronger* program.

Key Takeaways

- Although supplementation isn't terribly important, the minor improvements supplements can provide in body composition, performance, and health can add up to significant upswings over months and years.
- The three supplements I suggest for improving sleep are melatonin, glycine, and lemon balm.
- The five supplements I recommend for joint support are undenatured type II collagen, curcumin, *Boswellia serrata*, grape seed extract, and glucosamine.
- The three supplements I recommend for stress support are ashwagandha root extract, rhodiola rosea, and L-theanine.
- The six supplements I recommend for immunity support are pelargonium sidoides, aged garlic extract, *Panax quinquefolius*, *Tinospora cordifolia*, zinc, and vitamin C.

Part Six

The Farewell (For Now)

20

From Here Your Body Will Change

Normality is a paved road. It's comfortable to walk,
but no flowers grow on it.

—VINCENT VAN GOGH

SO ... I GUESS THIS IS IT, RIGHT? We've reached the end.

No way.

You're in a process now—and yup, it has already begun—of proving to yourself you can break through muscle and strength plateaus, set new personal records, and build your best body ever.

In just the first macrocycle of the program, you'll know with absolute certainty that you're on the fast track to a bigger, leaner, and stronger you.

Your self-confidence and self-esteem will surge, and your workout buddies will notice the fire in your eyes. Don't be surprised when your newfound positivity and pride elevate other areas of your life, as well, inspiring you to reach for other goals and improve yourself in other ways.

As I say in my book *The Little Black Book of Workout Motivation*, if you have the power to change your body, you have the power to change your life.

From here, all you have to do is walk the path I've laid out for you, and

soon, you'll look in the mirror and think, "I'm glad I did," not "I wish I had."

My goal is to help you reach your goals, and I know if we work together as a team, we can and will succeed.

So, if you're ready to begin, fire up your favorite social media networks, announce you're starting the program, tag me (my information follows), and add the #BeyondBiggerLeanerStronger hashtag.

Why do this? Three reasons:

1. It's a powerful way to "precommit" to your journey and strengthen your resolve.
2. I'd love to e-meet you and keep tabs on your progress (and feature your transformation on my website once you're ready, if you'd like).
3. Other men looking for inspiration can find you (with the hashtag) and follow your journey. Who knows who you might help and motivate!

So, here's how we can connect:

- Instagram: @muscleforlifefitness
- YouTube: www.youtube.com/muscleforlifefitness
- Facebook: www.facebook.com/muscleforlifefitness
- Twitter: @muscleforlife

I also want to invite you to join my Facebook group, which is a community of thousands of positive, supportive, like-minded people who are striving to become the best they can be. People who can answer your questions, cheer your victories, and soothe your setbacks, and for whom you can do the same in return.

Here's where you can find it:

⇒ www.teamlegion.group

All you have to do is visit that URL and click the "+ Join Group" button. One of my team members will approve your request, and you're in.

Also, if you want to write to me, my email address is mikem@

legionsupplements.com. Keep in mind that I get a lot of emails every day, so it may take a week or so for me to get back to you.

Also, if you've enjoyed this book and are better off after reading it, please pass it on to someone you care about. Let them borrow your copy, or, better yet, get them their own as a gift and say, "I want to help you live your best life, so I got you this. Read it."

And if there are any women in your life who could use some help getting in shape, you can tell them about my book *Thinner Leaner Stronger* and that I'd love to help with their fitness goals as well.

My personal mission is to get my information into as many hands as possible, and I can't do that without your help. So please spread the word.

Thank you so much, and I hope to hear from you soon.

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Frequently Asked Questions

Most people overestimate what they can achieve in a year and underestimate what they can achieve in ten years.

—UNKNOWN

I PUBLISHED THE FIRST EDITION of *Beyond Bigger Leaner Stronger* in 2014, and as of this writing, it has sold over 100,000 copies.

That's incredibly humbling, and it has allowed me to speak with many people who have asked many good questions. In fact, my inbox has over 200,000 emails sent and received from men and women around the world!

