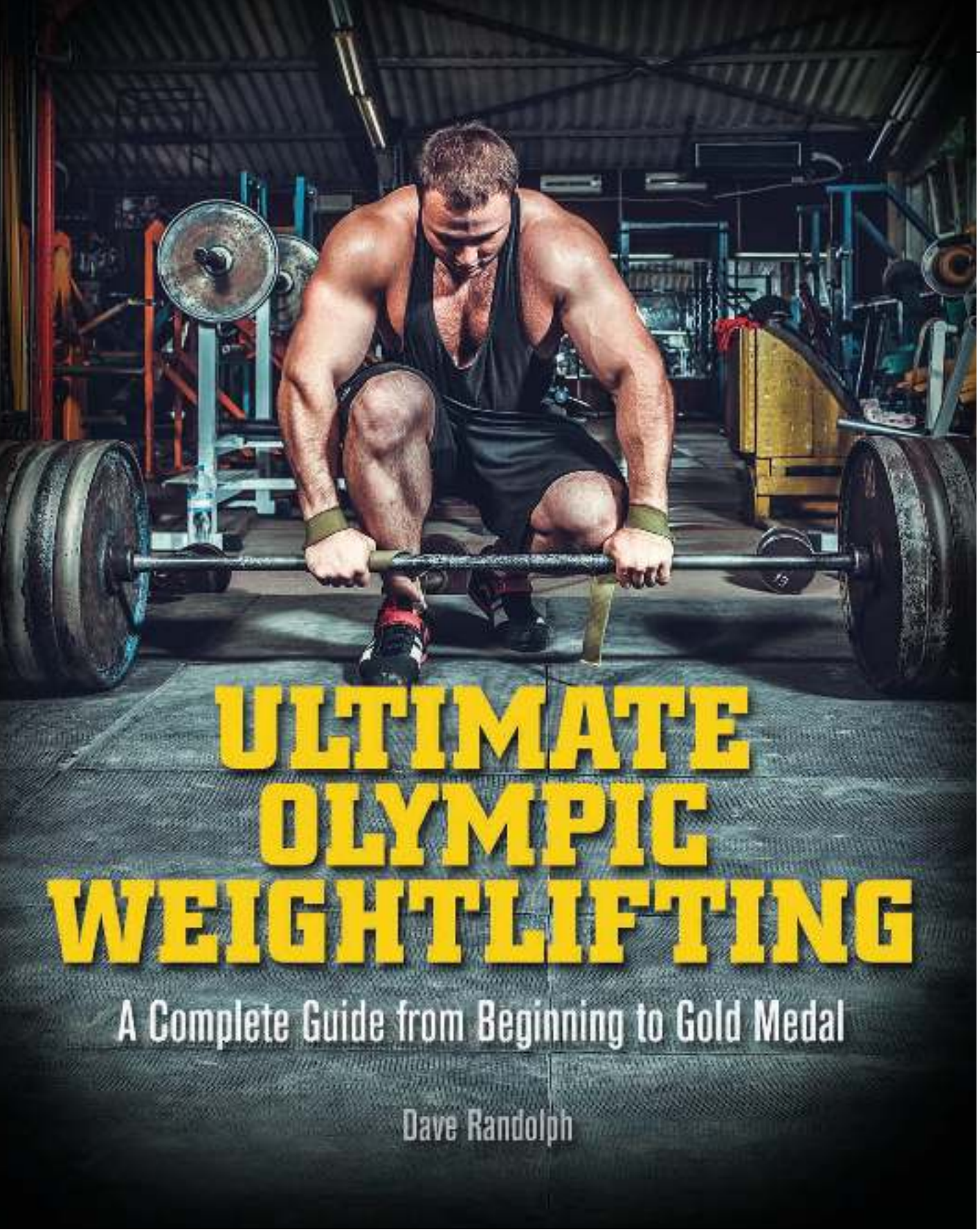
ULTIMATE
OLYMPIC
WEIGHTLIFTING
A Complete Guide from Beginning to Gold Medal
Dave Randolph

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PART 1

OVERVIEW

INTRODUCTION

Olympic weightlifting (using a barbell and plates to get a weight overhead) has been around since the mid- to late 1800s. However, it wasn't until the late 1940s and 1950s that the sport transformed into the Olympic lifting practiced today—the "clean and jerk" and the "snatch."

Up until fairly recently, most people had no idea what Olympic weightlifting is. Maybe they caught a lift watching the Olympic Games or on ABC's *Wide World of Sports*. The pool of those who actually wanted to learn the lifts wasn't very big, either, and those who did want to learn had even fewer qualified coaches nearby.

