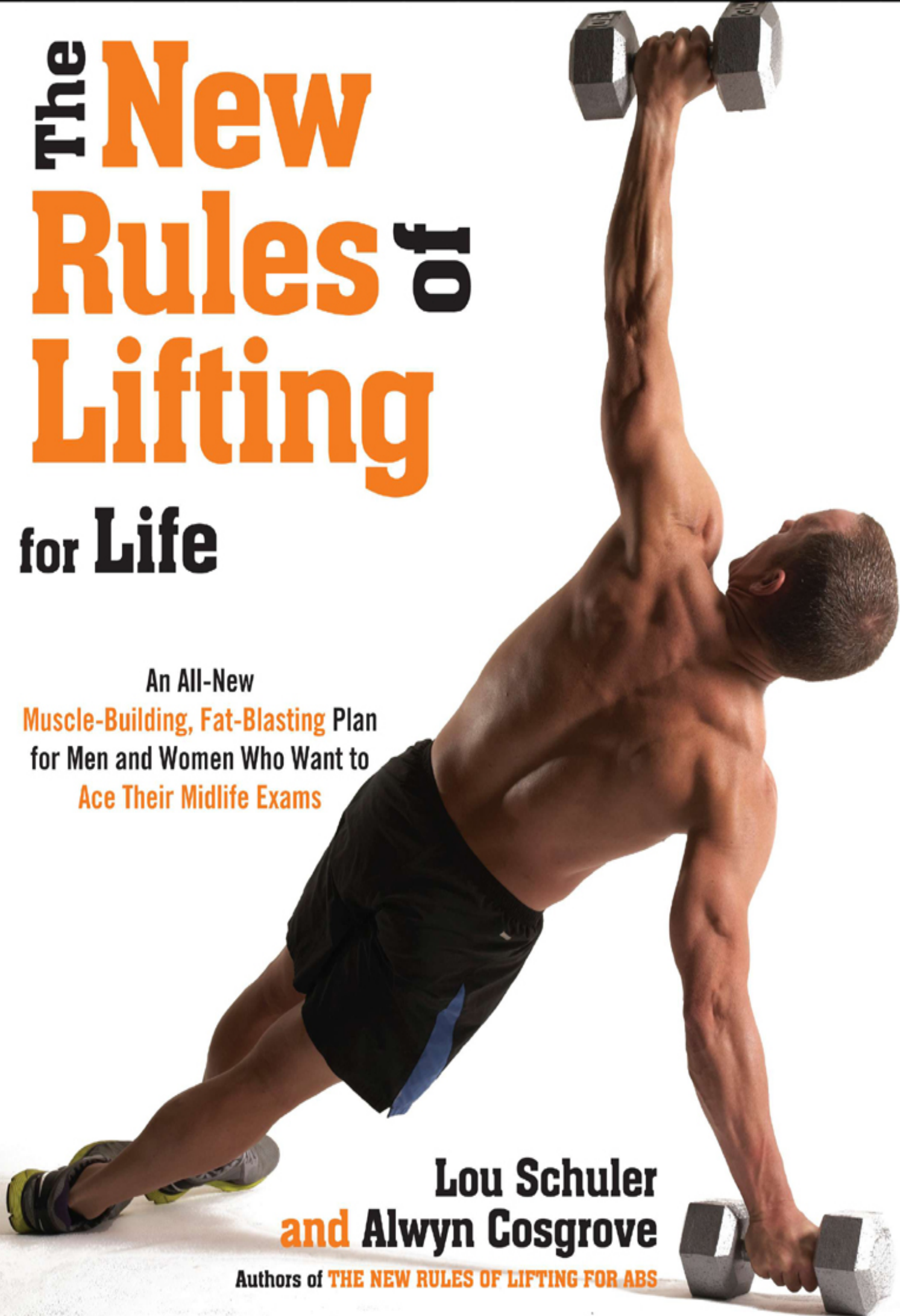


The New Rules of Lifting for Life

An All-New
Muscle-Building, Fat-Blasting Plan
for Men and Women Who Want to
Ace Their Midlife Exams

Lou Schuler
and Alwyn Cosgrove

Authors of **THE NEW RULES OF LIFTING FOR ABS**



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ALWAYS LEARNING

PEARSON

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I want to dedicate *The New Rules of Lifting for Life* to Hal Johnson, Jim Ross, and all the readers over the years who prodded, pleaded, and exhorted me to write a book for middle-aged, overweight, injured, or otherwise atypical enthusiasts. The series wouldn't continue if not for the dedicated lifters who've come to rely on Alwyn's programs to keep them motivated and excited about training, and this particular book wouldn't exist if readers like you hadn't demanded it. You make me want to be a better fitness writer.

—L.S.

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To Darren Vella: Good friends will bail you out of jail. Great friends will be sitting next to you and will help you avoid getting shot in the leg.

To my mum: This time I *know* you're watching. I hope I've made you proud.

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To my life partner, Rachel: We're just a boy and a girl trying to take on the world one kiss at a time. Thanks for everything. “And they lived happily ever after.”

—A.C.

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Introduction

I'm Not a Geezer. I'm You

ALMOST EVERY DAY I GET an e-mail that starts like this:

“I'm ____ years old, ____ feet, ____ inches tall, and I weigh ____ pounds. I've been working out ____ years, with a combination of ____ and ____, but recently, I haven't been able to do ____ because of _____. Here's why I'm writing...”

Unless Microsoft has a new template for letters to fitness-book authors, virtually everyone who writes to me for the first time feels compelled to begin with these details. The order changes, but the uniformity is uncanny. The simplest questions about how to interpret workout charts, or whether it's okay to do one exercise instead of another, begin by telling me how old my correspondent is, along with his or her height, weight, and workout history.

I used to skim past the age/size/circumstances boilerplate so I could get right to the questions the reader wanted me to answer. Eventually, though, I realized I was misunderstanding my correspondents. Sure, they wanted answers to their specific questions, but there was a reason for the windup before the pitch. All of them, in one way or another, were asking me a different question entirely:

“I don't look like everyone else in the gym. I'm older/heavier/gimpier. But I still want to work out. What should I do?”

In my early years as a workout-book author, when I was more invested in the binary thinking of the troglodyte wing of the fitness industry, I took offense at questions like this. What does age have to do with anything? After all, I was in my forties, and I did all the workouts in my books with great success. If you were overweight, it was your own damned

fault for eating too much and not exercising enough. And individual circumstances? Come on! You either want it, or you don't.

Then I turned fifty, and... well, I used the introduction to the previous book to describe in bloody detail the calamities that befell my suddenly middle-aged body. It's the reason I wanted to write *The New Rules of Lifting for Abs*: I needed to do something different, so I experimented with a new workout template and experienced remarkable improvements. Then I discovered that my coauthor, Alwyn Cosgrove, was using a similar template with his clients. They were coming to him in worse physical condition than demographically indistinguishable clients had just a few years before, so he changed his system to spend more time on mobility, core training, and metabolic conditioning, with less time in the weight room.

We wrote a book for a new type of exerciser: a man or woman whose body is starting to break down, or who has developed one type of fitness (strength, for example) at the expense of everything else.

That said, we also wrote *NROL for Abs* with the idea that we were producing a book for a broad swath of fitness-conscious readers. If you're serious about exercise in general and strength training in particular—and if you're especially interested in developing a lean, strong, athletic physique, highlighted by a flat and muscular midsection—that's the book for you.

Age? Size? Circumstances? Hey, none of us is getting younger, and we're *all* actors in a unique movie of life. Rough economy, complicated relationships, weird times all around.

And yet, as I wrote the manuscript in late 2009 and early 2010, the e-mails kept coming in. The details were always different, but a common theme emerged: “After doing X for years, I finally realized I'm too old / too fat / too *different* for X. I need to do X minus something, or X plus something. But what?” Sometimes the circumstances described by the reader came on suddenly, like an injury or illness. But most often, it was a gradual and grudging acceptance of the reality of age or

weight or singularity. As someone in his fifties, I realized I had more in common with these special-circumstances readers than I did with the undamaged ones I've traditionally addressed in my books.

I asked myself some tough questions. Where's the book for someone who's middle-aged? Where's the book for someone who has a lot of weight to lose? Where's the book for someone who's not like all the other readers? Where's the book for someone like me—or, perhaps more important, for someone like my coauthor?

The Fight of His Life

Las Vegas, summer 2005. I met up with Alwyn at a strength and conditioning conference, where he was a presenter. We had mostly finished work on *The New Rules of Lifting*, our first book together; it would come out in six months. A lot had happened to both of us since we started the book two years earlier. For one thing, Alwyn had been diagnosed with Stage 4 lymphoma, undergone chemotherapy, and come out with a clean bill of health. For another... well, next to cancer, the rest doesn't really matter, does it?

Alwyn and I were having lunch with our friend Chris Shugart, an editor at T-nation.com, a popular bodybuilding site. It was the first time I'd seen Alwyn since his diagnosis, treatment, and recovery. He looked great, and felt so good that he told us he was thinking of fighting competitively again.

In his youth, Alwyn, a native of Scotland, had won seven national titles in tae kwon do, and was a two-time bronze medalist at the European championships, where he represented the UK. Despite the fact that he was a few years and one major illness removed from his peak as a martial artist, he was restless. He wanted a new challenge. "You have to remember," he told Chris and me, "I was still winning when I retired." At that moment, in his early thirties, Alwyn was 90 percent athlete and maybe 10 percent cancer survivor.

He never got a chance to resume his fighting career. Stage 4 cancer returned with a vengeance, and as Alwyn points out, there is no Stage 5. He checked into UCLA Medical Center on

June 6, 2006, for a stem-cell transplant, an operation that completely dismantled his immune system and built a new one from scratch.

When he came out of the hospital, he was 100 percent cancer survivor. It took years to recover his strength and athleticism. He's never fully regained his ability to perform long, difficult workouts, and now it takes more time to recover from one workout to the next. Combat-sport athletes are notorious for their ability to manipulate their own body weight, but cancer had taken that away. He could maintain a stable weight, but his body fiercely resisted any attempt to lower it. Every aspect of his athleticism, even his flexibility, was suddenly, dramatically different.

The athlete who was thinking about a return to competitive tae kwon do at thirty-three was a middle-aged man at thirty-four.

Sizable Concerns

So that's where we start *The New Rules of Lifting for Life*: two longtime lifters who know what it's like to be forced by age or circumstances to change their approach to training. I had the luxury of reaching midlife the old-fashioned way—by pretending my age didn't matter until well past the point when it clearly did—while Alwyn got there overnight, courtesy of a deadly illness and a miracle of modern medicine. But we're both there now, and our first goal with this book was to provide a training system for people like us.

But what about item #2? What do we have to offer those who want to lose weight? I'll admit this right up front: I started *NROL for Life* with the idea that it would provide a useful guide to weight loss, in conjunction with the training program. After all, lots of readers of the first three *NROL* books told me they shed pounds while doing Alwyn's workouts and following the nutrition and lifestyle advice. Alwyn and I, it seems, had found a solid middle ground: We could help people lose weight without making it the sole focus of our books. I wondered what would happen if we made it a bigger part of the package.

Alas, almost from the first day of research, I realized we couldn't say anything with the prescriptive certainty you're supposed to have when you write about weight loss. The math and physiology appear simple only if you refuse to acknowledge complexity. There are too many individual metabolic variations, and they're too poorly understood. Then, when you look at weight loss from the behavioral side, you see an equally complex set of variables. Finally, good luck to anyone who tries to separate where physiology ends and behavior begins.

This would be really depressing except for one fact: People do manage to lose weight and keep it off. I know some of them, and I've probably corresponded with hundreds. Their secret? They figured out how they gained the weight, and did the opposite until they lost it. They can describe the process in simple terms, but it doesn't take much digging to get below the surface and see an infinitely complex set of personal, familial, and circumstantial variables that they learned to master over time. Exercise is always part of it, of course—too little before, the right amount now. But the desire to work out, the knowledge to do it productively, and the self-discipline to do it consistently were part of a long, often frustrating struggle to change physiology and behavior.

I don't think a diet or training program produces weight loss, any more than a hammer produces a house. It's the person. The best workout or nutrition plan in the world won't work unless it's used by someone who's ready to reorganize his or her life around the goal of losing weight. Even then, it's almost never simple or straightforward.

Intelligent Design

So if *NROL for Life* isn't a weight-loss book, what is it? More than anything, what you have in your hands is a workout book for people who like to work out, who enjoy challenging themselves with new exercises, new routines, new ways to get results. It's also a training program for men and women who want something they don't yet have—less fat, bigger muscles, more strength, more energy, more confidence—and are willing to work hard to achieve it. Finally, it's an exercise system for

those who want to work out but for various reasons don't. Maybe you're recovering from an injury or illness and don't know how to modify a workout to fit your circumstances. Maybe you haven't found the right program, or don't feel confident that you understand the mechanics of training. Alwyn and I can't give you the motivation to show up and work hard, but we've done everything we can to pack *NROL for Life* with as much useful information and instruction as we could include without turning this into a multivolume encyclopedia.

About that information:

If you're looking for something so easy to understand that the entire thing can fit on a single page, this isn't the program for you. Not only does it require hard work once you get to the gym, it demands some effort on the front end. We ask you to choose your own exercises, based on detailed instructions, and fit them into the template Alwyn provides. Nothing here is beyond the comprehension of an adult who wants to train and whose mind is open to new information. But there is a bit of a learning curve.

You may wonder why we bother. Why not just tell you what to do? That's what we did in the first three *NROL* books. What's so special about this one?

The book may or may not be special; we'll have to wait for the reviews. But you are. From our earliest conversations about *NROL for Life*, Alwyn and I set out to create a product for readers who're challenged, in some way, by their age, weight, or circumstances. We had two choices: either we could imagine a composite of a challenged person, and have Alwyn design a program for that fictional reader, or we could assume that only individual readers truly understand what they can and can't do.

Obviously, we chose the latter. Our choice requires you to read carefully and follow the steps to assemble your own workouts, based on Alwyn's template. In return, you get a program that's fully customized to your individual strengths, limitations, needs, and goals.

But what if you don't have any limitations that require customized workouts? What if you simply need workouts that work? Even better. You now have the tools to create a program that moves as fast as you do. Get all you can out of an exercise, then move on to one that's more challenging. You don't have to wait for the next stage of the program.

This is how Alwyn designs programs for his clients at Results Fitness, the gym he owns with his wife, Rachel, in Santa Clarita, California. It's the first time he's opened up the playbook to show readers his methodology. You get more than a bunch of workouts. You learn how to customize *any* workout, or create your own from scratch. You learn, in short, how to be the trainer you've never had.

The Standard Disclaimers

Every workout book has some version of this boilerplate on a page demarcated with a Roman numeral:

“Not intended as a substitute for a physician’s advice.”

“See a doctor before starting a program of strenuous exercise.”

“If you experience rapid weight loss or extreme muscle hypertrophy, be sure to give the authors credit.”

This time around, the standard disclaimers are more than legal indemnification. Alwyn and I beg you to exercise genuine caution before launching into this program. If you haven't worked out in a while, *please* get a checkup. If you're seriously overweight, *please* talk to your doctor about the program before you begin. If you're recovering from an injury or illness, *please* make sure you're cleared for training.

We ask you this because we have no intention of treating you like a weakling or invalid. No matter your age, your weight, or your circumstances, we want you to train hard, and to enjoy the benefits of hard training. We want you to do everything you can without fear or limitation. You'll customize the program to match your current abilities. But

that's just the starting point. We want you to put your current abilities so far in the rearview mirror that you'll forget you were ever in the shape you're in now. We want you to be stronger, leaner, faster, and more athletic than you thought possible at this stage of your life. We just want to make sure you get there safely, with as few setbacks as possible.

With that out of the way, let's talk about how we're going to help you do this.

In Part One, I lay out the challenges as we currently understand them. [Chapter 1](#) explains the goals of training while debunking some of the misconceptions common to men and women of a certain age. [Chapters 2, 3, and 4](#) look at what our bodies can and can't do as we get older, how and where we're most likely to get injured, and why it's so ridiculously hard to manage our weight in middle age and beyond.

Part Two is the reason you bought this book. It has more exercise choices, information, and advice than any of the previous books in the *NROL* series. It explains every part of the program in full detail.

Part Three tackles the challenges of weight loss, explaining how we got here, the mathematical and physiological impossibility of traditional weight-loss advice, and the importance and challenges of weight maintenance following a successful downsizing. We'll wrap up with an easy-to-remember meal-planning system that can help you reduce calories without sacrificing nutritional necessities, along with some sample meals to put it into practice.

That's what we offer in *The New Rules of Lifting for Life*. What we don't offer, in this or any other *NROL* book, is a guarantee of specific results. We don't know where you're starting or how far you can go. All we know for certain is that we've given you the tools to get there, at your own speed, on your own terms.

It's your movie of life. Are you ready to create a masterpiece?

PART 1

**WHILE YOU
WERE
WORKING...**

It's Too Late to Say You're Sorry

I USED TO WORK with a guy who had a thing about baby boomers. My first few weeks on the job, he made comment after comment about how my generation had ruined everything for everybody. His biggest gripe was that we hoarded all the good jobs to prevent his generation from advancing into higher management. It didn't matter that he was closer to management than I was at the time. He was convinced the boom babies were conspiring to make his life undeservedly mediocre.

Funny thing is, up to that point in my life I'd always considered the year of my birth, 1957, to be a nontrivial handicap. From my earliest memories, it always seemed as if too damned many people wanted to do exactly what I was trying at the exact moment I was trying to do it. Too many kids wanted to play baseball, so I ended up on the bench. Too many kids wanted a limited number of seats in the Catholic school my older siblings attended, so I had to go somewhere else. (I went to four different elementary schools altogether.) Too many young men and women attended journalism programs in the late seventies, so when we graduated there weren't going to be enough jobs even if the economy had been booming, which it so totally wasn't.

The early eighties were one of the worst times ever to enter the workforce. "Stagflation" was a word used in everyday conversations. Just when we started feeling better about things, the economy crapped out again in the late eighties. It dropped again in the early two thousands. Then, just for good measure, it nearly went down for the count in 2008.

Everyone who wasn't a boomer hated boomers. My parents and their friends are still bitter over the fact that some of us

had long hair or walked around barefoot. My younger siblings and their friends saw us as caricatures, a privileged and useless generation who'd gotten our fashion cues from *The Brady Bunch* and our values from Gordon Gekko in *Wall Street*.

And what exactly did we boomers get out of the deal, aside from those four recessions, skyrocketing tuition costs for our children, falling home values, and the daily shock of realizing our parents still hate us despite the fact we're bankrupting the health-care system to keep them alive?

We're getting old and fat and broken down, three things we swore would never happen to us.

How did it come to this? How did the most fitness-conscious generation the world has ever seen turn out to be incapable of keeping ourselves lean and strong? I think it's because we've either forgotten or never learned these rules.

NEW RULE #1 • *The older you are, the more important it is to train.*

An untrained human body will reach its physiological peak in its early twenties. Sometime around age forty, bad things begin to happen. Muscles shrink. Fat accumulates. Starting at fifty, that untrained body will lose 1 to 2 percent of its muscle mass per year, and 10 percent or more per decade. Strength declines twice as fast as muscle tissue. And power declines even faster than strength.

So when I say it's more important to train as you get older, I'm not talking about establishing a best-ever bench press or winning a push-up contest or developing six-pack abs. If those things happen, great. But they aren't as important as regaining what you've already lost, or building what you never had.

You'll see in the next few chapters just how adaptable the human body is in midlife and beyond. Research shows that muscles can be built, strength can be improved, power can be restored, and fat can be lost at any age that's been studied. Alwyn's daily experience at Results Fitness confirms that hardworking men and women can make extraordinary improvements to their appearance and performance.

There's just one catch: Time is no longer on your side. If you already feel the encroachment of age, weight, or misfortune, you need to do something. You can't do anything about yesterday, but with each passing year "tomorrow" becomes a less attractive option.

NEW RULE #2 • The goal of training is to change something.

The hierarchy of physical training goes something like this:

1. *Physical activity* is everything you do when you aren't at rest. It's basic movement, with no goal beyond getting from one place to another.
2. *Exercise* is movement you do on purpose. It includes sports practice, jogging, yoga, backpacking, swimming, cycling, or anything else you think is important enough to take precedence over all the other things you could be doing at that moment. (New Rule #2a: If you can operate your cell phone while exercising, you aren't actually exercising. You're just proving you can walk and chew gum at the same time.)
3. *A workout* is an exercise session that's deliberately strenuous. You start with the goal of working up a sweat, pushing your muscles and your circulatory system toward their limit, and giving your body a challenge from which it will have to recover.
4. *Training* is a system of workouts designed to achieve specific biological adaptations.

The more physical activity you get, and the less time you spend sitting, the better. Some of that activity should be purposeful enough to qualify as exercise. More exercise is generally better than less. A workout is even better, but there are only so many true workouts you can do in a week, a month, or a year. A workout that's also a training session is usually best of all, because you aren't just testing yourself to see what you can do now. You're forcing your body to make adaptations that will produce better performances in the future.

NEW RULE #3 • Your body won't change without consistent hard work.

When was the last time you picked up a barbell or dumbbell with the goal of *training*, of changing the way your body looks, feels, and performs?

Maybe it's an unfair question. Maybe everybody in the gym, from the middle-aged guy who wears weightlifting gloves to do lat pulldowns with a padded bar to the clinically obese woman doing triceps kickbacks with a dumbbell that's smaller than her forearm, thinks they're training. They certainly see themselves as working out. But I have to tell you, most of what I see in the gym on a daily basis barely qualifies as exercise.

If you aren't out of breath at least some of the time, you aren't really working out. You certainly aren't working hard enough to build strength, power, endurance, or any other fitness quality beyond what you already have. And if you aren't getting better at *something*, you sure as hell aren't training.

I don't say this to scare you off. If you're new to training, or following a structured program for the first time, you're almost guaranteed to make rapid progress. You just have to show up and follow the directions. It will *feel* like hard work, and it will certainly take you out of your comfort zone. But in a month or two you'll be able to do so much more that the entry-level workouts will seem like child's play.

Conversely, if you have a solid base of strength and conditioning—you like to work out, and you're pretty good at it—then you have to push yourself to improve on that, starting with the first training session. Alwyn's workouts allow that kind of effort and reward you for it. I've been using his programs off and on since 2000, and each one includes exercises and techniques that catch me by surprise, showing me where I'm weak, unbalanced, immobile, or deconditioned, and giving me the tools I need to improve.

But no matter your level, you'll make only as much progress as your effort allows. Muscles don't get stronger without progressively more challenging weights. Fat won't come off until you force your body to use more energy than it currently does.

Remember, the shape you're in now is the result of everything you've done to this point. If you want to achieve something new, you have to do something different.

NEW RULE #4 • Hard work doesn't mean beating the crap out of yourself every time you train.

We all have two goals in common:

- Fix the problems we have
- Avoid new ones

The perfect training session gives your body a stimulus, a type of stress that forces an adaptation. You follow that stimulus with a recovery period that allows your body to adjust to the stress. My default setting as a fitness writer is to say, "This is when your muscles get bigger and stronger." But it's not just your muscles. The stress is trans-systemic. It affects your muscles, connective tissues, bones, nerves, hormones. It even changes your mood.

Like any good remedy, it works best when taken in limited, prescribed doses. Just as you wouldn't go to one of Wolfgang Puck's restaurants and try to improve your entrée by emptying the salt shaker on top of it, so you shouldn't try to improve Alwyn's workouts by adding extra exercises, sets, or reps, or doing too many of them in a week.

Too much work with too little recovery will bring down anyone, at any level. It'll put a pro athlete on the disabled list, and it'll leave you or me with worse aches and pains than we had when we started.

NEW RULE #5 • You're not a kid anymore. Don't train like one.

When I was young, I thought middle age was the worst possible condition inflicted on our species. My parents and their peers represented everything I never wanted to be. Something puzzled me, though: If in my preteen estimation they should've been miserable, why did they seem so satisfied?

I had to reach middle age to realize it's not at all what I once feared. The world makes sense because you've seen

more of it. Your own life is no longer a mystery because you've had enough time to figure it out. (Having children of your own accelerates the process.) You don't have to brood about what you're going to be when you grow up because you know. Middle age is the sweet spot. You still have room to grow in your life and career, and you now have the wisdom to help you get there.

Unfortunately, that wisdom vanishes the minute you come into contact with a weighted object and attempt to lift it. Strength training brings out the teenager in all of us.

A young guy cares about three sets of muscles: abs, biceps, and chest, probably in that order. So his workout begins with sit-ups, moves on to bench presses, and finishes with biceps curls. A more advanced or enlightened young lifter will know that other people can see his double-mirror muscles—the ones he can't see unless he stands with his back to one mirror while holding a second mirror to see his reflection—so he'll also do some exercises for his back. If he considers himself a bodybuilder, he'll probably have an entire day devoted to back exercises. Which means, alas, that he'll also have an “arm day”—a workout in which he does nothing but curls and extensions for his biceps and triceps.

A young woman cares about her butt, her belly, and perhaps her triceps. So her workout begins with dozens if not hundreds of crunches, followed by a series of high-rep, low-weight exercises for her lower-body muscles, and ending with a few sets of triceps extensions.

It doesn't really work for either gender.

The guy may rock a six-pack, but it's not much of an accomplishment. He just needs to be skinny and fit and human anatomy takes care of the rest. My teenage son has had visible abs for most of his life. The sit-ups he does in karate training probably have something to do with it now that he's sixteen and eats like a hyperactive wildebeest, but it doesn't change the fact that he had a six-pack the first day he stepped into the dojo. A teenage lifter's biceps will get slightly bigger, with the much-coveted cephalic veins running proudly up the middle, while his pectoral muscles will grow just enough to help hide

his ribs. But all that repetitive pressing, curling, and crunching with his front-body muscles will eventually distort his posture, flattening his lumbar curve and rolling his shoulders forward. He'll look good when his shirt is off and he's consciously flexing. With the shirt on, he'll just look like every other kid who plays a lot of video games.

The girl, meanwhile, is terrified of getting "bulky." But she also wants a butt that looks like twin tortoiseshells. She's willing to do hundreds of sets and thousands of reps, but she'll do them with machines that limit the involvement of her glute muscles, while using weights that are too light to have any effect on the size or strength of the muscles she's trying to enlarge. Of course, she'd never acknowledge she's trying to *build* those muscles. Instead, she'll use words like "tone," "sculpt," and "shape," all of which are to be magically achieved without changing the muscles' strength, size, or performance capacity.

We don't expect teenagers to understand how anything works unless it involves a keyboard. If they did, the United States wouldn't have the highest rate of teen pregnancy in the developed world. But adults should know better. And almost every middle-aged adult I see in my gym trains like a teenager, even if he or she never picked up a weight before Y2K.

The men do their crunches, presses, and arm curls. The women do their crunches, leg exercises, and elbow extensions. And we wonder why we don't look any better than our parents did, back when we swore to ourselves we'd never be anything like those strange people we grew up with.

You can do better, and you will with Alwyn's workouts and an honest effort. But before we get to the tools of our future transformation, let's look at the changes we've already experienced, the ones that made us older, fatter, and more beaten up than we ever expected to be.

A Beginner's Guide to Gym Culture

My gym is owned by an orthopedic practice. A lot of the members are older and, judging by their wide-eyed bewilderment, exercising in a health club for the first time. The absolute beginners create some problems for the rest of us, including one near-disaster when an elderly woman stepped over a barbell that I was about

to lift off the floor. If I hadn't seen her in my peripheral vision at the last second, I can't imagine the consequences of that weight slamming into her leg. But the real problems, in my view, are caused by people who think they know what they're doing, but don't.

The following aren't my pet peeves, although I have plenty of those I could share. (In fact, I do share them in the Notes on page 273.) They're behaviors and practices that create potentially dangerous or volatile situations.

Don't use an iPod your first year in the gym

In a crowded weight room, with people lifting heavy things in unpredictable ways, your ears are almost as important as your eyes. At best, your eyes cover 180 degrees in a 360-degree world. If you can't hear what's going on behind you, you might step right into a rising weight. Some of the most dangerous mistakes I've seen were made by people listening to music and oblivious to their surroundings.

Don't sit on the equipment between sets

This is a basic, timeless, no-excuses rule of gym etiquette: If you're resting and someone else needs to use your equipment, you let him or her use it. You don't have to let two or three people jump in, unless that's standard practice in your gym. But you do have to share. The worst that can happen is you rest a little longer between sets than you planned, which means you're stronger and can lift more. The best that can happen is you score points for courtesy. I see this as a pervasive issue with older lifters who have no exposure to traditional gym culture.

Don't block two pieces of equipment to do one exercise

At my gym it's not uncommon to see someone standing between two benches doing an exercise that effectively blocks both, even though the person doesn't need either and could do that exercise anywhere else in the room. The one time I said something, the offender was so offended she stormed off and complained to the manager about how she was being bullied and harassed.

Don't tie up equipment you don't need

This one is the hardest to explain to novices. The classic complaint among gym rats like me is the guy who does biceps curls in the squat rack, which is typically the only place in a commercial gym where serious lifters can do barbell squats and deadlifts. Another example is the newbie who puts her training log and water bottle on a bench while she does an exercise that doesn't require a bench. Which leads to my final point...

You don't need a water bottle

The early nineties were the golden age of hydration. Carrying a water bottle meant you were hip to the fear-of-thirst Zeitgeist created and nurtured by Gatorade to sell its sports drinks. Today's gyms have plenty of drinking fountains. You don't need to lug your own supply around. It's just one more thing to burden you and inconvenience others. And you especially don't need to make everyone else wait while you fill your bottle at the fountain when you're never going to be more than ten feet away from it.

Middle Rage

GROWING OLD HAS NEVER BEEN POPULAR. Almost every religious tradition involves an element of immortality or eternal reward. And if you want to see how the anti-senescence sentiment plays out among today's youth, check out the young-adult section of your local bookstore (if you still have a local store). You can't keep track of all the popular series whose main characters have found ways to preserve their youth forever.

Personally, I'm in favor of aging. I compare more favorably with my age-matched peers each birthday. Since I turned fifty I catch myself mentioning my age whenever I find an opening, even if it's a complete non sequitur. "Speaking as someone who's fifty-five, I wonder if this rain is ever going to end." I don't expect people to respond, "You're over fifty? Really? I never would've guessed." But I appreciate it when they do.

One reason aging doesn't bother me is that I've never been particularly good at anything that diminishes with age. When I was really lean, guys made fun of me for being skinny. (If I'd been paying better attention I would've noticed that no girl ever suggested I bulk up.) As an athlete, a charitable assessment would put me in the bottom quartile for my age. I got pretty strong at one point, but now that I'm not as strong, I don't miss it all that much. Aches and pains? I guess I could complain, but I can't really remember a time post-puberty when I wasn't jacked up somewhere. I was vulnerable to ankle sprains and partial shoulder separations in high school, and I struggle with knee and shoulder issues now.

I say all this with tongue partially in cheek. I'm not a fan of the aesthetics of middle age; given the choice, I sure wouldn't

check the box marked “thicker waist and wrinkled neck.” But some aspects of aging, if not exactly optional, are at least modifiable. The goal of this chapter is to discuss what aging is and what we can do about it, starting with these rules.

NEW RULE #6 • Decline is inevitable.

Show me a world-class athlete in a strength-and-power sport who’s better in his late thirties than he was in his late twenties, and I’ll show you Barry Bonds. If nothing else, Bonds proved to the few remaining doubters that steroids work. The subsequent crackdown in baseball showed that the laws of human physiology didn’t change in the late twentieth century.

Two types of people are guaranteed to reach their physiological peak in their twenties: those who do no exercise, and those who do little else outside of training and competition. From there, it’s downhill for both groups. Elite competitive weightlifters decline by about 1 percent per year after age thirty. After fifty, the decline is a little faster—16 to 21 percent per decade—and it goes all to hell after seventy. Different sports show different rates of decline at the elite levels, but the basic plot doesn’t change. You see that the most talented and best-trained athletes in anything decline about 10 percent per decade. Doesn’t really matter if we’re talking about strength or endurance sports. The rate of decline is similar to that of adults who don’t exercise at all. The athletes, of course, are still stronger and faster than the slugs at every stage. They’re only getting weaker and slower in comparison with their younger selves.

I don’t say any of this to limit your ambitions. You and I aren’t elite athletes. Some of you reading this still haven’t reached your physiological peak for strength, power, and muscle mass, even if you’re middle-aged. I hit my peak in my forties. Friends and readers have told me they’re still getting stronger in their fifties or sixties. There’s only one way to go once you reach your peak, but that’s no reason not to go for it in the first place. In a moment, I’m going to show you why that peak is so important.

NEW RULE #7 • How fast you decline is up to you.

Genes are totally overrated in the aging process. Let's start with how old you look—and by “you,” I mean me. Balding is associated with looking older, but there's not much I could've done about it, back when I actually cared. It's about 80 percent genetic. (I'm also going gray, which is 90 percent genetic.) I've gone bald in the exact way my father went bald. If I had an identical twin, he would be stuck with the same monk's stripe. However, that hypothetical twin might look older or younger than me, depending on a long list of environmental factors and lifestyle choices.

He might have less sun damage than me (I was a lifeguard during my college summers), making him look younger. But if he smoked, his skin would look older. If he was a little chubbier than me, his face might look younger than mine, since the fat would minimize his wrinkles. However, if he lost that extra weight, his face might look older, with flaccid skin and more pronounced cracks and crevices.

All told, our genetic heritage accounts for 40 to 60 percent of the factors associated with perceived aging.

That's just the *appearance* of age, assessed from the outside. These differences, at best, make you look a couple years older or younger, and aren't always indicative of your health status. A fit, athletic man or woman could look older than a sedentary peer, thanks to sun damage and, in my case, an abdicating hairline. As your mother used to say, it's what inside that counts. Your workout routine and lifestyle choices can make you as much as two decades younger at the cellular level.

Those choices, and their consequences, are the main subject of this chapter. But first, let me get one thing off my chest.

NEW RULE #8 • You are not a rural Okinawan.

I'm highly suspicious of any longevity advice based on the lifestyles of isolated, agrarian populations. Here's what long-lived people tend to have in common:

- They live in temperate regions with year-round sunlight.

- They grow up in poor farming communities with very little social or economic mobility.
- They live in multigenerational households, including grandparents.
- Their daily lives include long hours of repetitive labor. Nobody truly retires.
- If they need to get somewhere, they usually walk.
- Their diets are mostly vegetarian, with a predominance of cereal grains. They don't overeat, but I don't know if that's by choice or necessity. You can't eat too much of what you don't have.
- They tend to have low-stress lives with a strong sense of community.

Some of that sounds appealing. But how does it apply to your life, or mine? Can you tell your boss, “You know, I think we should shift our best practices to the rural Okinawan model”? Would you want to live with your parents or grandparents? Would they want to live with you?

Like it or not, most of us live and work in a stress-filled world, with small families and long hours spent in technology-driven isolation. I think it makes more sense to look for the best ways to manage our health within the parameters of our own world than to try to replicate select features of another. How do we really know that any life-extending element of rural Okinawans or Sardinians or Costa Ricans would work without all the others? If it's a package deal—the low-calorie, low-protein diet doesn't work unless you live with your grandparents—then what's the point?

THE ROARING HUNDRED AND TWENTIES

The late, great Jack LaLanne is a perfect example of the inevitability of aging. He was there at the creation of modern fitness culture, hanging out at Muscle Beach in the 1940s with Vic Tanny (a guy who more or less invented the health-club chain as we know it), Joe Gold (founder of Gold's Gym), Steve Reeves (iconic bodybuilding champion who played Hercules in the movies), Harold Zinkin (a bodybuilding and

weightlifting champion best known for inventing the Universal Gym Machine), and Abbye “Pudgy” Stockton, the first woman to become famous for a body built with strength exercises. (“Pudgy” was a childhood nickname; as a fitness icon, she weighed a solid 115 pounds, with a tiny waist and beautiful curves.)

LaLanne was the first and longest-running fitness guru on TV; he invented exercise machines and owned gyms. In 1956, the year before I was born, he did 1,033 push-ups in 23 minutes on a TV show. Three years later, at age forty-five, he did a thousand jumping jacks and a thousand chin-ups in 83 minutes. By all accounts he had a close, loving family, and was the best advertisement for his own advice to live the healthiest, cleanest, most physically dynamic life that was humanly possible. He even refused to eat cake at his ninetieth birthday party.

He died in 2010 at the age of ninety-six, much loved and now much missed.

But here’s something interesting: His brother Norman, who was an avid golfer and a former college athlete but nowhere close to Jack when it came to fitness fanaticism, died at ninety-seven. The guy who *didn’t* exercise two hours a day or turn down birthday cake or tow barges through San Francisco Bay lived longer than his younger brother, who did all those things.

Make no mistake: Living a vigorous life into your nineties is a great accomplishment. And perhaps if LaLanne had gotten medical treatment for his ultimately fatal pneumonia, instead of trying to exercise his way through it, he might still be alive today.

The maximum human lifespan is thought to be about 120 years. Jeanne Louise Calment—born in 1875, died in 1997—is the only human whose claim to have lived 120-plus years is beyond dispute. What we know about her isn’t any more helpful than what we know about LaLanne. She was independently wealthy and never had to work. She outlived her only grandchild and spent her final decade in a nursing home, including eight years in a wheelchair following a leg

fracture. By her own account, she started smoking when she was twenty-one and didn't quit until she was one hundred seventeen. She says she drank port wine and ate two pounds of chocolate a week.

It's tempting to say that longevity is all in the genes, combined with the good luck to avoid catastrophic diseases and accidents. The latter explains how average human life span is increasing. We have less childhood disease, cleaner water, safer jobs, better medicine, and all kinds of expensive machines to keep us alive long past whatever our original expiration date may have been. Consistent exercise is estimated to add six to seven years to an individual's life expectancy.

But maximum life span, as far as anyone knows, isn't in play. A vigorous life might get you past a hundred, but it won't get you to 125. The best we can hope for is to get the most out of whatever years we have. Exercise, I'm happy to report, is the best tool we have for that project. And strength training may be the best type of exercise.

YOUR CELL-BY DATE

Parents and teachers know how hard it is to keep kids from running. It's their natural instinct when they want to get from one place to another. Then puberty comes around, and it's suddenly hard to get them to move at all, unless you count their thumbs as they text. As adults, few of us can remember the last time we ran all-out. We have to force ourselves to run because our bodies are telling us to walk.

It's all part of nature's plan: We have a high metabolism and high activity level in early childhood, and we gradually slow down until we're just barely shuffling along. Eventually that slow metabolism kills us. When we get less active, we lose fitness, both cardiorespiratory and muscular, and with lower fitness we move even less. At first our muscle tissue shrinks. Then the type IIb muscle fibers, the ones most responsible for strength and power, start to disappear. As we lose muscle cells we also lose motor units. A motor unit is a nerve cell and all the muscle fibers it's in charge of activating.

Lose enough of these—especially the high-powered ones controlling type IIb fibers—and your body loses entire functions. It can't do things it used to be able to do.

Concurrent with these issues is a loss of appetite, as you know if you've cared for an aging parent. Many seniors, left on their own, will eat a low-calorie, low-protein diet that falls far short of what they need to maintain muscle tissue. That may be the biggest reason why the aging process speeds up so much around age seventy. Not only are untrained muscles getting smaller and weaker and losing motor units from disuse, they're being starved out of existence.

Of course this matches our memories and perhaps our experience, if we're pushing past middle age. The most energetic septuagenarian still looks old. Jack LaLanne, despite a lifetime of lifting, and despite a lifetime of eating to support his muscle tissue and activity level, was visibly much smaller in his later years. He may have lost more muscle than some people ever build.

The key to senescence is in parts of our cells called mitochondria. Mitochondria produce ATP (adenosine triphosphate, for those who've forgotten your high school biology), and ATP is where the action is. Or, rather, it's the juice that allows action. ATP fuels everything we do. We think of human energy as a product of carbohydrates and fat (protein is a minor energy source), but carbs and fat have to be converted to ATP before they can do squat.

The proteins that make up mitochondria have DNA, and within those DNA are structures called telomeres. I should point out that when we start talking about telomeres, we're getting down toward the most microscopic levels of human anatomy. But to understand aging, we have to go even smaller, to the tips of the telomeres. These get progressively smaller each time our cells reproduce. It's sort of like an eraser on the end of a pencil. You can erase only so much of your scribbling before the eraser gets down to the nub. When your telomeres get down to their own nub, the DNA stops reproducing, and bad things happen.

If I went through the list of bad things, I'd have to pretend I understand it in more depth than I do. So let's skip the fine print in our biological license agreement and return to the big picture: When parts of cells can no longer reproduce, those cells can no longer function as they once did. Cells mutate or die or otherwise malfunction. The cellular scrubbing system, which does such a great job of cleaning out the metabolic junk when you're young, doesn't work as well when you're forty or fifty as it did when you were twenty or thirty.

The work of mitochondria in muscle tissue is especially important. Muscle is where carbohydrates go to be used or stored following a meal. The carbs you eat are converted to a simple sugar called glucose, and 65 percent of that glucose is either used by skeletal muscles or stored there as glycogen. If the mitochondria in your muscle cells become smaller, weaker, or less active, you have a problem. Your body becomes less capable of handling all that glucose flowing through your bloodstream following meals. Excess blood sugar is typically accompanied by higher levels of the hormone insulin, which is in charge of pushing nutrients like glucose, fat, and protein into the appropriate storage centers. As insulin gets higher, your body becomes less sensitive to it. This is the path that eventually leads to type 2 diabetes.

But it won't be your path. Not if you train.

MUSCLE CHANGES EVERYTHING

“Sarcopenia” is one of those dry, nonjudgmental scientific terms that make the preventable and often self-inflicted loss of muscle in old age sound inevitable. It's inevitable that you'll decline from your peak—whatever it may be, and whenever you might achieve it—but it's not inevitable that you grow feeble. The more muscle mass you have at your peak, the more you'll have left as age takes its toll. The same goes for strength and power.

That's why it's so important to work harder and train more ambitiously than people our age are typically willing to do. If you've never pushed yourself in the weight room, you don't know what your muscles can handle. You can add size and

strength at any age; the research is very clear on that point. It's also clear that the less you've pushed yourself to get to where you are now, the more room you have to grow.

Women reading this may be tempted to stop right here and ask for a refund. Who wants to get bigger, especially in middle age? Trust me on this: Bigger, stronger muscles don't mean a thicker, less attractive physique. (If you don't believe me, go online and find pictures of Pudgy Stockton from the 1940s. She was a knockout.) Muscle and fat are separate tissues. You can build muscle without increasing fat, or burn fat without losing muscle. Beginners can often do both at the same time. No matter your age or gender, you're better off with well-trained and well-developed muscles. You'll look better, feel better, and move better.

But if you've never done a serious training program before—including those of Alwyn's in the NROL series—you probably haven't developed your muscles to anything close to their full potential. I rarely see a middle-aged man or woman in a gym who appears to be working hard, and the research backs up my observation. Studies have shown that men and women, beginners and experienced lifters alike, typically choose weights well below those that would actually increase strength or size. Lifters rarely work with more than 50 percent of their one-rep maximum—the most weight they could lift once with good form—and when they aren't told how many reps to do with the weight they've selected, they inevitably stop well short of exhaustion.

When scientists conduct strength-training studies with older adults (or, really, with lifters at any age), they typically make them work with much heavier weights than they would choose on their own. Just to pick one example, let's look at a study titled "Resistance Exercise Reverses Aging in Human Skeletal Muscle." It was published in 2007 in a journal called *PLoS One* (the acronym stands for Public Library of Science). Among the authors is Mark Tarnopolsky, M.D., of McMaster University, one of the most innovative, prolific, and respected researchers in the field of exercise science. Dude's a rock star; his studies have changed the way we think about a long list of

topics, including nutritional supplements, neuromuscular diseases, the aging process, and of course strength training.

In this study, he and his colleagues identified 596 genes found in skeletal muscle that change with age, hundreds of which are involved in metabolism and mitochondrial function. They took a group of healthy, older men and put them on a six-month strength-training program. Not only did the men increase their strength by 50 percent, but 179 of those genes shifted into reverse and started behaving like the genes of younger men.