By this point in the book, we've covered all the most important aspects of succeeding as an intermediate or advanced weightlifter, but you may have lingering doubts still stuck in your craw.

Let's tackle the obvious candidates here.

Q: When should I switch from *Bigger Leaner Stronger* to *Beyond Bigger Leaner Stronger*?

A: When you're no longer gaining strength and muscle on the *Bigger*

Leaner Stronger program. For most people, this occurs after one to two years, mostly because it doesn't provide enough volume for an intermediate weightlifter to continue making progress.

That said, some find they can follow *Bigger Leaner Stronger* for three, four, or even five years with consistent muscle and strength gain. If you're one of them, you don't have to switch after a year or two if it's still working for you, but you might get even better results with *Beyond Bigger Leaner Stronger*, and you might enjoy the challenge of more difficult training.

Another way of determining when to transition from *Bigger* to *Beyond Bigger Leaner Stronger* is strength levels. If you haven't hit at least two of the following targets, chances are you can still profit from *Bigger Leaner Stronger* and don't need to switch just yet.

- Squat One-Rep Max: 1.5 x body weight
- Bench Press One-Rep Max: 1.2 x body weight
- Deadlift One-Rep Max: 2 x body weight
- Overhead Press One-Rep Max: 0.8 x body weight
- Chin-up or Pull-up: 8 reps with bodyweight or at least 1 rep with bodyweight plus 20 percent

Why two out of five targets for moving to *Beyond Bigger Leaner Stronger*? Because it's normal for people to be above average in a couple of key lifts and below average in the others.

For instance, I have long legs and arms, so I've always struggled with the bench press, overhead press, and squat, but less so on the deadlift, because the advantage provided by my arms negates the disadvantage of my legs.

Q: I'm in my 30s/40s/50s-plus. Can I do this program?

A: Absolutely.

If you're an intermediate or advanced weightlifter who has achieved at least two of the five strength standards listed above, you can benefit from

Beyond Bigger Leaner Stronger just as much as a college kid.

(And if you're new to proper weightlifting or haven't gained much strength yet, *Bigger Leaner Stronger* will suit you better.)

That said, research shows that after about age fifty, muscles, tendons, and ligaments recover slower from exercise, and tendons and ligaments stiffen, which can increase the risk of injury.¹

Thus, if you're middle-aged, I have two tips to share:

1. Be a stickler for good form.

The older you are, the less shenanigans you can get away with in your training. Lumbar rounding in your deadlifts ... knee bowing in your squats ... elbow flaring in your bench presses ... they all increase the risk of injury at any age, but improper form becomes more dangerous as the years go by.

Hence, my emphasis on learning and using proper form from day one, regardless of age or fitness level, and resisting the temptation to sacrifice form to hit personal records. I'm willing to train hard, but if I feel my lower-back rounding on the deadlift, I end the set. Likewise, if I'm squatting and no longer can keep my shoulders rising with my hips, I end the set.

I'm not a competitive bodybuilder or strength athlete. I enjoy lifting heavy weights and being muscular and strong, but I like staying healthy and injury-free more. I suspect you're in the same boat.

2. Get enough sleep.

Many middle-aged people don't sleep enough, because they've heard (and believed) the common wisdom that sleep needs decline with age. This is true, but it doesn't mean you can get by on minimal shuteye.

Most of us start out needing about twelve to fourteen hours of sleep per night as babies, ten to twelve hours as toddlers, and nine to ten hours as teenagers. Once we reach adulthood, we need seven to nine hours depending on our genetics, lifestyle, and exercise habits.²

So yes, we need less sleep as we get older, but not that much less. While

there is a tiny fraction of the population that can get by with six, five, or even four hours of sleep per night, you're probably not one of them.³

What's more, intense training increases your need for sleep, so even if you could make do with six or seven hours per night, you'll do better with more.

While there's no direct evidence sleeping more will enhance muscle or strength gain, multiple studies have found that increasing sleep duration from seven to eight hours per night to nine to ten improves athletic performance in several ways.⁴ It's very likely these benefits would extend to your workouts as well.

Your ability to recover from your training will also be directly impacted by how much and how well you sleep. Research shows that even slight sleep deprivation (sleeping seven hours if your body really needs eight, for instance) may impair muscle protein synthesis, which could reduce muscle growth if you were regularly underslept.⁵

So, if you're sleeping less than seven hours per night, you aren't sleeping enough, and bumping this up by an hour or two will probably produce immediate and long-term benefits inside and outside the gym.

Q: Why aren't there any ab exercises on the program?

A: There are!

They're called: the squat, deadlift, military press, bench press, chin-up, pull-up, one-arm dumbbell row, and others.

My point is while there are no *direct* ab exercises in the program, like crunches, planks, and situps, many of the compound exercises in it heavily train your abdominals, obliques, and other core muscles.

For instance, a study conducted by scientists at Nord University measured the core muscle activity of twelve powerlifters and national level sprinters during barbell back squats and weighted planks.⁶

The researchers found that on average, the barbell back squat activated the rectus abdominis ("ab muscles") and external oblique muscles just as effectively as the weighted plank and the erector spinae muscles significantly more. Rectus abdominis activation also increased with each rep of

the squat, but not the weighted plank.

Thus, the researchers concluded, “... we recommend targeting core muscles by integrated high-intensity exercises [such] as the squat instead of an isolated and isometric core exercise, especially for athletes.”

Why did I bother including direct ab exercises in *Bigger Leaner Stronger*, then?

Because that's a book for guys who can benefit from ab training. Most of the people who read *Bigger Leaner Stronger* are new to heavy, compound weightlifting, and thus have underdeveloped core muscles. While they don't need to do any ab exercises, including some in their routine will speed up their core development so they can see their six-packs sooner.

This book, however, is for guys who likely don't need direct ab exercises. They've been squatting, deadlifting, and bench pressing for some time now, and have a well-developed core that won't benefit from additional ab work.

But if your abdominal development is lagging or you just like doing ab exercises, you can include ab exercises in *Beyond Bigger Leaner Stronger*. I recommend adding two sets of ab exercises of your choice (*Bigger Leaner Stronger* has my favorites) to the end of your legs and pull days, after you've finished all of your prescribed exercises.

After doing this for one macrocycle, you can up the volume to three or four sets of each core exercise, but there's little reason to do more than this when you're also doing plenty of heavy weightlifting.

Q: Should I change anything when I'm cutting?

A: Just your expectations.

While people new to weightlifting can gain muscle and strength while cutting, as an intermediate or advanced weightlifter, maintaining most of your gains during a cutting phase is cause for celebration.

In the *Beyond Bigger Leaner Stronger* program, if your one-rep maxes are about the same or slightly lower than when you started a cut, you've done well.

In fact, expect up to a five percent reduction in your squat and deadlift one-rep maxes by the end of a cut and up to ten percent off your bench and military press maxes. Don't ask me why, but pressing often suffers more than pulling and squatting while cutting.

If you lose more strength than that while dieting, you were probably restricting your calories too much, eating too little protein, not sleeping enough, phoning in your workouts, or doing too much cardio. Take heart, though, because you'll quickly gain back any muscle and strength you lost once you come out of the calorie deficit.

You may also find that you miss reps more often while cutting, especially toward the end of the cut. This is normal, and the solution is to reduce your estimated one-rep maxes as described in chapter eighteen.

Q: How should I coordinate my cuts and lean bulks and macrocycles?

A: You can cut and lean bulk as desired, regardless of where you are in a macrocycle, but if you're so inclined, you can also incorporate "nutritional periodization" into your regimen.