Like magic, the biological clock is turned back by as much as twenty years at the cellular level.

There is, however, a catch: The older men in the study were doing a routine in which they used 80 percent of their one-rep max for three sets of eight repetitions of each exercise. They were working *hard*.

Getting to Know Max

Most of you reading this know exactly what I mean when I talk about sets, reps, and percentages of one-rep max. But for those who don't:

- A *repetition*, or rep, is a single performance of an exercise. So one push-up is a single repetition.
- A *set* is a series of repetitions. If you do three sets of eight reps (you might see it shortened to 3x8), you're doing eight reps three times, with rest in between each set.
- Your *one-rep max* (often abbreviated as 1RM) is the most weight you can lift once with good form. But it's not a weight you would ever use for training. Even competitive lifters rarely train with 100 percent of their 1RM.

For a practical example, let's say your one-rep max on an exercise is 50 pounds. Eighty percent of that max would be 40 pounds. If you try one all-out set with 40 pounds, you can probably do ten repetitions before your muscles become too fatigued to complete another one with good form. (We don't want you working with not-good form. Nobody is perfect on every rep, but deliberately changing your form to eke out one or two more is unnecessary and potentially dangerous.)

So if you see that subjects in a study did three sets of eight with 80 percent of their max, that means they were working very close to complete exhaustion on each set. Put another way, they were working their butts off to get stronger.

You see something similar in all the studies showing improvements in muscular strength and size in older men and women. Left on their own, these people wouldn't have lifted

heavy enough, or pushed themselves hard enough, to get results. The researchers had to set parameters and then supervise them closely to make sure they lifted as much as they were supposed to. They also made sure they increased the weights as they got stronger.

When you do Alwyn's workouts, it's up to you to start with weights that challenge you, and to increase them as often as you can. Nobody's looking over your shoulder. You'll get some benefit from half-assed workouts—especially if you aren't currently lifting—but all the good stuff comes from full-assed training. That is, from forcing your body to do more today than it could last week.

HIGHER POWER

At this point, you might be wondering what's the best result you can hope to achieve. Research on this is consistent over the years. If you start lifting now, in middle age, and you push yourself hard, in six months you can be as strong as someone decades younger... as long as that person doesn't lift.

Here's a recent example: Researchers at the University of Regina, in Saskatchewan, took a group of healthy older men and compared them with a group of healthy younger men. The older men were between sixty and seventy-one years old. Neither group included men who were currently lifting. After twenty-two weeks, the older men matched the younger ones for strength and muscle mass, more or less. In some areas, like muscle thickness in their upper arms, the trained older men surpassed the untrained younger ones.

There are lots of studies out there with similar findings. Not every lifter in every study makes the kind of gains we're talking about; some don't make much progress at all, while others do considerably better than the averages show. The good news is that your chances of getting stronger—*much* stronger—and adding high-quality muscle tissue are pretty good. You can't stop the clock, but the evidence shows you can roll it back, if you're willing to work hard enough.

Hurt's No Good

WHEN YOU'RE A JOURNALIST, you quickly figure out whom to call when you need a certain kind of quote. Just as important, you learn which type of source to avoid. Some people see the worst of everything. It's not that they're dishonest or unfair. They'll honestly tell you about things that are so grim you want to start drinking before noon. These people come in handy when the goal is to paint a stark picture for your readers. Other sources are predictably sunny. If you need a hearts-and-rainbows, "everything is beautiful" kind of angle, you go to them, even if you know their optimism comes from assiduous refusal to consider any facts that would temper it. In politics they call it "spin," but in most other contexts we just call it B.S.

I decided early on that I didn't want to spend my career being depressed or lied to, which is why writing about health and fitness suits me so well. Almost everything I write is prescriptive. Experts are happy to talk to me, and readers are happy to find and use the information I get from my sources. Real controversies are so rare that you sometimes have to work hard to find them.

But there are some.

Take the barbell back squat. Although I was an enthusiastic back squatter at the time Alwyn and I wrote the original *NROL*, eventually I stopped doing them. They were hard on my knees and shoulders. I always felt worse for days afterward. Conversely, I could do front squats and not feel any joint pain at all. Whatever soreness I felt a day or two later was in the bellies of my thigh muscles—exactly where it's supposed to be.

There are two ways to look at my retreat from back squats:

I could try to extrapolate my problems with the exercise out to the entire population, and suggest nobody should do them. I can always find doctors and physical therapists who would be happy to portray dozens of exercises as injurious. They deal with injuries every hour of every working day, and their point of view, while honest, is tainted by the fact that they typically see people who are already in pain. The problem with this kind of reporting is that the same doctors and therapists might have similarly grim opinions about exercises that I think are safe and include in books and articles.

Or I could acknowledge that lots of people can do lots of things I can't. I've sucked at so many things in my life that it's easy to suppose an exercise I struggle with is just another brick in the wall. I can always find someone out there who'll agree with me on that as well.

Those two sides squared off in what I call the Squat Wars of 2009 and 2010, which began when Mike Boyle, a friend of ours, explained why he no longer uses the barbell back squat with the athletes he trains. The backlash was swift and furious. Even the National Strength and Conditioning Association got into the act, revoking Boyle's invitation to speak at its 2010 national conference.

The controversy illustrates my dilemma as an honest journalist whose reporting includes a mix of prescription and description. Is something dangerous because it doesn't work for me? Should Alwyn and I go so far toward the cautionary side that we tell middle-aged people like you and me to walk more and eat vegetables (although not at the same time, because someone might get hurt)? Or should we go to the opposite extreme and say no exercise is dangerous if you do it right (and if you don't, it's a sign of a serious character flaw)?

The rules of injury prevention and recovery, as you'll see, are simple and straightforward. How you apply them is infinitely more complex. I'll do my best to tell you what we know from research, but as I do keep in mind that your experience is the only one that really matters.

NEW RULE #9 • Everyone is injured. But not every injury hurts.

I was caught by surprise a few years ago when I suffered a deep chest bruise playing basketball. When it didn't get any better, I went to a doctor for an X-ray to see if it was more than a bruise. It wasn't, but the X-ray revealed a bizarre anomaly in my rib cage. One of my ribs stopped short of my spine. Was it an old and unhealed injury? A sign of the apocalypse? The orthopedist was equally baffled, but his advice was reassuring: If it doesn't hurt, don't worry about it.

It's not just me. When researchers go looking for injuries in people who are symptom-free, they find them. Just to pick one example, a study published in the *New England Journal of Medicine* in 1994 started with doctors at one hospital taking MRI scans of ninety-eight people who had no history of back pain. They sent the scans to another hospital, where they were examined by doctors who weren't told that the scans came from asymptomatic people. For good measure, the researchers mixed in twenty-seven scans of people who had back pain and whose scans showed abnormalities.

Just 38 percent of the people without pain had completely normal spines. Almost two-thirds had an issue that a doctor would expect to find in someone with back pain. Gender and activity level didn't seem to matter, although age did, as you'd expect. The study showed a steady increase in abnormalities in middle age and beyond.

Lots of things can go wrong. Aside from wear and tear, athletes in high-risk sports like football, mixed martial arts, gymnastics, cheerleading, and Olympic weightlifting are known to have higher risk of fractures in the tiny bones on the edges of their vertebrae. Those fractures may or may not cause pain at the time, but could show up as an injury later in life, when the former athlete is more sedentary and less fit.

That's just the spine. Add in shoulder, hip, knee, ankle, and elbow injuries, and chances are that none of us reach middle age without something going wrong. As my doctor said when looking at my inexplicably detached rib, if it doesn't hurt, don't worry.

NEW RULE #10 • If an activity hurts, stop doing it.

I guarantee this is the least original advice in this book, if not the entire NROL series. I've seen it countless times. I'm sure Alwyn has said it more times than he can remember. But it also needs frequent repetition because it's so easy to forget. I know because I sometimes push through discomfort in order to finish all the work I planned to do that day. I regret it every time.

Pain in the weight room will almost never be short, sharp, and shocking, unless you drop a plate on your foot. I can probably count on one hand the number of times I've gotten that kind of pain while lifting. And even then, I can think of only one time when it was an actual injury. The other times, nothing.

The really insidious injuries are the ones that you know you have but convince yourself you can work through anyway. There's no alarm-bell sensation that tells you to stop. You notice that an exercise aggravates your shoulder or knee or hip or elbow or back. But because it's a tolerable, familiar pain, you think it's okay to keep going. Trust me, it isn't. You're only making it worse.

NEW RULE #11 • If it hurts after you do it, it may or may not be a problem.

New lifters tend to overreact to delayed-onset muscle soreness, which is saddled with an unnecessarily ominous-sounding acronym: DOMS. Veteran lifters, on the other hand, sometimes overreact when they *aren't* sore a day or two after starting a new program. Both sides understand that muscles get sore in response to a new stimulus. One group assumes the pain is proof they worked too hard, while the other worries the lack of pain shows they didn't work hard enough.

They could be right. Or wrong. If DOMS persists more than two or three days, then yes, you probably overdid it. But that's almost inevitable for a new lifter, who doesn't yet know how to avoid doing too much of something she's never before done. Absence of DOMS might mean a new stimulus wasn't novel enough. Or it might mean that you're starting out at exactly the right level of intensity, giving you time to learn new exercises or sequences before you start pushing the limits.

Either way, general muscle soreness—the kind that leaves muscles tender in a uniform way—is a poor indicator of success or failure. But if you’re not used to it, you probably wonder if it’s okay to work out when you have lingering soreness.

You don’t have to stop exercising altogether. The tissues still need to be nourished, and movement will accelerate the process by allowing enhanced blood flow. Jonathan Fass, DPT, a board-certified physical therapist, recommends this simple test to see if you’re ready to exercise again:

- If a light touch is enough to trigger muscle pain, hold back at least one more day.
- If you feel pain only with deep pressure—like when you push your thumb directly into the belly of a muscle—you’re ready to train, although you should consider doing a little less total work than normal.
- If there’s no pain or soreness, warm up thoroughly and have at it.

Once you start the workout, you have two rules: Use the full pain-free range of motion, but stop doing anything that hurts.

NEW RULE #12 • *Never try to fix an acute injury by stretching it.*

“Pain-free range of motion” isn’t just the key phrase in the previous sentence. It may represent the five most important words in this chapter, if not the entire book. Your range of motion will shorten in the area surrounding an injury as your body tries to prevent further damage.

Imagine that you have a small tear in your shirt. If you pull on it, the tear gets bigger. Your shirt won’t generate an inflammatory response to protect and repair the damaged area, so the analogy isn’t perfect. But if you sew the shirt up, the stitching will leave a reminder that the shirt was once torn, just as a healed injury will have some residual scar tissue. That scar tissue changes the integrity and function of the connective tissues surrounding it, which is why you need to work injured muscles and joints through that pain-free range of motion early

and often. The goal is to get back to full mobility without pain or limitation sooner rather than later.

But you can't reach that point ahead of your body's schedule. Soft tissue takes about six weeks to recover completely, although each of us ultimately recovers on our own schedule. Stretching an area while it's still sore and inflamed—depending on the severity, this could include the first week or two—will only create more pain and inflammation, extending the recovery rather than speeding it up.

With most common injuries, Fass says, you want to begin stretching within three weeks. That gives you a three-week window to work with the new tissue in its formative stage, before scar tissue has a chance to permanently alter its structure and function.

NEW RULE #13 • When in doubt, refer out.

Everything I've said about injuries so far is general information. Most of the time, for most mild injuries in most people, these guidelines are good enough. But you aren't a hypothetical person, and there's a chance your injury isn't a textbook example. Don't be stoic. If it's obviously a serious injury—severe inflammation, sharp pain, unabated soreness lasting five or more days—see a doctor. Even simpler: If you think you need a professional opinion, you probably do.

BACK OF THE LINE

You've read that 80 to 85 percent of adults will suffer back pain at some point in their lives. It may not be true, but it's close. According to the textbook *Rehabilitation of the Spine*, an American adult has a 56 percent chance of having lower-back pain in any single year, and a 70 percent lifetime chance. Almost half of us will experience some kind of back-related episode before we turn thirty, and at any given moment between 15 and 30 percent of us will be in pain.

But here's the stat of stats: More than 85 percent of back pain is caused by “non-specific” factors. Serious diseases and injuries (tumors, infections, fractures) cause less than 2

percent of back pain. Less than 10 percent is caused by nerve compression. The rest is classified as “nonspecific.”

If it’s nonspecific, you’d assume it’s unlikely to be caused by a single event, which seems to be the case. We grind ourselves down over time. It could be too much of one kind of activity or too little overall activity. It could be genetic (there’s a high correlation for combined back and neck-shoulder pain among identical twins), it could be occupational, or it could be linked to any number of personal characteristics or issues. Or it might be something else. The simple act of sitting in a chair for a long time is one of the riskiest activities we engage in on a regular basis.

Most acute back pain will subside on its own schedule, without intervention. But that doesn’t mean you’re off the hook. The number-one predictor of back injury is a previous back injury. More worrisome is this: Back injuries cause your body to use muscles differently. All your major joints protect themselves through muscular co-contraction. Muscles on one side of the joint contract in tandem with those on the other side to keep the joint in a stable position. When the normal firing patterns change or get disrupted, the previously protected joint is suddenly vulnerable. This is why bad posture—shoulders rolled forward, lower back flattened instead of naturally curved—is one of the best predictors of pain and injury, Fass says.

I don’t think it matters which joints we’re talking about. Those of you who read *NROL for Women* may remember the discussion on women and knee injuries. One cause is muscular imbalance; a woman’s quadriceps are typically much stronger than her hamstrings, whereas men usually have a smaller discrepancy. Whether it’s the lower back, shoulders, hips, or knees, if muscles on one side of a major joint are weaker or tighter than they’re supposed to be, you have a greater chance of injury.

I’m not going to dwell too much here on specific problems, simply because Alwyn’s entire program is designed to help you develop balanced strength and mobility. That balance is the key to everything.

What we don't know about injuries and persistent pain may still exceed what we do know. But we're pretty sure that the healthiest and most injury-resistant body is the one that can do the most things. It can lift heavy objects slowly but also complete explosive actions. It has steady-state endurance but also has well-trained reflexes for sudden and unpredictable movements. It can use your muscles as a coordinated movement system even when you aren't moving. When you run or jump or play, it protects itself by stabilizing key joints even when you're moving at full speed. At the same time, we know that the athletes and enthusiasts who push themselves the farthest in one or more directions are most likely to be hurt.

That leaves us with this directive: Do the entire program to the best of your ability, and you should end up with a body that's much stronger and more resilient from top to bottom. No body is ever 100 percent resilient, but if nothing else the more fit and functional body will be a lot more fun to have on a daily basis.

The Road More Traveled

“I’M TRAINING FOR A MARATHON” is one of the more deflating sentences I hear in my life as a fitness professional. I have friends who run marathons and do it well. They’re serious, gifted endurance athletes who’ve been training for years. The people who announce their long-distance ambitions to me are neither serious nor gifted. Most of the time, they’re trying to lose weight. I don’t even try to talk them out of it anymore because I know how it’ll turn out:

1. They’ll get angry and stop talking to me.
2. They’ll do it anyway.
3. They’ll get hurt.
4. They’ll gain weight.

Once upon a time, the idea that you could gain weight on a serious endurance-training program was dismissed as physiologically impossible. Calories go in. Calories go out. If you’re burning hundreds of calories a day that you weren’t burning before, of course you’ll lose weight. The only possible way you could gain weight is by eating substantially more food. And that’s crazy. If people are overweight, they’re already eating plenty of food to sustain an hour or two a day of running. Why in the world would they eat more?

At some point, the fact that many people were indeed training and gaining became too obvious to ignore. That’s when a curious admonition started showing up in mainstream fitness articles. Often, the exhortation is right there in the headline: “Break the Work Out/Pig Out Cycle.” The assumption is that men and women who’re smart enough to exercise don’t understand that too many post-workout calories will negate the effects of the workout.

This is, of course, part of a pattern among fitness and nutrition professionals. We always assume people lack the cognitive ability to understand they should move more and eat less. So we repeat it as often as we can, in as many different ways as our own cognitive skills allow. The goal is to convince any individual seeking advice that she's doing at least one of those things wrong. Two of my favorite scolds come from the bodybuilding world: "Great bodies are built in the kitchen" and "It's 90 percent diet."

The premise is absurd. You build a great body in the gym *and* the kitchen, and which is more important will vary from one person to the next. Imagine that you could take two identical twins, and have one eat perfectly without exercise while the other trains perfectly while eating her normal diet. Which would look better in a year? Of course it would be the one who spent hours in the gym lifting and sweating.

"Ah!" says the imaginary person I'm arguing with. "But what if the twin ate too much and her body got all flabby and shit?"

We now circle back to the original problem: Why would someone who's exercising to lose weight, or to get leaner and more muscular, eat so much food that he or she ends up gaining fat instead?

Let's take stupidity off the table. My career is based on the premise that if people are intelligent enough to seek out professional advice, they're intelligent enough to understand the basic math of calories-in, calories-out. That leaves us with this: There must be something about exercise that makes some people hungrier than they were before.

In fact, there is. That's the good news. The bad news: If you're remotely interested in the answer, you're probably one of them.

NEW RULE #14 • Exercise burns calories. Sometimes that's a problem.

When researchers use the word "exercise," they don't use my definition. They mean steady-pace endurance exercise.

“Strength training” or “resistance exercise” is something different, and “high-intensity interval training” is yet another thing.

And exercise, by their definition, is problematic. When researchers have used exercise as a short- or long-term intervention to help people lose weight, it doesn't work the way it's supposed to. Average weight loss in exercise-only studies is often minuscule. When the intervention includes a reduced-calorie diet, the people who diet and exercise don't lose any more weight than the people who diet without exercise.

What goes wrong? Why do people who are sometimes jogging for up to five hours a week not losing weight? A team of researchers based in Australia and the UK has been trying to crack the nut, and their findings are intriguing.

One study, published in 2009 in the *American Journal of Clinical Nutrition*, recruited several dozen overweight and obese adults between the ages of thirty and fifty. Their twelve-week exercise program was designed to burn 500 calories per session, and 2,500 calories a week. Most of the people in the study lost weight—seven pounds on average, virtually all of it from fat. But there was a huge gap between those who responded to the program and those who didn't. Responders lost an average of eleven pounds, which was close to 6 percent of their starting weight, versus two pounds and 1 percent for the nonresponders.

It gets worse. Fifteen percent of the participants gained weight. Daily hunger rose for the nonresponders, and their sense of fullness following a meal was lower. Some of the responders also ate more, which makes sense when their bodies are suddenly forced to burn off an extra 2,500 calories a week. But they didn't eat enough to negate the exercise. One responder ate an extra thousand calories a day and still lost nine pounds, while one *extreme* responder cut a thousand calories a day and lost more than thirty pounds. On average, the responders didn't report any change in their hunger levels.

So a hefty dose of exercise sure as hell works for *some* people.

At the other end, my heart goes out to the person who added 1,250 daily calories and gained seven pounds. And what are we to think of the nonresponder who added 2,000 daily calories—*four times* the amount of energy burned in each exercise session—but still managed to drop a pound?

The study left a very, very big question unanswered: Why were the nonresponders so...nonresponsive? The same team tackled that question in a review study, which led them to a fascinating possibility.

NEW RULE #15 • “Fat-burning” exercise doesn’t always burn fat.

Human bodies burn a combination of fat and carbohydrate for energy. A healthy body will burn more fat than carbohydrate at rest and in low-intensity exercise. The harder you go, the higher the percentage of carbs you burn, until you’re burning almost all carbs during those short bursts of all-out exertion. But when you recover from a sprint or a set of heavy lifts, you burn almost all fat, and you burn a lot of it because your heart is thumping and your metabolism is as high as it can go.

There’s only so much of this activity you can do, as I noted in [Chapter 1](#). But if you do three of Alwyn’s workouts a week, and push yourself to work harder and get stronger, you’ll spend enough time with an elevated metabolism to see a real difference. Your body will burn a lot of fat during and after the workout as it recovers. The term for this is *metabolic flexibility*. The easier your body can switch from burning fat to carbs and back again, the more metabolically flexible you are, and the easier it will be for you to train hard and to enjoy the results of training, all else being equal.

Alas, some people don’t burn fat the way they should. They burn a higher percentage of carbs at rest, during exercise, and while they’re recovering. Because the human body has limited ability to store carbs—as opposed to its unlimited ability to store fat—this metabolic inflexibility presents a serious problem.

Humans can store carbohydrate three different ways: There’s the glucose in your blood (typically from recently digested food), glycogen in your muscle tissues, and a smaller

amount of glycogen in your liver. Your body will never let the supply run out completely. Even if you're starving on the frozen tundra, your body will use fat and muscle tissue for energy before it wrings the final grams of carbohydrate from your system. You'll die of starvation first.

Logically, if your body places that much value on its carb reserves, it's extremely sensitive to carb depletion. The lower it goes, the hungrier we get. Somebody who burns too many carbs all the time, at rest and in motion, will feel that depletion sooner, and respond with greater hunger.

No one can say exactly how this process works, or even say with 100 percent certainty that it happens at all. When we do have a clearer picture, it won't be as simple as what I just described; nothing ever is. The most we can say now is that some evidence suggests that those who burn a higher percentage of fat calories during exercise will be less hungry afterward than those who burn less fat. This has been shown in studies in which all the participants, male or female, were lean.

We also know that obese adults typically burn a higher percentage of carbs all day, every day. If burning too many carbs during exercise indeed provokes more hunger afterward, then we have an explanation for why endurance exercise doesn't do much to help people lose weight. It works for healthy, lean people, or those predisposed to be lean, but they were that way before they started running or riding or swimming. Thus, when friends and relatives who're slim and fit tell you that a morning run is their secret to staying slim and fit, they're telling the truth. Endurance exercise works for them because their bodies burn more fat during exercise and are less hungry afterward.

If you're not one of them, if you're predisposed to gain weight easily and conventional exercise doesn't work for you, the carb-depletion theory might explain why.

NEW RULE #16 • Alwyn figured this out a long time ago.

Alwyn would be the first to tell you that he's not an inventor. He's an integrator. He figures out the best ways to do things based on what others have done successfully. But by the time

he finishes integrating, the programs he creates don't typically look like anyone else's.

Take the idea that endurance exercise is the best weight-loss tool for the people who most need to lose weight. It was gospel when I started writing about fitness back in the early nineties. But by the time I worked with Alwyn in the early 2000s, several prominent trainers had already shared their skepticism about steady-state cardio. Alwyn's skepticism didn't seem unique.

Over time, though, the way he *applied* that skepticism started to look very different from what other trainers I knew were doing with their clients. For one thing, he rejected the idea that extremely overweight clients needed an easier training program. He worked them hard. He understood that fatigue gave him two potent fat-loss tools:

- Fatiguing exercise burns calories.
- Fatiguing exercise leaves you with an elevated metabolism and a need to recover.
- Endurance exercise is also fatiguing, and the more fatigued you are from any individual bout, the more recovery you need. But there are two problems with endurance training as a primary weight-loss tool:
 - Your body becomes more efficient at running or cycling or swimming, and burns fewer calories per unit of work.
 - Weight loss slows down your metabolic response to both food and exercise. Your body becomes biased toward regaining the lost weight.

Those two outcomes are the best-case scenario. That's your reward for *successful* weight loss when you use a combination of diet and endurance exercise. You need to exercise even more and eat even less just to break even and not regain the weight.

Alwyn went to the other extreme. He created fatigue through the widest possible variety of movements: forward, back, sideways, up, down, and every angle in between. But it wasn't just fatigue that he was after. He used every

intervention he could think of to force a body to make adaptations, to do or be something it couldn't or wasn't before. The most important of those adaptations is tissue remodeling.

Your body breaks down and rebuilds its own tissues all day, every day. Without exercise, you have three stages of tissue remodeling throughout your life. When you're young, there's a net protein accretion. That is, your body builds more muscle and other tissue than it tears down. In your twenties and thirties, if you aren't training and you aren't eating in a way that adds to or reduces your weight, you achieve net protein balance. You break down and rebuild tissue at the same rate. Finally, starting in midlife, you break down more than you put back, unless you take specific actions to prevent it from happening.

Alwyn's goal is to maximize every part of the adaptive process while stopping short of the point at which fatigue does more harm than good:

1. First, you will do enough work to burn a lot of calories.
2. Some of the work will be difficult enough to jack up your heart rate and get you breathing hard. Your body will use the anaerobic energy systems, during which your muscle cells will be forced to create ATP without oxygen. It's a less efficient and thus more metabolically expensive way to create energy.
3. You'll almost always stop long enough to catch your breath between sets or intervals of anaerobic exercise. That enhances metabolic flexibility by forcing your body to switch back and forth between fuel sources—burning carbs during the set and then burning fat as you recover.
4. Most of the exercises employ your body's biggest muscles, which takes more energy and requires more recovery.
5. The strength exercises will break down muscle tissue. That would be a bad outcome if you didn't rebuild at least as much as you break down. ([Chapter 18](#) covers post-workout nutrition.) The goal is a net gain in muscle protein. Stronger, thicker muscles allow you to train harder, which is the best kind of adaptation you can achieve. But even without bigger

muscles, simply forcing your body to break even can be a win, as long as it takes a lot of energy to get there.

More than anything, Alwyn makes sure his clients—and by extension our NROL readers—don't become so efficient that they stop seeing results. That's why there are so many different movement patterns in every workout, why there are so many ways to make the movements more challenging, and why the programs change every few weeks. You want to get good at doing individual exercises, but you never want to repeat the same exercise in the same way so many times that your body goes from adaptation to efficiency.

And yet, all those interventions, by themselves, don't guarantee weight loss. Some of you will probably lose a few pounds of fat on Alwyn's program, and that can be substantial if you're already close to your fighting weight—whatever makes you feel like you're at the top of your game. Some of you will gain a few pounds, especially if your body responds well to strength training and you add solid muscle. Again, that can be a great outcome if you were relatively lean and a few pounds of muscle makes you look and feel better.

But if you aren't particularly lean right now, and your goal is to lose more than a few pounds of fat, even Alwyn's workouts won't get you there without a change in your diet. Alwyn will be the first to tell you that. I can't specify what you need to change—although I'll give it my best shot in Part Three—but if you're heavier and fatter than you want to be, you'll have to change *something*. There's no scientific evidence that exercise alone will create enough of a calorie deficit to produce substantial weight loss. Exercise can certainly create a calorie deficit in isolation, but our bodies will typically find a way to compensate for that, as I explained earlier.

There are outliers, of course. They show up in almost every study, including the one I described. Every trainer has worked with them. They exist at both extremes: Some gain more muscle or lose more weight than expected, while others lose muscle when trying to gain, or gain weight while trying to lose.

The first kind of outlier makes my life a whole lot easier. They get extraordinary results, attribute them to Alwyn's programs, and convince their friends to buy our books. The truth is that the program put into motion something that was waiting to happen. The reader's preexisting propensity to gain muscle or lose weight just needed the right stimulus. Don't get me wrong: We still deserve credit for providing what they needed. I just want to make it clear that there's nothing magical going on. It's the right program applied by the right person at the right time in the right way. (Then again, given how rare it is for all this to come together, maybe it *is* magic.)

As for the other type of outlier, it's easy to say that he or she just didn't work hard enough to get the expected results, or didn't follow directions. Either or both might be true. But there's also the possibility that it wasn't the right program for that person. We'll never know.

All we can do is present the program, starting on the next page, and hope it works exactly as expected for you. If not better.

PART 2

THE PROGRAM

Every Workout Tells a Story

ALWYN AND I BEGAN THIS BOOK with the premise that each lifter is slightly different from every other lifter. I can't remember the last time I went to the gym with a workout that I hadn't modified in some way to accommodate my tragic inability to do every exercise in the canon, including the workouts in my own books.

That's why Alwyn came up with what he describes as a "Chinese menu" system. Instead of giving you a series of workouts with all the exercises filled in, he's putting the power to create a customized program in your hands. It's the most important and unique feature of *NROL for Life*, and we've done everything we can to make it easy for you to choose.

But before we get to the exercises, it's important to understand the system itself.

ELEMENTS OF THE PROGRAM

I'll introduce them here in the order in which you'll perform them during each workout. Each is explained in full detail in its own chapter.

1. RAMP (Chapter 15)

Each book in this series has emphasized the importance of getting your body warmed up and ready to lift. In fact, Alwyn's concept of warming up has grown to the point that he doesn't even use that term anymore. "Warming up" implies that there's a moment when your body is fully prepared for training, and there's nothing else you need to do. You're there, and you can stay there as long as you want.

RAMP—an acronym for *Range of motion*, *Activation of muscles*, and *Movement Preparation*—suggests something

slightly but meaningfully different: You've *begun* the process of training your body. Each challenge leads to the next. There's nothing static or finite about the process. It ramps up your metabolism and your mood to ensure you're ready for challenges that will ramp them up even more.

This part of the workout will usually take about 10 minutes.

2. Core Training (Chapter 6)

We define the core as including all the muscles that attach to and help stabilize the lower back and pelvis. Starting out, you'll do two core exercises each workout, drawn from two categories: *stabilization* and *dynamic stabilization*. Each category has five levels of exercises.

3. Power Training (Chapter 7)

I've already noted that power—the ability to rapidly exert force—declines faster in middle age than strength or muscle mass. We also know from research that it's possible to reverse declines in power. That process is relatively straightforward, and Alwyn has provided five levels of power exercises to get you there.

But there's more to power development than doing a single, power-specific exercise per workout. Alwyn has incorporated exercises throughout the program that lend themselves to fast, powerful movements. You can't and shouldn't do everything fast, certainly, but throughout the following chapters I'll note places where it's appropriate for readers who're ready to push themselves. Physiological benefits aside, I think you'll find that it's just more fun to work fast once you have the green light.

4. Strength Training

Readers of the original *NROL* will recall that we reduced all exercises to six basic categories: squat, deadlift, lunge, push, pull, twist. The concept is the same in *NROL for Life*, but Alwyn has changed some of the terms to better describe the way he designs programs. Each of these categories has five levels of exercises.

- **Squat (Chapter 8)**. These are exercises in which you bend at the knees and hips, usually with your feet shoulder-width apart and parallel to each other. They work all your lower-body muscles.
- **Hinge (Chapter 9)**. These are deadlift-type exercises in which you bend forward at the hips and then return to a standing position. The muscles on the back of your body, mainly your glutes and hamstrings, do most of the work.
- **Lunge (Chapter 10)**. You perform these exercises with your feet split apart and your torso upright. They activate most of your lower-body muscles.
- **Single-Leg Stance (Chapter 11)**. These exercises are variations on the previous three movement patterns—squat, hinge, and lunge. But because you're doing them with one foot off the floor, they're different enough to merit their own designation. They're crucial for improving balance, coordination, and joint stability.
- **Push (Chapter 12)**. The push-up is the most obvious and important exercise in this category, which also includes bench and shoulder presses. Your chest, shoulders, and triceps are the prime movers.
- **Pull (Chapter 13)**. These are the opposite of push exercises. They work the muscles on the back of your shoulders and torso, primarily the trapezius and lats, with assistance from your biceps. The category includes rows, chin-ups, and pull-downs.
- **Combination (Chapter 14)**. Some of the best exercises, and coincidentally the most challenging, involve two movement patterns: a squat with a press, for example.

Every workout includes a pull, a push, and either a lunge or single-leg-stance exercise. You'll do hinges and squats every other workout. Combination exercises first appear in Phase Two and then feature prominently in Phase Three. (I'll explain the three phases of the program in the next section of this chapter.)

5. Metabolic Training (Chapter 16)

The exercises in these drills are pretty simple; you might do gym-class staples like push-ups and squats in one workout, or a newer but easy-to-learn exercise like kettlebell swings. You want them to be simple because your body is too exhausted to do anything requiring a high attention to form. But don't confuse "easy to learn" with "easy." The goal is to work hard and make your body even more exhausted in these 5 to 10 minutes.

I should stop here and note that the categories I've just described, for all their distinctive qualities, have just as much in common. From RAMP to metabolic training, they all work to increase your overall conditioning level along with strength, power, stability, coordination, mobility, athleticism, and efficacy. Each thing makes you better at lots of things.

Metabolic training has all the aforementioned crossover qualities. You could even argue that it's redundant, since you might end up repeating exercises you've already done in that very workout.

The big difference: You're doing the exercises in a deeper state of fatigue. Ten push-ups or squats in the 45th minute of a workout are exponentially harder than 10 push-ups or squats in the 25th minute. Your heart is pounding, it's hard to catch your breath, and your metabolism is at its limit. It's going to be elevated for many hours after you leave the gym, which is exactly what you want from one of Alwyn's workouts. Of course you want to burn a lot of calories while you're training, but you also want that accelerated metabolism while your body recovers.

6. Recovery (Chapter 18)

No workout is complete until you've started preparing your muscles for the next workout. As you'll see, the recovery process includes stretches and foam rolling. This chapter also offers a look at post-workout nutrition, the most important aspect of recovery.

THE PHASES

Alwyn's program has three phases, each of which should last four weeks on average for most readers.

Phase One: Transform

Experienced lifters will look at the workout charts in [Chapter 17](#) and ask themselves, “Is that *it?*” It looks easy on paper. But if it’s easy to perform, you’re doing it wrong. You’re either using the wrong exercises for your level, or too little weight, or both. Conversely, many of you will choose exercises and weights that are too challenging for this phase, and end up with more soreness than you’ve had since the last time you underestimated one of Alwyn’s workouts.

The goal of the phase is in the title: During the first four weeks of the program, you’re going to train your body to do things it has forgotten how to do, never learned to do, or can only kinda-sorta do. You’ll improve your fitness in almost every area. RAMP will boost your mobility. The core training will improve the strength, stability, and endurance of your mid-body muscles. The power exercises will teach your muscles to work fast, improving your rate of force development. The four resistance-training exercises in each workout will build strength and muscle size in those of you who’re new to this, and improve muscle endurance and tissue quality in veteran lifters. Metabolic training will give everyone a fat-burning stimulus. Recovery will be whatever you make it. For those who’ve never used a foam roller to smooth out the knots and adhesions in muscles, it can be a workout all by itself. All of it combines to improve your total-body conditioning and athleticism.

Phase Two: Develop

By now you’re familiar with the exercises and system, and it’s time to push yourself. If you’re relatively new to lifting, that’ll happen with heavier weights and more challenging exercises. Weight-room vets will advance with heavier weights and higher volume: up to four sets of 10 reps of each resistance exercise. Everyone will strive to increase some aspect of performance each workout.

Phase Three: Maximize

The big change in this final phase is that you’ll do five resistance exercises each workout, instead of four. The added

move is a combination exercise, which requires a higher level of effort and will induce a deeper level of exhaustion. No matter how well you prepare for it, you'll still notice a difference.

THE WORKOUTS

Each phase has two total-body workouts, labeled Workout A and Workout B. You'll alternate between these workouts until you finish the phase. You will never, ever do both workouts on the same day, and if you're even slightly tempted to do A and B on consecutive days, it means you aren't working hard enough to get the results you want. You should need, and your body should *demand*, at least one day of recovery between workouts.

Three workouts each week is ideal for most readers, although it may be too much for you if you're especially challenged—coming back from an injury or a long layoff, for example. Two workouts a week is still a decent volume of exercise if you're starting from zero. One is too few to see results, no matter your present condition, and four of Alwyn's workouts are too much for anyone. If you have that much time and energy, there are better ways to use it (see [Chapter 22](#)).

Here's what a month of training will look like if you follow the classic Monday-Wednesday-Friday workout schedule:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1	Workout A	off	Workout B	off	Workout A	off	off
Week 2	Workout B	off	Workout A	off	Workout B	off	off
Week 3	Workout A	off	Workout B	off	Workout A	off	off
Week 4	Workout B	off	Workout A	off	Workout B	off	off

Most readers should do workouts A and B six times each, which, as you can see in the chart, will take four weeks on a typical schedule. Some exceptions:

- If you train twice a week, you'll need six weeks for each phase.
- If you're an absolute beginner, coming off a long layoff, or returning from a serious injury, you may want to do A and B eight times each. This is tricky, though; I tend to get bored with any workout after three weeks, and I usually make my best gains in the first and second weeks. Then again, I started

lifting before some of you were born. You know it's time to move on when you stop making gains. You should see an improvement in *something* from one workout to the next—each week, each phase—throughout the program. (At first you'll see improvements in everything, which is fun while it lasts.)

- If you're an NROL veteran, and you've done the entire program in at least one of our books, you may want to do each workout in Phase One four times, instead of six. You'll know you're ready to move on if the fourth time through workouts A and B feels exactly like the third time. At that point, there's nothing more to gain from Phase One, and it's time for Phase Two. The same guideline applies to Phase Two and Phase Three, but I doubt if many of us will adapt to those workouts so quickly.

Now that you understand the program's goals and parameters, it's time for what might be the most important step: selecting exercises.

HOW TO CHOOSE THE BEST EXERCISES FOR YOU

Here's how Alwyn explained the Chinese-menu system to me: "You pick something from every column—a soup, a meat, two vegetables, a sauce, and rice or noodles." The most important rule, Alwyn says, is to make sure you pick just one from each column. "You can't mix beef and shrimp, or two sauces. You'll come up with something nasty."

The key to a tasty workout—or at least one that gives you all the benefits of a good training program without any of the sour aftertaste of one that exacerbates your weaknesses and limitations—is to select the best exercises for you in each phase of the program.

1. Stay true to the category.

As you know, the strength workouts include six categories of exercises: squat, hinge, lunge, single-leg stance, push, pull. There's also a seventh category, "combination," which blends two distinct movements into one exercise.

You have two categories for core training—stability and dynamic stability—and two more for power exercises—upper-body and lower-body.

Alwyn gives you five levels of exercises in each category, arranged according to the difficulty of the technique and the amount of training experience it requires. You'll often have variations on those choices to modify the difficulty in either direction, or to accommodate different equipment preferences. The next few chapters will show all your options in each category.

You can also bypass the decision-making process altogether by following the done-for-you sample workouts in [Chapter 17](#). If you choose to choose, make sure you select each exercise from the proper category.

But how do you know which exercise is best for you?

2. In Phase One, pick the easiest exercises you can do with full intensity but without discomfort.

Most categories give you simple self-tests to help you figure out the right level. But the tests aren't definitive. You still need to make choices. Let's use the squat category as an example. Here are the five levels:

Level 1: Body-weight squat

Level 2: Goblet squat (holding a weight against your chest with both hands)

Level 3: Front squat (supporting a barbell or dumbbells on your front shoulders)

Level 4: Back squat (supporting a barbell behind your shoulders)

Level 5: Overhead squat (holding a barbell at arm's length overhead)

[Chapter 8](#) begins with a self-test to see if you can skip past Level 1. If you're a strong, experienced lifter with no injuries to hold you back, Level 2 might also be a nonstarter. You'd have to hold a pretty heavy weight in front of your chest to work your lower-body muscles to exhaustion; when you're

doing 15 reps, your arms and shoulders would give out before the bigger, stronger muscles in your hips and thighs. Levels 3, 4, and 5 present no such problem. Any lifter can build a serious workout with the front, back, or overhead squat.

But what if you can do the workouts as written with *any* of the exercises, including the overhead squat, one of the most challenging in any category? You might want to start with the front squat in Phase One, move up to the back squat in Phase Two, and save the overhead squat for Phase Three. If you're that good a lifter, you can certainly trust your own judgment and instincts.

Conversely, if you've never done any of these exercises and feel like you've stumbled into a foreign movie without subtitles, don't worry. The next few chapters will explain and illustrate all of them.

3. In Phase Two, pick the exercises that allow you to work with the heaviest weight for multiple sets.

It may not be the most difficult exercise in the menu. You might even go back a level in some categories. The goal is to use an exercise that's easy to load without discomfort.

4. In Phase Three, pick the exercises that kick your ass.

I don't think this needs explanation.

5. Don't feel pressure to get through all the levels.

A pure beginner, or someone who's never used free weights, will do well to get to Level 3 on everything by the end of Phase Three. You might not even get to Level 3 across the board. No problem. Simply repeat the program, using higher-level exercises.

If you're more advanced, I'll explain in [Chapters 17](#) and [22](#) how to repeat the program, using the same exercises with higher intensities for strength and size development.

[Chapters 8](#) through [16](#) show you all the exercise choices. [Chapter 17](#) explains Alwyn's system, with step-by-step guidance on how to create your own custom workouts. By the end you'll have two full programs, one each for beginners and advanced lifters. (The latter is my own program, which I put

together with Alwyn's guidance.) If either looks like it fits your needs and abilities, you can simply take it to the weight room and get started.

Finally, [Chapter 18](#) shows you a sample set of exercises for recovery. I put them last because they need so little explanation. You just do what's on the page.

STUFF YOU NEED, AND STUFF YOU'LL PROBABLY WANT

With each book, a few readers will drop down from the cyberclouds and ask if it's possible to do the workouts without any equipment. There's always an excuse that makes sense to them: They can't afford it, they don't have room, they can't find a barbell to match the drapes. So let this be our final word: You have two choices. Either buy equipment for your home, or join a gym that has everything you need. You can't do a resistance-training program without some form of external resistance.

Some of the exercises require nothing more than your body weight (a formidable challenge on chin-ups and many of the core exercises), but you won't find body-weight exercises in every category. And even when you do, those exercises may be too easy or too advanced. *That's why you need equipment.*

And *please* don't e-mail requests to revise the program because the gym you belong to doesn't have standard gear like barbells or dumbbells heavier than a five-year-old. Alwyn has provided the most flexible strength-training program in the history of publishing, and I've done the best I can to explain how to modify it for your own needs, limitations, or equipment options. But if your gym doesn't have basic training tools, you have to find another gym, or buy your own equipment for home workouts.

Let's start with what you need:

1. Dumbbells

For home exercise you can buy a range of dumbbells, or a single set of adjustable weights. Either works just fine. If you're buying individual dumbbells for the first time, shop for

price. We're just talking about hunks of inert iron; fancier stuff is nice but completely unnecessary. Keep in mind that as you get stronger you'll need bigger dumbbells. Make sure you set up your workout space with room to add more. If you're getting adjustable dumbbells, I've always liked the original PowerBlocks (powerblock.com). They're pricey—over \$400 for a set that goes up to 50 pounds per block, when you add shipping—but easy to use and convenient.

2. Barbell and weight plates

Weight plates, by themselves, can be a handy form of resistance for some of the exercises. Weight plates secured to a barbell are your only option for some, particularly the deadlifts. We recommend an Olympic barbell set, with a 45-pound bar. It's certainly the best choice for male readers. You'll never outgrow it, and you'll never wear it out. You can pass it on to your grandchildren. A woman working out at home might want to consider a 35-pound Olympic bar, which is shorter as well as lighter. The only drawback is that you'll probably have to buy the bar and weights separately, instead of getting a discounted set.

You can also consider a 10-pound standard barbell. It's narrower, making it easier to grip for women with small hands. I don't recommend it for most lifters; it's less versatile than the Olympic bar. Then again, I started out with a standard barbell set when I was thirteen, so I can't really knock it.

As with dumbbells, you can shop for price. Iron is iron, whether it's new or used. Start with yard sales and Craigslist. If you buy online, check out performbetter.com or fitnessfactory.com. Get on their mailing lists and, if possible, wait for a sale that includes free shipping.

3. Squat rack with chin-up bar

The chin-up is a somewhat advanced exercise for middle-aged men and for women of any age, and not even an option for those who're overweight or recovering from shoulder or back injuries. But the bar is crucial. By design it's strong enough to support several times your weight, which makes it the perfect

attachment point for elastic bands or a suspension system like the TRX, both of which are described below.

A good squat rack also has adjustable supports for the Olympic bar. They obviously allow you to perform barbell squats. Less obviously, you can set the supports closer to the floor for the deadlift variations shown in [Chapter 9](#). And even less obviously, you can set the bar in an optimal position for push-up variations.

4. Cable machine, elastic bands, or resistance tubing

If you have access to a cable machine, you don't need bands or tubing. (Bands and tubing are the same thing, functionally, but tubing comes with handles, which make it easier to use and more comparable to cable exercises.) But you have to have one or the other. It's nearly impossible to do the program without this type of resistance.