Here are three tips on how to do this fruitfully:

1. Start a cutting or lean bulking phase at the beginning of a mesocycle, and try not to switch while in the middle of it.
2. Lean bulk for three to four mesocycles in a row before cutting. Ideally, you'd finish an entire macrocycle in a calorie surplus (four mesocycles), but if you eat too much during your lean bulk (tisk tisk), you can end after three mesocycles.
3. For the best results, aim to spend at least two-thirds of the year lean bulking and no more than one-third cutting. Some experts recommend maintaining a 4:1 ratio of time spent lean bulking to cutting. That is, for every four months of lean bulking, you have one month of cutting.⁷

Here's how this might play out over twelve mesocycles (one year):

Macrocycle	Mesocycle	Diet
1	1	Lean bulking
	2	Lean bulking
	3	Lean bulking
	4	Lean bulking
2	1	Cutting
	2	Cutting
	3	Cutting
	4	Lean bulking
3	1	Lean bulking
	2	Lean bulking
	3	Lean bulking
	4	Cutting

Many people also like to plan their lean bulking and cutting cycles according to the seasons. Usually, it's cutting in the spring, maintaining in the summer and fall, and lean bulking in the winter.

This is fine, but if you get and stay too lean (sub-10 percent) during the summer and fall, you'll make less progress over the course of the year, because you're missing out on several months of lean bulking. Remember—while maintaining can be fun, you're essentially pausing your ability to gain muscle and strength.

If you're okay with that, however, you could plan the year like this:

Macrocycle	Mesocycle	Month	Diet
1	1	January	Cutting
	2	February	Cutting
	3	March	Cutting
	4	April	Maintaining
2	1	May	Maintaining
	2	June	Maintaining
	3	July	Maintaining
	4	August	Lean Bulking
3	1	September	Lean bulking
	2	October	Lean bulking
	3	November	Lean bulking
	4	December	Lean bulking

To make this schedule work best, you must start the year around 12 to 14 percent body fat and come into summer around 9 to 10 percent. If you start your cutting phase much fatter or want to get and stay much leaner during the warmer months, you'll need more time for cutting, which isn't optimal.

Another strategy for maintaining a generally lean body composition while also making progress on the program is cutting down to 9 to 10 percent body fat and then using the mini-cutting approach shared in chapter seventeen.

Here, your body fat levels rise a bit over the course of three or four mesocycles of lean bulking and then fall back to about 9 to 10 percent by the end of a mini-cut, allowing you to rinse and repeat this cycle indefinitely.

Q: I travel a lot. Can I follow this program?

A: Yes, but it'll require some forethought.

First, booking hotels close to adequate gyms helps a lot (hotel gyms usually suck), and determining beforehand when you'll work out is also a good idea.

Second, you have three options for your diet:

1. Make a meal plan of simple foods you can pick up at a local grocery store and prepare and store in your hotel room. Good choices include salad, deli meat, rotisserie chicken, fruit, nuts, high-protein yogurt, granola, and the like. A grocery delivery service like Instacart or Amazon Prime Now can make this more convenient (if the hotel will accept the delivery for you).
2. Track food intake on the go with an app like MyFitnessPal.
3. Eat according to your appetite and try to keep your calories and macros in check.

If you travel a lot and want to make good progress in your training, options one and two are your best bets. Option three works fine for the occasional short trip, but not for regular travelers.

Q: I'm not getting very sore. Is that a problem?

A: I used to think perpetual muscle soreness was a price you had to pay to get bigger—a badge of honor, if you will. (“Damn straight I have to walk down stairs backward! My legs will be huge!”)

I assumed a major reason we trained our muscles was to damage them, which resulted in soreness. Therefore, considerable soreness meant considerable damage that would hopefully lead to considerable muscle growth, right? Not quite.

Research shows that muscle damage may contribute to growth, but it isn't a requirement.⁸ Workouts that produce large amounts of muscle soreness may not result in muscle growth, and workouts that produce very little soreness can cause significant growth.⁹

For instance, an hour of downhill running can produce a tremendous amount of muscle soreness in your legs, but it won't do much toward building strong, muscular wheels.¹⁰ Similarly, changing your workouts to produce more muscle damage can cause more soreness, but doesn't always result in more growth.¹¹

Several other observations provide more evidence of the disconnect

between muscle soreness and muscle building:

- People who train infrequently build less muscle but experience more soreness than those who train more often.
- Muscle soreness generally decreases as training frequency increases, which can boost muscle growth.
- Muscles like the shoulders and calves are often barely sore after training but can grow substantially.