5. Bench, box, and/or steps

You don't *need* a traditional weight-lifting bench, but it helps. Aside from the obvious bench presses, a good bench gives you a platform for elevating your hands or feet on a variety of exercises. (If you're going to get a bench, you may as well make it adjustable so you can do incline presses and chest-supported rows.) A perfect workout room gives you a variety of boxes and steps, from 6 to 24 inches high. Most of the boxes you see in our photos are industrial-quality, designed for big athletes to perform jumping and landing exercises. They're also expensive. (If you're curious, you can find them at performbetter.com.) A home lifter can get just about the same benefits from a set of adjustable aerobics steps. I've used the ones at my gym for years and never worried about my safety.

6. Mats or a padded floor

You don't want to try some of Alwyn's core and power exercises on a concrete or wood floor. If you don't have a carpeted or padded surface, find something that will protect your elbows on core exercises and your hands on explosive push-ups. You'll also want to find a forgiving landing spot for the jumping exercises in [Chapter 7](#).

7. A clock or timer

The core-stabilization exercises in [Chapter 6](#) call for timed sets, as do the metabolic-training drills in [Chapter 17](#). That means you'll need either a timer or a workout space that allows you to see the second hand on a wall clock. I used to use a timer called the Gymboss (gymboss.com). When it gave out a couple years ago, I switched to the free Gymboss app for my iPhone. Another great app is the iWorkout Muse Pro (workoutmuse.com).

Here's some stuff you might want:

8. Swiss ball

You can find one at any sporting-goods store or big-box retailer, and it comes in handy for core exercises and push-up variations.

9. Suspension trainer

These are straps with handles that hang from a doorway, chin-up bar, or ceiling attachment and allow you to do body-weight exercises with your hands or feet suspended above the floor. You don't need one for this program, but it's good to have. Alwyn uses the TRX, the best-known system. It's also the one you see in our photos. The TRX is expensive, at \$190 for a package that includes a DVD and instruction booklet. You can do all the same things with a Jungle Gym XT at half the price. There are other options with their own advantages and drawbacks, and by the time you read this there may be new choices that are even better.

10. Kettlebells

I was surprised to see kettlebells in Walmart in early 2011. I knew they were increasingly popular, but I didn't know they were ubiquitous. Maybe next they'll be in the checkout line of my grocery store, next to the Tic Tacs and gossip mags. Serious kettlebell enthusiasts will tell you that there are big differences from one type to another; some have smooth handles that make them tough to grip, while others are so rough they'll tear your skin off. I'll take their word for it, and

advise you to do some research before you purchase one or more for your home gym.

More important, though, is that you get the weight right. My friends tell me that women should start with a 15-pound kettlebell for swings (a terrific exercise for power and metabolic training), and go up from there. For men, the minimum starting weight is 25 to 30 pounds. There are certainly great exercises you can do with lighter weights, but they aren't in this program, and dumbbells are just fine for some of them.

11. Sliding discs

I like the \$30 Valslides, which have slick plastic on the bottom and a rubber grip on top. I use them for a variety of exercises, and find they work equally well with my hands or feet controlling them. Many readers have told me that cheap furniture sliders, available online or at Home Depot and Lowe's, work just as well at a fraction of the price. I can't confirm or refute. I'm a lot more comfortable using equipment that's designed for training. Alwyn says that some gyms don't allow you to use homemade or off-label gear. And here's something I didn't know until Alwyn told me: If you're a trainer, and you use something like furniture sliders with a client, and that client gets hurt, you could be looking at a lawsuit, one you have little chance of winning.

Core Training

IF YOU'RE LOOKING FOR CRUNCHES HERE, you won't find them. Alwyn and I believe the crunch is a useless exercise the way most people perform it, with high reps and low intensity. There are certainly other ways to do it, and you can argue their merits, but in our view they present their own problems. Our biggest concern: Many of us already have postural problems from sitting all day. Why use your valuable workout time on an exercise that, at best, does nothing to improve your posture, and at worst may exacerbate an existing problem?

The goal of core training is to increase the endurance, stability, and strength of the muscles that are responsible for keeping your lower back safe and coordinating upper- and lower-body movements. We don't like to make extravagant claims for what core training gives you in isolation. It does something—particularly for those recovering from back injuries—but it's hard to measure. We're a lot more comfortable saying that when you combine core training with all the other elements of Alwyn's training programs, you end up with a body that looks better, feels better, and does better. The synergistic effects are far more important than whatever you get out of the individual components.

There's almost certainly a point of diminishing returns with core training. I can't tell you where it is, but when I see someone in my gym doing core exercises for a half hour or more, I have to think he's well past that point. Five to ten minutes per workout should be plenty.

THE PROGRAM

Alwyn divides the core exercises into two categories: stabilization and dynamic stabilization. For stabilization, you'll get into a position and hold it for a timed set (up to 30

seconds, although you can go longer, as I'll explain). Dynamic stabilization involves getting into a position and holding it while doing repetitions of a movement with one or more limbs. The challenge is to keep the original, stable position while your center of gravity changes. For these exercises, you'll count reps the traditional way, rather than holding them for a predetermined amount of time.

Both categories have five levels, but the way you advance through the levels is slightly different. Advanced lifters (especially *NROL for Abs* veterans) may move quickly through the stabilization levels. If you can hold the position for maximum time, there's no reason to do it more than once. You'll spend more time at each level for dynamic stabilization. Always choose exercises that allow you to increase weights and/or reps from one workout to the next.

Next, we'll look at how you'll advance through the exercise levels, then move on to the exercises themselves.

Stabilization

Start the program with the Level 1 stabilization exercises. That is, in Workout A do a basic plank, and in Workout B do a basic side plank. If you hit or exceed the time limit for both sets of both exercises, move up to Level 2 the next time you do workouts A and B. If you again hit or surpass the time limits for both exercises, then do the Level 3 stabilization exercises the third time you do A and B. Thus, if you do each workout six times, and you advance through a level each workout, you'll hit all five levels, and only in your final two workouts will you repeat a level.

I realize that what I just wrote is confusing. So let's look at this in chart form, assuming you do three workouts a week and follow a traditional Monday-Wednesday-Friday schedule:

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1	Workout A: Level 1 (basic plank)	off	Workout B: Level 1 (side plank)	off	Workout A: Level 2	off	off
Week 2	Workout B: Level 2	off	Workout A: Level 3	off	Workout B: Level 3	off	off
Week 3	Workout A: Level 4	off	Workout B: Level 4	off	Workout A: Level 5	off	off
Week 4	Workout B: Level 5	off	Workout A: Level 5	off	Workout B: Level 5	off	off

Realistically, I don't know if any readers need to move that fast through the levels. By the time you get to Level 4, you have enough options to keep you busy for multiple workouts. Even advanced lifters may want to save Level 5 for your second time through the program.

Final point: You may not advance through the plank and side-plank levels at the same speed. You may get to Level 5 on planks while you're still doing the Level 3 side planks.

Dynamic stabilization

With these exercises, which involve movement rather than getting into one position and holding it, you can advance within each level by increasing weights on some exercises, and increasing reps on others. The body-weight exercises make it easy to know when it's time to move up to the next level. When you hit the maximum reps, you move up. But when you're doing one of the cable exercises, and you can increase the weight from one workout to the next and still hit all the reps, it's harder to know when to move up. Here's your guideline: When you can't use a heavier weight with perfect form—that is, when you have to twist your shoulders or shift your weight to do the exercise—it's time for the next level.

This assumes that you've mastered the form and maxed out the reps on each set. If you haven't, keep working at the same level for the duration of that phase of the program. (When you advance from Phase One to Phase Two, or from Two to Three, you probably want to start with all-new exercises. If nothing else, you'll have more fun with something new to try.)

And keep in mind...

All training is core training. When you do the exercises in Alwyn's program with perfect form, you're working your core along with the specific muscles the exercise targets. The combination exercises, shown in [Chapter 14](#), are the best illustration of this. You can't do them at all without stabilizing the muscles in your hips and abdomen.

STABILIZATION LEVEL 1

★ Plank

- Get into plank position, which is also called a modified push-up position: You're facedown, with your weight resting on your forearms and toes, forearms aligned with your torso, elbows directly beneath your shoulders, and your body in a straight line from neck to ankles.
- Hold that position for at least 30 seconds, and as much as 60 seconds.



DIAL IT BACK

★ **Torso-elevated plank**

If you can't hold the basic plank for 30 seconds, or at least get close, rest your forearms on a padded bench or step. The rest of the exercise is the same. Elevating your upper torso makes the exercise easier, allowing you to build strength and endurance until you're ready for the traditional version.



★ **Side plank**

- Lie on your left side with your legs straight and your right leg on top of your left. Position yourself so your weight rests on your left forearm and the outside edge of your left foot. Your

left elbow should be directly beneath your shoulder, with your upper arm perpendicular to the floor.

- Lift your hips until your body is in a straight line from neck to ankles. You want your shoulders square and on a plane that's perpendicular to the floor, as if your back was supported by a wall.
- You can place your right hand on your right hip or left shoulder.
- Hold that position for at least 30 seconds, and up to 45 seconds, then switch sides and repeat.



DIAL IT BACK

★ **Modified side plank**

If you can't hold the side plank for at least 15 seconds, try this modification: Bend your knees so your weight rests on your left forearm and the inside edge of your left knee. Align your body so it forms a straight line from neck to knees. Other than that, it's the same exercise.



STABILIZATION LEVEL 2

★ **Plank with reduced base of support**

You have three options here:

- Plank with one leg elevated
- Plank with one arm extended in front of you
- Plank with one leg elevated and the opposite-side arm extended in front of you



Or you can switch from a plank to the push-up position, and run through the same list of options: one leg elevated, one arm extended in front of you, or one leg elevated and the opposite arm extended.



With any of these options, you want to hold one leg or arm (or both) off the ground for half the time, then switch to the opposite limb or limbs for the rest.

★ Side plank with reduced base of support

You have two options. One is hard. The other is *really* hard.

- For the side plank with leg raise, get into side-plank position, and lift your top leg so your legs form a V shape.
- For the side plank with knee tuck, lift your bottom leg off the floor, bending your hip and knee so your bottom foot is near your top knee. Your weight will rest on your forearm and the inside edge of your top foot.



STABILIZATION LEVEL 3

★ Feet-elevated plank

Same exercise, only with your toes resting on a bench or step. You can also do this from a push-up position.

★ Feet-elevated side plank

Again, same exercise, only with your feet elevated on a bench or step. As with Level 2, this side-plank variation is much harder than the matching plank variation.

STABILIZATION LEVEL 4

★ Feet-elevated plank with reduced base of support

Options include:

- Elevated plank with one leg raised
- Elevated plank with one arm extended in front
- Elevated plank with one leg elevated and the opposite arm extended

- The same three options in the push-up position: one leg elevated, one arm extended in front of you, or one leg elevated and the opposite arm extended



★ Feet-elevated side plank with reduced base of support

You have the same two options for reducing your base of support: lift your top leg (which is hard) or lift and tuck your bottom leg (which is *extremely* hard).



STABILIZATION LEVEL 5

★ Feet-elevated plank with unstable point of contact

You can rest your toes on a Swiss ball, or put your feet into a TRX or comparable suspension system. With the Swiss ball, you probably want to use the push-up position instead of the plank, although either position works fine with your feet suspended. You can also get creative and elevate your feet on a stable surface, like a bench, and put your forearms or hands on something unstable, like a Swiss ball or medicine ball.



★ Feet-elevated side plank with unstable point of contact

Same idea: Get into the side-plank position with your feet on a medicine ball, or suspended.



STABILIZATION BEYOND LEVEL 5

★ Feet-elevated plank with reduced base of support and unstable point of contact

Clunky name, great exercise options. You can use any variation described so far, and reduce your base of support by lifting a leg, an arm, or an arm and a leg. You can put your hands or feet on the unstable object.



★ Elevated side plank with reduced base of support and unstable point of contact

Same two options: Elevate your feet on a Swiss ball or with a suspension system, and either lift the top leg or lift and tuck the bottom leg.



DYNAMIC STABILIZATION LEVEL 1

★ Plank and pulldown

- Attach a D-shaped handle to the low cable pulley.
- Set up in the plank position facing the cable machine.
- Grab the handle with your nondominant hand, using a neutral grip (your palm facing in, neither underhand nor overhand).
You want tension in the cable when your arm is fully extended

in front of you, which will probably require some maneuvering to get the right distance from the machine.

- Pull the handle until it's just below your shoulder, keeping the rest of your body in the plank position, with everything from chest to ankles on a plane parallel to the floor.
- Do all your reps, then switch sides and repeat.



★ Side plank and row

- Attach a D-shaped handle to the low cable pulley.
- Get into side-plank position facing the cable machine, supporting your weight on your dominant side.
- Grab the handle with your nondominant hand, palm facing down, and adjust your position so your arm is fully extended toward the machine with tension on the cable.
- Pull the handle to your rib cage, keeping your body aligned on a plane perpendicular to the floor.
- Do all your reps, switch sides, and repeat.



DYNAMIC STABILIZATION LEVEL 2

★ Push-away

- Grab a pair of Valslides, furniture sliders, or anything else that will slip across your floor with minimal friction while supporting your weight. (Towels should work on a wood or tile floor, while plastic works best on a carpet.)
- Get into push-up position with one slide in each hand.
- Slide your nondominant arm as far forward as you can, keeping your arm straight and your core in a stable, neutral position. If you feel anything move in your lower back, shorten your range of motion.
- Pull it back, then slide the dominant arm forward.
- Alternate until you finish the set. If the workout calls for 10 reps, do that many with each arm.



★ Side plank and row with reduced base of support

- Get into position for the side plank and row, as described earlier, and lift your top leg.
- Do all your reps (following the previous instructions), switch sides, and repeat.



DYNAMIC STABILIZATION LEVEL 3

Starting with this level, Alwyn switches things up. Instead of exercise pairs, with one based on the plank and the second based on the side plank, you have multiple variations on the same basic movement, and multiple ways to use them. Let's say you're in Phase Two, and you're doing a dynamic stabilization exercise in Workout B. You can try the Level 3 variations one at a time, and then decide which, if any, you want to repeat. Or you can pick one and work on it each time you do Workout B until you max out. Then you can try another Level 3 variation (which we recommend) or move up to Level 4.

But let's say you're in Phase One or Phase Three, and you need to do a dynamic stabilization exercise in both workouts,

A and B. You should do one of these from Level 3 in your A workout and a Level 4 exercise in your B workout. These Level 3 exercises challenge your core by moving your legs while your upper torso remains stationary. In Level 4, you stabilize your lower body while moving your arms and shoulders. Thus, the two levels work in a complementary way within the same phase.

★ **Spiderman plank**

- Get into plank position.
- Lift your left knee toward your left elbow, keeping everything else in the same position.
- Return to the plank, then lift your right knee toward your right elbow.
- Alternate until you do all the reps to each side.



★ **Swiss-ball mountain climber**

- Place your hands on a Swiss ball, roughly shoulder-width apart.
- Set up as you would for a push-up hold, with your body forming a straight line from neck to ankles.
- Raise your nondominant leg off the floor and bring your knee up toward your chest.
- Lower it, then repeat with your dominant leg.
- Continue alternating until you do all your reps with both legs.
- Once you can hit all your reps, work at increasing your speed. You'll be surprised at how challenging it is to maintain good form at a faster tempo.



★ **Mountain climber with slides**

- Get a pair of Valslides (or anything else that slides on your workout floor, as described on page 63 for the push-away), and set them on the floor next to your feet.
- Bend forward at the hips and place your palms on the floor.
- Place your feet on the slides, and push your legs back until you're close to the push-up position, with a slight hinge in your hips.
- Slide your nondominant leg toward your chest, bending your knee.
- Slide back, then slide your dominant leg forward.
- Continue alternating until you do all your reps with both legs.
- You can also elevate your hands on a bench or step.

This version of the exercise gets easy in a hurry, so you'll want to make a couple of modifications after the first or second workout:

- You can increase the reps, up to 20 per leg on each set.
- You can place your hands on an unstable surface, like a medicine ball or Swiss ball.
- You can do all that and also move your legs really fast, which is more fun than you might expect. (I enjoy it, anyway.)



DYNAMIC STABILIZATION LEVEL 4

These two exercises are a progression, and you should work through them in order. When you master the half-kneeling chop, advance to the kneeling chop. Then you're ready for the standing exercises in Level 5.

★ Cable half-kneeling chop

- Affix a rope handle to the high cable pulley. Pull the rope through its metal attachment ring as far as you can, giving you about 24 inches of rope to grasp.
- Grab the rope with an overhand grip, one hand at each end.
- Kneel sideways to the machine, with the knee closest to the machine up and the other one down. Your weight is resting on your inside foot and outside knee.
- Straighten your torso to make yourself as tall as possible, holding the rope between the machine and your shoulders.
- Square your shoulders and focus your eyes straight ahead.
- Pull the rope down and across your torso. The hand closest to the machine should end up in front of your outside hip. Keep your arms straight and your midsection and hips stationary, moving only your arms and shoulders.
- Do all your reps, switch sides, and repeat.



★ Cable kneeling chop

This is the same exercise, only with both knees down and your body in a straight line from neck to knees. It's harder than you think to keep your hips and midsection in a stable position as you pull the rope down and across your torso.

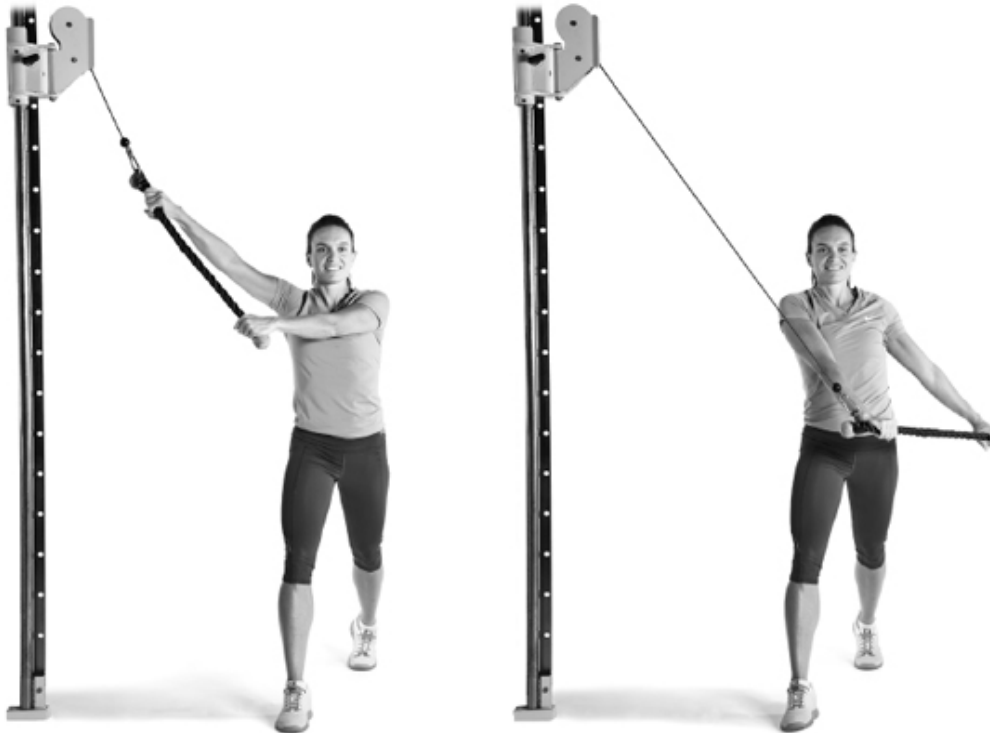


DYNAMIC STABILIZATION LEVEL 5

Again, the two exercises are a progression. Master and max out on the first before moving on to the second.

★ **Cable split-stance chop**

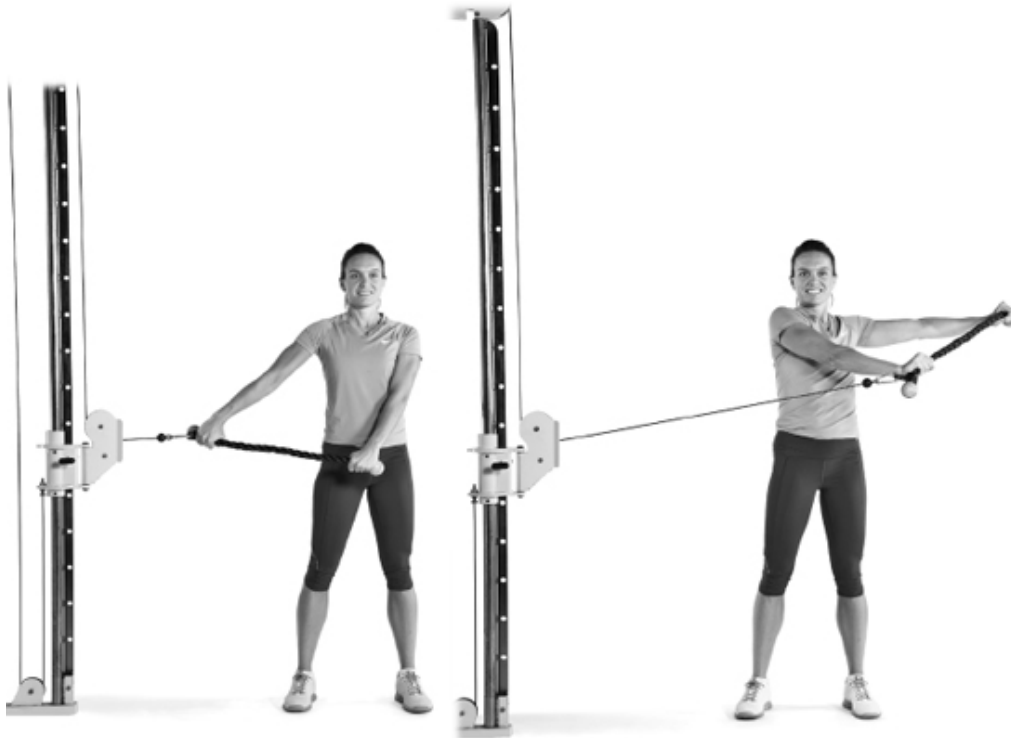
- Affix the rope attachment to the high cable pulley, as described earlier.
- Stand sideways to the machine, holding the rope between your shoulders and the cable machine, and take a long step back with your outside leg. You want your torso upright, arms straight, and both knees bent slightly.
- Pull the rope down and across your torso until the hand closest to the machine is in front of your outside hip.
- Do all your reps, switch sides, and repeat.



★ **Cable horizontal chop**

- Attach the rope, as described earlier, and lower the pulley so it's at about waist height.
- Stand sideways to the machine with your feet parallel to each other and spread wide apart. Hold the rope between your shoulders and the machine with straight arms and your torso upright.

- Pull the rope straight across your torso until the hand closest to the machine is just past your chest and shoulders.
- Do all your reps, switch sides, and repeat.



Power Training

AT THE HIGHEST LEVELS OF NERDERY, power is defined as work divided by time, or the speed at which you can do some specific thing. Which, I'll admit, isn't particularly helpful in the context of a workout book. So let's start by defining something else: strength. Strength is the amount of force you can generate at a specific speed. Power, by contrast, is how fast you can generate that force. Two corollaries: The bigger the object you're trying to move, the slower you can move it; the smaller the object, the faster you can move it. Power peaks somewhere in the middle, when you're moving something that's neither tiny (like a baseball) nor huge (like your maximum weight on a deadlift).

We know this is important because, as I explained in the opening chapters, human bodies lose power with age, and lose it more precipitously than we lose strength or muscle mass. Bad things happen when we can no longer generate force quickly. We fall more, and fall harder.

True power, according to its technical definition, is something you can develop in a systematic way with the exercises in this chapter. But if we use the term loosely, a shorthand way to describe the rate of force development, that's something you can work on every day, in or out of the gym. Walk up the stairs faster. Jump over puddles instead of stepping over them. In the gym, once you're confident of your form, you can do just about any exercise faster. Not every exercise can or should be done truly *fast*, but moving faster than you do now is a good way to make any part of your workout harder, which is to say more exhausting, with a more profound conditioning effect.

Plus, all else being equal, fast lifting is just more fun than slow lifting. Work your way through the following exercises and you'll see what I mean.

THE PROGRAM

In Phase One and Phase Three, you'll do a power exercise in Workout A and B. That configuration gives you a lot of options. Ideally, if you do a lower-body power exercise in A, you should do an upper-body move in B. That's why they're paired up in levels 1 through 4: one each for lower and upper body.

In Phase Two, however, you'll do a combination exercise in A—which involves both upper- and lower-body work—and a power exercise in B, for which you want to choose a lower-body movement.

You probably won't advance through the lower- and upper-body exercises at the same pace. The exercises move on separate tracks until you get to Level 5, the dumbbell single-arm snatch, which is a total-body exercise. You're cleared to try it when you've mastered the first four levels of the lower-body power exercises. It doesn't matter if you haven't yet finished all four levels of upper-body training. You can always catch up your next time through the program.

One unique feature of power training is that it's done with low repetitions and a moderate weight, neither heavy nor light. You'll use your own body weight on some of the exercises (which, I know, may or may not be "moderate"). When using weights on the higher-level exercises, you want to start light until you learn the exercise. After that, a moderate weight is defined as about 40 to 60 percent of your one-rep max, or the most you could lift on that exercise at any speed. But that's not much help, considering that none of us has a clue what our maxes are on these exercises. So it's up to you to decide what "moderate" means, relative to what you think your max might be.

But that's part of the fun. Power performance is the undiscovered country for most lifters, young and old, beginner and advanced. Let's go there now.

LEVEL 1, LOWER BODY

★ **Box jump**

- Stand in front of a box or step that you're sure won't move or collapse when you land on it.
- With your feet set shoulder-width apart, bend at the hips and knees as you swing your arms back, then swing your arms forward and jump up onto the box.
- Cushion your landing with “soft” knees—that is, land with the knees slightly bent, and let them bend a little more to absorb the impact of the landing.
- Stand up, step off the box, and repeat.
- When you can do all your reps with good form, advance to a higher box. When you run out of boxes to jump onto, move up to Level 2.



LEVEL 1, UPPER BODY

★ **Elevated explosive push-up**

- Get into the elevated push-up position, with your hands higher than your feet and resting on a padded bench.
- Lower your chest toward the bench, then quickly and powerfully push yourself up so your hands come all the way off the bench.
- Catch yourself and immediately go into the next push-up.



LEVEL 1, UPPER BODY OPTION

★ **Medicine-ball push pass from knees**

- Hold a medicine ball with both hands against your chest and kneel a few feet in front of a solid wall, or in front of a training partner who'll catch the ball.
- Push the ball straight out from your chest with as much force as you can generate.
- Retrieve the ball and repeat.

LEVEL 2, LOWER BODY

★ **Body-weight jump squat**

- Stand with your feet shoulder-width apart, hands behind your head in the prisoner grip.
- Push your hips back, allowing your knees to bend, and jump.
- Land with soft knees and immediately go into the next jump.



LEVEL 2, UPPER BODY

★ **Explosive push-up (first photo)**

Same as the one described on page 74, only with your hands on the floor.



FUN ALTERNATIVE

★ **Levitating push-up (second photo)**

When a friend told me about this exercise, I didn't think it was possible: you push off so hard that your hands *and feet* leave the floor. Then I tried it. It's really not much harder than a regular explosive push-up.

LEVEL 2, UPPER BODY OPTION

★ **Medicine-ball push pass**

Same as the kneeling push pass, but this time you're standing, and you want to get a bit farther from your target, whether it's a wall or a training partner. Start with your feet about hip-width apart, and stride forward with one leg as you push the ball away from your chest. Alternate legs on each throw.

LEVEL 3, LOWER BODY

★ **Kettlebell swing**

Here you'll take a temporary break from the jump-squat sequence and work on the swing. Take a workout or two to get used to the basic two-handed swing if you've never done it before. Once you're comfortable with the movement, you want to use a fairly heavy kettlebell, and move it explosively. For most guys, the minimum weight for a two-handed swing would be 16 kilograms/35 pounds. Women will probably need at least 12 kilograms/25 pounds. I know that sounds obscenely heavy to some readers, and I certainly don't want you to jump right into those weights if the movement still feels awkward or unnatural. But when you feel you've got it, heavier weights aren't much harder to move. You're using your body's biggest, strongest muscles. Your arms and upper-torso muscles are just along for the ride.

- Grab a kettlebell and hold it with both hands in front of your torso, with your arms straight.
- Set your feet wider than shoulder width, your toes pointed straight ahead or angled out slightly.
- Push your hips back, lowering your torso toward the floor as the kettlebell swings back. Your forearms should touch your inner thighs on the backswing, and your knees should bend slightly.
- Snap your hips forward as you come back up, propelling the kettlebell up and out in front of your torso. Don't raise it with your shoulders; the height of its trajectory should be determined by the power of your hip thrust.

- Let the kettlebell swing back between your legs as you push your hips back for the next repetition.
- If you don't have a heavy enough kettlebell for the two-arm swing, you can do one-arm swings. The technique is the same. Do the recommended reps with each arm.
- You can also swing two kettlebells at once, a variation called the power swing.



LEVEL 3, UPPER BODY

★ Dumbbell push press

- Grab a pair of dumbbells and stand holding them at the sides of your shoulders. You can turn your palms in or out, whichever feels more natural.
- Stand with your feet shoulder-width apart, toes pointed forward, knees unlocked.
- Push your hips back slightly, as if you were about to jump.
- Snap your hips forward and use that momentum to push the weights up off your shoulders.
- Lower the weights and go right into the next repetition.



LEVEL 4, LOWER BODY

★ Dumbbell jump squat

- Grab a pair of dumbbells and hold them outside your legs. Set your feet shoulder-width apart.
- Push your hips back and bend your knees.
- Jump as high as you can, using all three lower-body joints—hips, knees, ankles—to power the movement.
- Land softly on the balls of your feet (not flat-footed!), bending your knees and hips to start the next rep.
- You can also use a barbell, holding it across the back of your shoulders. It's probably a more effective power exercise, but I wouldn't do it that way; there's so much that can go wrong with a higher center of gravity, starting with the fact you're doing a ballistic movement with a weighted object near the top of your spine. However, for lighter, smaller lifters, this variation may be easier.
- Whether you use dumbbells or a barbell, the key is to jump as high as you can on each rep. You should be winded after 5 or 6 reps. If it's easy, you're not doing it right.



LEVEL 4, UPPER BODY

★ Explosive push-up from boxes

- Set up two equal-size steps or boxes, each about 6 to 8 inches high, so they're just outside where your hands will be in the push-up position.
- Get into push-up position with your hands between the boxes.
- Do an explosive push-up, landing with your hands on the boxes.
- Do another explosive push-up, this time landing with your hands on the floor.
- Caution flags:
 - Make sure the floor is well padded. You don't need the impact shock of wood or concrete. (This of course applies to every ballistic push-up variation.)
 - Don't do this variation if you have current shoulder issues. It's too much risk for the minor benefit of doing a cool-looking exercise.
- For the heaviest readers, this one is a non-starter. The form will be difficult, and the damage caused by the impact could negate

any potential benefit.

- You need a strong and stable core to pull this off. If you can't keep your lower back and pelvis in a neutral position on takeoff and landing, the exercise may be too risky for you.



LEVEL 5

★ Dumbbell single-arm snatch

- Grab a dumbbell with your nondominant hand and stand with your feet shoulder-width apart, toes pointed forward.
- Push your hips back and bend your knees, with the dumbbell hanging straight down from your shoulder between your legs, palm facing behind you.
- Jump, powering the movement with your hips, knees, and ankles, and coming all the way up on your toes, or even off the floor slightly.
- Shrug your shoulder as you come up, which will pull the weight up the front of your torso. The weight will be near your chin at the top of the jump.
- As your body comes down from the jump, straighten your arm so the weight ends up overhead. Your knees and hips will be bent slightly, as they would when you land following a jump.

- Catch your balance and stand up straight to complete the repetition, then drop the weight back to the starting position and begin the next snatch.
- Do all the reps with your nondominant arm (your left if you're right-handed), then repeat the set with your other side.

Some style points:

- It should never feel like you're *lifting* the weight. I like to think of it as *throwing* the weight without letting go. If the movement is slow and you feel your arm and shoulder muscles working, focus on speeding up the movement until it feels like jumping and throwing.
- The great thing about a one-arm snatch is that you really can't do it with dangerous form unless you hit yourself (or someone else) with the weight. It takes some practice, but if you keep your focus on jumping and throwing, your body will eventually get the idea.
- When I was younger and braver, I used to do single-arm snatches using an EZ-curl bar. (It's the barbell with zigzag bends in the middle, allowing you to hold it with an angled grip, which is easier on your wrists and elbows than a straight bar.) More advanced lifters sometimes snatch an Olympic barbell with one arm. (You can go to YouTube and see guys do this with as much as 200 pounds.) I've never been that bold or ambitious, but I will tell you that this is a fun exercise to test your limits with relatively little risk.



THERE MAY NOT BE AN EXERCISE that works more muscles in a more functional movement pattern. The squat hits all the major muscles in your hips and thighs, and the advanced variations also force your lower-back muscles to work hard. It's one of the first coordinated movements in human development—babies learn to squat before they learn to stand—and it's one that the elderly miss the most when they can no longer get up from a chair.

It's also a movement that most adults have to relearn when they begin a strength-training program. A full squat requires core stability as well as mobility in the hips and ankles. Moreover, it requires these qualities while the body is moving, which presents a coordination challenge as your body's biggest, strongest muscles shorten and lengthen. As Gray Cook notes in *Athletic Body in Balance*, if you can't squat well, you can't really do *anything* well. It's the key to fluid movement, to athleticism itself.

LEVEL 1

★ **Body-weight squat**

Set down the book and get out of your chair. (Come on, you know you've been sitting too long.) Stand with your feet shoulder-width apart. Extend your arms out in front of you for balance. Push your hips back and sit back as far as you can while keeping your feet flat on your floor. Don't worry about your knees; just let them bend whenever they need to. The key is to start the movement with your hips, and descend until your upper thighs are parallel to the floor, if not lower.



If you have a full-length mirror, look at yourself first from the side. This is what you should see:

- Your feet are flat on the floor.
- Your ankles and torso are bent forward at the same angle, more or less.
- If you weren't looking at yourself in the mirror, your eyes would be looking forward, not up or down.
- If you were to look down, you'd see that your knees are directly over your toes—not inside or outside of them.

From that position, you should be able to stand straight up. Now turn 90 degrees, squat down again, and look at yourself from the front. Check for symmetry. Are your toes either straight ahead or turned out slightly at the exact same angle? Are your knees and feet equidistant from the midline of your torso?



- If so, congratulations. You can squat.

Next question: Can you perform 15 of these body-weight squats with perfect form? If so, you're cleared to move ahead to Level 2.

If not, can you at least achieve good form on multiple body-weight squats? If the answer is yes, then this is the exercise you'll start with in Phase One of Alwyn's NROL for Life program. Your goal is to work your way up to two sets of 15 repetitions.

But what if you can't yet do multiple body-weight squats?

DIAL IT BACK

★ Supported body-weight squat

Stand next to something sturdy—a pole or the edge of a solid piece of furniture work equally well. Rest one hand lightly on the support. Set the other hand on your chest or alongside your ear. Push your hips back and descend into a squat as described above, then return to the starting position, using the support as little as possible. Do as many as you can, up to 15. For your next set, switch sides and support yourself with your opposite hand.



COOL VARIATION

★ **Suspended body-weight squat**

Attach the TRX (or any suspension-training system) to a chin-up bar or overhead support. Take a light grip on the handles and stand with your feet shoulder-width apart, leaving some slack in the straps. Push your hips back and descend into a squat, then return to the starting position. If you can do a few reps without using the straps to pull yourself up, you're ready for unsupported body-weight squats.



LEVEL 2

★ **Goblet squat**

Traditionally, the first progression from a body-weight squat is a squat holding dumbbells at your sides. But there are two problems with the dumbbell squat: First, the weights start low to the ground, below your center of gravity, so they have to be pretty heavy to present any kind of challenge. Holding heavy weights outside your legs is awkward. Second, if you do try holding heavy dumbbells outside your legs, you might find that your grip gives out before your lower-body muscles do. Even if you can handle the weights for the required number of reps, the gripping muscles in your hands and forearms will be exhausted, leading to compromised performance in subsequent exercises.

The goblet squat is the perfect alternative. You'll get more from holding a lighter weight above your center of gravity than you will with heavier weights at arm's length.

Grab a dumbbell or weight plate and hold it with both hands against your chest, just below your chin. (It's called a goblet squat because if the weight were a cup, you could drink out of it.) Stand with your feet shoulder-width apart, push your hips back, and squat as described above. Keep your eyes focused forward and your torso as upright as possible.



LEVEL 3

★ Front squat

This is an easy and important progression from the goblet squat. You have to hold the weight higher, which means farther from your center of gravity. That increases the challenge to your core. (It's also an example of a *self-limiting exercise*, which I explain in the sidebar.)

- Set a barbell in the supports of a squat rack just below shoulder level. Grab the bar overhand, with your hands just outside shoulder width, and step up to the bar so it sits on your front shoulders. Lift your elbows until your upper arms are parallel to the floor and your palms are on the underside of the bar.
- Lift the bar off the supports and guide it back until it rests just above your collarbones. It will probably roll to the ends of your fingers, rather than staying on your palms. This is a safe and stable position as long as your upper arms stay parallel to the floor and your torso remains upright.
- Step back from the supports and set your feet shoulder-width apart. Your toes will probably point out slightly. (Just make sure they point out at the same angle.)
- Push your hips back and descend until your upper thighs are parallel to the floor, or even lower. Push back up to the starting

position.



LIMITED-EQUIPMENT OPTION

★ Dumbbell front squat

- Grab a pair of dumbbells and hold them so one end of each rests on your corresponding shoulder. Your palms should face each other, with your upper arms parallel to the floor.
- Push your hips back and squat as described.
- The only problem with this variation is the awkwardness of putting heavy dumbbells on your shoulders as you get stronger. But on the bright side, it puts the load well above your center of gravity, giving you both a core challenge and a workout for the stabilizing muscles in your hips and lower body.



Self-Limiting Exercises

My high school weight room in the early seventies had two pieces of equipment. The first was a Universal multistation gym, the presence of which supported the crazy idea that machines were better than free weights. America was still an industrial power, and we put our faith in chrome. Plus, the Universal machine was efficient. Six or eight guys could work out in the space you'd need for a single squat rack and a bench.

The second was an ancient chin-up bar embedded in the doorway.

Strange as it sounds, I used to do pull-ups to prepare my body for lat pulldowns on the machine. At my peak I would do two sets of 15. If I'd known anything about lifting back then I would've found a way to add resistance and made those pull-ups the highlight of my workouts. It was by far the best strength- and muscle-building exercise I did, and probably accounted for most of the modest results I attributed to the Universal machine.

Pull-ups and chin-ups are perfect examples of a self-limiting exercise, a category I didn't know existed until Alwyn told me about it shortly before we started working on this book. You can't pull your chest up to the bar without using the right muscles in the right way. (Okay, you *can*, but you'd have to try pretty hard to mess it up.) Contrast them with lat pulldowns, the exercise that most people do instead. A beginner will often use a light weight and try to pull the bar down to her belly button, engaging small rotator-cuff muscles instead of the big latissimus dorsi muscles—which, after all, are the target of the exercise; it's right there in the name. A musclehead might do the old-school version of the lat pulldown, when you pull the bar down to the back of your neck. It puts your shoulder and neck joints into their most vulnerable position, and then forces them to strain against a heavy load.

The front squat is also a self-limiting exercise: not always easy to do right, but nearly impossible to do wrong. If you don't keep your torso upright and head up, you'll drop the bar. You need near-perfect form on every rep.

The hallmarks of a self-limiting exercise are the hallmarks of any good exercise. The basic movement is natural—squatting, pushing, pulling, or bending—and includes a challenge to your strength, stability, and balance. Your form and strength are co-equal partners. When you reach the limit of one or the other, you're forced to stop.

Most exercises are not self-limiting, including many in this book, or any other. Take, for example, the barbell back squat. As I said in [Chapter 3](#), I had to concede sometime after my fiftieth birthday that I simply couldn't do it anymore. It hurt to hold the bar behind my shoulders, and my knees ached for days after doing heavy squats. But that's not to say it's a "bad" exercise, or one that none of you can or should do. It's an exercise that stopped working for me, probably because I did it long enough that I learned to lift heavy loads while injuring myself.

Common sense remains your best defense against injury in the weight room. If you're doing something that hurts while you're doing it, don't. If it leads to excessive aches and pains in the days after you do it, move on to another exercise variation, and see if the problem is the exercise or the movement pattern. If it's the latter, you need professional guidance. An experienced trainer may be able to identify flaws in your form. A physical therapist might be able to free up restricted muscles or connective tissues that affect your performance. Trainers and PTs can also tell you if you have a bigger problem that requires medical intervention.

LEVEL 4

★ **Back squat**

Alwyn has changed his view of the back squat in the past few years. We used it as the default exercise for this movement pattern in earlier books, for good reason: No other squat variation allows you to use as much weight, making it ideal for both strength and size development. But as you get older, the fact that you have to support that weight on your back becomes increasingly problematic. There's a high risk to the structures of your cervical spine, which have direct pressure from the barbell. The stronger you get, the greater the load on the discs in your lower back.

All that said, if you can handle the back squat without pain—immediate or post-exercise—it's a terrific exercise for rapid strength gains and muscle growth. Here's how to do it:

- Set the barbell in the supports just below shoulder level.
- Grab the bar overhand, your hands just outside shoulder width, and duck under the bar so it rests on your upper trapezius. If you squeeze your shoulder blades together, your upper traps will form a nice little shelf for the bar.

- Lift the bar off the supports and take a step back, setting your feet shoulder-width apart (you can also go a bit wider; the best position is whatever gives you the strongest platform and feels most natural), with your toes pointing forward or angled out slightly.
- Push your hips back and descend as far as you can without your heels coming off the floor or your lower back shifting out of its neutral position.
- Return to the starting position.



COOL OPTION FOR ADVANCED LIFTERS

★ **Hex-bar deadlift**

Gyms set up for serious lifting often will have a barbell that's shaped like a hexagon in the middle. (It's also known as a trap bar, since the original design, patented by Al Gerard, used a trapezoid-shaped frame.) You stand in the center and lift the bar by grabbing the handles just outside your legs, with your palms facing each other. It's probably the safest position for heavy lifting. There's no barbell pressing down on your upper spine, and your lower back stays in a strong, stable position.

The open question is whether the exercise should be included with the squats, or if we should honor its name and put it with the other deadlifts in [Chapter 9](#). Alwyn thinks it's more of a squat, as you have a lot of knee bend at the start of

the movement and thus use your quadriceps more than you would on a traditional deadlift. It most resembles the dumbbell squat, only without the awkwardness of trying to hold heavy dumbbells outside your legs.

That said, you can use it as a heavy-duty alternative for either squats or deadlifts, and you won't miss out on any benefits of Alwyn's program. For accounting purposes, keep in mind that there's no standard weight for this piece of equipment. The original trap bar weighed 30 pounds, while newer versions, such as the hex bar sold at per formbetter.com, are typically 45 pounds. But the one in your gym could weigh more or less.



LEVEL 5

★ **Overhead squat**

- Grab a barbell overhand with a very wide grip, probably double your shoulder width.
- Stand holding the barbell with straight arms over the back of your head. Set your feet as described earlier. Your goal is to keep your arms perpendicular to the floor throughout the movement.
- Push your hips back and descend as far as you can while keeping your feet flat on the floor, your knees steady and

aligned with your toes, and the bar over the back of your head, or slightly behind it.

- Return to the starting position.
- As you get better at the movement, first aim to improve your depth—going lower while maintaining perfect form and completing all the repetitions. Then add more weight.



TO UNDERSTAND THE BENEFITS of this exercise category, we have to talk about the muscles we don't normally discuss in polite company. That's right: We're going to have a frank conversation about your hamstrings.

And your glutes. Mostly your glutes.

We're all adults here. If we think about our glutes at all, it's probably to chastise ourselves for their size, appearance, or consistency. Negative self-talk doesn't actually make them smaller, smoother, or less gelatinous, but that's not my concern right now. I want you to think about your glutes in the non-aesthetic sense—specifically, how your glutes come into play during your workouts. The stronger they are, and the more reliably they engage when you need them, the more productive your workouts will be, with a lower risk of back injury.

Let's try a test to see how well they work. Lie on your back, knees bent, feet flat on the floor, arms out to your sides. Squeeze your glutes and lift your hips until your body forms a straight line from knees to shoulders. Did you feel anything else tighten up along with your glutes and hamstrings? Some of you probably felt a contraction in your lower back. That's a problem.



The basic movement we're after is called hip extension—straightening your hips when you're bent forward. Do it right and all the action takes place in your hip joints, driven mostly by your glutes with support from your hamstrings. Other muscles will engage to keep your lower back and pelvis in a neutral position, allowing them to move as a unit as your hips hinge and straighten. But if your glutes can't do their job, your body will compensate by using your lower-back muscles to pull your lumbar spine into a deeper arch (aka hyperextension). Someone who sits in a chair for most of the day is at high risk for gluteal dysfunction. Even advanced lifters can develop something the experts call “gluteal amnesia”—glutes that have forgotten how to do their primary task. Someone with a “bad” back often has a very strong back, the result of those muscles compensating for a butt that can't get into gear.

Let's try one more test, called the Cook hip lift (after physical therapist Gray Cook), to see if your glutes are doing their job. Find a tennis ball, or anything that's round and roughly that size. Get into the same position as the previous test. Put the tennis ball at the bottom of your left rib cage, and pull your left knee to your chest to hold it in place. Put your hands out to your sides, as before, so your left thigh is all that holds the ball against your abdomen. Now try a series of hip lifts, powered solely by your right glute. Repeat with the opposite leg. (If any part of this exercise causes pain, stop immediately.)



Congratulate yourself if you can do a few reps on each side without losing your hold on the ball. Even if your range of motion is tiny, the fact you can hold the ball means you used your glutes to lift your hips off the floor, rather than your lower-back muscles. Conversely, if you can't hold the ball, it's a sign that you're using your lower-back muscles to compensate for poor glute activation.

Feel free to repeat this drill as often as you like, or not to repeat it at all. I don't know if it has any kind of nondiagnostic benefit. But do keep in mind the goal of glute activation. The better your buttocks work during hip-extension exercises, the more productive your workouts will be. And if they end up smoother or less gelatinous in the process, thanks to a combination of fat loss and muscle development, so much the better.

LEVEL 1

★ **Swiss-ball supine hip extension**

This is the same idea as the first hip-raise exercise you tried on the floor, only with your heels on a Swiss ball instead of having your feet flat on the floor. Everyone starting the NROL for Life program should try this exercise at least once, even if you're a relatively advanced lifter. If you can do 15 reps for at least one set, great. You're ready for a higher-level exercise. If

not, work at this one until you can get two sets of 15, or until you finish Phase One.

- Lie on your back with your heels on a Swiss ball and your arms out to your sides.
- Lift your hips until your body forms a straight line from ankles to shoulders.
- Lower your hips until they're close to the floor but not touching, and repeat until you finish the set.
- If you feel any discomfort in your lower back, go back to the basic hip extension on the floor described at the beginning of this chapter.



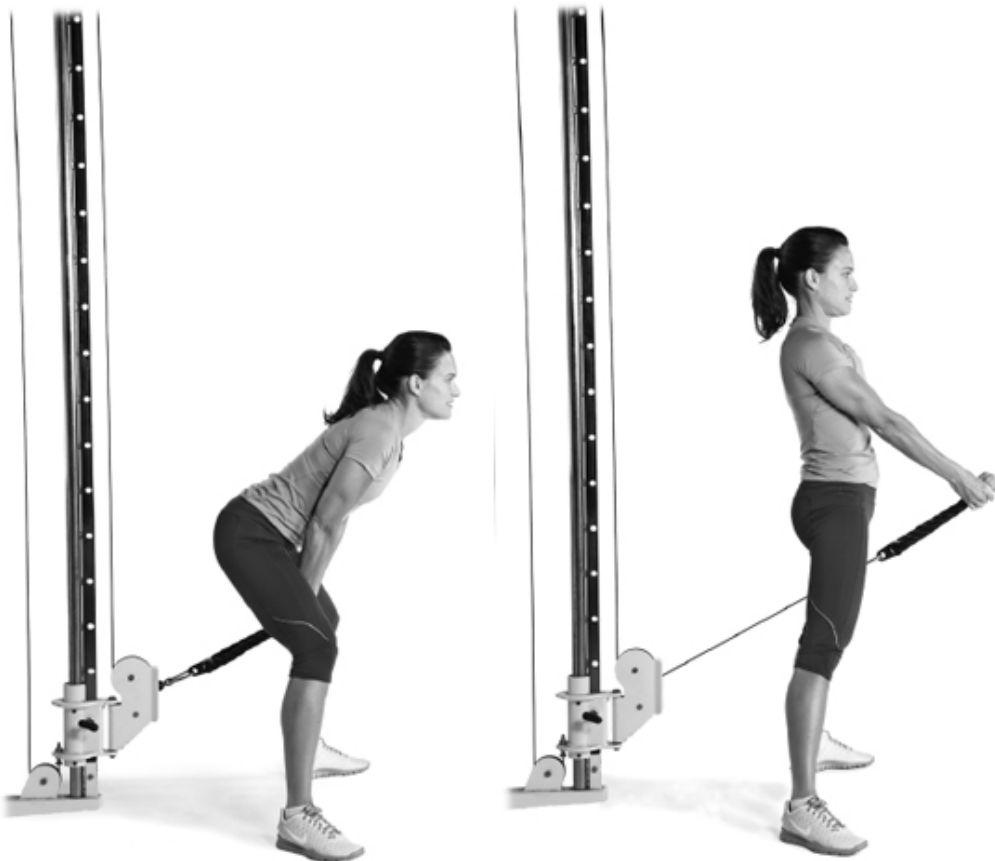
LEVEL 2, OPTION 1

★ **Cable pull-through**

To be honest, this can be kind of an obscene-looking exercise. So if you take one look and say, “No way in hell am I doing that in a crowded gym,” you’ll get no argument from us. However, if you can try it just once in an uncrowded gym, or

at home if you have a cable machine or elastic bands, you'll see that it's a really good exercise for two reasons:

- It helps your body “get” the basic action of loading and then firing your hip muscles from a standing position. You can certainly learn this with free weights, but with the cable there's some drag as you push your hips back to start each repetition, so you get a sense of your hip muscles preparing themselves for a powerful movement in the opposite direction.
- If you train with this exercise, and get comfortable with it, you can move pretty fast without much risk to your lower back. Thus you get a trifecta of benefits: You learn to load and fire your hips, you learn to do this with speed and confidence, and you develop power that will translate to more advanced exercises in this movement category.



Here's how to do it:

- Attach a rope handle to a low cable pulley. (You can also do the pull-through with a band attached to a pillar a few inches above the floor.)

- Holding the ends of the rope attachment between your legs, stand with your back to the cable machine.
- Push your hips back, feeling them load, until your knees bend and your torso is near parallel to the floor.
- Fire your hips forward to straighten your body.
- Keep your back flat and arms straight throughout the movement.

LEVEL 2, OPTION 2

★ **Romanian deadlift**

The Romanian deadlift—usually abbreviated to RDL—is the same movement described in the previous exercise, only this time you’ll have to work a bit harder to control the descent of the weight as you load your hips. It’s a skill we all need to learn anyway, so you may as well learn it here. Many of you will do this exercise in Phase One (after passing through Level 1 by doing 15 supine hip extensions), and let me tell you, when you’re doing 15-repetition sets of deadlifts with a barbell, you’d better be very, very sure of your form.

- Grab a barbell with an overhand grip. Your hands should be about shoulder-width apart, or just a bit wider. Stand holding it with straight arms in front of your thighs.
- Push your hips back until the bar is just below your knees. Your knees will bend slightly, and your torso will probably be at a 45-degree angle to the floor. Keep your arms straight and back flat.
- Fire your hips forward to straighten your body.



LEVEL 3

★ **Rack deadlift**

The Level 2 exercises are both based on momentum. That is, you start upright, with your hips fully released, load your hips, and then release them again. When you do this with high repetitions, there's a rhythm to it. Load, fire, load, fire. Even if you do it fast—Load, fire! Load, fire!—you still end up following whatever rhythm you create. Now you're going to take the musicality out of it and start each repetition from a dead stop. You'll adjust your grip, load your hips, fire them, and slowly return the bar to a dead stop.

- Set the pins or rails of a squat rack just below knee height. If you don't have a rack, you can also set up the bar so it rests on a pair of equal-height boxes. Anything that allows you to start each lift with the bar just below your knees will work.
- Set the Olympic barbell on the pins or rails. Most of you will need to add weights to the bar, but for some the 45-pound Olympic bar may be enough to start with.
- Grab the bar overhand, with your hands just outside your knees.
- Push your hips back, grip the bar as hard as you can, and tighten up everything, from hands to feet. Lift your chest up and focus your eyes forward.

- Fire your hips as you pull the weight off the supports and straighten your body.
- Lower it slowly to the pins or rails, reset your body, and repeat.



LEVEL 4

★ **Deadlift**

This is the exact same exercise as the rack deadlift, only with the bar starting at about mid-shin height.



But there is an important nuance that I haven't discussed in previous books. Male readers who qualify for Level 4 should

be able to deadlift at least 135 pounds—a 45-pound Olympic bar plus a 45-pound weight plate on each side. Since 45-pound plates are about 18 inches in diameter, and the bar runs through the middle, that puts the bar about 9 inches above the floor, which will hit an average-size guy at about mid-shin height.

But not every woman who's ready for Level 4 will be able to use 135 pounds. A lower weight means smaller plates; the bar will start out a couple inches closer to the floor, which means each repetition begins with your back in a more compromised position. Thus, female readers have a couple of options to start the bar out at mid-shin height.

The best option is a pair of bumper plates. These are lighter, rubber-coated plates with the same 18-inch diameter as 45-pound Olympic plates. But few commercial health clubs will have these, and they're expensive to buy for a home gym. The second-best option is to start each rep with the bar or plates resting on supports that lift it a few inches off the ground and put it at mid-shin height.

Final note: This advice also applies to guys who're significantly taller than average. A guy who's six-foot-three will start with the bar lower on his shins than someone like me, who stands five-foot-ten.



LEVEL 5

★ **Wide-grip deadlift**

This is probably my favorite exercise in Alwyn's arsenal. Start with a grip that's about twice shoulder width. To do this, you'll have to bend over farther, which is a more challenging position for your lower back. But the benefits are outstanding. The wider grip creates more work for the stabilizer muscles in your shoulder girdle, especially the middle part of the trapezius muscle. The longer range of motion means more work for your glutes and hamstrings.

But the benefits come with risk. You have to build up to this. You really don't want to move to this level until you have at least a year's experience doing deadlifts. I'm tempted to say that men shouldn't train with wide-grip deadlifts until they can deadlift at least their body weight the conventional way, as shown in Level 4. But I don't think the rule needs to be that hard and fast. You don't need to be especially strong; you just need to be really good at deadlifts.

To execute the lift:

- Load the bar and grab it overhand with your hands about twice shoulder-width apart.
- Push your hips back as far as you can. You'll start with your hips hinged at a more severe angle and your knees bent more than in other deadlifts.
- As described for the rack deadlift, tighten your entire body, from your hands to your ankles. Lift your chest and focus your eyes straight ahead.
- Make sure your feet are flat on the floor. If you can't push down through the middle of your feet to start the lift—that is, if you come up on your toes—you aren't qualified for Level 5.
- Fire your hips as you stand and pull the weight off the floor. Finish with your hips and knees straight and your shoulders back.
- Lower the weight to the floor and repeat.



BEYOND LEVEL 5

★ **Wide-grip deadlift from deficit**

Although it's a simple progression from the wide-grip deadlift—you're adding a couple inches to the range of motion by allowing the bar to start from a lower position on each

repetition—don't mistake simplicity for ease. This is an aggressive, advanced exercise for those who qualify to do it.

I've used the wide-grip deadlift from a deficit successfully in fat-loss programs. It's hard to do, and harder is almost always better. But it also takes a lot of skill and experience to get to the point at which this exercise offers more benefit than risk. You need full mobility in your hip and ankle joints, coupled with advanced-level core strength and stability to keep your back safe. Upper-back and shoulder stability come into play as well.

- Set up a box or step that's sturdy enough to stand on and about 3 to 4 inches high.
- Grab the barbell with a wide grip and step up onto the box. Stand with your feet shoulder-width apart and toes pointed forward.
- Push your hips back and lower the bar until the edges of the weight plates are below the top of the box. The bar will be at or near the bottom of your ankles, and your hips might be lower than your knees. Your feet should remain flat on the box.
- Straighten your knees and fire your hips forward, finishing the movement with your shoulders back.
- Lower the bar and repeat.



THE SQUAT AND THE DEADLIFT—the subjects of the previous two chapters—offer you simple, efficient ways to increase the strength, size, and endurance of your lower-body muscles. Both movements start and end with your feet parallel to each other and about shoulder-width apart. But most of the things you do in life—from walking or jogging to tennis, basketball, or rock-climbing—involve putting one foot in front of the other. You would think the symmetry of the movement would even out over time; you'd take the same number of steps with each leg, with more or less the same level of difficulty, and the two legs would end up with more or less equal strength and range of motion.

Ha!

My guess is that everyone reading this has a series of imbalances. One leg is stronger than the other. One hip has more mobility. One knee bends and straightens more easily. One ankle is more likely to roll in or out.

These aren't character flaws. They're the cost of doing business as an ambulatory human. But they are a problem, and the problem doesn't fix itself. It goes one direction until the asymmetry leads to chronic pain or an injury that requires surgical intervention. Many of you are already there.

The good news is that these imbalances can be modified. Alwyn's workouts, by themselves, will go a long way toward rebalancing your strength and mobility, and improving your overall coordination and athleticism. But before we get to the exercises, let's try a test called the in-line lunge (yet another from Gray Cook) to see where you are now.

You'll need a light, straight object, like a broomstick or dowel rod, and some masking tape. Measure the distance from the bump just below your kneecap to the floor. (It's about 17 inches for me.) Tear off that much tape and stick it to the floor in a straight line.

Stand over the tape and place your left heel at one end and your right toes at the other. It's crucial that both feet are on the same line. Hold the broomstick vertically against your back with both hands so it touches the back of your head, the space between your shoulder blades, and the midline of your glutes. Your right hand will hold the top of the stick behind your neck and your left hand will hold it in the small of your back.



Lower your right knee so it touches the tape on the same line as your left heel and right toes. Rise to the starting position. The goal is to descend and rise without wobbling or leaning to either side. The broomstick should remain in contact with all three spots and perpendicular to the floor. Do

as many as you can, then switch legs, reverse your hands on the broomstick, and repeat.

Consider that your trial run. Rest for a minute, then try it again, this time shooting for 10 to 15 slow, controlled reps with each leg. If possible, have a partner watch for form. In the absence of an observer, use the focus test: Keep your eyes focused on a single spot directly in front of you; if your eyes slip off target, you can bet that you lost your alignment at some point.

How did you do? If you got more than 10 perfect reps with each leg, and your body feels fine (not stiff or cramped), you're qualified to do any exercise in this chapter. Your challenge is to use them in a way that allows for higher reps in Phase One, a heavier load in Phase Two, and combination of higher reps and faster tempo in Phase Three.

Those who didn't fare as well will need to start at Level 1 and work your way up.

LEVEL 1

★ **Split squat**

The exercise itself is simple enough, as you can see. The trick is figuring out what to do with your arms. If you can do at least one set of 15 with your body weight, you'll need to do the exercise with dumbbells, which you hold at arm's length at your sides. But if you need to work up to that point, you can either start with your arms at your sides, your hands on your hips, or your hands behind your head in the prisoner grip, as shown here.

- Stand with your feet hip-width apart, and take a long step back with your right leg. This is your starting position.
- Lower yourself until the top of your left thigh is parallel to the floor and your right knee nearly touches the floor.
- Return to the starting position and repeat until you finish all your reps. Switch legs and repeat the same number of reps. That's one set.



DIAL IT BACK

★ Supported split squat

Can't yet do the basic split squat? Stand next to something sturdy—a pole or the edge of a solid piece of furniture. When your left leg is forward, as described earlier, rest your left hand lightly on the support. Lower yourself until the top of your left thigh is parallel to the floor, and then return to the starting position, using the support as little as possible. Do as many as you can, up to 15. For your next set, switch sides and support yourself with your right hand.



LEVEL 2

★ **Dumbbell reverse lunge**

This is a terrific Phase Two exercise because it allows you to use fairly heavy weights without knee strain.

- Grab a pair of dumbbells and stand holding them at your sides, with your feet hip-width apart.
- Take a long step back with your right foot and lower yourself until the top of your left thigh is parallel to the floor and your right knee nearly touches the floor. Keep your torso upright.
- Step back to the starting position and repeat until you finish all your reps. Switch legs and repeat. That's one set.



COOL VARIATION #1

★ **Goblet reverse lunge**

Holding dumbbells at your sides for high-repetition sets can do a number on your gripping muscles. You can get around that by holding a dumbbell or weight plate against your chest with both hands.



COOL VARIATION #2

★ **Reverse lunge from step**

Start with both feet on a box or step that's about 6 inches high. Step back with your right foot and lower yourself into a deeper lunge. Your left thigh will end up below parallel to the floor. Finish the set as described above. The extra range of motion challenges your mobility and balance, and potentially leads to faster muscle development. You'll certainly use your lower-body muscles in a different way, with a bigger role for your supporting muscles. For some reason, I always seem to get better calf development when I include this variation in my workouts.



COOL VARIATION ON THE VARIATION

★ **Offset-loaded reverse lunge from step**

This time, hold a single dumbbell in your left hand at shoulder height as you step back with your right foot. Switch the weight to your right shoulder when you step back with your left. The offset weight develops core stability along with the challenges to your balance and mobility.



LEVEL 3

★ Split squat, rear foot elevated

If you're doing this for high reps in Phase One, you might want to start with just your body weight. You can put your hands at your sides, on your hips, or in the prisoner grip behind your head. If you use weights, you can either hold dumbbells at your sides or hold a dumbbell or weight plate with both hands against your chest.

- Get into a split-squat position, with the toes of your back foot resting on a low step.
- Lower yourself until the top of your forward thigh is parallel to the floor, keeping your torso upright.
- Push back to the starting position, and do all your reps before switching legs and repeating.

Most lifters doing this for the first time will feel an uncomfortable stretch in the quadriceps of the trailing leg. You want to go easy at first with the range of motion, gradually expanding it to give your lower body a better workout.



UNIVERSALLY DESPISED VARIATION

★ **Bulgarian split squat**

This is the same exercise, only with your rear foot elevated on a bench or step that's at least 12 inches high, and with the instep of that foot resting on the bench, rather than the toes. You can use any of the loading variations described earlier: body weight, dumbbells, or goblet. Lifting your rear foot higher increases the range of motion, which means you're getting a much tougher workout. Just make sure that the discomfort you feel (and you will feel discomfort, guaranteed) is in the muscles rather than the knee joints. You'll hate the exercise but love the results. This may be the single best exercise in the program for developing the quadriceps.



MUCH MORE ENJOYABLE VARIATION

★ Suspended split squat

Attach the TRX (or any suspension-training system) to a chin-up bar or overhead support. With your back to the straps, put your right foot into a loop and hop forward with your left until you're in a comfortable position for split squats. Drop down into the lunge position and push back up. Do your reps, switch legs, and repeat.

You have a few options with your arms. At first you may want to hold them out to your sides for balance. When you're comfortable with the movement you can drive your arms up in a running motion. So when your left leg is forward, you drive your right arm up on the descent, and your left arm up as you rise. When your right leg is forward, you drive with your left arm on the descent.

Once you're comfortable with that, you can hold a pair of dumbbells as you do the lunge with the running motion. It's one of my favorite exercises for fat loss, and an option for Phase Three.



LEVEL 4

★ **Forward lunge**

For many, this will be an easier exercise than the Level 3 split squat. But the fact that you find it easy doesn't mean you're qualified to do it. Go back to the in-line lunge test at the beginning of the chapter. Can you get 10 to 15 reps with each leg, holding the broomstick in place? If not, you have no business doing a forward lunge with somewhat heavy weights, and Alwyn doesn't want you doing this exercise without a challenging load (in addition to your body weight). You don't yet have the stability, balance, and mobility you need. Whatever problems you have in your lower body that keep you from doing the in-line lunge will only be exacerbated by doing this exercise before you're ready for it.

Conversely, it may be a surprisingly difficult exercise for some of us who have knee pain, even if we're otherwise fully qualified. Split squats and reverse lunges take some pressure off the kneecap of the forward leg, but when you step forward all the force goes right into that joint.

In *Advances in Functional Training*, Mike Boyle notes that knee pain is rarely a problem that originates in the knees. It could have a long list of causes beginning in the ankles or hips. Tightness or restricted mobility above or below can pull on the knee's tendons and produce pain that disguises its source. Alwyn's program, by itself, may take care of the problem, especially if you're diligent with your pre- and post-workout exercises. But if it doesn't, knee pain is your signal that you aren't yet ready for this exercise.

For those who are:

- Grab a pair of dumbbells and stand holding them at your sides with your feet hip-width apart. (If you can't use weights for all the repetitions in your current phase, you need to use a lower-level lunge variation.)
- Take a long step forward with your left leg, and lower yourself until the top of your left thigh is parallel to the floor. Your right knee should almost touch the floor while your torso remains upright.
- Push back to the starting position.
- Repeat with your right leg, and alternate until you've done all the repetitions with each leg.

LEVEL 5

★ **Walking lunge**

I scratch my head when I see this exercise used in entry-level workout programs. I've always considered it an advanced lunge variation—one I rarely do in my own workouts—and Alwyn agrees. This is the first time he's included it in the NROL series, even though we've featured some extraordinarily challenging (dare I say “badass”?) exercises. But if you're ready for it, here it is:

- Grab a pair of dumbbells and stand holding them at your sides with your feet hip-width apart.
- Take a long step forward with your left leg, as described previously.

- Push off your right foot and step forward into a lunge with your right leg.
- Continue lunging forward, alternating legs, until you've done all the repetitions with each leg.



BEYOND LEVEL 5

★ **Lunge-a-palooza**

The lunge is probably the most versatile exercise in the program. If we had more space and a bigger budget, I could include at least a dozen more lunge variations that I've used in my own workouts. I'm sure Alwyn knows five for each one I could come up with.

Here are some of the ways you can create a more advanced version of any of the exercises we've shown in this chapter:

- **Change the angle.** You don't have to stop at forward or backward. You can lunge to the side or any angle in between.
- **Change the resistance.** We've shown you how to use three types of resistance: your body weight (which is never to be

underestimated); dumbbells; and a single weight plate. You can also try kettlebells, a barbell held across the back of your shoulders, a sandbag, or even a small child who won't squirm too much.

- **Change the elevation.** You can step up or step down on any of the variations you see in this chapter. Technically, the exercise called “step-up” goes into the single-leg-stance classification, shown in the [next chapter](#). But if you create your own step-up or step-down lunge, you can decide for yourself which category it fits. It's not like Alwyn is going to follow you around and scold you for the transgression. (Although it would be entertaining if he did. You haven't been scolded until you've heard it from a Scotsman.)
- **Change the stability.** I carry a set of Valslides with me to the gym, and from time to time I'll spice up my workouts by doing reverse lunges with the rear foot on a slide. It creates a balance challenge on the way down and extra work for the hip-flexor muscles on the way up. Plus, it's fun to move fast while staying under control.
- **Unbalance the load.** We've shown you one offset-loaded variation in this chapter, and in the [next chapter](#) we'll show you a bunch more. But you don't have to wait for us to describe every possible opportunity to use an offset form of resistance. Once you reach Level 5, you can create your own, using a dumbbell, kettlebell, band, cable machine, or anything else you can think of.
- **Mix and match.** One of my favorites is an offset-loaded reverse lunge, using a kettlebell held overhead and a Valslide. I'm not brave enough to go all the way and do it with my front foot on a step, but I think it's kind of cool to combine three unique challenges—unstable surface, offset load, unconventional form of resistance—in one exercise.



Single-Leg Stance

THESE EXERCISES ARE VARIATIONS on the squats, deadlifts, and lunges from the previous three chapters. But because you do them with one leg at a time, your balance and coordination are challenged in unique and useful ways. Single-leg balance is something we need, and something we lose rapidly with age and inactivity. Life is filled with situations in which we find ourselves suddenly teetering on one leg. Maybe one foot hits a patch of ice, oil, or mud. Maybe a foothold gives way. Maybe we're negotiating a narrow path, or climbing unusually steep steps. If you're an athlete in a sport like basketball or soccer, you may get very good at balancing and pushing off from the nondominant leg (the left if you're right-handed), but without corresponding balance and stability on the dominant leg.

Let's start with a very simple test of single-leg balance. Find a cone or something else that's about 12 inches high. Stand about 36 inches in front of it. Balancing first on your nondominant leg, reach forward and touch it with your dominant hand. Extend your dominant leg behind you for balance. Now, without touching the ground with your dominant foot, return to the starting position, and repeat for as many reps as you can without losing your balance. Do the same thing with the opposite leg.



If you're able to touch the cone at least 10 times with each hand without touching the floor with the foot that's in motion, consider yourself qualified for Level 3. But even if you pass, you may want to start with the Level 1 exercise, as I'll explain.

LEVEL 1

★ Step-up

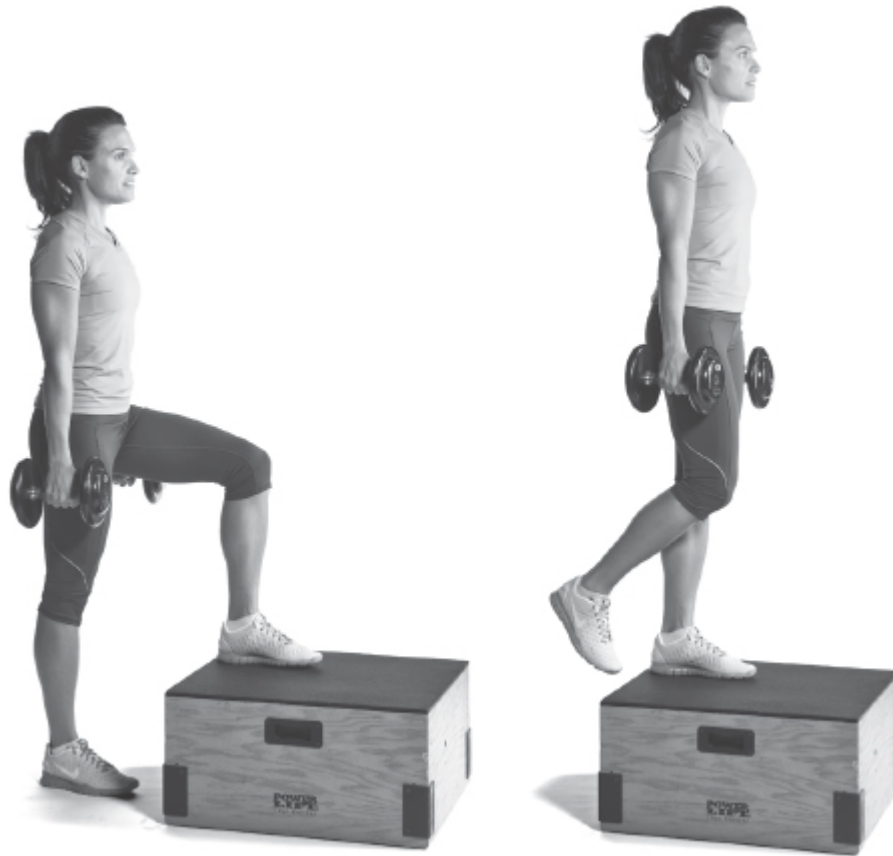
Did you ever see the movie *Vision Quest*? It's about a high school wrestler who decides to drop several weight classes so he can take on Brian Shute, a three-time state champion. There's also some sex and stuff, and a trivia-question scene in which a then unknown Madonna sings "Crazy for You," a song that was way more successful than the movie back in 1985. I vaguely remember those things. The only part I remember *vividly* is when Brian Shute works out by climbing stadium stairs with a sawed-off telephone pole across his shoulders. You can keep your *Rocky III* and *G.I. Jane* workout montages. For me, that's the most startling workout scene ever filmed.

It also demonstrates that the step-up, Alwyn's Level 1 exercise, can be the hardest exercise in this chapter, if you make it so. I used to do my own version of Shute's Ladder

with a barbell on my back, stepping up onto a 12-inch box. With enough weight, it was a brutally effective exercise.

But forget weight for now. Let's get the form right first:

- First you want to find a step, box, or bench to step up to. The higher the step, the harder the exercise. If you have any knee problems or balance issues, I recommend starting with a low step—12 inches or less—and working your way up if that's too easy.
- Grab a pair of dumbbells. If you have lifting experience, and you're working with a step that's lower than your knee, you can be aggressive with the weight. Whatever you choose, you have to be able to hold the weights long enough to complete the repetitions. In Phase One, that's up to 15 reps with each leg. All else being equal, some of you might do better with lighter weights and a higher step.
- Place your left foot flat on the step, with your right foot on the floor. (Do the opposite if you're left-handed.)
- Push down through the heel of your left foot and lift yourself up so your right leg is even with your left. The higher the step, the more you'll feel this in your glutes and hamstrings. The lower the step, the more you'll feel it in your quads and calves.
- Brush the step with your right foot to complete the repetition, but don't rest it on the step. You want to keep the tension on the working muscles of your left leg.
- Lower your right foot to the floor.
- Do all your reps with your left leg, then repeat with your right.



DIAL IT BACK? NO.

If you're at Level 1, just find a low enough step to complete the reps with each leg. Knee-challenged lifters who can use a low step pain-free should increase the weights as needed to make it challenging.

LEVEL 2

★ Offset-loaded step-up

This was my go-to exercise for Phase Two. It adds a core challenge and also takes away one of the main drawbacks of the conventional step-up with two dumbbells, during which your gripping muscles may give out before your leg muscles have worked to a desired level of exhaustion. Execution is simple: Hold a single dumbbell or kettlebell at shoulder height on the side of your working leg—your left when you're stepping up with your left.



LEVEL 3

★ **Single-leg Romanian deadlift**

- Grab a dumbbell with your right hand and hold it at arm's length at your side as you stand with your feet together.
- Hinge at the hip as you bend your torso toward the floor and extend your right leg behind you.
- Lower the weight toward the floor, with your right arm hanging straight down from your shoulder. Your right arm and left leg should be perpendicular to the floor. Do whatever you need with your left arm for balance.
- Your neck, torso, and right leg should form a straight line. If you have great balance and range of motion, that line will be parallel to the floor; don't worry if you can't get there right away. The key is to form that straight line.
- Return to the starting position, trying not to put weight on your right leg, and do all your reps. Remember that your left leg is working, even though your right leg is moving. You want to feel the contraction in your left glute.

- Repeat the set with your right leg, holding the weight in your left hand.



DIAL IT BACK? NO.

In my gym, a lot of the senior lifters do this exercise with support. I don't like it. I've never seen a senior advance to the unsupported version of the exercise. In fact, the tendency is to try to do it with heavier weight over time, which makes them *more* reliant on the support. If you qualified for the single-leg RDL by passing the balance test at the beginning of this chapter, you should have no problem doing it without support. Sure, you'll wobble a bit and land on your nonworking leg. It happens to everybody, and it's not a reason to rely on a support. The entire point of the exercise is to develop balance in a single-leg position.

LEVEL 4

★ **Single-leg squat**

Not only do I suck at this exercise, I once injured my knee trying to get better at it. The problem isn't with the exercise. It's with the fact that I can do it pain-free to a certain range of motion, but risk injury when I go beyond that. So let's be clear about this: *On single-leg squats, there's no defined range of*

motion that is ideal or attainable for everyone. Some people can go glute-to-heel with the working leg while the nonworking leg extends straight out in front of them, a few inches off the floor. It's one of the most impressive-looking exercises I've seen, and I'd love to be able to do it, just as I'd love to be able to dunk a basketball or ski a black diamond. None of those things will happen in this lifetime, and I'm okay with that.

- Grab a light dumbbell and stand on your left foot near the side edge of a sturdy box or step that's at least 12 inches high. Your right foot will hang off the side of the box.
- Extend your arms in front of you as you push your hips back and lower yourself as far as you can go, allowing your left knee to bend naturally as your right foot goes below the edge of the box. (The weight in your hands should act as a counterbalance to the shift in your center of gravity.)
- Push back up to the starting position, finish your reps with your left leg, switch sides, and repeat the set.
- In subsequent workouts, the goal is to increase reps and range of motion, rather than add to the weight you're using as a counterbalance.



DIAL IT BACK

★ Supported single-leg squat

- Attach the TRX (or any suspension-training system) to a chin-up bar or overhead support.
- Take a light grip on the handles and stand with your feet together. Start with as much or as little tension in the straps as you need. If you're doing this exercise for the first time, you'll probably start with a white-knuckle grip on the handles and full tension in the straps. But as you get more comfortable, try to leave a little slack in the straps so you're relying less on them for support.
- Lift one foot off the floor, and push your hips back. As you descend into the squat, allow your nonworking leg to extend out in front of you. Return to the starting position, do all your reps with that leg, and then repeat with the other leg.

Don't have a suspension-training system? Anything that supports your body weight will do, even if it's just a rope thrown over a tree limb.



ADVANCED OPTION

★ Kettlebell single-leg squat

If the single-leg squat off the step feels easy, then do the exercise standing on the floor, without the step. You can use dumbbells, but a single kettlebell, held with both hands, seems

to allow better balance and range of motion. Again, you want to increase reps and squat depth before increasing the weight you use as a counterbalance.



LEVEL 5

★ **Single-leg deadlift**

For the single-leg squat, whatever weight you hold is a counterbalance to make the exercise easier, rather than a form of resistance to make it harder. Now, if you qualify for this level by mastering the single-leg squat, you're going to use weights to make it harder.

- Grab a pair of dumbbells and stand holding them at your sides.
- Lift your right foot off the floor behind you, bending your right knee about 90 degrees while keeping your thighs parallel to each other.
- Push your hips back and lower yourself as far as you can. Don't extend your nonworking leg behind you; keep your thighs close to each other throughout the movement. Thus,

when your hips go back and your left knee bends, your right leg should remain more or less perpendicular to the floor, with your knee bent just enough to keep your right foot from touching the floor.

- Push back up to the starting position, finish all your reps, and repeat with your right leg.



BEYOND LEVEL 5

★ Higher steps

Earlier, I noted that the step-up can be the toughest exercise in the single-leg category. Here are three versions that add new challenges to a familiar movement.

★ Crossover step-up

- Hold heavy dumbbells at your sides and stand next to a bench or step, with your left leg closer to the step and about 12 inches away. (Taller lifters should stand farther away, and shorter lifters may need to get closer.)
- Cross your right leg in front of your left and plant your right foot on the step.

- Push yourself up to the step, without touching it with your left foot.
- Step down with your left foot, followed by your right.
- Do all your reps, and then switch sides.
- After your first set, stand farther away from the step on subsequent sets. The exercise is advanced only if you create obstacles—the weights in your hand and the distance you have to step—that make it advanced.
- You can also create an asymmetrical balance challenge by using a single dumbbell. Hold it in your left hand when stepping up with your left foot.



★ **Sprinter step-up**

Set up as you would for a conventional step-up. Here, though, once you are up on the box, bring the knee of the nonworking leg up toward your chest. Once you get the hang of it, try to bring the knee up explosively. For advanced lifters this is a terrific Phase Three exercise. You develop power and create a high level of metabolic fatigue, which is the best tool we have for rapid fat loss.



★ **Overhead sprinter step-up**

Hold a light barbell overhead while doing the sprinter step-up described above. For advanced lifters with *really* good balance who want a challenge, this is the best step-up variation I've come across.



THE DIRTY SECRET OF THE MUSCLE-BUILDING industry is that a lot of recreational lifters get hurt. A review study published in 2010 in the *Journal of Strength and Conditioning Research* dug up reports showing that as many as 60 percent of lifters experience shoulder pain in any given year. I'm one of them.

I could try to pretend that these injuries are mysterious, but they aren't. Talk to any serious, longtime lifter, and chances are good he'll tell you he hurt his shoulder doing either bench or shoulder presses, usually with a barbell. Indeed, the researchers found those two exercises show up frequently in studies of shoulder injuries. A few others include parallel-bar dips, behind-the-neck shoulder presses, chest flies, and, curiously, biceps curls.

Almost all of them fall into the push category, the subject of this chapter. These are the exercises that use your chest, shoulder, and triceps muscles. Pushing things away from you, either forward or overhead, is a natural movement pattern, and shouldn't be more dangerous than any other natural pattern. But we make it dangerous in three ways:

1. *We don't balance pushing and pulling.* Show me a male lifter who does a bodybuilding "split" routine—working different muscles on different days—and I'll show you a guy who probably puts more time and effort into building his chest, shoulders, and arms. To my surprise, the review by Morey Kolber and colleagues at Nova Southeastern University showed that there's no data to link the amount of weight lifted to shoulder injuries. Heavy lifting doesn't necessarily produce more injuries, nor does lifting light weights for high reps prevent them. The problem comes when lifters, mostly male,

overbuild chest and arm muscles at the expense of the back and shoulder muscles that perform the opposite movements.

2. *We do exercises in the “high five” position.* We’ve known for years that when the upper arms are pulled back and externally rotated, as they would for a behind-the-neck shoulder press, the shoulder is extraordinarily vulnerable. I’d never heard it called the “high five” position until I read this review, but I hope the name sticks. The position is great for celebrating life’s best moments but really bad for lifting heavy weights.
3. *We extend the range of motion too far.* When you do exercises like parallel-bar dips and chest flies (the latter is typically done with dumbbells; you lie on a bench, lower the weights out to your sides, then pull them back over your chest), your upper arms probably go behind or beneath your torso. That strains the jumble of tendons and ligaments that converge around your shoulder joints.

The basic bench press is also a problem for lifters with a naturally narrow torso and long arms. Lowering a weight to your chest means your upper arms sink below your torso, potentially straining the biceps tendon. That tendon crosses your shoulder joint between the upper-arm bone and a bony structure called the acromion, the part of the shoulder blade that connects with the outside edge of your collarbone. It’s also where a couple of rotator-cuff tendons converge, and it’s all topped by a protective pad, called a bursa. The biceps tendon, stuck on the bottom of that dog pile between two bones, takes a hit when you overuse or misuse the biceps or the muscles surrounding it. That produces inflammation, and any swelling in that tiny space will produce pain.

Now that we’ve covered the things that hurt, let’s talk about the exercises you’ll actually do in this chapter. Or, rather, let’s talk about the *exercise* you’ll do. It’s singular for a reason. The push-up and its many variations cover levels 1, 2, and 3.

I know what many readers are thinking: “Push-ups? *Me?* I want to lift weights!” Men reading this tend to assume the push-up is too easy. Women often assume it’s too hard. Neither

is true; this chapter includes both entry-level push-up variations and some that will humble advanced lifters.

Because you do so many push-up variations throughout Alwyn's program, it's really hard *not* to use lifts for variety, if nothing else. That's why Alwyn includes dumbbell bench presses (Level 4) and shoulder presses (Level 5), as well as the barbell bench press (Beyond Level 5), an exercise I can't even do anymore. As you'll see in [Chapter 17](#), even beginners probably will need to do bench presses in Phase One. So you may wonder why Alwyn puts the "advanced" label on exercises that beginners have been doing since the dawn of the commercial fitness industry, and will most likely use throughout this program.

It's not that he hates chest and shoulder presses (although he doesn't think beginners have the strength and stability to do the latter with solid form). He just really likes push-ups. "It's such a superior exercise for metabolic purposes, time management, core stability, and shoulder health," he told me. That said, most male lifters, and some women, will get beyond the point at which they can increase strength and muscle size with push-ups alone. Alwyn and his trainers can load their clients up with weighted vests and chains, but you probably don't have access to either. Thus, bench presses are an important part of Alwyn's program for all lifters, even if push-ups are the more important and valuable exercise.

Here's how you decide which push-up level to start with:

Get down on the floor in the push-up position. Lower yourself to within an inch of the floor or until your upper arms are even with your shoulder blades, whichever happens first. (This protects the shoulders of those with longer arms and narrow frames, while allowing those with shorter arms or thicker frames to use a full range of motion.) Pause two seconds. Push back up and repeat.



Those who can do at least 15 paused reps qualify for Level 2 or 3; it's really up to you which to start with. For the record, I made it to 15, but only barely, and I can't guarantee I paused for exactly two seconds at the bottom of the final three reps.

There's no particular test for shoulder presses (Level 5). Alwyn simply prefers that even advanced lifters wait until Phase Two or Three before using them.

LEVEL 1

★ **Push-up**

- Get into push-up position: arms straight down from your shoulders and perpendicular to the floor, feet close together, weight resting on your hands and toes, and your body straight from neck to ankles.
- Lower your chest until it's within an inch of the floor or your upper arms are even with your shoulder blades, whichever happens first.
- Push back up to the starting position.



12 Ways to Make Push-Ups Tougher

When you can easily do sets of 15 push-ups the conventional way in Phase One, try one or more of these variations. For accounting purposes, each push-up counts as a single repetition, even if you're doing variations in which you're alternating from side to side. This is different from the way we count single-leg and split-stance exercises, when you do all the required repetitions with each leg.

- Stack your feet, resting one on top of the other.
- Elevate your feet on a step or bench.
- Raise one leg (do equal reps with each leg elevated).
- Elevate your feet with a TRX or similar suspension system.
- Put your hands on an unstable surface, like a foam pad or Bosu ball.
- Put your feet on an unstable object, like a Swiss ball.
- Put your hands on a Swiss ball.
- Put one hand on a medicine ball and the other on the floor (do equal reps with each hand on the ball).
- Put both hands on a medicine ball.
- Put each hand on a medicine ball of the same size.
- Lower your chest and shoulders toward one hand, then the other, alternating on each rep.

- Lift your right knee toward your right elbow, then your left knee toward your left elbow, alternating on each rep (this variation is usually called a Spiderman push-up).

DIAL IT BACK

★ Push-up with hands elevated

Alwyn is no fan of the “girl” push-up, with knees on the floor. One of the main benefits of the push-up is the way it uses the core muscles to stabilize the spine and pelvis, and most of that benefit is lost when you cut your own body off at the knees.

Instead, do push-ups with your hands elevated as high as they need to go. If you’re an absolute beginner, or recovering from something no one should ever have to recover from, you can even do wall push-ups: stand a few feet from a wall, lean forward, rest your hands on the wall, come up on your toes so your body forms a straight line, and do the exercise with whatever range of motion you can.

The point is, always do the hardest push-up variation you can manage for the required repetitions.



LEVEL 2

★ **Push-up with hands suspended**

- Set up a TRX or similar suspension system so the handles are 12 to 24 inches above the floor. Higher is easier; lower is harder.
- Grab the handles and get into push-up position.
- Lower yourself until your upper arms are parallel to the floor, then push back to the starting position.
- When you can do all the required reps, make it harder by lowering the handles.



LEVEL 3

★ T push-up

- Get into push-up position.
- Lower your chest toward the floor, and as you push back up, twist to your left so your left arm comes off the floor and finishes straight over your right arm. In this position your body will form a T.
- Twist back and immediately begin your next push-up.
- As you push back up, twist to the right, so your right arm ends up over your left.
- Remember that each T push-up counts as a repetition. So if the workout calls for 15 per set, you'll have to do either 14 or 16 to get the same number to each side. If you stop at an odd number, no problem; just start the next set to the opposite side.