Moreover, damaged muscles don't always hurt, and muscles that hurt aren't always much damaged.¹²

The physiology of this isn't fully understood yet, but one study conducted by scientists at Concordia University found that at least some of the pain we're feeling in post-workout soreness stems from the connective tissue holding muscle fibers together, not from the actual fibers themselves.¹³

Therefore, what we think is muscle soreness is at least partially (if not mostly) connective tissue soreness.

And while we're talking muscle soreness, we might as well tackle another common question: can you train muscles that are still sore from a previous workout?

Yes, you can.

Training sore muscles doesn't necessarily hinder recovery and prevent muscle growth.¹⁴ However, if you train too hard too often, you can experience chronic soreness and fatigue that compromises your progress. If you follow the *Beyond Bigger Leaner Stronger* program as it's laid out, though, this shouldn't happen.

Q: Should I exercise when I'm sick?

A: No. At least not intensely.

I understand the desire to train when sick. Once you've established a good workout routine, skipping days can be harder than going to the gym even when you're not feeling well. Force yourself to rest, though, because your normal

workouts will only make things worse and depress immune function.¹⁵

That said, animal research shows that light exercise while infected with the influenza virus boosts immunity and speeds recovery.¹⁶ Similar effects have been seen in human studies as well.¹⁷

Human research has also found that light exercise doesn't impair the immune system or prolong or worsen infections.¹⁸

So if you do any exercise while under the weather, make it twenty minutes or less of light cardio, like walking.

Q: I only have dumbbells. Can I do the program?

A: Kind of.

You can't follow the routines exactly as I've laid them out, because there are no great dumbbell substitutions for some of the exercises, but you can still use a lot of what you've learned in this book to create effective dumbbell workouts.

To do this, you have the dumbbell exercises I've provided you with in chapter seventeen, but those won't be enough for all the major muscle groups. Here's a more extensive list of dumbbell and bodyweight exercises to choose from:

Chest	Shoulders	Back	Arms	Legs
Dumbbell Bench Press	Seated Dumbbell Press	Dumbbell Deadlift	Dumbbell Curl	Goblet Squat
Incline Dumbbell Bench Press	Seated Arnold Press	One-Arm Dumbbell Row	Dumbbell Hammer Curl	Dumbbell Front Squat
Dumbbell Fly	Dumbbell Side Lateral Raise	Chin-up	Dumbbell Triceps Kickback	Dumbbell Romanian Deadlift
Dumbbell Pullover	Dumbbell Rear Lateral Raise	Pull-up	Dumbbell Triceps Overhead Press	Dumbbell Lunge (Walking or In-Place, Forward or Reverse)
Dumbbell Floor Press	Dumbbell Front Lateral Raise	Inverted Row	Dumbbell Lying Triceps Extension (Skullcrusher)	Nordic Hamstring Curl
Feet-Elevated Push-up			Triceps Dip	Standing Dumbbell Calf Raise

And as far as workouts go, here's how I might build a five-day routine:

Workout 1	Workout 2	Workout 3	Workout 4	Workout 5
<i>Upper Body A</i>	<i>Pull & Calves</i>	<i>Upper Body B</i>	<i>Legs</i>	<i>Upper Body C</i>
Dumbbell Bench Press Warm up and 4 hard sets	Dumbbell Deadlift Warm up and 4 hard sets	Seated Dumbbell Press Warm up and 4 hard sets	Dumbbell Front Squat Warm up and 4 hard sets	Incline Dumbbell Bench Press Warm up and 4 hard sets
Incline Dumbbell Bench Press 4 hard sets	Pull-up 4 hard sets	Dumbbell Fly 4 hard sets	Dumbbell Lunge (In-Place, Forward) 4 hard sets	Dumbbell Bench Press 4 hard sets
Dumbbell Side Raise 4 hard sets	One-Arm Dumbbell Row 4 hard sets	Dumbbell Curl 4 hard sets	Nordic Hamstring Curl 4 hard sets	One-Arm Dumbbell Row 4 hard sets
Dumbbell Lying Triceps Extension 4 hard sets	Standing Dumbbell Calf Raise 4 hard sets	Dumbbell Rear Lateral Raise 4 hard sets	Standing Dumbbell Calf Raise 4 hard sets	Dumbbell Hammer Curl 4 hard sets