COOL VARIATION

★ **T push-up with weights**

Grab a pair of hexagonal dumbbells and start with your hands on the weights, palms turned toward each other so the weights are parallel to your torso. Then do the exercise as described. If you don't have hex dumbbells, use a single round dumbbell. Hold it in one hand, do all your reps twisting to that side, then repeat the set with the dumbbell in the other hand.



LEVEL 4

★ **Dumbbell bench press**

- Grab a pair of dumbbells and lie on your back on a flat or incline bench. (I prefer the incline; it's *much* easier on my shoulders.)
- Hold the weights straight up over your shoulders, with your feet planted flat on the floor, shoulder-width apart. If your feet don't reach the floor when the bench is flat, either incline the bench, or better yet, skip this exercise altogether. The bench press, like the push-up, is a total-body exercise. With your feet on the bench, you lose half the muscles that would otherwise provide upper-torso stability. You absolutely must start with both feet flat on the floor.
- Lower the weights toward the edges of your shoulders, stopping when your upper arms are even with your shoulder blades.
- Press the weights straight up toward the ceiling, and repeat.



COOL VARIATION

★ Dumbbell single-arm bench press

It's exactly like the conventional bench press, only with a dumbbell in one hand and your other hand resting on your stomach. You add a core-stability challenge when you unbalance the load like this. Again, you can use a flat or inclined bench.



LEVEL 5

★ Dumbbell shoulder press

- Grab a pair of dumbbells and stand holding them just above your shoulders, with your feet shoulder-width apart. You can turn your palms in if that's easier on your shoulders, or hold them the conventional way, with your palms forward.
- Press the weights straight up.
- Lower them to the starting position and repeat.



COOL VARIATION

★ **Dumbbell single-arm shoulder press**

Same exercise, but press one weight at a time. It's a little more exhausting, and adds a bit more of a challenge to your core.



BEYOND LEVEL 5

★ **Barbell bench press**

- Yeah, here it is. Flat or incline bench, your choice. Load a barbell and lie on your back with your feet shoulder-width apart and flat on the floor. Grab the bar overhand with your hands about one and a half times shoulder-width apart.
- Lift the bar off the supports and hold it straight over your chest. Tighten up everything, from your feet to your hands. You want your feet directly beneath your knees and angled out slightly. Your lower back is arched, your core is tight, and your shoulder blades are pulled together in back. Grab the bar like an iron dishrag you're trying to wring out.
- Lower the bar to your lower chest, keeping your upper arms close to your torso. Don't let your elbows flare out; you'll put more strain on your shoulders.
- Push the bar back up to the starting position, keeping your shoulder blades pulled together in back. You should feel your entire body pushing the weight, including your legs, as if you were standing up and pushing a car out of ditch.



POSSIBLE SHOULDER-SAVING VARIATION

★ **Barbell board press**

Same exercise, only with one or two pieces of 2-by-4 set flat on your sternum. If you use two, you can tape them together. A thick phone book works just as well. I'm supposed to recommend holding the boards in place with an elastic band, but to tell you the truth, I've never had a problem with the boards slipping off my chest. Powerlifters do this to shorten the range of motion so they can get used to lifting heavier weights and work on their lockout, which is more dependent on triceps strength. I like it because it doesn't hurt my shoulders as much as the conventional bench press.



SITTING IS A PROBLEM for a lot of us. Or, put another way, *not moving* is a problem. We sit for longer hours each day than at any time in human history. As a result, we're fatter and schlumpier than any previous generation. So you'd think that sitting during your workout is a bad idea. If you're going to work out several times a week, you should spend that time on your feet, shouldn't you? Or at least in some posture that activates more muscles than you use when your butt's planted on a chair?

And yet, some of the most popular pulling exercises—the ones that activate the biggest muscles in your upper torso—involve sitting. You may think, “What does it hurt to sit on a bench for a cable row or a lat pulldown? After all, I'm working muscles while I'm sitting.” True enough, except that many lifters also sit on the padded benches between sets. A minute of lifting might lead to three minutes of sitting.

One of the reasons Alwyn's clients typically get better-than-expected results is because he and his trainers don't let them sit down. The lat pulldown machine at Results Fitness doesn't even have a seat; you have to do pulling exercises standing or kneeling, keeping your core and postural muscles engaged throughout your workout. Alwyn brings that anti-sitting philosophy to this program. At most, you have to support yourself on a bench for a couple of the variations, but it's not a position that inspires comfortable rest between sets.

We can't claim that this simple modification will fix all the problems you want your training program to address. All it does is keep you on your feet, or at worst your knees. But it's something.

Let's talk about pulling exercises specifically. Traditionally, training programs focus on the lats, the muscles at the sides of the torso that pull your arms down and in. But those of us who measure our lifting experience in decades learn, sooner or later, that we look and feel better when we focus on the trapezius, the diamond-shaped muscle that connects the base of the neck with the shoulder blades and the middle part of the spine. In particular, the middle and lower traps, which pull your shoulder blades together and down, help improve posture. Better posture makes your shoulders look wider and, for guys at least, makes the chest muscles appear better developed.

All the exercises in this chapter work those muscles, along with the rear shoulders, in similar but slightly different ways. (See the sidebar "Gripped from the Headlines!" for more details.) Using a mix of pulls from different angles and with different hand positions ensures well-balanced muscle development.

Typically, a major goal of Alwyn's programs is to get you to the chin-up bar. The chin-up is the ultimate self-limiting exercise, as described in [Chapter 8](#), and is one of the best measures we have of strength relative to your body's weight. It's also the most beneficial exercise I know of for developing your upper back and biceps.

Alas, it's also an exercise that very few readers will be able to do for the repetitions in Alwyn's program. You'd have to do 15 chin-ups per set in Phase One, a number I haven't hit since high school, when I weighed 40 pounds less. In Phase Two, you'd have to do multiple sets of 10. And Phase Three requires sets of 12 during highly fatiguing conditions.

That's why I recommend that everyone, beginner through advanced, start Phase One with the standing cable row, the Level 1 exercise. (If you don't have access to a cable setup, you have no choice but to start with one of the higher-level exercises.) Don't underestimate this exercise; it's fun and challenging, especially when you're doing sets of 15.

If you *can* do sets of 10, by all means use chin-ups in Phase Two, which is the most aggressive muscle-building part of

Alwyn's program. Don't worry that you have to jump from Level 1 to Level 5. You've already qualified for all five levels. (You're awesome, too, in case you didn't already know.) For the rest of us, there's plenty to do in levels 1 through 4.



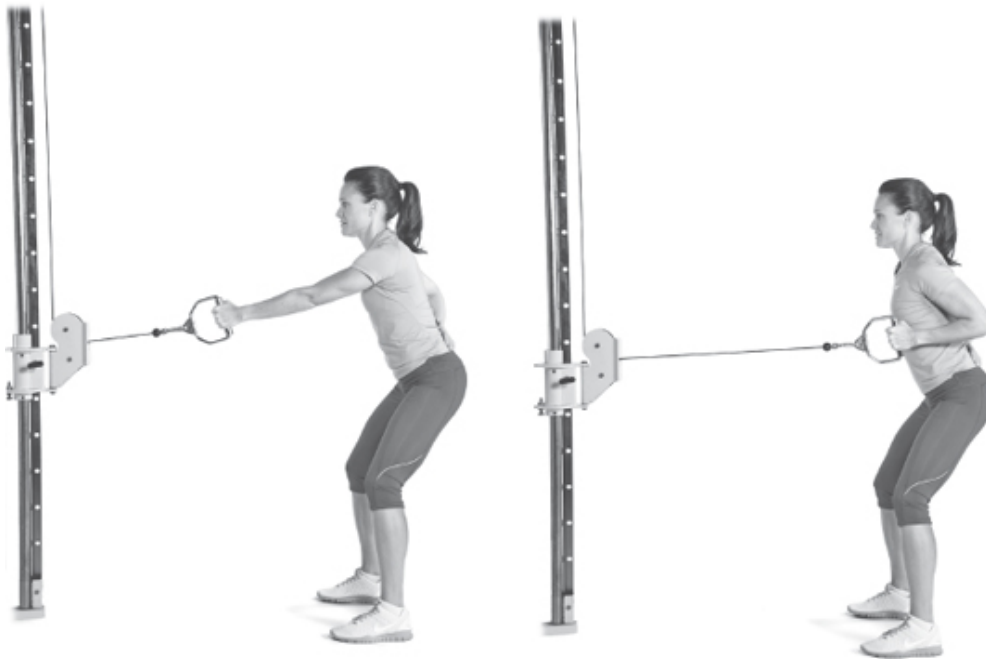
LEVEL 1

★ **Standing cable row**

- Set the pulley of a cable machine to waist height, and attach a stirrup handle.
- Grab the handle in your nondominant hand (your left if you're right-handed) and step back from the machine until you have tension in the cable with your arm fully extended in front of you.
- Stand facing the machine with your feet shoulder-width apart, toes pointed forward, knees and hips bent slightly, chest up,

shoulders back, and your working arm extended out in front of you. (You can rest your nonworking hand on your thigh or hip, or hold it behind your back, whichever you prefer.) Tighten your hip and torso muscles to brace your core.

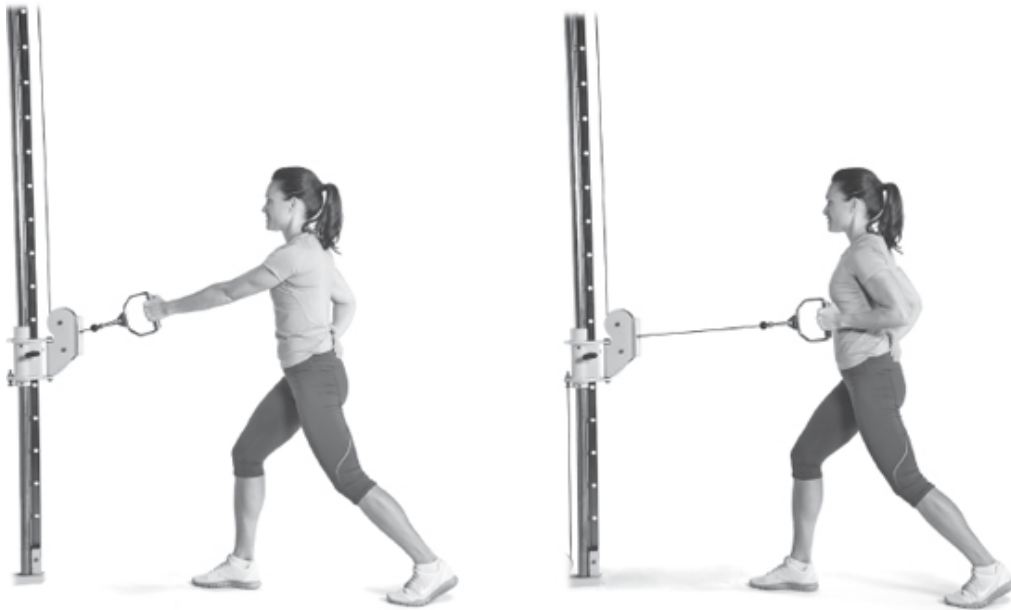
- Pull the handle to the side of your torso, keeping your shoulders forward and minimizing rotation.
- Return to the starting position, do all your reps, switch arms, and repeat the set with your other arm.



DIAL IT BACK

★ **Split-stance cable row**

Same thing, only with one leg forward and the other back to give you a more stable platform. Put your right leg forward when you pull with your left hand, and vice versa. You still want to avoid rotation. Keep your shoulders square throughout the set.



LEVEL 2

★ Kneeling lat pulldown

- Attach a long bar to the overhead cable apparatus.
- Grab the bar overhand with a grip that's about one and a half times shoulder width (the same width you would use for a barbell bench press, if you do them).
- Kneel in front of the weight stack, pulling the bar down with you so your arms are fully extended overhead.
- Pull the bar down to your upper chest, while pushing your chest out to meet the bar. This will help you pull your shoulder blades down and back.
- After a few workouts with the wide overhand grip, you can switch to a shoulder-width underhand grip for more biceps work. Another option is the triangle handle, which gives you a narrow grip with your palms facing each other. It puts your arms in their strongest position, and allows you to use more weight than the other grips.



LOU'S FAVORITE VARIATION

★ **Standing lat pulldown**

You can stand with your feet parallel to each other with lighter weights on high-rep sets, or with a split stance when you're getting more aggressive. You can use a wide overhand grip, a close grip, or anything in between. It turns the lat pulldown into one of the best core exercises you'll do.



LEVEL 3, OPTION 1

★ **Dumbbell two-point row**

- Grab a dumbbell with your nondominant hand. Stand with your feet shoulder-width apart and knees bent slightly.
- Push your hips back as you bend your torso forward.
- Hold the weight straight down from your shoulder with an overhand grip (palm facing back).
- Pull the weight straight up to the side of your abdomen. Lower it to the starting position, finish all your reps, then repeat the set with the other arm.



LEVEL 3, OPTION 2

★ **Dumbbell three-point row**

Most lifters call the previous exercise a “bent-over” row. The most hardcore version is the barbell bent-over row, which I did often when I was younger. It allowed me to work with heavier weights than I could manage with a pair of dumbbells. But I avoided a variation that’s usually called the dumbbell one-arm row. In that one, you rest your left hand and leg on a bench and set your right foot on the floor while you lift a dumbbell with your right hand. In fact, I disparaged it in *NROL* because it encourages bad habits: too much weight with

poor form for one type of lifter, too little weight with too much attention to form for another.

Then I reached a point at which I could no longer do the traditional bent-over row variations. The barbell row put too much strain on my lower back, and I found it awkward and difficult to do the two-point row with a heavy weight for low reps. That's when I turned to the three-point row. It's the same as a two-point row, only with your nonworking hand resting on a bench. That extra support mechanism took all the unwanted pressure off my back and allowed me to work with the heaviest weights my back and arm muscles could lift.

My recommendation: Do the two-point row as long as you can increase weights from one workout to the next. When you hit a plateau, switch to the three-point version, and get aggressive with your weight selection. Push yourself to lift the heaviest weights possible without compromising form or falling way short of the required reps.



LEVEL 3, OPTION 3

★ **Dumbbell chest-supported row**

- Set a bench to a 45-degree incline. Grab a pair of dumbbells and lie chest-down, with your head and shoulders beyond the top of the bench, your arms hanging straight down, and your toes on the floor.
- You can turn your palms so they face out (underhand), back (overhand), or toward each other (neutral). (See sidebar.)

- Pull the weights to the sides of your torso if you're using a neutral or underhand grip, or to the sides of your chest if you're using an overhand grip with your elbows out.



Gripped from the Headlines!

On all the pulling exercises in this chapter, your hand and elbow position can change the way you use your back, shoulder, and arm muscles. Using an underhand grip will put your biceps in their strongest position, and you'll probably feel them working harder. A neutral grip—palms facing in toward your torso—puts your arms in their strongest support position. It activates the biceps along with the brachialis (a thick muscle that lies between the biceps and your upper-arm bone) and brachioradialis (your biggest, strongest forearm muscle). An overhand grip puts the biceps in its weakest position, forcing the other muscles to do more of the work.

If you pull your elbows in close to your torso, as you would most often when using a neutral or underhand grip, you work your lats, which are responsible for pulling your upper arms in when they're extended above or in front of you. The middle part of your trapezius also contracts to pull your shoulder blades together.

When you keep your elbows out to your sides, as you typically do when using an overhand grip, you pull less with your lats and more with your rear deltoids, the muscles on the back of your shoulders. Your middle and upper traps also work hard in that position. The one drawback to the overhand grip, especially on a vertical exercise like the pull-up, is that you increase your risk of shoulder impingement. Your upper arms are close to that “high five” position described in [Chapter 12](#), and things start to get crowded in and around your shoulder joints.

One more option: When you use a narrow grip—usually with your palms neutral or underhand—you get a bit of support from your chest muscles. I can't say how much they contribute, but I know I can always use more weight or get more reps with my body weight when I use a narrow grip.

LEVEL 4

★ Inverted row

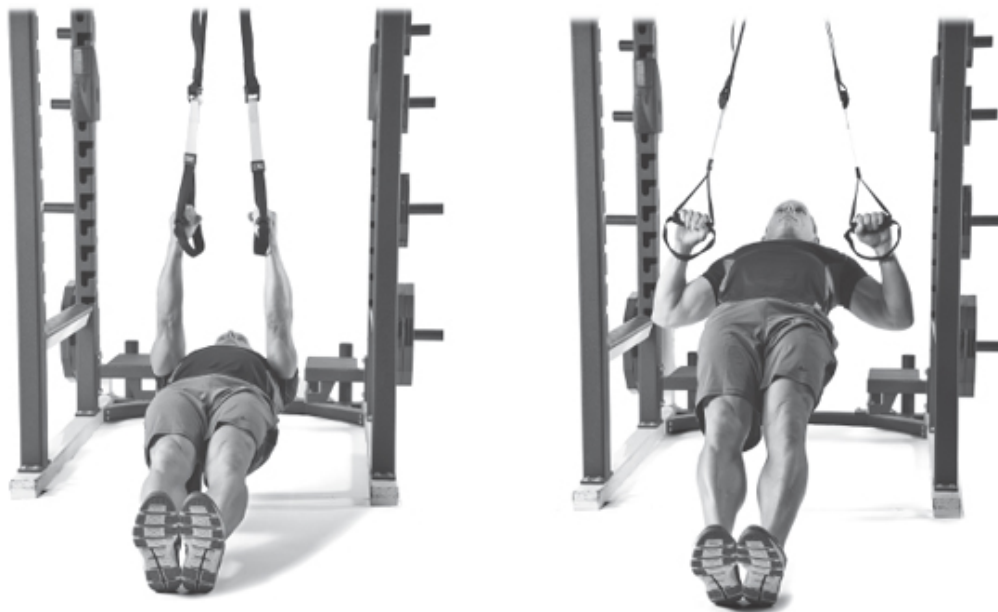
- Set up a barbell in a rack so it's somewhere between the height of your waist and hips. (You can also use a Smith machine for this, if you train in a gym that has one.)
- Slide under the bar and grab it overhand, with your hands just outside shoulder width. Set your body in a straight line from neck to ankles, and hang with your arms straight. Only your heels should touch the floor.
- Pull your chest to the bar, return to the starting position, and repeat.
- If you can't get all the reps in your current phase, raise the bar a few inches, which will make it a little easier.
- If you need to make it harder, you can lower the bar only so far before you lose the room you need to do the exercise with a full range of motion. You can raise your feet up on a bench or, if you're really advanced, you can put them on a Swiss ball. The unstable surface adds a serious core challenge to what's already a tough exercise for your upper-back muscles.
- For variety, and more direct biceps work, you can use an underhand grip.



COOL VARIATION

★ **Suspended row**

- Attach a suspension system—TRX or equivalent—to a chin-up bar.
- Grab the handles so you're facing the overhead support they're attached to and walk out until you have enough room to extend your arms without hitting the floor.
- Hang from the straps so your body forms a straight line from your neck to ankles. Only your heels should touch the floor.
- Pull yourself up until the handles reach the sides of your torso, lower yourself, and repeat.
- The beauty of a suspension system is that you can make the exercise easier by moving your heels closer to the point of attachment, thus increasing the angle of your body relative to the floor. Or you can make it harder by shifting your heels farther from the attachment, and lowering your body so it's closer to the floor. You can make this adjustment in the middle of a set if you need to.



LEVEL 5

★ **Chin-up**

- Grab the chin-up bar with a shoulder-width, underhand grip, and hang from the bar with your knees bent and ankles crossed behind you. Your body should form a straight line from neck to knees.
- Pull your chest up to the bar, lower yourself, and repeat.



BEYOND LEVEL 5

★ Pull-up

I never had a problem with this exercise when I was younger, but in middle age it just wrecks my shoulders. I assume that I've either worn out something in my joints that used to provide a cushion, or I've added bone or scar tissue that narrows the space. All I know for sure is that something rubs something the wrong way. I don't mind; I can do chin-ups without pain, and they offer as much challenge as I can handle. If you can do pull-ups without pain for sets of 10 or more, have at it.

- Grab the bar overhand, with your hands just outside shoulder width, and set your posture as described above.
- Pull your chest up to the bar, lower yourself, and repeat.



Combination Exercises

THE EXERCISES IN THIS CHAPTER are here for two reasons: They use a lot of muscle, and they require a lot of effort. Picture yourself doing a lunge with a shoulder press. Already, the lunge is a complicated move, one that requires some balance and coordination as you lower and then raise your center of gravity. Add a shoulder press to the movement, and now you've created a bigger coordination challenge. You lower the center of gravity on the lunge, but also raise it as you simultaneously lift a weight over your shoulders.

There's nothing efficient about this movement. You're using all kinds of muscles to stabilize your body that you wouldn't need if you were doing a lunge or a press. The result is an acute oxygen deficit; it takes some time to catch your breath at the end of each set.

Another benefit of combination exercises: Like everything you do in the weight room, they pull glycogen from your working muscles. The more muscles you use, and the longer you use them, the more fuel you expend. You're also breaking down muscle tissue. Restoring that fuel, and rebuilding those muscles, is your body's highest priority in the hours following a workout. (This assumes you eat in a way that supports this process, which we'll cover in [Chapter 18](#).) It's a metabolically expensive process all around:

- It takes more energy to do the complicated exercises.
- It takes more energy to recover from them afterward.

You'll work hard, breathe hard, and open the spigots to your sweat glands. When I was going through the program in the summer of 2011, I once walked out of the gym into a rain shower. I'd brought an umbrella but didn't bother putting it up

because I was already soaked with my own perspiration. The rain helped me cool off, and I barely noticed the extra water on my clothes.

LEVEL 1

★ **Single-leg, single-arm cable row**

The first combo exercise in the program is, admittedly, not really a combo exercise. Some of your lower-body muscles are moving, but they aren't truly challenged. For that matter, you won't be able to use much weight on the row, either. The demand for balance prevents an all-out effort by your upper back and arm muscles. But it's a hellacious challenge to your core, forcing your lats, lower back, glutes, and hamstrings to find a way to work with each other. That makes it a perfect choice to introduce your body to this category of exercise.

- Attach a D-shaped handle to an adjustable cable pulley and raise it to about mid-thigh height. (If your gym's cable machine doesn't adjust, use the low setting. And if you don't have a cable machine, a band will work.)
- Grab the handle with your nondominant hand and step back far enough to ensure tension in the cable throughout the range of motion.
- Facing the cable with your arm extended in front of you, lift your nondominant foot off the floor, so you're balancing on your dominant leg.
- Bend forward at the hips until your torso is at a 45-degree angle to the floor.
- Fire your hip muscles to straighten your body while at the same time pulling the handle to the side of your abdomen.
- Immediately bend forward and extend your arm to begin the next repetition. Do all your reps, then switch sides and repeat.
- Your first goal is to do all the reps with good form, which means you remain balanced on one leg throughout the set. Your second goal is to establish a rhythm with the movement, and then speed up the rhythm, so it's smooth and fast. Your third goal is to make the movement powerful; that is, really fire your hips forward and pull hard on the cable. The final

goal is to move heavier weight with a smooth but powerful action.



LEVEL 2

★ Reverse lunge and cable row

- Set up the cable machine as described above, grab the attachment with your nondominant hand, and step back to create tension in the cable.
- Stand facing the machine with your arm extended and feet hip-width apart.
- Take a long step back into a reverse lunge with your nondominant leg, leaving your arm extended in front of you.
- As you return to the starting position, pull the handle to the side of your abdomen.
- Immediately step back and extend your arm to begin the next repetition. Do all your reps, then switch sides and repeat.
- This one will seem easy after the coordination challenges of the Level 1 exercise. Once you have the hang of it, you can increase weights quickly without compromising your form.

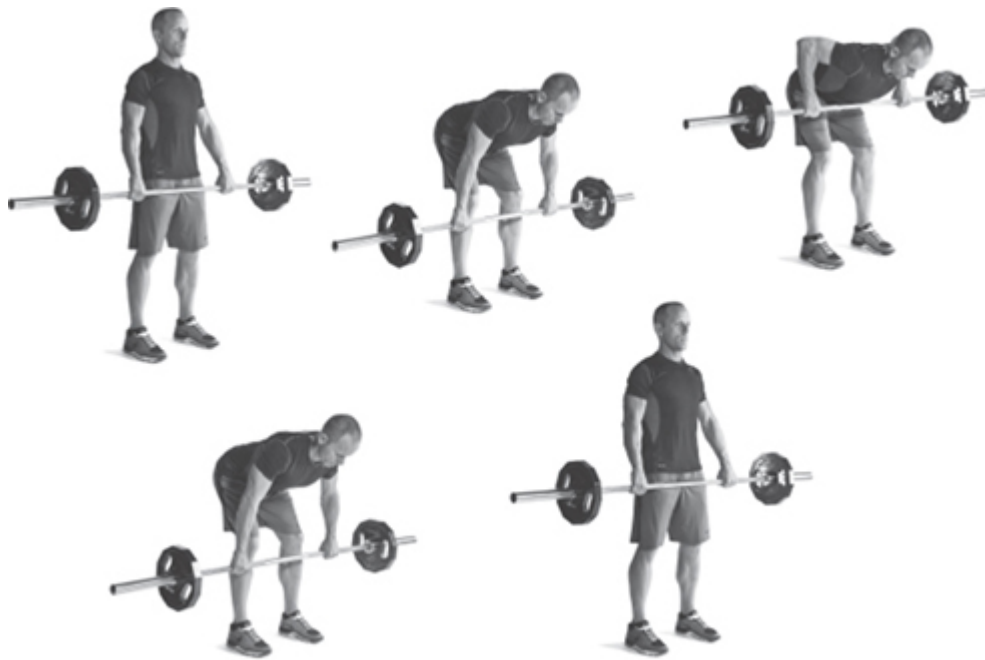


LEVEL 3

★ **Romanian deadlift and row**

You can do this with dumbbells or a barbell. I recommend the barbell; the form is easier to learn when you're controlling one versus two moving objects. Another worry is that your upper-back and gripping muscles will get too fatigued when you're working with dumbbells. I'll describe it as if you're using a barbell, but of course it's your call which to use.

- Grab the barbell overhand, your hands just outside shoulder width. Stand holding it at arm's length against your front thighs, with your feet about shoulder-width apart.
- Push your hips back and lower the bar until it's just below your knees. Your knees will bend slightly.
- Pull the bar straight up to your lower abdomen without raising your torso.
- Lower the bar until your arms are fully extended again.
- Push your hips forward and return to the starting position. That's one rep.



LEVEL 4

★ Squat and press

- Stand holding a pair of dumbbells at the sides of your shoulders. You can turn your palms in or have them facing out, whichever is easier on your shoulder joints. Set your feet shoulder-width apart, toes pointed forward or angled out slightly.
- Push your hips back and lower yourself into a squat.
- As you return to the starting position, press the weights straight up over your shoulders. Lower them to the starting position, and immediately drop into a squat to begin the next repetition.



LEVEL 5

★ Reverse lunge and single-arm press

- Stand holding a dumbbell just outside the shoulder on your nondominant side. Your feet are hip-width apart.
- Take a long step back into a lunge position with your nondominant leg as you press the dumbbell straight up over your shoulder.
- Lower the weight as you step back to the starting position.
- Do all your reps, then switch sides and repeat.



BEYOND LEVEL 5

★ Use your imagination

- You can combine an overhead press with any of the lunge variations shown in [Chapter 10](#), including the Beyond Level 5 suggestions at the end. You can do a reverse lunge from a step, or a forward lunge onto a step. The most hated exercise in the original *NROL* was the Bulgarian split squat with overhead press. So if you're feeling masochistic, try that one.
- If you're feeling blasphemous toward Alwyn, you can do biceps curls instead of presses or rows. On the Romanian deadlift and row, for example, you would hold the bar with an underhand grip. Push your hips back and lower the bar, as described, but instead of doing a bent-over row, fire your hips forward, curling the weight toward your shoulders as you return to the standing position. Lower the weight, then push your hips back to begin the next repetition.
- Finally, you can combine single- or double-arm shoulder presses to any of the step-up variations shown in [Chapter 11](#). If you're doing a single-arm press, use your right arm if you're stepping up with your right leg, and your left with your left.

Take the On-RAMP

I’VE DISCOVERED THE HARD WAY how important it is to prepare middle-aged muscles and joints for a good workout. The more thoroughly I warm up, the better my training sessions go, allowing me to get more done in less time. But when I skimp on my warm-up routines, I inevitably end up with knotted muscles and a compromised range of motion.

Alwyn’s RAMP protocol is designed to help you avoid that. You’ll start with simple range-of-motion exercises—the R in RAMP—and move on to faster movements that wake up your muscles and nervous system. That’s the A, for “activation.” The MP stands for “movement preparation,” which you’ll accomplish throughout the 10-minute routine.

Some of Alwyn’s movements look different from what everyone else in the gym is doing. I include some modifications—noted as “social anxiety” options—for exercises that might draw unwanted attention. Other drills simply can’t be performed in a crowded health club, where you can’t move more than a step or two in any direction without bumping into another gridlocked exerciser. Those are the “no space” options.

You’ll use this same protocol before every workout. As you get accustomed to the program, you may decide to add or change some things around, either from boredom or because of an injury that requires more focus in one particular area. You may find you train better when you use the recovery exercises in [Chapter 18](#) as part of your warm-up. (It seems to work better for me.) The only rule is, do this as written until you have good reason to change it.

One other tip: Feel free to do more total work on one side than the other. Most of us have discrepancies in strength,

balance, and mobility. That's why the strength chapters have you start single-limb exercises with your nondominant side. But when it comes to balance and mobility, the dominant side might be more restricted as a consequence of using it more. Whatever needs the most improvement should get the most attention, as long as you don't ignore the less-restricted side. That would just create new problems.

RAMP • Use at the start of each A and B workout	
Exercise	Reps/distance
Kneeling hip-flexor/lat stretch (page 174)	30 seconds each side
Single-leg hip raise (page 174)	8 each side
Open one-half kneeling adductor/ankle mobilization (page 175)	8 each side
Open one-half kneel with T reach (page 176)	8 each side
Squat to stand (page 177)	6
Wall slide (page 178)	10
Forward/backward jump (page 179)	20
Walking knee hug to forward lunge (page 179)	8 each leg
Side-to-side jump (page 180)	10 each direction
Walking lateral lunge (page 180)	8 each direction
Skipping (page 181)	2 runs of 10–20 yards
Carioca (page 182)	2 runs of 10–20 yards
Side shuffle (page 183)	2 runs of 10–20 yards

★ **Kneeling hip-flexor stretch**

- Kneel on a pad on your right knee, with your left foot flat on the floor in front of you and your knee bent. You can put your

hands wherever you prefer: on your left leg, on your hips, or in the prisoner grip behind your head.

- Shift your weight forward, keeping your torso upright, until you feel a stretch on the right side of your pelvis.
- Hold for 30 seconds, then switch sides and repeat.



★ **Single-leg hip raise**

- Lie on your back on the floor, with your knees bent, heels on the floor, and arms out to your sides. Lift your dominant leg a few inches off the floor.
- Push down through the heel of your nondominant foot and lift your hips off the floor as high as you can. You should feel it mostly in your glutes, partly in your hamstrings, and not at all in your back.
- Lower your hips close to the floor, and repeat.
- Do all your reps, then switch legs and repeat.



★ **Open one-half kneeling adductor/ankle mobilization**

- Kneel on a pad on your right knee. Open your left leg to your side, perpendicular to your torso, with your knee bent 90 degrees and your foot flat on the floor, pointing the same direction as your left knee.
- Place the back of your left hand on the inside of your left knee, with your right hand on your right hip. Straighten your torso and pull your shoulders back.
- Keeping your torso upright, shift your weight to your left while pushing back on your knee with your left hand. Feel the stretch in your left inner thigh.
- Return to the starting position, do all your reps, and repeat with your right leg.



★ **Open one-half kneel with T reach**

- Get into the open half-kneel position described above.
- Bend forward at the hips and place your left hand on the floor. Your torso is parallel to the floor, with your left hand directly beneath your shoulder.
- Turn your torso to the right and reach straight up with your right arm until your fingers point to the ceiling. Your arms should be in a straight line, perpendicular to the floor. Follow your hand with your eyes so your neck turns along with your torso.
- Turn your torso back toward the floor, bringing your arm back down, across, and slightly beyond your torso. That's one rep. Do all your reps, then switch sides and repeat.



★ Squat to stand

- Stand with your hands to your sides and your feet shoulder-width apart.
- Bend at the hips, keeping your legs straight, and reach toward your toes.
- Push your hips back, bend your knees, and descend into a squat, grabbing your toes whenever you can and pulling yourself down into the deepest squat you can manage. Keep your arms straight and just inside your knees, with your feet flat on the floor.

- Pull your shoulders and head back as you tighten your entire upper body.
- Raise your arms overhead and stand.
- Immediately start the next rep by bending at the hips and reaching toward the floor.



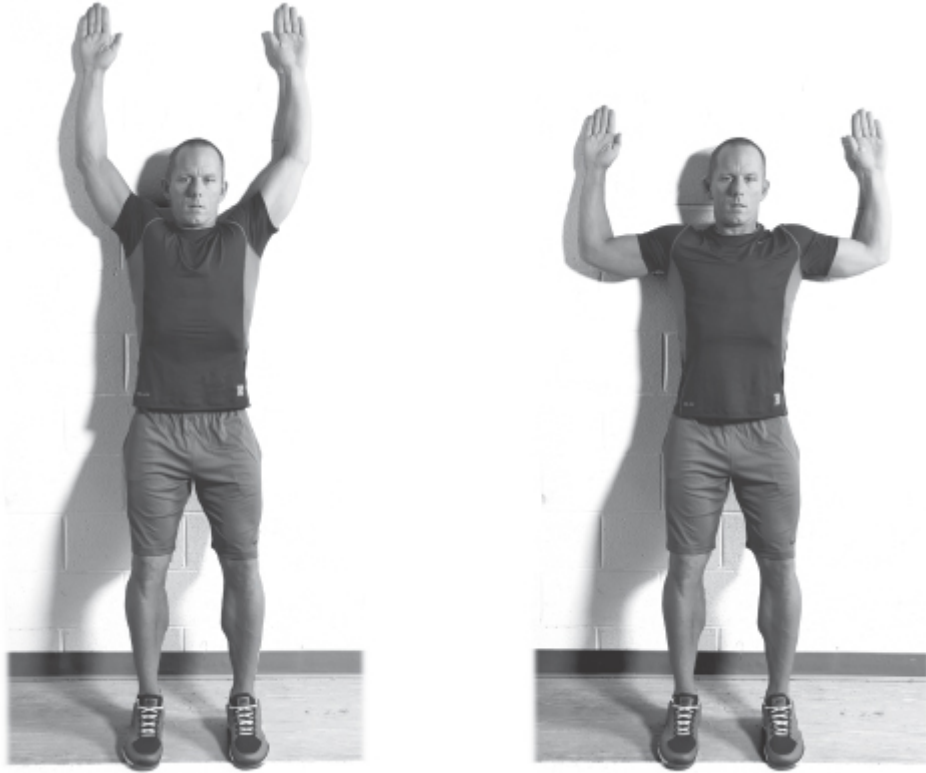
★ **Wall slide**

[Chapter 12](#) describes all the reasons you shouldn't lift with your arms in the "high five" position—upper arms out to your sides, elbows bent, fingers pointed toward the ceiling. This exercise uses that position to help alleviate shoulder problems by improving the mobility and stability of the complex and quirky joints and connective tissues of your upper back.

- Stand with your head, upper back, and glutes against a wall.
- Raise your arms in the high five position, with the back of your hands, wrists, and elbows touching the wall. Those three parts—along with your head, upper back, and glutes—must remain in contact with the wall throughout the exercise. Your range of motion is determined by how far you can go without losing one of those six points of contact.
- Pull your arms down toward your torso, keeping your elbows bent about 90 degrees. When you can't go any farther without

losing contact, slide them back up the wall. Reach as high as you can. That's one rep. Repeat until you finish 10 reps.

- Work to expand your range of motion in subsequent workouts.



★ **Forward/backward jump**

- Stand with your feet together, hands at your sides, and your knees, ankles, and hips all bent slightly.
- Jump forward a few inches, landing on the balls of your feet, and immediately jump back to the starting line. That counts as one jump; do a total of 20.

★ **Walking knee hug to forward lunge**

- Stand with your feet hip-width apart, hands at your sides.
- Lift your right knee and pull it to your chest with both hands.
- Release your knee and take a long step forward with your right leg, lowering yourself into a lunge.
- As you come up from the lunge, step forward with your left leg and pull your left knee to your chest.

- Release your knee and start the next lunge by taking a long step forward with your right leg.
- That's one repetition; do a total of 8.



★ Side-to-side jump

- Stand with your feet together and your hips, knees, and ankles bent slightly.
- Jump a few inches to your left, landing on your toes, then jump back to your right.
- Do 10 jumps in each direction; keep your landings soft, and get off the ground for your next jump as quickly as possible.

★ Walking lateral lunge

- This drill, like the three that follow, requires a space where you can travel 10 to 20 yards without crashing into anyone or anything.
- Stand with your right side toward the open space, your feet hip-width apart, and your arms at your sides or in front of your chest.

- Take a long step to your right and drop into a side lunge, with your right knee bent 90 degrees, your left leg straight, and the toes of both feet pointed straight ahead. Your torso will lean forward, but you need to keep your shoulders square, not leaning or twisting to the side.
- As you rise up, bring your left foot over to your right, then take another long step to your right.
- Do 8 lunges to your right, then return to the starting point by doing 8 lunges to your left.



NO-SPACE OPTION

Lunge to your left, then lunge back to your right, and alternate until you've done 8 each direction.

★ Skipping

Forgot how? Join the club. Boys of my generation didn't skip, and since I went to Catholic schools, where the girls had to wear skirts, they weren't real big on skipping either. You're going for an exaggerated running motion: Drive your right knee and left arm up and forward, lifting you off the floor. As your right toes touch the floor, drive your left knee and right arm up to start the next skip. You're going more for height than distance or speed. Do two runs of 10 to 20 yards.



NO-SPACE/SOCIAL ANXIETY OPTION

Skip in place, driving each knee up with maximum acceleration.

★ **Carioca**

This move may be unfamiliar to most readers. Even those of us who learned it for high school or college sports are probably rusty. It's a lateral-movement drill in which your trailing leg alternately crosses behind and in front of your lead leg. So let's say you're doing a carioca to your left. You start as you would for the walking lateral lunge shown above. Then:

- Swing your right foot behind and past your left foot.
- Take a long step to the left with your left foot.
- Swing your right foot in front of and past your left foot.
- Take a long step to the left with your left foot.
- Repeat until you've gone 10 to 20 yards, stop, catch your breath, and repeat, this time moving to your right.

It doesn't feel like much of an exercise when you do it slowly. That's why you need to speed it up as soon as you get the hang of it. When you go fast, your hips rotate rapidly, and your shoulders turn with your hips. Let your arms do whatever they want. It's fun to cut loose and let your body figure it out.



NO-SPACE/SOCIAL ANXIETY OPTION

There isn't really anything that replaces the carioca. But you can try a crossover jumping jack. Instead of bringing your feet together as your arms come down, cross them in front of and behind each other, alternating on each rep. You can also cross your arms in front instead of lifting them overhead.

★ **Side shuffle**

- From the same starting point as the carioca and lateral lunge, get into an athletic position with your feet wider than your shoulders, knees bent slightly, torso leaning forward, arms out to your sides. It should look like you're guarding someone in basketball.
- Slide your right foot until it touches your left.
- Immediately step to the left with your left foot, and slide your right foot to meet it.

- Continue for 10 to 20 yards, stop, catch your breath, and repeat by sliding to your right.

NO-SPACE/SOCIAL ANXIETY OPTION

You can't really do this without some space. As for social anxiety, it's still going to look different from what everyone else is doing. But it's a good exercise, especially when you move fast.

- Shuffle twice to your left, then reach and touch the floor outside your left foot with your right hand.
- Shuffle twice to your right, reaching and touching the floor outside your right foot with your left hand. Do 10 to each side.

Metabolic Training

IMAGINE THAT YOU'RE JUST STARTING a fitness program, and you ask a trainer for advice. "Here's what I want you to do on the first day," he says. "Hop 750 times with your right leg. Then hop 750 times with your left leg."

"That's nuts!" you say, stating the obvious. What kind of dipstick would tell a beginner to perform a total of 1,500 high-impact plyometric movements, hitting two different sets of muscles and joints 750 times each?

"Okay," he says. "Do 750 hops, but alternate legs. And move forward while you do it."

So you try it, and you realize that it's a lot like running. In fact, Alwyn says, with only slight exaggeration, it *is* running, which he considers a high-impact exercise for a beginner, especially one who's overweight. A mile run is at least 750 joint-jarring steps for each leg. With a shorter stride, it could be a thousand or more.

And yet, on any given day, countless entry-level exercisers go out running. In [Chapter 4](#) I mentioned two all-too-frequent consequences: They'll get hurt, and they'll gain weight.

"What's the alternative?" you might ask.

"What's the goal?" Alwyn would say in reply. Is it to be a runner? Or is it to burn calories, develop cardiovascular fitness, and in general feel like you have more energy and can go longer before getting winded?

If the goal is to be a runner, then of course you have to run. Same if you want to be a cyclist, swimmer, or any other type of endurance athlete. Alwyn has worked with athletes in all those sports. He's also been a champion martial artist, and trained fighters. In fact, he's worked with athletes in almost

any individual and team sport you can name, from preteen gymnasts to superheavyweight powerlifters to one of the world's highest-paid soccer players. To my surprise, and probably yours, he says that actual cardio fitness plays less of a role than you would think.

Once you can run a mile, he says, you can probably walk 20 miles. Your feet would be sore afterward, but you wouldn't collapse before you got to the finish line. Cardio endurance wouldn't be a limiting factor at such low intensity. But if you tried to jog those 20 miles, without specifically training for that distance, you'd be in a world of pain and misery. You wouldn't come close to finishing. It would take years to develop enough muscular endurance, neuromuscular efficiency, joint stability, and pain tolerance. You would, in a way, have to reengineer your body: developing extensive capillary networks in the working muscles; increasing your muscles' ability to store glycogen while at the same time teaching your body to use more fat and less carbohydrate for energy; and repurposing muscle fibers for endurance at the expense of strength and power.

Alwyn offers this example: Lance Armstrong may be the most gifted endurance athlete in U.S. history. His VO₂ max, the standard measure of aerobic performance, was an astounding 83 at the height of his cycling career. (The only time I had mine tested, in 2000, it was 41.6—half of Armstrong's.) When he decided to run the New York City Marathon in 2006, *Runner's World* magazine interviewed several experts on endurance training. No one suggested Armstrong would win, but one said that Armstrong's superhuman VO₂ max is the equivalent of a 2:06 marathon. As it happened, the winner ran the 26.2-mile course in 2 hours, 9 minutes, and 58 seconds. Armstrong finished 50 minutes behind. It was still an amazing and gutsy performance; fewer than 900 runners finished in less than 3 hours, and more than 37,000 were slower (including then Arkansas governor Mike Huckabee, who had recently lost 110 pounds). But it also shows the specificity of each sport's demands on your body. Armstrong was quoted after the race as saying it was “without a doubt the hardest physical thing I've ever done.”

You may wonder why we're talking about marathon training in a chapter that tells you what to do in the final 5 to 10 minutes of each workout. Alwyn's point: When the goal is to burn calories, or get a heart-rate response, or feel more "fit," however you define it, *the activity doesn't matter*. If you could get all that by doing calisthenics, or swinging a kettlebell, or carrying something heavy, would you feel cheated because you didn't get to run?

Now, if you *want* to run, don't let any of this stop you. It's certainly one of the options. Here are Alwyn's three rules for metabolic training:

- *It should be intermittent*. That is, it should be done as interval training: Go hard for 15 to 30 seconds, recover, and then go hard again.
- *It should be anaerobic*. You should breathe hard and get your heart rate up. The pace should be exhilarating, and at times you should feel as if you're doing something you didn't think you could do.
- *It should not cause any joint pain, during or after*. If something hurts your knees, ankles, hips, back, or shoulders, try something else.

Whatever you decide to try—we'll show you all the options next—you should do it in 1-minute rounds. Each workout in Alwyn's program calls for 5 to 10 minutes of metabolic training, which means 5 to 10 rounds.

Those who're new to training should start with a 3-to-1 ratio of recovery to work. If you work for 15 seconds, you would rest for 45. Most readers should shoot for a 2-to-1 ratio: go hard for 20 seconds, recover for 40. Advanced lifters can make it 1-to-1: 30 seconds on, 30 seconds off.

You can stick with one or two exercises for consecutive workouts, counting reps and working to improve your performance from week to week. Or you can do something different every week, with the goal of making your body train harder by doing unfamiliar activities.

Once you get the idea, you can try just about anything you want, as long as you follow the three rules, plus this one: Avoid exercises in which the working muscles fatigue before the end of your interval. For example, if you decided to do push-ups for the entire interval, after the first couple of rounds your chest, shoulder, and triceps muscles would burn out too soon. You'd end up with shorter work periods and longer recovery, which would compromise the program (although you'd certainly get better at doing push-ups).

Everything else is in the mix, including many of the exercises in the strength program. You can also use any toys at your disposal: barbell, dumbbells, kettlebells, battling ropes, dragging sleds, TRX-style suspension trainers, gymnastics rings, slides, sandbags.

Final tip from Nanny Lou: Make sure you do any high-impact exercises on a forgiving surface. If you can't work on carpet, at least find a wood floor that can absorb impact. I say this as someone who never had a knee problem until I played pick-up basketball on asphalt and concrete, and I've had nothing but knee problems since.

Now let's get to the fun stuff.

LEVEL 1 OPTIONS

★ **Body-weight squat**

Go as fast as you can with good form (as described in [Chapter 8](#)) for 15 seconds, then rest for 45.

★ **Step-up**

This is different from the exercise shown and described in [Chapter 11](#). Start with both feet on the floor. Step up with your right, up with your left, down with your right, down with your left. Continue for 15 seconds, then rest for 45. Start the next round by stepping up first with your left foot. As soon as you get the hang of it, work to increase the pace of your steps in each round.

★ **Shadow boxing**

Pick an imaginary opponent, and kick his or her imaginary butt. Just keep in mind that your opponent is also trying to hit you. So keep your guard up, move your feet, duck and twist to dodge punches, and throw combinations of jabs, crosses, uppercuts, and the occasional haymaker. Try for 20 seconds on, 40 seconds off.



LEVEL 2 AND 3 OPTIONS

★ **Burpee**

Stand with your feet hip-width apart. Squat down and put your hands on the floor outside your feet. Kick your legs backward so you're in the push-up position. Pull them back in, and jump, throwing your arms overhead and coming all the way up off the floor. Land and go straight to the next rep.

★ **Kettlebell swing**

Exactly as described in [Chapter 7](#), only with a lighter weight and higher reps performed at a faster speed.

★ **Box jump**

Again, it's the same exercise shown in [Chapter 7](#). You probably want a lower box so you can work at a faster pace.

★ **Squat/push-up combo**

Do body-weight squats (or jump squats, if you're more advanced) for half the interval, then switch to push-ups for the

second half.

LEVEL 4 AND 5 OPTIONS

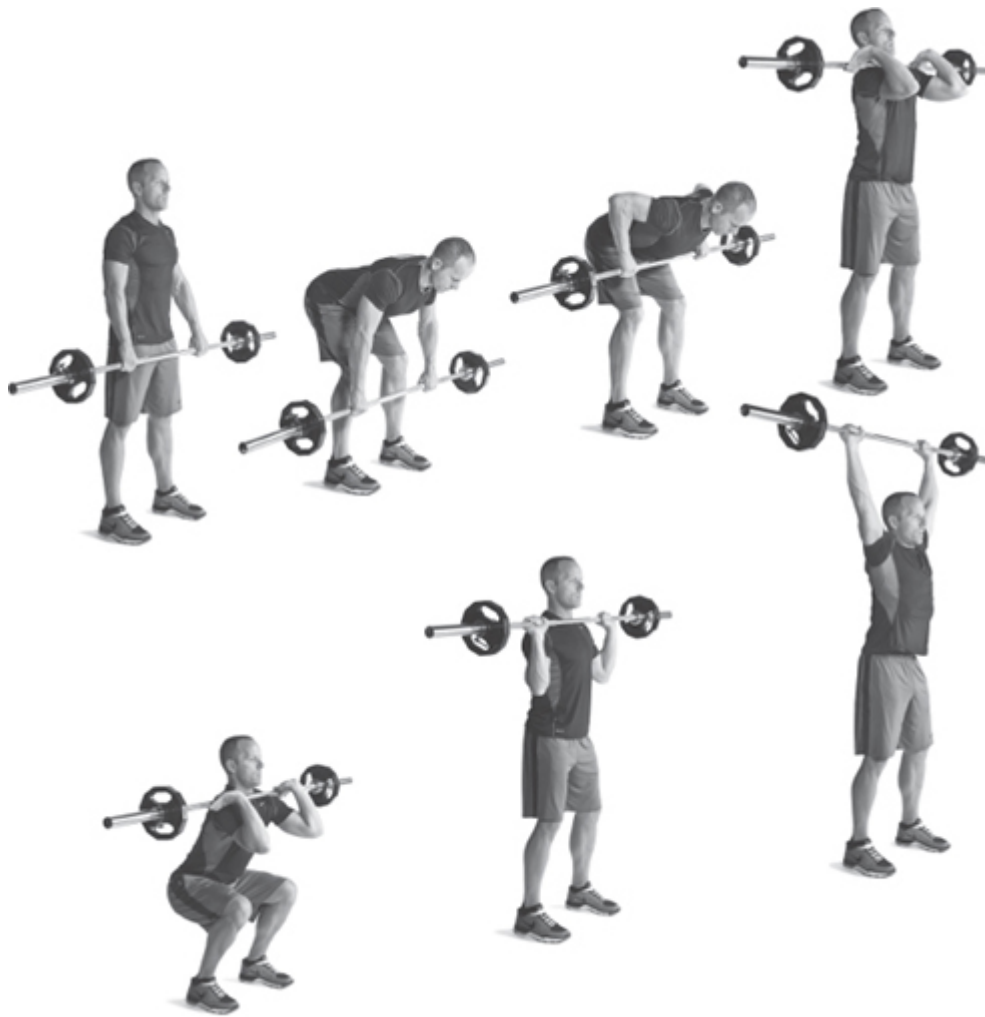
★ **Barbell matrix**

Load a barbell with a weight you're sure you can use for all three exercises. Grab the bar with a shoulder-width, overhand grip and do 10 reps each of these:

- Bent-over row
- Front squat
- Shoulder press

After a few workouts with that matrix, try this variation:

- Pick up the barbell, bend forward at the hips, and do a bent-over row.
- Straighten your body, and “clean” the bar to your shoulders. Shrug your shoulders to get the bar moving, then dip your knees and hips as you flip the bar up to your shoulders. It'll end up in what Olympic lifters call the “rack” position, which is the starting position for the front squat.
- Straighten your body again, and do a front squat.
- As you come up, roll the bar forward from your fingertips to your palms to get into the starting position for the shoulder press.
- Press the bar overhead.
- Lower it to your thighs to complete the first repetition, and repeat.
- Do as many as you can for 30 seconds, rest 30 seconds, and repeat for 5 to 10 rounds. (You may want to start with 20 seconds of work and 40 seconds of rest; it's a pretty tough drill.)



★ **Farmer's walk**

Grab a pair of heavy dumbbells, walk for 30 seconds, set them down for 30 seconds, and repeat. You can also do this with a pair of barbells.



★ **Sprint**

You really want to run? Outdoors or on an indoor track, run hard for 20 seconds, walk for 40 seconds, and repeat. Even better: Sprint up a hill, walk down, and repeat. You can do the same thing on a bicycle, either outdoors or inside on a stationary bike.

BEYOND LEVEL 5 OPTIONS

In no particular order:

★ **Jump rope**

This is one of those things, like single-leg squats and skiing, that I've often wished I could do. But when I was younger I didn't have the coordination, and in middle age my joints can't take the impact. If you know how to jump rope and the impact isn't a problem, it's a great option.

★ **Take the stairs**

At home or the gym (or anywhere, really), sprint up and down the steps, touching the floor at the top and bottom, for the duration of the interval. You can add push-ups at the bottom or top if you want to make it ever harder.

★ **Hit a heavy bag**

If you have access to martial-arts equipment, you can kick or punch a heavy bag. Just make sure you wrap your hands or wear gloves.

★ **Turn your yard into a gym**

You can chop wood, hit a tire with a sledgehammer (lots of private training studios now have tires and things to hit them with), or push a wheelbarrow filled with dirt or firewood. Another option is to push your car up and down the street, assuming you can find someone you trust to steer and not hit the brakes at random moments.

How to Build a Workout

BEFORE YOU BUILD YOUR OWN WORKOUT, let's review the basic parameters:

1. You're going to do two workouts—A and B—for each of the three phases.
2. Each workout starts with RAMP, which will be the same set of exercises for everyone. (You can modify it as you see fit, as I explained in [Chapter 15](#), but for now let's assume you're going to do it as written.)
3. You'll need to select exercises for the next four parts of the workout: core, power, strength, and metabolic training.
4. Those are followed by recovery ([Chapter 18](#)). As with RAMP, we'll assume for now that you're going to use the recovery exercises as shown.
5. As you know from [Chapter 5](#), the strength exercises you choose for Phase One are ones that you can do for one or two sets of 15 repetitions. If you're a beginner, you may not be able to do any of them 10 times, much less 15. Not a problem. You have to start somewhere, and you'll build strength and endurance quickly. For more advanced lifters, keep in mind that you have to be able to make progress from one workout to the next. When you can do 15 reps for both sets, you have to add weight, increase the difficulty, or move up to the next level of that category.
6. The strength program in Phase Two calls for two to four sets of 10 reps. Pick exercises that allow you to increase both weight and volume. That will mean different types of choices in different exercise categories. You may need to go to a higher-level exercise in one category, and a lower-level

exercise in another. The goal is to increase the amount of weight you lift as well as the volume of lifting you perform.

7. In Phase Three, pick exercises that allow you to perform two to three sets of 12 reps. You're adding a fifth exercise to each strength workout, and looking for improved conditioning. You want to breathe hard and get sweaty, if you haven't been doing that all along. (I know I did, starting with the first workout in Phase One.) This is where you go from grinding it out to *performing*. You should feel smoother, faster, lighter, more athletic. Alwyn calls this phase "Maximize" for a reason: You want to bring everything you have with the goal of emerging with more than you ever thought possible.

Realistically, there's only so much transforming, developing, and maximizing you can do in 12 weeks. That's why the program is set up to be repeatable. The second time through, you can do higher-level exercises, do the same ones with heavier loads, do more sets of each exercise, or some combination. Whatever you don't accomplish the second time through, you can try the third time. Or the fourth. An inexperienced lifter can do this program for a year and see improvements each time.

Advanced lifters can repeat the program using heavier weights for lower reps. The second time through, you can do two to three sets of 12 reps in Phase One, four sets of 8 reps in Phase Two, and two to three sets of 10 in Phase Three.

Once you get comfortable with the template, you can even fill in some of your own exercises. We could fill an entire book with push-up variations, or exercises you can do with a Swiss ball or TRX, or single-leg-stance exercises. This book has more exercises than any of its predecessors, and we've still just scratched the surface.

Advanced lifters can also vary sets and reps by movement pattern. You can stick with higher reps and lighter weights for exercises that require more balance and stability, but go heavier with the big-muscle exercises like squats, deadlifts, chin-ups, presses, and rows.

Now it's time to take a look at the workout templates. Remember that you can either start with these blank slates and fill in your own exercises, or use the done-for-you programs that we offer as examples. If you choose to fill in your own, you'll find lists of all the exercise options right after the templates. You can photocopy the templates in this book, download blank copies at thenewrulesoflifting.com, or get free training logs at werkit.com.

PHASE ONE: TRANSFORM

Workout A					
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Stability	2 x 30 seconds*				
Dynamic Stability	2 x 10				
<i>Power</i>					
Lower body	2 x 5				
<i>Strength</i>					
1a. Squat	1–2 x 15				
1b. Pull	1–2 x 15				
2a. Single-leg stance	1–2 x 15				
2b. Push	1–2 x 15				
<i>Metabolic</i>					
	5–10 minutes				
* You can hold for as long as 60 seconds if you find you've selected an exercise that you can easily hold beyond 30 seconds.					

Workout B					
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Stability	2 x 30 seconds				
Dynamic stability	2 x 10				
<i>Power</i>					
Upper body	2 x 5–8				
<i>Strength</i>					
1a. Hinge	1–2 x 15				
1b. Push	1–2 x 15				
2a. Lunge	1–2 x 15				
2b. Pull	1–2 x 15				
<i>Metabolic</i>					
	10 minutes				

Those who haven't done Alwyn's workouts may be confused by 1a and 1b and 2a and 2b in front of the strength exercises, which indicate *alternating sets*. You do the 1a exercise, rest long enough to catch your breath, do 1b, rest, and repeat until you've completed all your sets of both exercises. Then you move on to 2a and 2b. (There's also a "c" exercise in Phase Three, but the system is the same. Do a set of 1a, rest, 1b, rest, 1c, rest, and then repeat until you finish all your sets.)

One other difference for readers of previous NROL books: In the past Alwyn has given you specific rest periods, usually 30, 60, or 90 seconds. The only instruction this time is to stop long enough to catch your breath and regain your strength. How do you know if you've regained your strength? Trial and error. If you're noticeably weaker from one set to the next, you know you didn't rest long enough.

PHASE TWO: DEVELOP

Workout A					
Category/exercise	Sets/ reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Stability	2 x 30 seconds				
<i>Combination</i>					
	2 x 10				
<i>Power</i>					
Lower body	2 x 5				
<i>Strength</i>					
1a. Lunge	2-4 x 10				
1b. Pull	2-4 x 10				
2a. Hinge	2-4 x 10				
2b. Push	2-4 x 10				
<i>Metabolic</i>					
	5-10 minutes				

Workout B					
Category/exercise	Sets/ reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Dynamic stability	2 x 10				
<i>Power</i>					
Upper body	2 x 5–8				
<i>Strength</i>					
1a. Single-leg stance	2–4 x 10				
1b. Push	2–4 x 10				
2a. Squat	2–4 x 10				
2b. Pull	2–4 x 10				
<i>Metabolic</i>					
	10 minutes				

PHASE THREE: MAXIMIZE

Workout A					
Category/exercise	Sets/ reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Dynamic stability	2 x 10				
<i>Power</i>					
Lower body	2 x 5				
<i>Strength</i>					
1a. Hinge	2–3 x 12				
1b. Push	2–3 x 12				
1c. Lunge	2–3 x 12				
2a. Pull	2–3 x 12				
2b. Combination	2–3 x 12				
<i>Metabolic</i>					
	5–10 minutes				

Workout B					
Category/exercise	Sets/ reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Dynamic stability	2 x 10				
<i>Power</i>					
Upper body	2 x 8–10				
<i>Strength</i>					
1a. Squat	2–3 x 12				
1b. Pull	2–3 x 12				
1c. Single-leg stance	2–3 x 12				
2a. Push	2–3 x 12				
2b. Combination	2–3 x 12				
<i>Metabolic</i>					
	10 minutes				

THE EXERCISES

Core: stabilization

Level	Exercise
Pre-Level 1	Torso-elevated plank (p. 54) Modified side plank (p. 55)
Level 1	Plank/side plank (pp. 54–55)
Level 2	Plank/side plank with reduced base of support (pp. 56–57)
Level 3	Feet-elevated plank/side plank (p. 58)
Level 4	Feet-elevated plank/side plank with reduced base of support (pp. 58–59)
Level 5	Feet-elevated plank/side plank with unstable point of contact (pp. 59–60)
Beyond Level 5	Feet-elevated plank/side plank with reduced base of support and unstable point of contact (pp. 60–61)

Core: dynamic stabilization

Level	Exercise
Level 1	Plank and pulldown (p. 61) Side plank and row (p. 62)
Level 2	Push-away (p. 63) Side plank and row with reduced base of

	support (p. 63)
Level 3	Spiderman plank (p. 64) Swiss-ball mountain climber (p. 65) (or) Mountain climber with slides (p. 65–66)
Level 4	Cable half-kneeling chop (p. 67)
Level 4 progression	Cable kneeling chop (p. 68)
Level 5	Cable split-stance chop (p. 69)
Level 5 progression	Cable horizontal chop (p. 70)

Power

Level	Exercise
Level 1, lower body	Box jump (p. 73)
Level 1, upper body	Elevated explosive push-up (p. 74) (or) Medicine-ball push pass from knees (p. 75)
Level 2, lower body	Body-weight jump squat (p. 75)
Level 2, upper body	Explosive push-up (p. 76) or levitating push-up (p. 76) (or) Medicine-ball push pass (p. 76)
Level 3, lower body	Kettlebell swing (p. 77)
Level 3, upper body	Dumbbell push press (p. 78)
Level 4, lower body	Dumbbell jump squat (p. 79)
Level 4, upper body	Explosive push-up from boxes (pp. 80–81)
Level 5	Dumbbell single-arm snatch (pp. 81–82)

Squat

Level	Exercise
Pre-Level 1	Supported body-weight squat (p. 86)
Level 1	Body-weight squat (pp. 84–85) (or) Suspended body-weight squat (p. 87)
Level 2	Goblet squat (p. 88)
Level 3	Front squat (p. 89)
Level 4	Back squat (pp. 92–93) (or) Hex-bar deadlift (p. 94)
Level 5	Overhead squat (p. 95)

Hinge

Level	Exercise
Level 1	Swiss-ball supine hip extension (p. 99)
Level 2	Cable pull-through (pp. 100–101) (or) Romanian deadlift (p. 102)
Level 3	Rack deadlift (p. 103)
Level 4	Deadlift (pp. 104–105)
Level 5	Wide-grip deadlift (pp. 106–107)
Beyond Level 5	Wide-grip deadlift from deficit (p. 108)

Lunge

Level	Exercise
Pre-Level 1	Supported split squat (p. 113)
Level 1	Split squat (p. 112)
Level 2	Dumbbell reverse lunge (p. 114) (or) Goblet reverse lunge (p. 115) (or) Reverse lunge from step (p. 115)
Level 3	Split squat, rear foot elevated (pp. 116–117) (or)

	Bulgarian split squat (p. 118) (or) Suspended split squat (p. 119)
Level 4	Forward lunge (pp. 120–121)
Level 5	Walking lunge (p. 121)
Beyond Level 5	Change angle, resistance, elevation, stability, balance (weight on one side of body), or any combination

Single-leg stance

Level	Exercise
Level 1	Step-up (pp. 125–127)
Level 2	Offset-loaded step-up (p. 127)
Level 3	Single-leg Romanian deadlift (p. 128)
Pre-Level 4	Supported single-leg squat (p. 131)
Level 4	Single-leg squat (p. 130) (or) Kettlebell single-leg squat (p. 132)
Level 5	Single-leg deadlift (p. 133)
Beyond Level 5	Crossover step-up (p. 134) (or) Sprinter step-up (p. 135) (or) Overhead sprinter step-up (p. 135)

Push

Level	Exercise
Pre-Level 1	Push-up with hands elevated (pp. 140–141)
Level 1	Push-up (p. 139)
Level 2	Push-up with hands suspended (p. 142)
Level 3	T push-up (p. 143) (or) T push-up with weights (p. 144)
Level 4	Dumbbell bench press (p. 145) (or)

	Dumbbell single-arm bench press (p. 146)
Level 5	Dumbbell shoulder press (p. 147) (or) Dumbbell single-arm shoulder press (p. 147)
Beyond Level 5	Barbell bench press (p. 148) (or) Barbell board press (p. 149)

Pull

Level	Exercise
Pre-Level 1	Split-stance cable row (p. 154)
Level 1	Standing cable row (p. 153)
Level 2	Kneeling lat pulldown (p. 155) (or) Standing lat pulldown (p. 156)
Level 3, option 1	Dumbbell two-point row (p. 157) (or) Dumbbell three-point row (p. 158) (or) Dumbbell chest-supported row (p. 159)
Level 4	Inverted row (pp. 160–161) (or) Suspended row (p. 162)
Level 5	Chin-up (p. 163)
Beyond Level 5	Pull-up (p. 164)

Combination

Level	Exercise	Notes
Level 1	Single-leg, single-arm cable row (pp. 166–167)	
Level 2	Reverse lunge and cable row (p. 168)	
Level 3	Romanian deadlift and row (p. 169)	
Level 4	Squat and press (p. 170)	
Level 5	Reverse lunge and single-arm press (p. 171)	

Beyond Level 5	Create your own combo	
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RAMP

Exercise
Kneeling hip-flexor stretch (p. 174)
Single-leg hip raise (p. 174)
Open one-half kneeling adductor/ankle mobilization (p. 175)
Open one-half kneel with T reach (p. 176)
Squat to stand (p. 177)
Wall slide (p. 178)
Forward/backward jump (p. 179)
Walking knee hug to forward lunge (p. 179)
Side-to-side jump (p. 180)
Walking lateral lunge (p. 180)
Skipping (p. 181)
Carioca (p. 182)
Side shuffle (p. 183)

Metabolic Training

Level	Exercise
Level 1	Body-weight squat (p. 187) (or) Step-up (p. 187) (or) Shadow boxing (p. 187)
Levels 2 and 3	Burpee (p. 188) (or) Kettlebell swing (p. 188) (or) Box jump (p. 188) (or) Squat/push-up combo (p. 188)
Levels 4 and 5	Barbell matrix (bent-over row, front squat, shoulder press) (pp. 188–189)

	(or) Farmer's walk (p. 190) (or) Sprint (p. 190)
Beyond Level 5	Jump rope (p. 191) (or) Take the stairs (with or without push-ups) (p. 191) (or) Hit a heavy bag (p. 191) (or) Turn your yard into a gym (chop wood, sledgehammer, wheelbarrow pushes or pulls) (p. 191) (or) Push your car (p. 191)

Now we'll fill them in. Let's suppose you're a novice lifter, or someone who's new to NROL-type training. I start with these assumptions:

- You're healthy, with no back pain or limitations in your knees, hips, or shoulders. I know it seems odd to write a book for people with limitations and then assume the sample lifter has no issues. I do it this way because I don't know what your individual problems may be.
- You have access to a gym with all the standard equipment, like cable machines and Swiss balls.
- You're a sometimes-active person who can walk around the block a couple of times without stopping to rest.
- Here's how you might select exercises for your first time through the program.

PHASE ONE: TRANSFORM

Workout A (beginner)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Stability: <i>Plank</i> (p. 54)	2 x 30 seconds					
Dynamic stability: <i>Side plank and row</i> (p. 62)	2 x 10					
Power						
Lower body: <i>Box jump</i> (p. 73)	2 x 5					
Strength						
1a. Squat: <i>Goblet squat</i> (p. 88)	1–2 x 15					
1b. Pull: <i>Standing cable row</i> (p. 153)	1–2 x 15					
2a. Single-leg stance: <i>Dumbbell step-up</i> (pp. 125–127)	1–2 x 15					
2b. Push: <i>Push-up</i> (p. 139)	1–2 x 15					
Metabolic						
	5–10 minutes					

Workout B (beginner)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Stability: <i>Side plank</i> (p. 55)	2 x 30 seconds					
Dynamic stability: <i>Plank with pulldown</i> (p. 61)	2 x 10					
Power						
Upper body: <i>Elevated explosive push-up</i> (p. 74)	2 x 5–8					
Strength						
1a. Hinge: <i>Swiss-ball supine hip extension</i> (p. 99)	1–2 x 15					
1b. Push: <i>Dumbbell bench press</i> (p. 145)	1–2 x 15					
2a. Lunge: <i>Dumbbell split squat</i> (p. 112)	1–2 x 15					
2b. Pull: <i>Kneeling lat pulldown</i> (p. 155)	1–2 x 15					
Metabolic						
	10 minutes					

PHASE TWO: DEVELOP

Workout A (beginner)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Stability: <i>Plank with reduced base of support</i> (p. 56)	2 x 30 seconds					
Combination						
<i>Single-leg, single-arm cable row</i> (pp. 166–167)	2 x 10					
Power						
Lower body: <i>Jump squat</i> (p. 75)	2 x 5					
Strength						
1a. Lunge: <i>Dumbbell reverse lunge</i> (p. 114)	2–4 x 10					
1b. Pull: <i>Kneeling lat pulldown</i> (p. 155)	2–4 x 10					
2a. Hinge: <i>Romanian deadlift</i> (p. 102)	2–4 x 10					
2b. Push: <i>Push-up with feet elevated</i> (p. 140)	2–4 x 10					
Metabolic						
	5–10 minutes					

Workout B (beginner)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Dynamic stability: <i>Push-away</i> (p. 63)	2 x 10					
Power						
Upper body: <i>Explosive push-up</i> (p. 76)	2 x 5–8					
Strength						
1a. Single-leg stance: <i>Offset-loaded step-up</i> (p. 127)	2–4 x 10					
1b. Push: <i>Dumbbell bench press</i> (p. 145)	2–4 x 10					
2a. Squat: <i>Front squat</i> (p. 89)	2–4 x 10					
2b. Pull: <i>Dumbbell two-point row</i> (p. 157)	2–4 x 10					
Metabolic						
	10 minutes					

PHASE THREE: MAXIMIZE

Workout A (beginner)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Dynamic stability: <i>Cable half-kneeling chop</i> (p. 67)	2 x 10					
Power						
Lower body: <i>Kettlebell swing</i> (p. 77)	2 x 6–8					
Strength						
1a. Hinge: <i>Rack deadlift</i> (p. 103)	2–3 x 12					
1b. Push: <i>Push-up with hands suspended</i> (p. 142)	2–3 x 12					
1c. Lunge: <i>Split squat, rear foot elevated</i> (pp. 116–117)	2–3 x 12					
2a. Pull: <i>Dumbbell chest-supported row</i> (p. 159)	2–3 x 12					
2b. Combination: <i>Squat and press</i> (p. 170)	2–3 x 12					
Metabolic						
	5–10 minutes					

Workout B (beginner)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Dynamic stability: <i>Swiss-ball mountain climber</i> (p. 65)	2 x 10					
Power						
Upper body: <i>Push press</i> (p. 78)	2 x 8–10					
Strength						
1a. Squat: <i>Back squat</i> (pp. 92–93)	2–3 x 12					
1b. Pull: <i>Dumbbell three-point row</i> (p. 158)	2–3 x 12					
1c. Single-leg stance: <i>Single-leg Romanian deadlift</i> (p. 128)	2–3 x 12					
2a. Push: <i>Dumbbell single-arm bench press</i> (p. 146)	2–3 x 12					
2b. Combination: <i>Reverse lunge and cable row</i> (p. 168)	2–3 x 12					
Metabolic						
	10 minutes					

I could go on all day about why I selected each exercise from the available options. But what it comes down to is this:

There really are no right or wrong answers. Nor are there any *permanent* answers. That's the beauty of Alwyn's template system. You can adjust anything you want on the fly. Alwyn's only hard-and-fast rule is that you stick to the category of exercise. You can jump to higher levels or back to lower levels if those exercises make the most sense in the context in which you're doing them.

Or you can just choose all Level 1 exercises for Phase One, Level 2 for Phase Two, and Level 3 for Phase Three. Yes, you'll get some redundancies. You may get tired of certain exercises, and on others you'll have to move up to the next level before you've gotten all you can out of them.

But those are minor problems, which may not apply to you. And even if they do, what's the worst outcome? That you get 90 percent of the potential benefits of Alwyn's program, rather than 95 percent? Believe me, you'd be happy with that.

Now it's time to look at something a bit more complex: the choices I made in my own NROL for Life workouts. I annotated some of my decisions, so you can either follow along with my thought process, or ignore it entirely. It's a good workout either way.

PHASE ONE: TRANSFORM

Workout A (advanced)					
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4
<i>Core</i>					
Stability: <i>Plank</i> (p. 54)*	2 x 30 seconds				
Dynamic Stability: <i>Swiss-ball mountain climber</i> (p. 65)	2 x 10				
<i>Power</i>					
Lower body: <i>Box jump</i> (p. 73)†	2 x 5				
<i>Strength</i>					
1a. Squat: <i>Goblet squat</i> (p. 88)‡	1–2 x 15				
1b. Pull: <i>Standing cable row</i> (p. 153)	1–2 x 15				
2a. Single-leg stance: <i>Single-leg Romanian deadlift</i> (p. 128)	1–2 x 15				
2b. Push: <i>Push-up</i> (p. 139)**	1–2 x 15				
<i>Metabolic</i>					
	5–10 minutes				

Workout B (advanced)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Stability: <i>Side plank</i> (p. 55)*	2 x 30 seconds					
Dynamic stability: <i>Spiderman plank</i> (p. 64)	2 x 10					
Power						
Upper body: <i>Explosive push-up</i> (p. 74)	2 x 5–8					
Strength						
1a. Hinge: <i>Deadlift</i> (pp. 104–105)^	1–2 x 15					
1b. Push: <i>Dumbbell incline bench press</i> (p. 145)	1–2 x 15					
2a. Lunge: <i>Reverse lunge from step</i> (p. 115)^^^	1–2 x 15					
2b. Pull: <i>Suspended row</i> (p. 162)	1–2 x 15					
Metabolic						
	10 minutes					
<p>* As explained in Chapter 6, I ran through all five core-stabilization levels in Phase One, doing different plank and side plank variations every workout. That included some we didn't have room to show in this book. My goal was to do something that was harder each workout, and when I ran out, I at least tried to do something different.</p> <p>† I hadn't done box jumps in ages. It was a blast, until I ran out of higher boxes. (Some of the young athletes at my gym stack boxes on top of each other, but I'm not that brave.)</p> <p>‡ For the first couple of workouts, I did a hybrid goblet/front squat holding two kettlebells against my chest. I had to switch to the conventional barbell front squat when I maxed out the paired kettlebells in my gym.</p> <p>** I did a different push-up variation every workout, all from the "12 Ways to Make Push-Ups Tougher" sidebar in Chapter 12. I'll be honest: I couldn't come close to 15 reps on some of them.</p> <p>^ It was surprisingly fun to do 15-rep sets of deadlifts. When I experimented with heavier weights I couldn't get all the reps. The exercise felt best when I used 135 or 155 pounds and went for speed (with good form).</p> <p>^^ I used light dumbbells for the reverse lunge from a step, but really, after all those deadlifts, my body weight would've been tough enough to use for 15 deep lunges with each leg.</p>						

PHASE TWO: DEVELOP

Workout A (advanced)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Stability: <i>Level 5 plank variations</i> (pp. 59–60)	2 x 30 seconds					
Combination						
<i>Reverse lunge and cable row</i> (p. 168)	2 x 10					
Power						
Lower body: <i>Kettlebell swing</i> (p. 77)	2 x 8–10					
Strength						
1a. Lunge: <i>Suspended split squat</i> (p. 119)	2–4 x 10					
1b. Pull: <i>Suspended row</i> (p. 162)*	2–4 x 10					
2a. Hinge: <i>Deadlift</i> (pp. 104–105)†	2–4 x 10					
2b. Push: <i>Push-up with hands suspended</i> (p. 142)	2–4 x 10					
Metabolic						
	5–10 minutes					

Workout B (advanced)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Dynamic stability: <i>Mountain climber variations</i> (pp. 65–66)‡	2 x 10					
Power						
Upper body: <i>Dumbbell push press</i> (p. 78)	2 x 5–8					
Strength						
1a. Single-leg stance: <i>Offset-loaded step-up</i> (p. 127)	2–4 x 10					
1b. Push: <i>Dumbbell incline bench press</i> (p. 145)**	2–4 x 10					
2a. Squat: <i>Front squat</i> (p. 89)^	2–4 x 10					
2b. Pull: <i>Dumbbell three-point row</i> (p. 158)^^	2–4 x 10					
Metabolic						
	10 minutes					
<p>* In Phase One I did a fairly easy version of the suspended row, with my body at a 45-degree angle to the floor. But in Phase Two I made it much harder, with my body close to parallel to the floor. (For the record, I <i>really</i> don't like the harder version, which is how I knew I needed to do it.)</p> <p>† I repeated the deadlift here, but used heavier weights for slower reps.</p> <p>‡ I can't imagine a good workout program that doesn't include a hip-flexion exercise—raising your leg up in front of your torso. Mountain climbers are great for core strength, hip mobility, and all-around conditioning and athleticism.</p> <p>** I use the incline press because my shoulders won't tolerate a flat bench press. If you can use challenging weights on a flat bench without discomfort, feel free to substitute.</p> <p>^ The front squat is another repeated exercise from Phase One. But with heavier weights, it feels more like a progression than a redundancy. As long as you're training with slightly heavier weights from one workout to the next, the exercise is doing what it's supposed to do.</p> <p>^^ As an experiment, I tried doing the two-point row (aka standing bent-over row) and the three-point row (feet on the floor, nonworking hand resting on a bench) back to back. I could use twice as much weight on the three-point row. The two-point row is a terrific exercise for core training, but eventually the lower back becomes the weak link. Putting your hand down on the bench removes the weak link and puts your body in a strong position for lifting heavy stuff.</p>						

PHASE THREE: MAXIMIZE

Workout A (advanced)						
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4	
Core						
Dynamic stability: <i>Cable horizontal chop</i> (p. 70)*	2 x 10					
Power						
Lower body: <i>Dumbbell single-arm snatch</i> (pp. 81–82)†	2 x 6–8					
Strength						
1a. Hinge: <i>Wide-grip deadlift</i> (p. 106)	2–3 x 12					
1b. Push: <i>T push-up</i> (p. 143)‡	2–3 x 12					
1c. Lunge: <i>Walking lunge</i> (p. 121)**	2–3 x 12					
2a. Pull: <i>Kneeling lat pulldown</i> (p. 155)^	2–3 x 12					
2b. Combination: <i>Squat and press</i> (p. 170)^^	2–3 x 12					
Metabolic						
	5–10 minutes					

Workout B (advanced)					
Category/exercise	Sets/reps	Workout 1	Workout 2	Workout 3	Workout 4
Core					
Dynamic stability: <i>More mountain climber variations</i> (pp. 65–66)	2 x 10–20				
Power					
Upper body: <i>Explosive push-up from boxes</i> (pp. 80–81)	2 x 6–8				
Strength					
1a. Squat: <i>Hex-bar deadlift</i> (p. 94)	2–3 x 12				
1b. Pull: <i>Chin-up</i> (p. 163)#	2–3 x 12				
1c. Single-leg stance: <i>Crossover step-up</i> (p. 134)##	2–3 x 12				
2a. Push: <i>Dumbbell alternating shoulder press</i> (p. 147)###	2–3 x 12				
2b. Combination: <i>Reverse lunge and cable row</i> (p. 168)	2–3 x 12				
Metabolic					
	10 minutes				
<p>* I chose horizontal chops because I've never gotten a good feel for the diagonal version. I set my feet wide when I do the horizontal chop, giving me an extremely stable base, and use aggressive weights.</p> <p>† I skipped over loaded jump squats, which are very tough on my knees, to get to the single-arm snatch. I still jump on this exercise, but for whatever reason it has less of a jarring effect when I land.</p> <p>‡ I'm going for a metabolic benefit with T push-ups, rather than strength or size.</p> <p>** I can't tell you why, but the basic forward lunge hurts my knees, while the walking lunge creates no discomfort.</p> <p>^ I'll be honest: After alternating sets of wide-grip deadlifts, T push-ups, and walking lunges, I needed a technically easy exercise here. The kneeling lat pulldown is as simple as it gets.</p> <p>^^ The entire workout builds up to the squat and press. I've kept stress off my knees and shoulders so I can impose stress here.</p> <p># I can't do chin-ups for 12 reps, but I still want to do them here because they're the best exercise.</p> <p>## Single-leg squats and deadlifts are nonstarters with my wounded knees. The crossover step-up (and the sprinter step-up, which I'll sometimes swap in) gives me similar benefits without pain.</p> <p>### Once more, for exercise 2b I picked the movement that best complements the rest of the exercises in the workout. Since I used a push-up variation for a power exercise, bench presses would be redundant (not to mention tough on my shoulders). It also pairs up well with the combination exercise I selected, the reverse lunge and row.</p>					

I FIRST REALIZED THE IMPORTANCE OF post-workout nutrition when I was a young and broke musclehead whose job required early-morning workouts. When I got home from the gym I was hungry enough to eat almost anything. I say “almost” because no amount of hunger or vanity could stifle my gag reflex when I tried to choke down the protein supplements of the mid-1980s. They looked like chalk and tasted like mulch. Instead, I made a post-workout meal with three eggs and three egg whites, scrambled, with a couple of English muffins. I chased it with a glass of skim milk, maybe two. (Over the course of a day I would sometimes drink a half-gallon.) I’m pretty sure it worked. The more consistent I was with my eggs and milk, the better I looked. I also noticed that the harder I worked out, the more consistent I was with nutrition. When my workouts got stale or erratic, so did my meals.

The next time I gave the subject any thought was 1992. I had just started working as a part-time copy editor at *Muscle & Fitness* magazine. An editor there told me that the “window of opportunity” for building muscle after a workout was extremely short. Could be an hour, could be half that. Just to be on the safe side, you should really have something before you leave the gym.

That’s been my working model ever since. Eventually I found protein supplements that taste good (my favorite, Biotest’s Metabolic Drive, is *seriously* good), and I’ve never really wavered from the soon-as-possible paradigm. There was plenty of research to confirm what I was already inclined to believe.

But in May 2011, I was forced to reconsider. Alan Aragon, a nutrition consultant based in Southern California, presented a

talk called “What Really Matters” at The Fitness Summit in Kansas City. Aragon showed new research suggesting that the “windows of opportunity” aren’t as narrow as gym rats imagine. “They’re more like bay windows of a mansion,” he said. “Our physiology basically has the universe mapped out, and we’re thinking it needs to be taught addition and subtraction.”

It’s not that post-workout nutrition isn’t important. Everyone agrees that your muscle protein breaks down rapidly after a workout, and if it has a ready supply of dietary protein to work with, it’ll build up new tissue even faster. Without protein, you’ll get a net breakdown of muscle tissue, at least in the short term. Aragon’s point is that your body can use protein you’ve eaten before the workout just as easily as it uses post-workout protein. (It takes protein up to six hours to work its way through your system.) A well-nourished adult training later in the day can eat a normal meal an hour or two after a workout and not miss out on any potential post-workout muscle growth or recovery. Even better: Your muscles remain in an anabolic state—that is, receptive to protein above and beyond what they need for maintenance—for up to twenty-four hours after you lift.

And yet, knowing that our bodies allow us more leeway doesn’t really change what most of us do. “I have no research to back this up, but I’m 100 percent convinced there is a difference with the timing,” Alwyn told me. His clients get better results when they have a protein shake immediately post-workout. I suspect I do as well. That’s why I rarely wait more than a half-hour after training for my protein fix. It’s partly habit, and partly because the shake tastes so good. But it’s also because I’ve never forgotten the lesson I learned back in the 1980s: The harder I train, the better I eat; the better I eat, the faster I can see the results of my workouts. Seeing results, in turn, increases my motivation to train.

I can’t prove this, but I think it’s entirely possible that many of the habits we associate with successful weight management don’t work because of any significant, substantial, or even measurable effect on our physiology. I think they work mainly because they help us remember that

we're trying to manage our weight, and secondarily because we do them instead of other habits that would take us further from our goal.

The nice thing about this theory is that it doesn't matter if I'm right or wrong. Either way, we end up looking better, eating better, and feeling better.

If you're going to have a post-workout shake, there's pretty wide agreement that milk-based proteins—whey and casein—are your best choice. Perhaps most important for older lifters is the high concentration of the amino acid leucine. Milk proteins have 10 to 12 percent leucine, compared with 8 to 9 percent for the protein in meat and eggs, and less than that for non-animal proteins. Twenty to 40 grams of whey or a whey-casein blend should be plenty.

You can also find a wide range of nondairy protein supplements, made from soy, pea, or even hemp protein. I assume the taste varies widely, as would the quality of the amino acids and leucine concentration.

RECOVERY EXERCISES

There's no fixed protocol for post-workout recovery. The following exercises are a sample of those Alwyn might have his clients use before they go home. You can use all or some of them, combine them with your own favorites, or do something else altogether. I do some of them at the beginning of my workout (kind of a pre-RAMP) rather than the end. As with other aspects of Alwyn's program, it's best to try the protocol as it's presented here before adding, subtracting, or modifying.

Just make sure you do something to restore the quality of your muscle and connective tissue. Stretches address the length and tension of those tissues, which can shorten and tighten during a workout. Foam-rolling exercises address tissue quality by smoothing out the knots and adhesions that affect performance.

If you work out at home, or your gym doesn't have a 6-inch-thick foam roller like the one shown in these photos, you can pick up your own at a sporting-goods store or online at performbetter.com.

General guidelines:

- On foam-rolling exercises, Alwyn recommends spending 10 to 20 seconds if nothing is particularly tender when you apply pressure. Give those areas extra attention. (This doesn't apply to actual injuries, which we cover in [Chapter 3](#). We're just talking about surprisingly sensitive spots in otherwise functional tissue.)
- Hold stretches about 30 seconds. You can do more work on one side if it's shorter or tighter than the other.
- Although it's not shown here, you will probably benefit from rolling a tennis ball around the bottom of your feet. It loosens up the fascia and improves range of motion throughout your lower body.
- There's no perfect time or place for mild stretches and tissue-manipulating exercises. A lot of older lifters I know do them every day, separate from their strength workouts. The only time you don't want to do stretches is first thing in the morning, when you have excess fluid in your spinal discs, which makes them more vulnerable.
- For a more aggressive stretching program, you want to make sure you're thoroughly warmed up. It's probably best to do that at the end of your workout, when your core temperature is elevated.

★ Back Roll

- Lie on the floor with the roll under the middle of your back, perpendicular to your torso.
- With your heels on the floor, pull and push your body over the roll, hitting your lower and middle back.



★ Glute roll

- Since the fibers of the gluteus maximus run east and west, rather than north and south, you're going to start with the roll parallel to your torso.
- Sit on the roll with one cheek, with your targeted leg crossed over your nonworking leg, and roll sideways.
- You can also try rolling the other way, with the roll perpendicular to your torso.



★ Calf roll

- Set the roll under one calf, and cross the ankle of your nonworking leg over that shin to increase the pressure.
- Lift your hips up, supporting your weight on your hands, and pull and push your calf muscles over the roll from ankle to knee.
- Switch legs and repeat.



★ Ham roll

- Same technique as the calf roll, except now you roll from the bottom of your knee to the gluteal crease.
- With this and the next two exercises, feel free to work one leg at a time, and spend more time on one side than the other, if one leg is more problematic.



★ Quad roll

- Lie facedown, with your front thighs on the roll and your weight on your forearms.
- Pull yourself over the roll, hitting everything from the top of your knee to your groin.



★ IT-band roll

- Lie on your side, with the outside of your thigh on the roll and your weight on one hand.
- Pull and push yourself over the roll from your hip to the top of your knee.
- To take some pressure off, you can place the foot of your non-rolling leg on the floor.



★ Adductor stretch

- From a kneeling position, lean forward and place both hands on the floor. Extend your right foot as far as you can to your side, with your right foot flat on the floor.
- Push your hips back, feeling the stretch along your right inner thigh.
- Hold for 30 seconds, switch sides, and repeat.



★ Hip flexor/lat stretch

- Get into lunge position, with your left foot forward and your right knee on or near the floor. Raise your right arm over your head.
- Shift your weight forward as you lean to your left, feeling the stretch in your right lat and on the right side of your pelvis.
- Hold for 30 seconds, switch sides, and repeat.



★ **Figure-four stretch**

- Lie on your back with your knees bent and the outside of your left ankle against your lower right quadriceps, just above your knee.
- Grab the back of your right leg just behind the knee.
- Pull your right thigh toward you until you feel a stretch in your left glute.
- Hold for 30 seconds, switch sides, and repeat.