And here's how a four-day routine could be laid out:

Workout 1	Workout 2	Workout 3	Workout 4
<i>Upper Body A</i>	<i>Pull & Calves</i>	<i>Upper Body B</i>	<i>Legs</i>
Dumbbell Bench Press Warm up and 4 hard sets	Dumbbell Deadlift Warm up and 4 hard sets	Seated Dumbbell Press Warm up and 4 hard sets	Dumbbell Front Squat Warm up and 4 hard sets
Incline Dumbbell Bench Press 4 hard sets	Pull-up 4 hard sets	Incline Dumbbell Bench Press 4 hard sets	Dumbbell Lunge (In-Place, Forward) 4 hard sets
Dumbbell Side Raise 4 hard sets	One-Arm Dumbbell Row 4 hard sets	Inverted Row 4 hard sets	Nordic Hamstring Curl 4 hard sets
Dumbbell Lying Triceps Extension 4 hard sets	Standing Dumbbell Calf Raise 4 hard sets	Dumbbell Curl 4 hard sets	Standing Dumbbell Calf Raise 4 hard sets

And as for a three-day routine ...

Workout 1	Workout 2	Workout 3
<i>Upper Body</i>	<i>Pull & Calves</i>	<i>Full Body</i>
Dumbbell Bench Press Warm up and 4 hard sets	Dumbbell Deadlift Warm up and 4 hard sets	Dumbbell Front Squat Warm up and 4 hard sets
Incline Dumbbell Bench Press 4 hard sets	Pull-up 4 hard sets	Dumbbell Lunge (In-Place, Forward) 4 hard sets
Dumbbell Side Raise 4 hard sets	One-Arm Dumbbell Row 4 hard sets	Incline Dumbbell Bench Press 4 hard sets
Dumbbell Lying Triceps Extension 4 hard sets	Standing Dumbbell Calf Raise 4 hard sets	Dumbbell Curl 4 hard sets

Q: Can I do exercises in a different order in my workouts?

A: I don't recommend it.

Each workout is organized so you're doing your primary exercises first, followed by your accessory exercises, because you always have the most energy and focus in the beginning of your workouts.

Research also shows that you'll likely make the most progress on whatever exercises you do first in your workouts, so it makes sense to always do your most effective exercises first (primary exercises), followed by less important ones (accessory exercises).¹⁹

Would You Do Me a Favor?

THANK YOU FOR READING *Beyond Bigger Leaner Stronger*. I hope you'll use what you've learned to break through muscle and strength plateaus, set new personal records, and build your best body ever.

But I have a small favor to ask.

Would you mind taking a minute to write a blurb on Amazon about this book? You don't have to write much if you don't want to, and I check all my reviews and love to get feedback, because that's the real pay for my work—knowing that I'm helping people.

To leave me a review, you can:

1. Pull up Amazon on your web browser, search for “Beyond Bigger Leaner Stronger,” click on the book, and scroll down and click on the “Write a customer review” button.
2. Visit www.bblsbook.com/review, and you'll be forwarded to Amazon to leave a review.

Thanks again, and I look forward to reading your feedback!

Free Bonus Material:

(Videos, Tools, and More!)

THANK YOU FOR reading *Beyond Bigger Leaner Stronger*.