PART 3

THE WIDE ALBUM

Flabby Road

I SHOULD FEEL GOOD ABOUT MYSELF. According an article in *USA Today*, the average American man in his fifties weighs 199 pounds. Me, I’m usually 185 when I weigh myself first thing in the morning. I’d always thought I was average for my height, gender, and age, but here was proof that I’m 14 pounds lighter. The article piqued my curiosity, leading me to wonder if I’m any lighter now, compared with my peer group, than I was at earlier ages.

Using data from the National Center for Health Statistics, I put together the following chart. The vertical axis shows the years in which data was collected, and the horizontal axis shows mean weights for American adults by age. (For the statisticians: I refer to “average” weight above, which is how *USA Today* described the data, while the studies actually show “mean” weight, meaning equal numbers of people weigh more or less than the figures shown.)

Mean weight for adult women and men in the United States (shown as women/men)							
	20s	30s	40s	50s	60-74	75+	
1960-62	128/164	139/170	143/169	147/168	147/160		
1971-74	134/170	144/178	149/177	148/173	146/166		
1976-80	136/168	146/176	149/180	150/176	147/168		
1988-94	142/173	154/182	158/187	163/189	154/181	139/166	
1999-2002	157/183	163/189	168/196	169/192	165/192	147/173	
					60s	70s	80s
2003-06	156/188	165/194	171/202	172/199	171/198	156/187	142/168

Source: National Center for Health Statistics.

What I discovered isn’t particularly impressive. My current weight is 93 percent of the mean for men in their fifties. Over my lifetime I’ve typically been between 91 and 94 percent of the mean for my age at the time of each survey, although I bulked up to 104 percent at one point in my late thirties. This was during my late-to-the-party attempt at bodybuilding, at

which I failed pretty spectacularly. But aside from that blip, a lifetime of serious exercise has kept me in more or less the same place, relative to my peers.

I encourage you to run your own numbers; just divide your weight by the mean for your age and gender at each time point. It gives each of us a baseline to keep in mind when we talk about how and why Americans have gotten so freakin' big in such a short period of time.

TELL ME WHY YOU FRY

That we've gotten massive is beyond dispute. That we eat more than we used to is beyond dispute. But in the past few years I've seen all of these additional hypotheses suggested as reasons for the girth of our nation:

- *We move less.* In *NROL for Abs* I noted a Mayo Clinic study that pinpointed one aspect of modern life—the fact that few of us walk to work anymore—and suggested this alone could account for the surplus energy we're storing instead of burning.
- *We're wired to store fat.* This was the conclusion of *Rethinking Thin*, a deeply researched 2007 book by *New York Times* fitness reporter Gina Kolata. While self-discipline matters, people who are fat are genetically destined to eat more food when it's available, and gain more weight.
- *Capitalism is making us fat.* The book *The End of Overeating*, by David A. Kessler, M.D., shows how the food industry has mimicked the tobacco industry in the way it manipulated food with sugar, fat, and salt to make it more palatable and harder to stop eating once you start.
- *It's all about the corn.* This is a corollary to the indictment of the food industry. Nixon-era subsidies for corn farmers eventually led to the presence of high-fructose corn syrup in everything from soft drinks to salad dressing. Food became cheaper than ever to produce, leading to the ubiquitous presence of fast-food restaurants on every corner. Even the poorest people in the United States have easy access to affordable, high-calorie meals.

- *Your friends make you fat.* Obesity as a social disease, spreading through networks of friends, has gotten much play in the media. The idea is that you eat like the people you eat with, and if you're all overweight there's an implied acceptance.
- *We simply make bad food choices.* And we should know better, according to a 2011 study in the *New England Journal of Medicine*. Looking at a sample of more than 120,000 American men and women, with data going back to 1986, Harvard researchers came up with incredibly precise figures. Consumption of potato chips increased subjects' weight by 1.69 pounds over four years; sugar-sweetened drinks added 1 pound; unprocessed red meat, 0.95 pounds. A couple of foods were associated with lower weight, including yogurt (which reduced weight by 0.82 pounds) and nuts (0.57 pounds).
- *Our lifestyles are a mess.* In the same study, the data showed that sleeping less than six hours or more than eight hours a day was correlated with weight gain, as was smoking, drinking, and watching TV.

Those are the big ones. They're all "true," in the sense that we can find data to back them up. They all make sense. Most of us have sedentary jobs. We all know the food chain makes the worst stuff cheap and the best stuff expensive. And no one with a mind open to science and reason denies the genetic roots of both behaviors and outcomes. You can't take a body that's thick by design—the loving creation of a human life by two people whose DNA tilts toward XXL—and make it thin. Not only is it physiologically impossible to do such a thing without surgery or powerful drugs, it's stupid and immoral to suggest that all of us should have matching silhouettes. I have a thin mom and a fat dad, and somehow ended up with a narrow frame. Most of my siblings struggle with their weight. Same deck, different cards.

Still, I can't help but lean toward the "bad choices" hypothesis. It comes closest to matching my experiences and observations. If you'll indulge yet another of my rambling stories:

I went to a Catholic high school in a semirural part of Missouri. The suburban-sprawl kids like me were a minority. Most of my classmates had deep roots in small towns. Some were farmers. As much as I observed anything beyond girls and sports, I noticed an odd type of couple: a solidly built man married to an obese woman. I can't recall seeing that in the suburbs; if you saw a mismatch, it tended to be more like my parents, where the male was soft and pot-bellied and the female more concerned with her figure.

Something else I noticed: The farm boys were the biggest and strongest in the school. My football coaches and teammates were anti-strength training but pro-farming. Some of the biggest kids spent their summers throwing hay bales onto flatbed trailers. Some of the skinniest kids (like me) lifted weights. So almost everyone assumed that it took a lot of repetitive work each day to get big and strong, something you couldn't possibly achieve in a few hours a week in the weight room.

But it wasn't simply exercise that made the farm kids bigger and stronger. It was the way they ate before and after they worked the fields. Farm kids consumed far more calories than the rest of us, as did their parents. That explains why male adult farmers so often seemed half the size of their spouses; they ate the same way, but the men burned most of it off outdoors while the women (who were hardly sedentary) spent more time indoors. It also explains why I was still skinny despite my work in the weight room. I went home and ate like everyone else in the suburbs. We had our meat, potatoes, and dessert, while my farming peers were eating all that plus biscuits, corn, and butter. Given my age, metabolism, and activity level, I was probably undercreating by hundreds of calories a day.

I've fallen out of touch with my classmates, but I still get the alumni newsletter, and what I saw in one issue just shocked me. It was a picture of a group of alumnae, most from my era, who'd volunteered for something or other. They were absolutely huge. I doubt if a single one was an actual farm wife, but they'd all managed to grow to that size, if not beyond. These weren't strangers riding electric carts in

Walmart, people we look right past without wondering how they got that way. These were people I once knew, whose potential adiposity wasn't at all apparent in the 1970s.

I get that humans have the ability to store calories; it's an evolutionary trait that helped our species survive when food was scarce. In past generations, when it was fashionable to stuff themselves, the upper classes did exactly that. According to Bill Bryson in *At Home* (a terrific history of how we came to live and eat the way we do), this was a recommended menu for a six-person dinner party in the mid-nineteenth century: mock turtle soup, fillets of turbot in cream, fried sole with anchovy sauce, rabbit, veal, stewed beef, roasted fowl, and boiled ham, followed by a long list of desserts.

While gluttony wasn't an option for most people, those who could afford the food (along with the household personnel to cook and serve it) ate fantastical quantities. And of course they grew to fantastical sizes. America's heftiest presidents, ranked by our best guess at their body-mass index, all served consecutively in the late nineteenth and early twentieth centuries: Grover Cleveland, William McKinley, Theodore Roosevelt (who was also our most physically active president), and William Howard Taft, who weighed an estimated 340 pounds when he left office in 1913.

This was decades before the invention of fast food.

History shows that people who want to consume massive volumes of food have always done so, as long as they have motive, means, and opportunity. The open question is why people of our generation, who don't want to eat to excess and desperately want to avoid storing fat, get big anyway. Let's explore.

NEW RULE #17 • It's actually kind of hard to gain weight.

There's a pernicious myth, propagated by health and nutrition professionals who should know better, that weight gain and weight loss are linear processes. Add a single cookie to your daily diet, the public is told, and over time it adds up to dozens, if not hundreds, of pounds. It's not true. As two Dutch researchers explained in a commentary in the *Journal of the*

American Medical Association, over time your body will adjust to the extra calories, along with whatever weight you gain initially. That amount of food—your previous diet plus the cookie—becomes exactly what your body requires to maintain its new, higher weight. You have a long list of hormones and metabolic processes to stabilize your weight... as long as you don't add any more cookies to your daily diet.

Even then, it's kind of hard to supersize. Your body upregulates your metabolism and downregulates your appetite to compensate for any new infusion of calories. The researchers used the example of a twenty-five-year-old male who has a body-mass index of 25, the edge of what we consider overweight. Let's make him five-foot-ten, 174 pounds. If he kept his activity level exactly the same over the next twenty-five years, he would need to eat an extra 680 calories a day to reach a BMI of 35, the midpoint between "obese" and "Holy crap, is that guy fat." He would weigh 244 pounds.

You could argue that no one would actually maintain the same activity level while gaining 70 pounds, and I'd agree. But at a higher weight he'd burn more calories with every step, so he could move a lot less and burn the same number of calories he did at 174 pounds.

How much he moves is really beside the point, which is this: We've been told for eons that a pound of fat is 3,500 calories, and an extra 500 calories a day should increase your weight by a pound a week. That would be 52 pounds a year, and after twenty-five years we'd be looking at a man who weighed close to 1,500 pounds—three-quarters of a ton.

Do you know someone who weighs more than a thousand pounds? I doubt if I've ever met anyone over 500. And yet, all of us know people who weigh at least 70 pounds more than they did a quarter-century ago. Some of you reading this have gained that much, and more.

Which brings us back to the original problem: How did something that should be really hard become the signal feature of our generation?

NEW RULE #18 • We don't really move less.

Along with the myth that weight gain and weight loss are linear and easily quantifiable is the notion that all of us move a lot less than we used to. I've always believed this to be true, despite the fact that I grew up at a time when adults hardly moved at all. My father and the other men of his generation had grown up in the Depression and served in the military. They reveled in their suburban leisure. In my neighborhood you rarely saw a middle-aged man do anything more strenuous than mow a lawn or trim a hedge on a Saturday. Even then, the work was done by mid-afternoon, and the drinking started soon after.

Women certainly moved more than their husbands. *Someone* had to shop and prepare food for all of us baby boomers, and those ranch houses didn't clean themselves. But it's not like they were taking daily Pilates classes.

Research now shows that our generation probably doesn't move less than our parents'. A 2009 study in the *American Journal of Clinical Nutrition* calculated how much food we had available in the 1970s versus the 2000s, subtracted the amount that's thrown out or wasted, and showed that weight gain correlates pretty well with the higher volume of food we eat. If anything, their data suggest that we probably move more now; otherwise, the average American adult would be about five pounds heavier.

Moreover, it takes a *lot* of movement to counteract all that food. Harvard researchers reported in the *Journal of the American Medical Association* that middle-aged women who gained fewer than five pounds over a thirteen-year period averaged about sixty minutes a day of exercise.

That leaves us with one remaining suspect in the fattening of our generation.

NEW RULE #19 • Tasty food makes it too easy to gain weight, and too hard to lose it.

Weight-loss researchers long ago gave up on the idea that all members of a species react to food in the same way. When they study mice or rats, they genetically modify them to make

them more or less susceptible to whatever stimulus they plan to administer. They can't modify humans, but that doesn't mean we're all the same to begin with. An exercise study I quoted in [Chapter 4](#) divided subjects into "responders" and "nonresponders." It works the same way with nutrition. Researchers know that some people simply respond to food with less inhibition or satiety than others. They're hungrier, and they eat more before their appetite-control mechanisms kick in.

So which are you? Come on, you know. If you sometimes lose control of yourself when eating, gain weight easily, and hang on to everything you've gained, then you're the human equivalent of one of those obesity-prone lab animals. It's what you are, and it's what you'll always be. Someone who's obesity resistant, like me, will still gain weight when we eat highly palatable food without restraint. But we'll also lose it when we stop eating the things that made us fat. I know it's not fair. As Denis Leary said, "Life sucks, get a helmet."

NEW RULE #20 • every pound you don't gain is one you don't have to worry about losing.

Ask a weight-loss researcher what works for people genetically susceptible to weight gain, and if she's honest, she'll say something like this: "Don't gain weight in the first place." If it's too late for that, then you're stuck with the same old advice you've always gotten from people like me: Burn as much energy as you can with your training program, and modify your diet to take care of the rest.

You know what not to eat. You know that highly palatable foods—those engineered to contain unnatural amounts of sugar, fat, and salt—are both irresistible and unsatisfying. You can't stop eating them once you start. (Most of us are old enough to remember the Lay's potato chip ads, which used their inability to satiate *as a selling point*.) That's true for everyone. Whether we're talking about snack foods, Big Gulps, movie-theater popcorn, big-chain pizzas, or french fries, we know we can't stop once we start. The only strategy that works is to avoid those things entirely.

Slightly less obvious is the need to avoid foods that are your personal triggers. A trainer I interviewed for a magazine article advises his clients to “know your Kryptonite.” For me it’s pancakes, donuts, and all the other stuff that falls under the “dessert for breakfast” rubric. I wake up hungry, and if sweets are an option, I’ll eat far more than I can burn off with any amount of activity, including Alwyn’s workouts. For someone else, it might be a couple of drinks. Alcohol is only mildly associated with weight gain, if at all, but its reputation for lowering your inhibitions is well deserved. If your night of drinking typically concludes at the nearest White Castle, the problem isn’t really the sliders and cheese fries. You wouldn’t end the evening there if you hadn’t started at the pub.

Two more ways to control your environment:

- *Use smaller plates, bowls, glasses, and cutlery.* If you’re lucky enough to inherit your great-grandmother’s china and silverware (the kind made from actual silver), you can’t help noticing how small it is, compared with the stuff you bought last year at Pottery Barn. It was designed for smaller people to use for smaller servings. Brian Wansink, Ph.D., a professor of marketing and applied economics at Cornell, has shown in numerous studies that you eat more when you’re served a larger portion, even if you don’t like the food. Flipping that around, the smaller the plate you use, the bigger any portion looks.
- *Don’t leave food where you can see it.* Wansink’s studies have also shown that you eat less when food is kept out of sight, even if you know exactly where you put it.

My big points are these:

1. You can’t change your appetite, or your propensity to store excess calories. That’s in your DNA. But even the biggest appetite has brakes, including a complex system of hormones that produce feelings of fullness and satiety. Your job is to avoid the things that have been engineered to override those appetite-control mechanisms.
2. Increasing your physical activity can certainly be part of the solution, even if lack of movement isn’t necessarily the

problem. It's not your only tool for weight management, but everyone agrees that it's an important one.

3. The biggest wild card is your behavior, especially your ability to avoid the situations in which you know you'll overeat. This is so important, and the subject of such intriguing new research, that it deserves its own chapter.

Your Enemy, Yourself

IF YOU HAVE WEIGHT TO LOSE, I assume you've made multiple attempts to lose it. You've tried at least one or two structured diets, but most often your goal was simply to eat less while exercising more. Each attempt, though, was tripped up by the fact you got too hungry to remain on the diet. Your body demanded more food. Appetite is the steroid-enhanced bully of physiological functions. It's the New York Yankees, Manchester United, GE, and Apple all rolled into one. No amount of self-control can keep hunger at bay forever. It wins almost every time.

Eating is what social-science researchers call an "automatic behavior." You can choose not to smoke or hang out in meth labs, but you can't choose not to eat. Almost all the eating we do is habitual, a product of both routine and necessity. Some of us are better or worse at forming new habits and routines, or at breaking the old ones. But for anybody, breaking one habit to establish another is a stressful process, and each of us has a limit to the amount of stress we can tolerate.

It's one thing if the habit is as simple as exchanging one breakfast cereal for another that has less sugar and more fiber, especially if it's an even swap in terms of calories or satiety. Making the change involves nothing more taxing than getting rid of the old one and remembering to buy the new one instead.

Dieting is something else entirely. The goal is to eat fewer calories, which is tremendously stressful all by itself, especially as the calorie deficits accumulate and your body responds by adjusting your metabolism. On top of that, you're simultaneously changing a series of eating behaviors: more meals, less food at each meal, different food, more prep time.

You can't just *eat* anymore. You have to stop, think, plan, prepare.

At the same time, you're probably changing your workout routine—another form of stress. I try to be as clear as possible about how challenging Alwyn's routines are. That's by design. These are *training* programs. The entire point is to get your body to do something it doesn't currently do, or do something better, or at minimum do something differently. If it's a singular stress, something you impose on yourself three times a week with plenty of time to recover in between, I predict you'll be happy with the results. If the workouts are part of a series of stressful changes to your normal routine, you may not last long enough to see the payoff for all your work.

Which bring us to the next two rules.

NEW RULE #21 • Self-control, like muscle strength, can improve with training.

That's the good news. Unfortunately...

NEW RULE #22 • Weight management has little to do with self-control.

That's the surprise finding of a 2011 research review in *Personality and Social Psychology Review*. One of the coauthors is Roy F. Baumeister, Ph.D., a psychology professor at Florida State University, whose groundbreaking studies into self-control have shown just how important it is. People with the best self-control, the review notes, enjoy life the most, and have the most successful lives. Flipping it around, the people with the least self-control have the most problems. They're more prone to drink, smoke, commit fraud, drive without using a seat belt, and go online to post negative reviews of books they haven't read. (I just made up the last one. I'm sure it's true, but I can't back it up with data.)

So, given all these commonsensical implications of having versus not having command over your thoughts and behaviors, you'd assume that there's a strong correlation between self-control and weight management. There isn't. The correlation is just 17 percent. That's still something, but it's not close to what most of us expect. By contrast, there's a 36 percent

correlation with success in school and work, and a 33 percent correlation with personal well-being. This appears to be the bottom line: People with high self-control are more likely to do well in school, have successful careers, and feel good about their place in the world than people who lack self-control. But those successful people have the same struggles with their weight as everyone else.

Why? Because eating, again, is an automatic behavior most of the time. We get hungry at predictable times, and the less attention we can pay to what and how we eat, the more we can focus on the parts of life that bring us the biggest rewards. Are you going to jeopardize your job performance so you can spend more time shopping for and preparing food? Are you going to compromise your most important relationships? Or, if you're financially stressed, are you going to spend limited funds on wild salmon when you could get hamburger for a fraction of the cost?

Of course the choices aren't so dire for most of us. One of the benefits of reaching middle age is gaining some stability in work and relationships. You've put in the long hours at the office. You've survived turbulence at home. And let's say you're now ready for another go at a serious weight-loss plan. You understand that your only shot at long-term success is to make permanent changes to your automatic eating behaviors, and you're willing to do that. What now?

NEW RULE #23 • A weight-loss plan is good for six months, max.

Through many years of reading and puzzling over weight-loss research, one trend shows up in all the long-term studies I can recall. The best results occur in the first six months. After that, study subjects inevitably start to regain their weight. It's not because they aren't trying hard enough. They're just hungry. Or they're sick of whatever the diet forces them to eat. Or they want their old life back. Or some combination.

Six months is also long enough for *adaptive thermogenesis* to kick in. This is a well-known physiological mechanism that I've described several times without naming. Your metabolism, in response to a prolonged calorie deficit, slows

down. Your body uses less energy throughout the day. Exercise becomes more efficient, meaning your muscles use fewer calories to accomplish the same thing. Everything is primed to prevent further weight loss and to regain what you've already shed. If you've lost a significant amount—10 percent of your initial body weight—your metabolism has probably declined 15 percent.

It may not even take six months. Here are two more signs that you've gone as far as you can with a diet:

- *Weight loss has stopped, or slowed dramatically.* If you've lost only a pound or two in a month, after experiencing substantial success in previous months, that's your sign to call it quits. Your body is starting to fight back.
- *Your workouts have stopped working.* You aren't getting stronger or leaner, and you might even feel weaker. The problem could be with the program, especially if you haven't changed things up in four weeks or more. But nutrition is a likely culprit, hindering recovery and perhaps causing a loss of muscle tissue.

Any or all of these signs tell you it's time to shift your focus from weight loss to weight maintenance. After all, what was the point of losing it if it doesn't stay lost?

NEW RULE #24 • Weight maintenance requires new strategies and a different skill set.

Weight loss is an outcome goal. You go out of your comfort zone and willingly sacrifice comfort for a specific result. For some, it's easier to cut calories and begin exercising at the same time, as one set of outcome-focused behaviors will reinforce the other. The exercise itself, as noted in previous chapters, doesn't contribute substantially to weight loss. That's almost all diet. Exercise works because you feel good about what you're doing, and by extension you feel good about yourself.

But if you went into your weight-loss program with an all-out focus on the outcome—measured in pounds, inches, and/or sizes—you may be tempted to quit training just as your body

has recalibrated itself to regain all of it, plus some. You couldn't possibly make a bigger mistake.

Exercise becomes the main event when a diet ends and you start eating in a more normal, sustainable way. It shows up in every study as a bulwark against regaining lost weight. Workouts like Alwyn's override the metabolic efficiency of your new, lighter body. Intense weight workouts, combined with a higher-calorie diet, allow you to gain strength and increase muscle tissue. *This is exactly what you want to happen.*

Weight maintenance involves process goals, rather than outcome goals. You may, for example, set a goal of twenty workouts per month, which is one of Alwyn's favorite tactics. Twelve would be strength workouts, and eight would be something else—Spinning classes, hiking, yoga, sports. Whatever your process goal is, focus on hitting that number of workouts without fail.

The following process goals linked to successful weight-loss maintenance have shown up in research from Penn State Hershey Medical Center, as well as the National Weight Control Registry:

- *Weigh yourself regularly.* It doesn't have to be every day, but it has to be something you monitor frequently. Your instinct is to stop weighing yourself once you realize you're no longer losing weight. Adjust your expectations, and celebrate each day that the scale hits the same number. If it shows something slightly higher, tighten up your diet until it goes back down. It's a lot easier to lose one pound than ten.
- *Drink lots of water.* Whatever effect water has on weight or metabolism is mild, if it's even measurable. But as a habit, drinking water throughout the day reminds you that you're still focused on the process of weight control.
- *Eat the same number of meals each day.* There's no magic number of meals. It could be four, five, or six—whatever works best for you. You just have to be consistent.
- *Question, quantify, qualify.* Data from the National Weight Control Registry is kind of depressing. People who

successfully maintain a reduced weight typically eat low-fat, low-calorie, and low-sugar food. What does that even leave, besides chicken breasts and broccoli? But I'm not sure those factors matter as much as the fact that they stop to think about what they eat, which seems counterintuitive: If eating is an automatic behavior, how can you quantify everything you eat? You can't, unless quantification itself becomes automatic. And really, you have to worry only about stuff you haven't eaten before. Even then, you don't have to deprive yourself of everything. You just have to slow down long enough to understand what you're about to eat, and ask why you're eating it. The answer might be, "Because it looks good and I really want it." Great. Just make sure you ask yourself the question, and give yourself an honest response.

When the Going Gets Weird, the Weird Turn to Protein

BACK IN 2009, the PBS show *Nova* debuted a brilliant three-part series called *Becoming Human*. In part three, “Last Human Standing,” the show explained why our species, *Homo sapiens*, outlasted the Neanderthals. Neanderthals had all of Europe to themselves for hundreds of thousands of years, with all the big game they could hunt down and kill. Their fossilized teeth and bones show that our Neanderthal cousins ate meat, and pretty much nothing else. Granted, there wasn’t a lot of vegetation during the many ice ages they endured. But even when things thawed out, there’s no evidence they had interest in anything that grew from the ground or swam in the rivers and seas. In a way, it’s hard to blame them. They needed an estimated 5,000 calories a day to sustain their heavily muscled bodies and full-contact hunting style. (They got right up on their prey and took them down with spears; as a consequence, most Neanderthal skeletons show traces of multiple fractures.)

Back in Africa, meanwhile, early *Homo sapiens* were pushed close to extinction by a drought that turned most of the continent to desert. Small, isolated bands of humans made a last stand on the coasts, where a remarkable change occurred some 70,000 years ago. Humans adapted, but not just to their immediate circumstances. They adapted to change itself. They learned to gather and cook shellfish, which required not just new tools but also a more sophisticated understanding of their environment. They hunted small game, which required new weapons and strategies. They gathered and ate a wide variety of roots and berries.

When the drought ended, these newly empowered humans worked their way back across the continent. Some migrated to Europe, others to Asia. Wherever they went, other human species quickly became extinct. Our ancestors could reproduce faster and more successfully (presaging our own baby boom by several dozen millennia), and they could find ways to thrive in almost any environment.

Moreover, humans learned to manipulate those environments, even to the point of self-destruction. For reasons unknown, our big human brains have from time to time proven incapable of thinking far enough ahead to avoid deforesting our habitats or hunting our prey to extinction. Today we have a food chain manipulated to give us fewer foods produced in larger quantities, at clear cost to human health.

So how do we resist? One increasingly compelling and popular answer is to look back to our cave-dwelling forebears, who saved our species from extinction by adapting to a lean but nutritious diet: meat, fish, eggs, fruits, seeds, and vegetables, along with some grains and tubers. It's relatively low in carbohydrates, but not religiously so. If we've learned anything from the unrelenting expansion of American waistlines during our own lifetime, it's that there's no simple explanation for how we got here, and no simple path back to a normal-sized population.

Low-fat and low-carb diets fail for most people because they're too restrictive. Low-calorie diets don't work for long because few of us can voluntarily deprive ourselves of the feeling of fullness that comes with a hearty meal. As explained in [Chapter 20](#), it's really hard to make anything work beyond the first six months.

Moreover, as our friend John Berardi, Ph.D., has noted, most people don't have the time or interest to sort out the food fights that get played up in the media day after day. Berardi's company, Precision Nutrition, counsels a broad spectrum of dieters (including people who're trying to *gain* weight). Everyone has too much information, and few of us know what to do with it, which is why he estimates 60 percent of his

clients struggle to follow any diet plan. For their benefit—and for ours—he simplifies every good weight-loss plan down to five simple concepts:

1. *You must eat less.* Don't believe anyone who says you can eat all you want as long as you avoid one type of food. You have to find a way to eat fewer total calories without triggering your body's anti-starvation mechanisms.
2. *You need more protein.* Your body can thrive with relatively little protein, as long as it has plenty of everything else. When you reduce everything else, you need more protein. Protein fills two enormously important roles during weight loss: It increases satiety, so you feel full longer between meals, and it takes much more energy to process than carbs or fat. Your body burns as much as a quarter of its dietary protein during digestion. Finally, since much of your body is made of protein (about 20 percent of your muscles, heart, and liver, and 10 percent of your brain), a higher-protein diet puts your body into an anabolic mode, one that builds tissues rather than breaking them down.
3. *Decrease carbs.* It's not that every carb is bad. We can thrive on a wide range of fruits, vegetables, seeds, grains, and roots, as well as the carbs found in dairy products. But we all eat more than we need because there's so friggin' much food available. If it's cheap to produce, our food chain gives us too much of it, and we fill up on bread, pasta, rice, corn, and potatoes instead of the things that would help us achieve and maintain a healthier weight.
4. *Increase vegetables.* Vegetables like broccoli, lettuce, carrots, and asparagus provide relatively few calories per unit of volume or weight, compared with energy-dense foods like bread or potatoes. Plus, they provide fiber, which not only contributes to your digestive health (the importance of which we certainly appreciate by middle age), but also works like protein to slow your appetite between meals.
5. *Replace unhealthy fats with healthy ones.* This is a complicated subject, but it really comes down to a fairly basic guideline: Naturally occurring fats in meat, dairy, eggs, fish, and plants are, on balance, good for you in moderate amounts.

When possible, we should choose the leaner, lower-fat versions of those foods, and minimize our use of vegetable oils for cooking and flavoring. It's not because the fats are bad; we just don't need the calories. The fats you want to limit, like soybean oil, are mostly found in prepared foods. The fats found in fish and fish-oil supplements are worth going out of your way to obtain. They were once plentiful in our food chain, and are associated with a long list of cardiovascular, orthopedic, and mood-related benefits. (If you don't eat a lot of fish, taking three to six fish-oil capsules a day is probably a good idea.)

It sounds like five separate pieces of advice—add this, take away that, and mix and match all this other stuff. But really it's one huge yet surprisingly simple concept: The more food you eat that's close to its natural state, the more protein, fiber, and healthy fat you'll have in your diet, with fewer overall calories and a steep drop in carbs and unhealthy fats. You'll also, to the extent it's possible, feel more satisfied with less food.

Easier said than done? Keep reading.

FREE FUEL FOR YOUR METABOLIC FIRE

Billy Beck III, owner of BB3 Personal Training and Performance Center in Weston, Florida, has the most straightforward meal-planning system I've ever come across. I won't pretend it's easy to execute, but at the very least it's easy to remember. More important, it gives you a foolproof template to follow Berardi's five nutrition principles. Beck has his clients narrow all food choices down to three types of meals:

- Fire
- Fuel
- Free

A fire meal is a plate that's 50 percent lean protein and 50 percent vegetables (or fruit, or a combination of the two). A fuel meal is one-third lean protein, one-third vegetables, and one-third high-energy carbs. Lean protein can be meat,

poultry, fish, or eggs. Vegetables, for this discussion, include all the colorful stuff (plus cauliflower), but not potatoes and other tubers. Those fall into the category of high-energy carbs, along with grains, including rice and corn.

A free meal is something you eat because you really want to. There are no rules, except that it applies only to that one meal. If a free meal turns into a day of unrestrained eating, or a weekend, the plan won't work.

Here's how simple it is:

Grill a steak and some asparagus, and it's a fire meal. The steak can be bigger or smaller to suit your appetite. Add a baked potato or a grilled ear of corn and it's a fuel meal.

You don't have to grill the steak. Broil it, bake it, boil it—it's still a steak. (Unless you dip it in batter and fry it. At that point it's a mutant blend of nutrition and anti-nutrition, and a threat to life as we know it.) Of course it doesn't have to be a steak. It can be a piece of fish, a chicken breast, a turkey burger.

The vegetables can be whatever you like, prepared however you like.

You can use the system dining out. At Ruby Tuesday, just to pick one, you can get a substantial fuel meal by ordering grilled salmon with broccoli and mashed potatoes. The company's website says it's 664 calories, with 46 grams of protein, 35 grams of carbs (including 8 grams of fiber), and 39 grams of fat.

But I mentioned the dreaded C word: calories. How do you manage those? Let's tackle that first, and then I'll show you a basic template for balancing fire, fuel, and free meals, followed by some tasty, easy-to-prepare fire and fuel meals.

CALORIE SLAVES

This is the part of the book where, in the past, I would do two things: First I'd give you a formula for estimating how many calories you need each day. Then I'd tell you to write down everything you eat for three days, go to an online calculator (such as fitday.com), enter each morsel of food, and emerge

with an estimate of your average daily calorie intake. If the first number is smaller than the second, I would tell you to calculate the difference and deduct that many calories from your daily meals.

The first number suggests that a formula based on height, weight, and age can guess how much energy you burn with exercise, digestion, fidgeting, or getting up to use the bathroom. With the second number, you hope that you wrote down everything you ate, that you ate the things you would typically eat (resisting the instinct to clean up your diet to feel better about yourself), and, most important, that you correctly estimated serving sizes of everything you logged and reported. For that matter, you hope that the calorie counts used by the website are accurate, even though different sources report different values for the same foods.

Both numbers tell you something. But I'm no longer confident they're meaningful or helpful. Energy balance is too dynamic, with too many variables.

I think there's a simpler equation, one that requires nothing more complicated than a scale, a tape measure, and some brutal honesty: Are you getting fatter? Has your weight increased in the past year? Two years? Three? Has your waistline, or any other circumference you care about, gotten thicker? How long has it been since you bought new clothes because something you like no longer fits?

Now you have a data point that matters. If you're getting fatter, you have an energy surplus—a mismatch between what you eat and what you burn. If your weight and everything else has been stable—regardless of *where* it stabilized—then you're in energy balance. Lost weight recently? You have (or had) an energy deficit.

Each situation requires a different strategy.

If you're in energy balance: I recommend doing Alwyn's workouts for a month before making any major changes to your diet. Clean it up where you can, but don't deliberately eat a lot less. See what the workouts do without a diet overhaul. You won't lose a

lot of weight from a ramped-up exercise program, but if you lose some, get stronger, and feel better without feeling hungrier, then you know your body responds to training. You don't need to cut a lot of calories to see results.

If you're gaining weight: I recommend starting a reduced-calorie diet along with the workouts. The workouts alone may stabilize your weight, but they're unlikely to create a negative energy balance unless you get control of your diet. You need to eat less, which, unfortunately, may affect your performance in the weight room. But you need both interventions to reverse your energy surplus.

If you're losing weight: In the early stages of a successful weight-loss program, the last thing you want to do is pivot away and try something else. You're already changing your exercise routine (assuming you were doing something else before you switched to NROL). The key for you is to monitor your workout performance along with your mood, energy level, and anything else that could be related to nutrition. A lack of steady, measurable progress from week to week, despite your best effort in the gym, suggests you aren't recovering enough between workouts. That, in turn, suggests you aren't eating enough. Alwyn designs every element of his training system with the idea that his clients or readers will work hard and then recover adequately. You won't get the results you want from an NROL program if your diet has left you depleted.

Beck's fire-and-fuel meal-planning system offers solutions for all three situations.

BURN NOTICE

In a moment I'll show you some easy ways to create fire and fuel meals. You'll see how a fire meal can easily become a fuel meal, and how you can expand the portions of any meal to accommodate a bigger body and a more robust appetite.

How you balance each type of meal depends on your goals, but we'll start with two givens: You plan to eat four meals a day (even if you eat just three, or as many as six, go along with the example for now), and you won't go more than four hours between meals. We'll say breakfast at eight a.m., lunch at noon, a mid-afternoon meal at three or four p.m., and dinner at six or seven. Some will be bigger or smaller; it doesn't really matter at the moment.

Your current state: energy surplus

You've been gaining weight, and need to reverse it. On the days you do one of Alwyn's workouts, you might have two fire and two fuel meals. Ideally you'll have the fuel meals before and after your workout. When you train matters, of course. Those who work out first thing in the morning aren't going to get up two hours early to prepare a fuel meal and give it time to digest. A fuel meal right after your workout is the best choice. Have the second fuel meal whenever it works for you.

On non-workout days, you might choose to have three fire meals and one fuel. You'd have the fuel meal whenever you're most likely to need it—breakfast, lunch, or dinner.

Starting out with more fire than fuel meals is aggressive, and it might end up being a lot less food than you're used to having. That's where the free meals come in handy. Beck has his clients eat three free meals a week, which is a good starting point for us. It's probably best to plan one or two of them, especially when you have a party or special night out on the calendar. At the same time, it's good to keep at least one in reserve for the times when you just need to break the rules and fill up on something you really miss when you're adherent. Pizza. Pasta. Chicken wings. Chocolate cake. Whatever it is, have it, enjoy it, brush your teeth, and return to the plan.

Your current state: energy balance

I suggest an equal balance of fire and fuel meals, with three free meals each week. It probably won't be more food than you currently eat, but it could be less. Monitor your hunger and energy levels. If you feel so hungry you're tempted to

have a free meal every day, adjust portion sizes until it feels like a normal amount.

After a month of Alwyn's workouts, reassess. If you're losing weight and/or inches (or at least centimeters), and you feel good, stay the course. If you feel good but aren't losing anything you can see or measure (assuming this is your goal), switch to three fire and one fuel meal on non-workout days. Look for strategic ways to cut back slightly on portions in your fuel meals.

Your current state: energy deficit

As I mentioned earlier, you don't want to change anything when your current diet is working. The fire-and-fuel plan may fit that diet, but it may not. If it doesn't, you can always switch when your diet quits working, or when you hit the six-month mark, as discussed in [Chapter 20](#).

For the moment, let's suppose that you're using fire and fuel meals, and you're losing weight steadily. But you aren't getting the results you want from your workouts. You need more food to recover, but not so much that you stop losing weight.

Try adding an extra meal on the days you work out. It could be as simple as a protein shake immediately after your workout, followed by a fuel meal an hour or two later. If the workouts don't get better, and you feel a general fatigue more often than not, you probably need to add more total food to your diet. Start with bigger meals on workout days, which give you more energy to train and a more robust recovery.

FIVE EASY PIECES

I can't cook worth a darn. I've never asked Alwyn about his culinary skills, but given how often he jokes about nutrition quality in his native Scotland (considered the worst in Europe), I suspect they aren't a lot better than mine. That's why I turned to my friend Galya Ivanova Denzel, a trainer and weight-loss coach based in Southern California, who also happens to be a very good cook. The following five recipes are entirely hers.

Remember, these are just examples of what you can do with fire and fuel meals if you have some time and feel like cooking something special. You can use the system with any foods you like, no matter how basic and unadorned, as long as they match the criteria: lean protein and vegetables and/or fruit for a fire meal, with each taking up half the space on your plate; lean protein, vegetables, and high-octane carbs for a fuel meal, with each filling a third of the plate.

BREAKFAST

Coconut Omelet

1 tablespoon coconut oil

4 egg whites

1 whole egg

4 drops natural vanilla extract

1 tablespoon unsweetened coconut flakes

½ cup strawberries

- Heat the oil in a medium skillet over medium heat.
- In a medium bowl, beat the egg whites and whole egg with the vanilla and coconut flakes. Pour into the skillet and cook until lightly browned on both sides. Serve with the strawberries.

337 calories; 21 grams protein; 9 grams carbs (3 grams fiber); 24 grams fat

- For a bigger appetite, make the omelet using 4 whole eggs instead of 1 whole egg and 4 whites.

510 calories; 25 grams protein; 10 grams carbs (3 grams fiber); 41 grams fat

- To make either of these a fuel meal, add a cup of blueberries, which gives you 82 more calories, with 4 grams of fiber.

LUNCH

Lebanese Salad

5 ounces lean lamb or 6 ounces chicken breast

Sea salt

1 teaspoon ground cumin

¼ teaspoon ground cinnamon

1 medium tomato

1 small cucumber

¼ cup cooked chickpeas

½ ounce walnuts (about 7 pieces)

1 teaspoon olive oil

1 tablespoon chopped parsley

- Preheat the oven to 375°F.
- Season the lamb or chicken with salt and the spices, place in a roasting pan, and roast for 20 minutes. (You can also grill it if you prefer.) Remove from the oven and slice the meat.
- While the lamb is roasting, cut the tomatoes and cucumber however you like (sliced, cubed, chopped). Place in a salad bowl and add the chickpeas and walnuts. Toss with the olive oil and parsley. Place the sliced meat on top of the salad.

490 calories; 38 grams protein; 19 grams carbs (5 grams fiber); 28 grams fat

- The calories and fat will vary tremendously, depending on whether you use lamb or chicken. Different cuts of lamb will also vary quite a bit. These numbers are an average of the range between chicken breast (which has very little fat after you remove the skin) and a lean cut of lamb. If you make it heartier, with a bigger piece of lamb or chicken, the range will be even greater.
- To turn it into a fuel meal, add another half cup of chickpeas. That gives you 142 more calories, with 8 grams of protein, 23 grams of carbs (including 7 grams of fiber), and 2 grams of fat.

California-Style Turkey Burger

1 slice bacon

One 4-ounce turkey burger patty

2 cups salad greens

½ cup sugar snap peas

4 or 5 olives

1 teaspoon olive oil

Sea salt

¼ orange

Mustard and/or ketchup (optional)

¼ avocado

2 large lettuce leaves

- Cook the bacon in a medium skillet over medium heat until crisp. Set the cooked bacon on a paper towel, drain the oil from the pan, and cook the burger in the pan. (Or you can grill it if that's easier.)

- While the bacon and burger are cooking, make a salad by combining the salad greens, sugar snap peas, and olives in a salad bowl. Toss with the olive oil and a pinch of salt. Squeeze the juice from the orange over the salad. When the burger's cooked, throw on mustard or ketchup if you like, top with the avocado and bacon, and wrap it all in the lettuce leaves in place of a bun.

582 calories; 39 grams protein; 13 grams carbs (8 grams fiber); 41 grams fat

- You can turn the burger into a fuel meal by serving it in a whole-grain bun. An Oroweat bun (other brands will be different) adds 170 calories, with 7 grams of protein, 32 grams of carbs (including 7 grams of fiber), and 2.5 grams of fat.

DINNER

Peppery Salmon and Greens

Lemon pepper

6 ounces boneless wild-caught salmon

1 cup broccoli florets

½ cup baby carrots

2 cups baby greens

1 ounce slivered almonds

Balsamic vinegar

Sea salt

- Heat a medium skillet over medium heat. Rub lemon pepper to taste into the salmon and cook on both sides until lightly browned and cooked through.
- Meanwhile, steam the broccoli and carrots for 10 minutes. Place in a salad bowl and cool. Add the greens and almonds, then toss with vinegar and salt to taste.

474 calories; 46 grams protein; 18 grams carbs (8 grams fiber); 25 grams fat

- You can make this dish more substantial by starting with 10 ounces of salmon. That adds 66 calories, 24 grams of protein, 5 grams of fat, and no more carbs.
- It becomes a fuel meal with a medium baked potato. That adds 168 calories, with 4.5 grams of protein, 37 grams of carbs (including 4 grams of fiber), and no more fat. (Obviously, a smaller potato has less of everything.)

Shrimp Stir-Fry

1 tablespoon coconut oil

½ cup sugar snap peas

½ cup bell pepper strips (multiple colors if possible)

½ cup broccoli florets

½ cup bamboo shoots

1 cup peeled and deveined shrimp

Sea salt or soy sauce

- Heat the coconut oil in a thin pan or wok, then toss in the vegetables and let them cook for a few minutes, stirring constantly. (Less cooking time leaves them crunchier.) Add the shrimp and salt or soy sauce to taste and cook for 2 to 3 minutes, stirring constantly, until the shrimp are firm and no longer pink.

445 calories; 47 grams protein; 21 grams carbs (including 8 grams of fiber); 20 grams fat

- You can make this a fuel meal by serving the stir-fry over a cup of cooked wild rice (made from 1/3 cup uncooked). To cook wild rice, first soak it in water for 20 minutes, rinse well, then boil with 1½ cups water for 40 minutes. The nutty flavor makes it worth the extra time it takes compared with white or brown rice. It adds 65 calories, with 7 grams of protein, 35 grams of carbs (including 3 grams of fiber), and no fat.

PART 4

THOSE THINGS YOU DO

Wherever You Train, There You Are

BEFORE I TRY TO ANSWER some of the questions that come up with each book in the series, let's review the elements of Alwyn's NROL for Life program:

1. *RAMP*, which combines range-of-motion exercises (improving flexibility and mobility) with agility and overall conditioning.
2. *Core training*, which improves the strength, stability, and endurance of the muscles supporting your lower back and pelvis.
3. *Power training*, which improves your ability to generate force rapidly, and is probably the most overlooked aspect of fitness for those of us who remember watching the 1960s on TV. (I don't know about you, but that was as close as I got to the fun stuff.)
4. *Strength training*, which in addition to building strength helps you develop all the aforementioned fitness qualities: mobility, coordination, core strength, power, and overall conditioning.
5. *Metabolic training*, which develops cardiovascular fitness, burns a lot of calories in a very short time, and, depending on the exercises you choose, can also improve power, strength, and muscular endurance.
6. *Recovery*, a combination of exercises to improve tissue length and quality, along with nutrition to put your body in an anabolic state, and keep it there as long as possible. You'll build up your muscles and connective tissues after your workout has broken them down.

The most unique feature of this book—the freedom to choose your own exercises—may also be the most confusing.

That's why we provided two complete programs, one each for beginner and advanced lifters, with sample exercises selected.