I hope you've found it insightful, inspiring, and practical, and to make sure you receive as much value from this book as possible, I've put together several additional free resources to help you, including:

- A reference guide to save, share, and print, with all of this book's key takeaways, checklists, and action items.
- Links to form demonstration videos for all *Beyond Bigger Leaner Stronger* exercises.
- An entire year's worth of workouts, neatly laid out and provided in several formats, including PDF, Excel, and Google Sheets. If you'd prefer the workouts in a digital or hard-copy book, check out *The Beyond Bigger Leaner Stronger Challenge* (www.bblsbook.com/challenge). And if you'd prefer to use an app, check out my free workout app Stacked (www.getstackedapp.com).
- Over twenty meal plans for losing fat and gaining muscle following traditional dieting, intermittent fasting, and calorie cycling protocols.
- A list of my favorite tools for getting and staying motivated and on track inside and outside of the gym.
- And more.

To get instant access to all of those free bonuses (plus a few additional surprise gifts), go here now:

⇒ www.bblsbook.com/bonus

Also, if you have questions or run into difficulties, just shoot me an email at mikem@legionsupplements.com, and I'll do my best to help.

Do You Want One-on-One Coaching?

HAVE YOU EVER FELT LIKE no matter what you do to eat better ... no matter how much you work out ... nothing seems to work?

I've been there. It can be incredibly frustrating. Hell, it can even make you feel a bit crazy.

You try and try and try. Then when that doesn't work, you jump onto a new diet or workout plan.

Then, when you've given that your all and it too doesn't work, you finally feel like giving up. Maybe you muster the will to keep going, but either way, you remain stuck.

This is why people can go to the gym, eat "clean," and take supplements for years and still look more or less the same as when they started.

Well, guess what?

Today I'm giving you the solution. I'm going to help get you "unstuck" and finally out of this vicious cycle, once and for all.

You game?

The biggest thing I see with the people I've helped radically transform their body is this: they're often missing just *one* crucial piece of the puzzle. And I'm gonna guess it's the same with you.

You're probably doing a lot of things right, but dollars to doughnuts, there's something crucial you're doing wrong that's giving you most of the grief.

Maybe it's your calories or macros ... maybe it's your exercise selection

... maybe it's your food choices or meal timing ... or maybe you're not progressively overloading your muscles.

Whatever it is, here's what's important:

Once you identify what that one thing you're missing is—once you "figure it out"—*that's* when everything finally clicks. *That's* when you start making serious progress.

It's kind of like typing in a password to log into your computer. You could have every character right except one, and what happens?

You can't log in. But as soon as you correct that one mistake, voila, you're in business.

The same probably goes for building the body you really want. You're probably just *one* major shift, important insight, or powerful new behavior away from easy street.

And I'm looking for people who want to do exactly that.

You see, my sports nutrition company Legion offers more than just supplements.

We also offer VIP one-on-one coaching, where together, we look at everything you're doing (and not doing) and help you figure out that "one thing" that's missing for you.

It could be a couple of things too, of course, and don't worry—there's no extra charge for that.

What happens next? You finally start making real progress. You start burning fat and building muscle. Your clothes start fitting better. You start to smile at what you see in the mirror every day.

Ready to take your first step?

Go here now and schedule your free consultation call ⇒ www.legionathletics.com/coaching

Hurry up though because coaching spots are limited and fill up quickly.

Oh and this is *not* a high-pressure sales call, by the way. It's a friendly chat where we get to learn about you, your goals, and your lifestyle, and then determine whether the program is right for you.

(And yes, sometimes we do speak with people who aren't a good fit, but we always have other experts and resources to refer them to.)

So if you feel even *slightly* interested, act now and schedule your free call.

You have absolutely nothing to lose and everything to gain because in a few months, *you* could be one of our next success stories!

In fact, if you qualify for the program and just show up every day and do the work, I guarantee it or you'll get your money back.

So don't put this off for later and forget. Take the first step. Schedule your free call now at www.legionathletics.com/coaching.

Also by Michael Matthews

*Bigger Leaner Stronger: The Simple Science
of Building the Ultimate Male Body*

*Thinner Leaner Stronger: The Simple Science
of Building the Ultimate Female Body*

The Little Black Book of Workout Motivation

The Shredded Chef

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Chapter 11

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Chapter 12

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