One of our goals was to head off the question we hear more than any other: "Is it okay if I do X instead of Y?" In the three previous *NROL* books, the answer was "Yes, but only if you understand what you're doing and have a really good reason to make the change." Here the answer is "Hell yes," with just these caveats:

1. **Stick to the category.** If you need a different squat variation, we've provided a comprehensive list. Just don't replace a squat with a pull. Remember Alwyn's Chinese-menu analogy. Don't combine chicken with pork, or rice with noodles, or for that matter white rice with brown.
2. **Qualify for the level.** Alwyn gives you five levels for each exercise category. Make sure you qualify for each level by mastering the one that precedes it. Don't squat with a barbell on your back (Level 4) before you've perfected your form with the body-weight squat (Level 1).
3. **Treat each category as its own challenge.** In theory, it's possible for a beginner to do all Level 1 exercises in Phase One, Level 2 exercises in Phase Two, and Level 3 exercises in Phase Three. But I'd be very surprised if anyone does it that way. Alwyn and I started this book with the idea that each reader has unique challenges. Some advanced lifters may be ready for Level 5 in one category but struggle to get past Level 3 in another. Healthy beginners may rocket past Level 1 exercises in some categories, but stay at Level 1 for a while in others.
4. **Challenge yourself.** Each workout should be *hard*, for lack of a better word. It's okay to breeze through one or two training sessions while you sort out which exercises are best for you. I guarantee no one can figure it out on paper; you have to get into the gym and decide if the exercises you choose actually work the way you think they will. You'll tinker constantly. Just keep in mind that these are still *training* sessions. You're training your body to be stronger, faster, leaner, more athletic, more durable, more mobile. You can't do that if you take it

easy on yourself. You have the power to change your body, but only if you're willing to use that power.

Now let's turn to the other frequently asked questions.

“I don't understand the workouts.”

What about them is confusing, other than “everything”? A quick review of the system:

- The program has three phases. You do only one at a time—Phase One, followed by Phase Two, followed by Phase Three.
- Each phase has two workouts, A and B. This trips up a lot of people, but it's simple. You start each new phase with Workout A. Two or three days later, you do Workout B. Then you alternate A and B until you finish the phase. You'll never do both A and B on the same day, or even on consecutive days. (You should need 48 to 72 hours between workouts for recovery.) Most of you will do A and B four to six times each before you finish that phase and move to the next phase. You'll have a different Workout A and Workout B in the new phase, but the idea is exactly the same.
- Each workout starts with RAMP (the warm-up routine shown in [Chapter 15](#)) and ends with recovery ([Chapter 18](#)). In between you'll have a series of program components (core, power, strength, etc.), which you'll perform in the order shown in the workout templates in [Chapter 17](#).
- Most of those components are broken down further into exercise categories. In core training, for example, you have stabilization and dynamic stabilization categories. In strength training, you have squat, hinge, lunge, single-leg stance, push, pull, and combination exercises. In power training, you have movements that primarily use upper- or lower-body muscles. But you'll do only one exercise per category per workout. All you need to focus on is that one exercise. Work to get better and stronger each time you do it. When it's time to advance to another exercise in that category, focus on the new one until it's time to change again.
- The exercise categories are further divided into levels. Each category has exercises listed from Level 1 to Level 5. Some go

beyond Level 5, but that's the last thing you need to worry about if you're just starting. Sometimes you have options within a level. But you're still focusing on one exercise at a time. Pick one and do it until you're ready to move up to the next.

- Some exercises appear in pairs: 1a and 1b, 2a and 2b. This is a standard feature of workouts in books, magazines, and websites; it's an efficient and effective way to train: Do a set of exercise 1a. Rest. Do a set of 1b. Rest. Do your second set of 1a. Rest. Do your second set of 1b. Rest. If you need to do third or fourth sets of each, do it. Then move on to 2a and 2b.

If you're still confused, or just want some advice on which exercise to choose, go to forums.jpfitness.com. There you'll find forums for each book in the *NROL* series. Some of the forum veterans—a mix of trainers and enthusiasts—will have advance copies of *NROL for Life*, and will be able to help you with your questions.

“What’s with all the negativity about cardio exercise? Are you telling me I should quit running?”

No. Or, as Darth Vader memorably emoted, “Noooooooooooo!” Alwyn and I aren't runners, but lots of *NROL* readers are. In fact, both of this book's models are runners (Dan is a triathlete), as are the book's editor and our agent. Rachel Cosgrove, Alwyn's wife, has done an Ironman, and was on a national triathlon team. Their gym, Results Fitness, has a running team that participates in local distance races.

Human survival depended on the ability to travel long distances on foot, while also performing feats of strength, power, and athleticism. We all want to have a mix of endurance and strength.

Alwyn and I make three big points about endurance training:

1. Running is not an entry-level activity for someone who's currently sedentary. The heavier you are, the more stressful it is. As Alwyn has often said over the years, you don't run to get fit. You get fit, then run.

2. Endurance activities are more specialized than most people understand. It takes years to develop a cardiovascular system capable of delivering oxygen and nutrients to your working muscles for hours at a time during a moderate-intensity activity like running. It takes years to develop the muscular endurance and neural efficiency to cover long distances. But we live in a world in which running a marathon is considered the pinnacle of athletic achievement, and that convinces a lot of people to push their bodies past the breaking point.
3. Traditional, steady-pace endurance exercise isn't a necessity for health, fitness, or weight control. You can achieve all those things with the NROL for Life training program.

Running, in other words, is great for runners. We don't want to talk anyone out of doing something they enjoy and consider beneficial. Alwyn's program is ideal for those (like me) who want to focus on lifting and have no interest in running farther than the mailbox. But it's also terrific for those who enjoy both strength and endurance exercise.

Final word: We're fitness professionals, and we're pro-fitness. We're in favor of everyone doing physical activities that they love. If all you love is lifting, Alwyn's programs give you a way to develop every important fitness quality without leaving your primary workout space. But the bigger goal is to provide you with a program that enhances every aspect of your life, helping you do more inside and outside the weight room, and do it better.

“How do I incorporate other activities with these workouts? Can I do two things on the same day?”

We all have to make choices. The older we get, the harder it is to pursue multiple fitness goals with similar intensity.

Recovery becomes an ever-more-pressing concern. However, some types of exercise work better as complements to strength training than others. Anything that involves low-intensity, low-impact movement seems to help with recovery. An ideal training schedule might be three days a week of NROL for Life workouts with something else in between—yoga, Spinning, swimming, cycling, sports practice. If it gets blood

into your muscles, and puts your joints through a range of motion, it'll probably help.

Conversely, a high-stress workout—competitive sports, interval training, long-distance running or cycling, full-contact martial arts—requires its own period of recovery. Not only are your muscles and joints stressed, your brain is fried.

As for two types of exercise on the same day, sure, it can work, as long as the two things don't compete in terms of the energy systems they use. Alwyn's workouts will push your anaerobic systems, the ones that require short bursts of hard work followed by a period of recovery to catch your breath. You can probably combine that with exercise that relies on your aerobic energy system, in which you don't push yourself to exhaustion. If you do them back to back, it's best to do the strength workout first, since that requires the most energy and focus.

“How come there aren't any arm exercises in the program?”

There's nothing wrong with biceps curls and triceps extensions. They obviously work your arm muscles. But so do the pushing and pulling exercises, which use your biceps, triceps, and forearms in conjunction with the rest of your upper-body muscles. If you want to target them more directly, you can use an underhand grip on most pulling exercises, which will give your biceps direct stimulation, and move your hands closer together on push-ups and presses, which makes your triceps work somewhat harder. I don't think there's any need (beyond a medical or therapeutic reason) to do specific exercises for your forearms. The gripping muscles will be tested early and often with deadlifts, pulls, and some of the lunges and single-leg exercises. The core, power, and combination exercises offer even more chances to use them.

Would your arms get a little bigger if you added some curls and extensions to the program? Probably. The open question is whether they're worth the time. In a 50-minute workout, will you be better off using 10 minutes for arm exercises, targeting small muscles you've already used in multiple exercises? Or

would you get better results by doing drills that make you stronger, leaner, and more athletic?

Let's be honest: A middle-aged guy in a gym wants to feel good about himself, and he's more likely to get that with pumped-up biceps than with quads turned to Jell-O by front squats and reverse lunges. An overweight woman wants to attack the pockets of fat that make it embarrassing or uncomfortable to wear her favorite outfits. She may understand, on an intellectual level, that no volume of triceps kickbacks will spot-reduce arm fat, just as she understands that crunches won't really make her belly smaller. But she does them anyway, because if we're going to work on a problem, we want to attack it directly.

This is one time when the indirect approach will be far more effective for most readers. An overweight lifter with a 40-inch waist will probably have bigger arms than a lean lifter, but whose arms look better? A woman looking to drop a size or two will get there faster with total-body training that employs her biggest muscles, the ones that use the most calories and push the metabolism as far as it can go.

“What do I do when I finish the program?”

Repeat it. Go back to Phase One, and start over again with one or more of these changes:

- Do more advanced exercises.
- Use heavier weights.
- Increase the volume. If you did one set of 15 reps in Phase One, make it two sets of 15. If you did two sets of 10 in Phase Two, try three sets of 10.
- Go faster. Once you're comfortable with your form on an exercise, try to increase your repetition speed.

Advanced lifters can also adjust the reps to allow more aggressive strength and size development. You can try it like this:

	Phase One: Transform	Phase Two: Develop	Phase Three: Maximize
First time	1–2 sets, 15 reps	2–4 sets, 10 reps	2–3 sets, 12 reps
Second time	2–3 sets, 12 reps	3–4 sets, 8 reps	2–3 sets, 10 reps
Third time	2–3 sets, 10 reps	4–5 sets, 5–6 reps	2–3 sets, 8–10 reps

If you go through the program a fourth time, you can adjust the sets and reps within each phase, so you do more sets with heavier weights on squats, deadlifts, presses, and pulls, and fewer sets with lighter weights on lunges and single-leg-stance exercises. As long as you hit all the movement patterns and improve something from one week to the next, the workouts should continue working for you.

“What about nutritional supplements? Should I use them?”

I use:

- protein supplements following my workouts (about 40 grams of protein mixed with water), and occasionally on non-workout days
- fish oil (3 to 6 pills per day is a standard recommendation)
- creatine

Since this is the first time I’ve mentioned creatine, I should explain my backstory: I used it off and on in the early 2000s, when I was training for maximum strength. I always got a boost when I used it, but eventually my supply would run out and I’d go on with my training without giving it any thought. In early 2011, I was struggling to regain strength following hernia surgery a few months before. I started using creatine again, putting 5 grams into my post-workout shakes. Within a couple of weeks I was making extraordinary gains, which continued for two or three months before things leveled off.

It wasn’t like I was unaware of the benefits. I’ve written and edited articles about creatine and seen the results. If anything stopped me (other than using up my supply and being too cheap or lazy to get more), it was the one side effect: weight gain. You can expect to gain a couple of pounds. It was worth it to me to regain some of the strength and muscle size

I'd lost with the string of injuries that started around my fiftieth birthday.

I don't think there's a final word on whether the lifelong use of creatine will lead to better muscular fitness than you could obtain by lifting and following a sensible diet. Studies in all age groups tend to show short-term effects (although some don't), and as always, individual results are all over the place.

If you want to try it, stick with a basic creatine monohydrate powder. Take 3 to 6 grams a day, mixed in water or in a post-workout shake. More isn't better. Once your muscles are saturated, there's no additional benefit.

Nutritionists often suggest a multivitamin for insurance against deficiencies. I'm not quite sure what deficiencies a typical adult would have with a non-extreme diet (other than EPA and DHA, the two polyunsaturated fats you get in fish and fish oil). We get the most important vitamins and minerals from fruit, vegetables, dairy, eggs, meat, beans, and fortified breads and cereals. (Even though it's best to avoid the highly processed foods in that last category, most of us end up eating some.) If a doctor or nutritionist recommends that you supplement something else—calcium, iron, vitamin D—by all means follow his or her advice.

“I bought your book for my Kindle, and I can't read the charts. What do I do?”

Go to werkit.com. Otto and Aoife Hammersmith design training logs for all the NROL books. You can download blank logs for each workout, print them out, and take them to the gym with you.

“What should I do on the days I'm just not motivated to work out? Work out anyway?”

The key question is, why aren't you motivated? Some possibilities:

ILLNESS, CURRENT OR IMPENDING

A few years ago, I noticed that when I worked out despite feeling off my game, with less energy and focus than usual,

two things happened: I'd have a mediocre workout, and by the next day I'd have cold or flu symptoms. My body tends to be pretty good at fighting things off. But if I pile training stress on top of a pathogen assault, the illness wins. If I listen to my body and take it easy for a day, I give my immune system a chance to work its magic.

That, of course, is a judgment call, and it's going to work differently for each of us. I've heard lots of people say that a workout is exactly what they need to get the juices flowing on the days they feel sluggish.

If you have an illness, it's a much easier decision. Don't go to the gym when you're sick. Forget that old "it's okay if the symptoms are above the shoulders" advice. Even if you work out at home, with no risk of infecting others, you still have a body under stress. Adding more stress just delays your recovery.

TOO MUCH GOING ON IN YOUR LIFE

Someone starting a new program often has a black-and-white perception of training: miss a workout, ruin the program. It's not that way at all. There's no harm in putting a workout off here or there. You don't have to go back to the starting line. At worst you'll need more time to get the results you want. You don't lose everything you've worked to that point to attain.

Even if you need to put the program on hold for a week or two, it won't take long to get your groove back. Yes, that first post-layoff workout may be ugly. Get through it however you can, and then pick up where you left off.

We all have personal business we have to take care of. Some of us can structure our lives so they rarely interfere with our training, but most of us can't. Keep in mind that this is a lifelong pursuit. You don't forget how to read if you go a week without a book, and you don't forget how to lift when life keeps you out of the gym.

BURNOUT OR POOR RESULTS

From time to time I'll hear from somebody who's been doing the exact same thing for years. They write to me because they haven't been getting much in the way of results lately. Lately?

I get bored with a workout in four weeks or less. And yet my correspondents wonder why year four of a program isn't as successful as years one, two, and three.

If you're feeling burned out or unsatisfied, you need to change something. Alwyn and I have done our best to provide you with alternatives. More than that, our goal in *NROL for Life* is to give you the knowledge to come up with your own solutions when the need arises. You now know far more about selecting the right exercises for your body and your goals than the average lifter in your local health club. (You may even be ahead of some of the trainers.)

Whatever your problem is, however it may originate, you owe it to yourself to figure out the solution. Nobody can tell you exactly what it might be. It's like any other part of your life: work, family, friends, leisure. You have to figure out what turns your own gears.

All we know for sure is that we have gears. We have physical mechanisms that need to move. They also need fuel, maintenance, and the occasional replacement part. Point is, they're *your* gears. Maybe they need to move faster than mine. Or slower. Or spend more time turning. Or less. You won't know until you put them into motion and figure out what does and doesn't work.

I'm flattered that you've decided to give these programs a shot. Of course we're confident that they'll work for most people who try them; Alwyn wouldn't risk his reputation on anything less, and I wouldn't risk my livelihood. But that doesn't mean the system is perfect for everybody, or will solve every problem you have. It's a system that works well for Alwyn's clients, and for his coauthor. For you, there's a full spectrum of possibilities, from "this is the Holy Grail of training programs" to "I think I'll try Zumba next."

Just keep this in mind: A system works only if you use it systematically. Again, it's like those other parts of your life—work, family, friends, leisure. You don't keep a job if you show up whenever it's convenient and your effort is random and unpredictable. You can't stay in a relationship if your partner never knows when or even if you'll be home for

dinner. Your friends would back away if you suddenly started calling them every day, and then three months later stopped calling altogether. Even your book club would kick you out if you forced them to read *Pride and Prejudice* one turn and *Jackass: 10 Years of Stupid* the next.

Your body won't fire you or file for divorce or stop returning your texts or change the location of its meeting with other bodies without telling you where it is. Still, those gears of yours perform best with consistent challenges imposed in a predictable pattern. The trick for each of us is to find the right mix of variety, to keep our workouts interesting and productive, and predictable, which ensures we're ready for new challenges when they arise. If it's too easy, you get nothing out of it, and if you hit your body with challenges for which it's completely unprepared... well, maybe you *should* read *10 Years of Stupid*.

A great training experience sometimes feels like a miracle. It's not. It's a proven system you've chosen to use while adjusting it to address your own abilities, limitations, and goals. That said, if this system works beyond your expectations, feel free to describe it as miraculous to your colleagues, family, friends, and book club, and accept our gratitude when you do.

Appendix

The Rules

These are the rules from all three NROL books, starting with the basic rules of exercise:

1. Do something.
2. Do something you like.
3. The rest is just details.

These are the original New Rules of Lifting:

1. The best muscle-building exercises are the ones that use your muscles the way they're designed to work.
2. Exercises that use lots of muscles in coordinated action are better than those that force muscles to work in isolation.
3. To build size, you must build strength.
4. To build size and strength, you must train hard but infrequently, with plenty of recovery time between workouts.
5. The goal of each workout is to set a record.
6. The weight you lift is a tool to reach your goals. It is not a goal by itself.
7. Don't "do the machines."
8. A workout is only as good as the adaptations it produces.
9. There is no magic system of exercises, sets, and reps.
10. Don't judge a system by the physique of the person promoting it.
11. You'll get better results working your ass off on a bad program than you will loafing through a good program.

12. Fast lifting is not more dangerous than slow lifting.
13. A good warm-up doesn't have to make your body warm.
14. Stretching is not a warm-up.
15. You don't need to warm up to stretch.
16. Lifting by itself may increase your flexibility.
17. Aerobic fitness is not a matter of life and death.
18. You don't need to do endurance exercise to burn fat.
19. When you combine serious strength training with serious endurance exercise, your body will probably choose endurance over muscle and strength.
20. If it's not fun, you're doing something wrong.

These are the New Rules of Lifting for Women:

1. The purpose of lifting weights is to build muscle.
2. Muscle is hard to build.
3. Results come from hard work.
4. Hard work includes lifting heavier weights.
5. From time to time, you have to break some of the old rules.
6. No workout will make you taller.
7. Muscles in men and women are essentially identical.
8. Muscle strength is a matter of life and death.
9. A muscle's "pump" is not the same as muscle growth.
10. Endurance exercise is an option, not a necessity, for fat loss.
11. "Aerobics" doesn't mean what you think it means.
12. Calorie restriction is the worst idea ever.
13. Traditional weight-loss advice is fatally flawed.
14. To reach your goals, you may need to eat more.
15. On balance, a balanced-macro diet is best.

16. Protein is the queen of macronutrients.
17. More meals are better than fewer.
18. Don't do programs designed for someone else's needs.
19. You don't need to isolate small muscles to make them bigger and stronger.
20. Every exercise is a "core" exercise.
21. The biggest blocks to your success could be the ones you've erected.

These are the New Rules of Lifting for Abs:

1. The most important role of the abdominal muscles is to protect your spine.
2. You can't protect your spine by doing exercises that damage it.
3. The size of your abdominal muscles doesn't matter.
4. The appearance of your abs doesn't matter either.
5. The core includes all the muscles that attach to your hips, pelvis, and lower back.
6. The lats are part of the core.
7. The crunch is not a core exercise.
8. Your spine is already flexed, and flexing it more just makes it worse.
9. Stability in your lower back depends on mobility in the joints above and below it.
10. You can't out-exercise a hunger-inducing lifestyle.
11. Your computer is the enemy of your abs.
12. TV and video games are almost as bad as your computer.
13. You can sleep your way to a better body... or not sleep your way to a bigger belly.
14. "Convenience" food is designed to make you eat more convenience food.
15. Processed food makes you stupid and depressed.

16. All that said, calories still matter more than anything else.
17. Don't do a complicated intervention unless you've tried all the simple ones.

Finally, these are the New Rules of Lifting for Life:

1. The older you are, the more important it is to train.
2. The goal of training is to change something.
3. Your body won't change without consistent hard work.
4. Hard work doesn't mean beating the crap out of yourself every time you train.
5. You're not a kid anymore. Don't train like one.
6. Decline is inevitable.
7. How fast you decline is up to you.
8. You are not a rural Okinawan.
9. Everyone is injured. But not every injury hurts.
10. If an activity hurts, stop doing it.
11. If it hurts after you do it, it may or may not be a problem.
12. Never try to fix an acute injury by stretching it.
13. When in doubt, refer out.
14. Exercise burns calories. Sometimes that's a problem.
15. "Fat-burning" exercise doesn't always burn fat.
16. Alwyn figured this out a long time ago.
17. It's actually kind of hard to gain weight.
18. We don't really move less.
19. Tasty food makes it too easy to gain weight, and too hard to lose it.
20. Every pound you don't gain is one you don't have to worry about losing.
21. Self-control, like muscle strength, can improve with training.
22. Weight management has little to do with self-control.

23. A weight-loss plan is good for six months, max.
24. Weight maintenance requires new strategies and a different skill set.

Notes

Chapter 1

Year of my birth: 1957 is generally acknowledged as the height of the post–World War II baby boom. The 4.3 million recorded births in 1957 were a U.S. record until 2007, when 4.317 million were born.

Decline with age: I got this from countless sources—individual studies as well as textbooks. I probably referred to these two more than any others: Melov et al., “Resistance exercise reverses aging in human skeletal muscle,” *PLoS ONE* 2007; 2 (5): e465; and “Strategies for Aging Well,” by Christina Geithner and Diane McKenney, in the October 2010 issue of *Strength and Conditioning Journal*.

Pet peeves: In order of annoyance, my personal list would go something like this:

1. *Blocking the dumbbell rack to do shrugs, curls, or worst of all, lateral raises.* I have no idea why people do this when they could just as easily step back a few feet and not block the rack. I also have no idea why the worst offenders are advanced male lifters who should know better.
2. *Squeezing me out of my implied exercise space.* I absolutely hate it when I’m warming up or doing core exercises on the floor and someone comes along and drops their foam mat right in front of me. In my gym they do it so they can see the clock or the nearby TV on the wall. It prevents me from doing any exercise that involves taking a step forward, which usually means I have to go somewhere else to finish that part of my routine, even though I was using the space first.

3. *Turning iPod music up so high I can hear it ten feet away.* I'm one of the last holdouts against plugging your ears in the gym. I hit on the reasons why it could be dangerous for newbies in [Chapter 1](#). For people who aren't a danger to themselves or others, my only issue with personal music is that it should stay personal. I shouldn't have to listen to it. I know I sound like a cranky old fart when I complain about this. So I'll also note that when I've asked people to turn down their music, they're always surprised to learn that I can hear it, and no one has ever taken my request the wrong way.

I could list one more annoyance—talking on cell phones in the weight room—but it's everyone's pet peeve, and I'm sure I don't need to explain why.

Chapter 2

Strength decline in elite weightlifters: "Aging Alibis," by James Krieger and Dan Wagman, *Pure Power*, March 2003.

Looking older: Gunn et al., "Why some women look young for their age," *PLoS ONE* 2009; 4 (12): e8021. (This study included a brief overview of aging and appearance for both genders, which is where I got the data about balding and graying.) Guyuron et al., "Factors contributing to the aging of identical twins," *Plastic and Reconstructive Surgery* 2009; 123 (4): 1321–1331.

Rural Okinawans: You can find a good overview of what we know from longevity research at bluezones.com, which is based on *The Blue Zones: Lessons for Living Longer from the People Who've Lived Longest*, by Dan Buettner (National Geographic Books, 2008).

Jack LaLanne: I wrote at length about LaLanne on my blog: louschuler.com/blog/jack-lalanne-and-the-limits-of-human-mortality. If you go there, you'll find links to several articles and posts I wrote over the years. In a follow-up post (louschuler.com/blog/sports-spelling-and-genes), I have links to news reports about Jack and his brother.

Muscle Beach: I've read so much about Muscle Beach over the years that it's hard to remember what I know from which source. Here are a couple of books that I keep on my shelves: *Remembering Muscle Beach*, by Harold Zinkin with Bonnie Hearn (Angel City Press, 1999); and *Muscle Beach: Where the Best Bodies in the World Started a Fitness Revolution*, by Marla Matzer Rose (L.A. Weekly Books, 2001).

Health-club chains: The company now known as Bally Total Fitness bought up both Vic Tanny's and Jack LaLanne's health-club chains, as well as the old Nautilus chain and others. Interestingly, Bally started as a company that made pinball and slot machines and then branched out into the casino business. From there it began buying up health clubs in the 1980s. The first gym I belonged to, in 1980, was still called Vic Tanny, although by then Tanny himself was long gone from the business.

There's a direct line from Tanny—who expanded his clubs on a pyramid-scheme model that depended on the fees from members of existing clubs to fund construction of new ones—to Bally, which has gotten into trouble multiple times for its rough and deceptive business practices. If you belong to a gym that's part of a chain, and you're frustrated with the way it does business, it's probably not reassuring to know that aggressive marketing and poor customer service aren't an aberration. They're pretty much the traditional business model.

Jeanne Louise Calment: I admit I got this from Wikipedia.

Aging and human performance: This information comes from too many sources to record, including the aforementioned studies cited for [Chapter 1](#). So let me throw a plug in here for a book that was tremendously helpful and that I thoroughly enjoyed reading: *The Athlete's Clock*, by Thomas Rowland, M.D. (Human Kinetics, 2011). I also interviewed Dr. Rowland for a feature in *Men's Health* magazine (September 2011), although I don't think I used any information from the interview in this book.

Mitochondria and telomeres: I mostly used this study: Lanza and Nair, “Mitochondrial function as a determinant of life span,” *European Journal of Physiology* 2010; 459: 277–289.

Lifters rarely use appropriate weights: Although this section refers to a bunch of studies published between 2004 and 2008, these three were the most noteworthy: Ratamess et al., “Self-selected resistance training intensity in healthy women: the influence of a personal trainer,” *Journal of Strength and Conditioning Research* 2008; 22 (1): 103–111; Glass and Stanton, “Self-selected resistance training intensity in novice weightlifters,” *Journal of Strength and Conditioning Research* 2004; 18 (2): 324–327; Glass, “Effect of a learning trial on self-selected resistance training load,” *Journal of Strength and Conditioning Research* 2008; 22 (3): 1025–1029.

The first study showed that even women who worked out with a personal trainer tended to choose weights that were too light to elicit strength gains. The third study, a follow-up to the second, showed that when entry-level lifters were given detailed instructions on how to lift, they still chose weights that were too light. They also stopped their sets well short of the point of muscular fatigue.

Dr. Mark Tarnopolsky: I specifically refer to the study previously cited as Melov et al. I also refer to two terrific articles from *The New York Times Magazine*: “The Incredible Flying Nonagenarian,” by Bruce Grierson, published in the November 28, 2010, issue, and “Can Exercise Keep You Young?” by Gretchen Reynolds, from March 2, 2011. Dr. Tarnopolsky is quoted in both.

Senior lifters compared with young non-lifters: Candow et al., “Short-term heavy resistance training eliminates age-related deficits in muscle mass and strength in healthy older males,” *Journal of Strength and Conditioning Research* 2011; 25 (2): 326–333. I’ve quoted similar studies in previous NROL books, which arrived at similar conclusions: If you take seniors who are healthy and active but not currently lifting, a strenuous program will give them

strength equal to healthy young people who aren't currently lifting. Old lifters can become good lifters, but they can't become young lifters. The best they can do is match young non-lifters.

Chapter 3

Controversies: In early drafts of this chapter, I included more information about the Squat Wars of 2009 and 2010, which began with an article by Mike Boyle called “Build Bigger Legs, One at a Time.” It was first posted at T-nation.com on August 3, 2009 (I edited the article), and advocates the exercise we call the Bulgarian split squat instead of the traditional barbell back squat. Mike later released a series of DVDs called *Functional Strength Coach 3.0*, which, despite its innocuous title, was marketed aggressively with a focus on Mike's aversion to back squats.

NSCA v. Boyle: For details on the battle, go to strengthcoachblog.com and search for posts tagged “NSCA.” As far as I know, the NSCA hasn't offered its side of the story, so it remains unclear if the revoked speaking invitation was entirely, partly, or not at all a result of the Squat Wars.

Back injury without back pain: Jensen et al., “Magnetic resonance imaging of the lumbar spine in people without back pain,” *New England Journal of Medicine* 1994; 331: 69–73. I chose this one, to be honest, because it was the first I found that offered the full text free online. This is a continual dilemma for journalists. Not every important study is available without a subscription to the journal in which it's published. Some journals charge more than \$30 to access a single study. The abstract is always free, but I hate to reference studies I haven't read. The most telling details are often in the graphs and charts. I end up paying for some; others come to me from friends, colleagues, and occasionally the researchers themselves. But most of the studies I use are either from the *Journal of Strength and Conditioning Research*, to which I subscribe, or free online.

Small spinal fractures: Soler and Calderon, “The prevalence of spondylolysis in the Spanish elite athlete,” *American Journal of Sports Medicine* 2000; 28 (1): 57–62. I heard about this study in a lecture by Eric Cressey at the 2011 Perform Better Functional Training Summit in Providence, Rhode Island.

Injuries that become problems years later: I found a specific case-study description on page 53 of *Low Back Disorders* (Human Kinetics, 2002), by Stuart McGill, Ph.D., professor of spine biomechanics at the University of Waterloo in Ontario. I also refer often to Dr. McGill’s other book, *Ultimate Back Fitness and Performance* (Wabuno Publishers, 2004). You can find both at backfitpro.com.

Jonathan Fass, DPT: Jon is currently the private physical therapist and sports manager for His Royal Highness Prince Alwaleed bin Talal. He’s based in Riyadh, Saudi Arabia. You can find more info at jonathanfass.com and hear him on thefitcast.com.

Back pain statistics: I got these from the second edition of *Rehabilitation of the Spine: A Practitioner’s Manual* (Lippincott Williams & Wilkins, 2007), edited by Craig Liebenson, D.C. Most of the stats are on pages 52 and 53. Others are on pages 4 and 34. The information about the risk of sitting is on page 300.

But I’d be selling the textbook short if I pretended this is the only information I used. Along with Dr. McGill’s books, *Rehabilitation of the Spine* was on my desk throughout the writing process, thoroughly highlighted and bookmarked.

Twins: Nyman et al., “High heritability for concurrent low back and neck-shoulder pain: a study of twins,” *Spine* 2010 (epub ahead of print).

Muscle imbalance and knee injury: *The New Rules of Lifting for Women* (Avery, 2007), p. 121.

Chapter 4

“*Break the Work Out/Pig Out Cycle*”: This is from prevention.com. I found it by Googling “work out pig out,”

and was surprised to see it was written by my friend Martica Heaner, Ph.D. (for the record, one of the smartest and most compassionate people I know in the industry). By pure coincidence, Martica supplied me with some of the weight-loss studies I used in this book. If you decide to find and read the article, make sure you check out the comments at the end. Last time I looked all the comments were from spammers who claimed to have lost weight by (1) wearing magic shoes; (2) taking magic supplements; (3) watching a magic TV show (*The Biggest Loser*); and (4) driving a Cadillac without brakes. If we ever get to a point when spambots write better comedy than actual comedy writers, civilization will officially have ended.

Twelve-week exercise program: King et al., “Dual-process action of exercise on appetite control: increase in orexigenic drive but improvement in meal-induced satiety,” *American Journal of Clinical Nutrition* 2009; 90: 921–927.

Problems using fat for energy: Hopkins et al., “The relationship between substrate metabolism, exercise, and appetite control: does glycogen availability influence the motivation to eat, energy intake, or food choice?” *Sports Medicine* 2011; 41 (6): 507–521. I referred to this review study for the entire section.

Metabolic effects of strength training: Although a lot of the information in the second half of [Chapter 4](#) falls under the category of “stuff everyone in the fitness industry acknowledges to be true,” I used information from this research review: Strasser and Schobersberger, “Evidence for resistance training as a treatment therapy for obesity,” *Journal of Obesity* 2011, Article ID 482564.

Increased efficiency and slower metabolism following weight loss: Rosenbaum et al., “Energy intake in weight-reduced humans,” *Brain Research* 2010; 1350: 95–102.

Chapter 6

Skepticism about value of core training: There’s certainly an opposing view to our approach to core training. In an earlier draft of *NROL for Life*, I described some of the pushback,

using these sources: “To Crunch or Not to Crunch: An Evidence-Based Examination of Spinal Flexion Exercises, Their Potential Risks, and Their Applicability to Program Design,” by Bret Contreras and Brad Schoenfeld, *Strength and Conditioning Journal*, August 2011. Okada et al., “Relationship between core stability, functional movement, and performance,” *Journal of Strength and Conditioning Research* 2011; 25 (1): 252–261. See also “Are Crunches Worth the Effort?” by Gretchen Reynolds, *New York Times*, August 17, 2011.

Chapter 7

Definitions of strength and power: Essentials of Strength Training and Conditioning, Second Edition (Human Kinetics, 2000), p. 35.

Chapter 8

Importance of squatting: This comes from *Athletic Body in Balance*, by Gray Cook (Human Kinetics, 2003), p. 46.

Self-limiting exercises: This is another Gray Cook concept, found in *Movement* (On Target, 2010), pp. 231–233.

Vulnerable shoulder position: Kolber et al., “Shoulder injuries attributed to resistance training: a brief review,” *Journal of Strength and Conditioning Research* 2010; 24 (6): 1696–1704. This paper, which rounded up all the available research on the subject, found a handful of exercises consistently linked to shoulder pain and injury: barbell bench press, behind-the-neck lat pulldown and shoulder press, parallel-bar dip, barbell back squat, and chest flies. I discuss the study at length in [Chapter 12](#), which covers pushing exercises. I mention it here because the back squat forces your shoulders into a vulnerable position, where your arms support a load that often exceeds your body weight.

Chapter 9

Bad back/strong back: This is from *Advances in Functional Training*, by Mike Boyle (On Target, 2010), p. 115.

Cook hip lift: Also from *Advances in Functional Training*, pp. 106–107. The exercise is called the Cook hip lift, after physical therapist Gray Cook, whose work is cited for [Chapter 8](#).

Chapter 10

In-line lunge: Yet another test from Gray Cook. This one is from *Athletic Body in Balance*, pp. 52–53.

Origins of knee pain: Boyle, *Advances in Functional Training*, p. 66.

Chapter 12

Shoulder injuries: Kolber et al., “Shoulder injuries attributed to resistance training.”

Barbell bench press descriptions: It’s been so long since I did this exercise that I wasn’t sure if I was up to speed on current recommended form. So I relied heavily on *Maximum Strength*, by Eric Cressey and Matt Fitzgerald (Da Capo, 2008).

Chapter 13

Disparaging dumbbell one-arm row: *The New Rules of Lifting* (Avery, 2006), pp. 147–148.

Chapter 16

Lance Armstrong/New York City Marathon: “Armstrong Finishes NYC Marathon in Under Three Hours,” Associated Press, November 5, 2006. “How Fast Could Lance Armstrong Run a Marathon?” by Amby Burfoot, *Runner’s World*, published online September 29, 2006.

Chapter 18

Alan Aragon/The Fitness Summit: Alan writes the outrageously informative *Alan Aragon Research Review* each month; check it out at alanaragon.com. I met Alan in 2008, when he presented at The Fitness Summit for the first time. He’s been back every year since, where he joins an annual lineup of speakers that includes some of the most

interesting and forward-thinking fitness and nutrition professionals in the United States (including Alwyn in 2007). It's held in May each year; find out more at thefitnesssummit.com.

Leucine importance: Kim et al., “Dietary implications on mechanisms of sarcopenia: roles of protein, amino acids, and antioxidants,” *Journal of Nutritional Biochemistry* 2010; 21 (1): 1–13.

Chapter 19

Weight of average Americans: “Poor Choices, Not Aging, Pack on Pounds,” by Nancy Helmich, *USA Today*, June 23, 2011. The data in the article came from the National Center for Health Statistics. I clipped the article when I was in Las Vegas to speak at the International Society of Sports Nutrition annual conference, and was so intrigued by the data that I went to the NCHS website to find the rest of the data that I put in the chart.

We move less: The New Rules of Lifting for Abs (Avery, 2011), pp. 193–194.

Wired to store fat: Rethinking Thin: The New Science of Weight Loss and the Myths and Realities of Dieting, by Gina Kolata (Farrar Straus Giroux, 2007).

Capitalism: The End of Overeating: Taking Control of the Insatiable American Appetite, by David A. Kessler, M.D. (Rodale, 2009).

Corn: Fat Land: How Americans Became the Fattest People in the World, by Greg Critser (Houghton Mifflin, 2003), and *The Omnivore's Dilemma: A Natural History of Four Meals*, by Michael Pollan (Penguin, 2006).

Your friends make you fat: A good explanation can be found in “Beating Obesity,” by Mark Ambider, in the May 2010 issue of *The Atlantic*. A good refutation can be found in “Catching Obesity from Friends May Not Be So Easy,” by Gina Kolata, in the *New York Times*, August 8, 2011.

Bad choices/messy lifestyles: Mozaffarian et al., “Changes in diet and lifestyle and long-term weight gain in women and

men,” *New England Journal of Medicine* 2011; 364 (25): 2392–2404.

Nineteenth-century gluttony: At Home: A Short History of Private Life, by Bill Bryson (Doubleday, 2010), pp. 81–82.

Size of U.S. presidents: I’m a sucker for anything that combines health and fitness with history. I got the presidential proportions from a variety of sources; my favorite is “Medical History of U.S. Presidents” at doctorzebra.com.

Volume of food needed to gain weight: Katan and Ludwig, “Extra calories cause weight gain, but how much?” *Journal of the American Medical Association* 2010; 303 (1): 65–66; Barry Levin, “Why some of us get fat, and what we can do about it,” *Journal of Physiology* 2007; 583.2: 425–430; Hall et al., “Quantification of the effect of energy imbalance on body weight,” *The Lancet* 2011; 378: 826–837. At the time I wrote the manuscript, the groundbreaking research by Dr. Kevin Hall’s team hadn’t gotten any mainstream media coverage that I knew of. But right around the deadline, Jane Brody wrote a series of articles in the *New York Times* focused on the obesity epidemic. “Why Even Resolute Dieters Often Fail,” published September 19, 2011, focused on Dr. Hall’s studies.

Food alone explains weight surge: Swinburn et al., “Increased food energy supply is more than sufficient to explain the U.S. epidemic of obesity,” *American Journal of Clinical Nutrition* 2009; 90 (6): 1453–1456.

Movement to counteract weight gain: Lee et al., “Physical activity and weight gain prevention,” *Journal of the American Medical Association* 2010; 303 (12): 1173–1179.

Food palatability and weight gain: This is from the Barry Levin study cited immediately above.

Denis Leary quote: It’s from *No Cure for Cancer*, his 1993 comedy album. I edited the quote, leaving out an obscenity that doesn’t change the basic idea.

Don't gain weight in the first place: Also from the Levin study.

“Know your Kryptonite”: This advice comes from Nate Miyaki, a personal trainer and bodybuilder, whom I interviewed for a feature called “Smash Your Records” in the September 2011 issue of *Men's Health*.

Brian Wansink: Dr. Wansink's research is catnip for journalists. There's always something interesting and counterintuitive. The Cohen and Farley study cited below for [Chapter 20](#) mentions several of his studies. Three others that I looked at but didn't use in [Chapter 19](#): Wansink and van Ittersum, “Shape of glass and amount of alcohol poured: Comparative study of effect of practice and concentration,” *British Medical Journal* 2005; 331: 1512–1514; Werle et al., “Just thinking about exercise makes me serve more food: physical activity and calorie compensation,” *Appetite* 2011; 56 (2): 332–335; Wansink et al., “The sweet tooth hypothesis: how fruit consumption relates to snack consumption,” *Appetite* 2006; 47 (1): 107–110.

Chapter 20

Automatic behavior: Cohen and Farley, “Eating as an automatic behavior,” *Preventing Chronic Disease* 2008; 5 (1): A23.

Self-control: de Ridder et al., “Taking stock of self-control: a meta-analysis of how trait self-control relates to a wide range of behaviors,” *Personality and Social Psychology Review* 2011: epub ahead of print. I also referred to “The Sugary Secret of Self-Control,” by Steven Pinker, in the September 4, 2011, issue of *The New York Times Book Review*. Dr. Pinker reviewed *Willpower: Rediscovering the Greatest Human Strength* (Penguin, 2011), by Roy Baumeister and John Tierney. Dr. Baumeister is one of the coauthors of the de Ridder et al. study.

Adaptive thermogenesis: Tremblay et al., “Role of adaptive thermogenesis in unsuccessful weight loss intervention: a

historical perspective and definition,” *Future Lipidology* 2007; 2 (6): 651–658.

Metabolism decline: Goldsmith et al., “Effects of experimental weight perturbation on skeletal muscle work efficiency, fuel utilization, and biochemistry in human subjects,” *American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology* 2010; 298 (1): R79–88.

Six-month rule: The tips come from our friend Mike Roussell, Ph.D. Mike wrote the sidebar to “Stay Lean for Life,” an article I wrote for the May 2011 issue of *Men’s Health*. He also alerted me to the research on weight maintenance, cited below. You can read more of his thoughts and tips at mikeroussell.com.

Easier for some to cut calories and increase exercise simultaneously: Annesi and Marti, “Path analysis of exercise treatment-induced changes in psychological factors leading to weight loss,” *Psychology and Health* 2011; 26 (8): 1081–1098; Annesi, “Behaviorally supported exercise predicts weight loss in obese adults through improvements in mood, self-efficacy, and self-regulation, rather than by caloric expenditure,” *The Permanente Journal* 2011; 15 (1): 23–27.

Weight maintenance: Stuckey et al., “Using positive deviance for determining successful weight-control practices,” *Qualitative Health Research* 2010; 21 (4): 563–579. This study came from a research team at Penn State Hershey Medical Center led by Chris Sciamanna, M.D., whom I interviewed for the *Men’s Health* article mentioned above.

Chapter 21

Becoming Human: I TiVo’d this from PBS during a rebroadcast in 2011. At the time it was also available for free viewing at pbs.org. If it’s no longer available, you can rent the DVD from Netflix or buy it at any online retailer.

Lessons from cave-dwelling forebears: Some readers will notice that I describe the currently trending “paleo diet” without using that term. I have two reasons. First, I don’t

think the advice to eat foods close to their natural state is any different from what we advocated in the original *NROL*, when we talked about “clean eating” in [Chapter 22](#). Second, I’m uncomfortable with the term “paleo” because it implies there was a single diet all early humans followed. The archaeological record suggests they ate anything and everything, including the brains and bone marrow of animals they hunted or scavenged. Some in warmer climates may have subsisted on near-vegetarian diets at different times, while those farther north may have eaten more like their carnivorous cousins, the Neanderthals. Furthermore, with industrial-scale food production I’m not sure it’s possible to replicate any version of a true paleo diet. The air, soil, and water would’ve been so different from ours that the plants and animals that fed on them would’ve had different nutritional profiles.

John Berardi, Ph.D.: Alwyn and I have known John for many years. John first got attention as a prolific writer for [T-nation.com](#), and then coauthored *Scrawny to Brawny* (Rodale, 2005) with another mutual friend, Mike Mejia. Since then he’s done terrific work on- and offline. You can check out his articles and programs at [precisionnutrition.com](#).

Billy Beck III: I heard Billy speak at the 2011 ISSN conference in Las Vegas, where I was impressed by both his energy and the creative ways he approaches all-too-common problems with training and nutrition. Although I used his basic idea of fire, fuel, and free meals, I scaled back the application for this book’s readers. For Billy’s take on his own system, check out <http://www.billybeck.com/blog/effective-eating/nutrition-cycling-the-ultimate-body-transformation-diet/>.

Galina Ivanova Denzel: Galya was a successful author and health-club owner in her native Bulgaria who now counsels clients in the United States. We know each other through the JP Fitness forums ([forums.jpfitness.com](#)), where she also met my friend Roland Denzel; they got married in 2011. Her website is [eatloveandtrain.com](#).

Chapter 22

Creatine articles: In “The All-Star Diet” (*Men’s Health*, October 2010) I included creatine in a roundup of the latest information on sports nutrition. “Powder to the People” (*Men’s Health*, November 2001) focused on creatine exclusively.

Creatine research: Waters et al., “Advantages of dietary, exercise-related, and therapeutic interventions to prevent and treat sarcopenia in adult patients: an update,” *Clinical Interventions in Aging* 2010; 5: 259–270.

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