This all changed when CrossFit hit the scene in 2000. Because of this incredibly popular exercise craze, which features the clean and jerk and snatch in its varied routines, these old-school movements are becoming mainstream ways to stay fit and healthy. Now everyone has not only heard of the lifts and seen them done, but has probably tried them as well. I wrote this book to be a concise course in learning the Olympic lifts. While the lifts require a lot of work to achieve a high level of proficiency, you don't need to be an Olympic-caliber lifter to reap the benefits.

In this book you'll learn the proper way to execute the lifts by breaking each one into easily learnable chunks. Once you master the basic components and refine your technique over the weeks, the pieces will start to come together.

Also included are general nutrition guidelines for eating properly, an important factor for optimal performance when lifting and for overall health. In addition, the essential self-assessment section will identify areas that need strengthening, followed by targeted exercise fixes to address those weaknesses. (Remember: Injuries are not necessarily caused by technique issues, but poor technique will break you.) A 12-week program, broken into three 4-week phases, guides you from raw beginner to proficient weightlifter.

Olympic weightlifting, along with a clean diet, will make you athletic, powerful, and lean. By incorporating mobility and agility work, you'll be able to do pretty much any everyday activity without difficulty.

WHY OLYMPIC WEIGHTLIFTING?

If you're looking for a quick fix or are hoping to perfect your movement in a short period of time, Olympic weightlifting is not for you. But if you want to develop explosive strength and incredible athleticism, Olympic weightlifting will help you achieve these goals. Be forewarned: You'll need to put in the time. To be really good at the sport, even if you never plan to compete, takes a lot of practice using low reps and a lot of sets.

A lot of gyms use high-rep Olympic lifts because they're metabolically demanding, meaning they require a lot of energy and therefore will make you lose weight. In many cases it's quantity over quality, and therein lies the problem. Unfortunately, even with a light weight, doing 20 or 30 reps of cleans pushes the envelope of safety. Sure, you should push yourself to the point of fatigue, but you also need to know when enough is enough. Listen to your body, not your head. You have to know your limits.

With that said, practicing Olympic weightlifting will help you lose weight by increasing energy expenditure and by building dense muscle mass. However, you won't look like a bodybuilder. Bodybuilding, or hypertrophy training, is quite a bit different from Olympic weightlifting. Unlike snatches and clean and jerks, bodybuilding movements focus more on body parts rather than the whole body. While bodybuilding focuses on making your muscles bigger and stronger, Olympic weightlifting will help you get lean and athletic in both appearance and quality of movement.

Olympic weightlifting is very challenging and technical. The top lifters have been training for years. Just like any other sport, being a skilled lifter means lots of high-quality practice along with a coach who knows how to create programs and to perfect the nuances required to reach the upper levels of Olympic weightlifting. Whether you're just starting out or have been lifting for a while, this book will help guide you on your path to a stronger and better you.

HISTORY OF OLYMPIC WEIGHTLIFTING

Man has been lifting heavy stuff in some form or another since the dawn of time. It probably didn't take long for two guys to get together to see who could lift the heaviest rock. In the Middle Ages, men fashioned their own "dumb-bells," so called because the clappers were removed from actual church bells so they wouldn't make noise while being lifted. In ancient Greece, where the Olympics began, there are all sorts of images depicting weightlifting challenges. The sport itself initially appeared in the 1896 Olympics, but the first crowning of a champion was actually in 1891. Of course, the implements used in the 1800s were a far cry from today's high-tech bars and rubber bumper plates.

THE CHANGING FACE OF OLYMPIC LIFTS

The early Olympic lifts themselves were quite a bit different than they are today. Originally, the lifters competed in a one-arm lift and a two-arm lift. After its initial inception in 1896, the sport was dropped from the 1900 Games, returned in 1904, then eliminated again until after World War I.

In the 1920 Games held in Antwerp, Belgium, Olympic weightlifting returned. The lifts at the time were the one-handed "snatch" and one- and two-handed "clean and jerks." Two more lifts—the two-handed snatch and the two-handed press—were added in the 1924 Games. The Olympic sport continued to be fine-tuned over the years, with lifts added then removed. In 1928, the one-handed lifts were dropped. In the name of fairness, weight classes were added in 1932 so you no longer had a 300-pound participant competing against a 150-pound lifter.

In the 1950s, the deadlift, bench press, and squat (lifts now considered "power lifts") were also contested in Olympic weightlifting. All three were dropped and then reclassified under a new sport called "powerlifting."

Due to the ease of "cheating," the clean and press lift was dropped from the sport after the 1972 Olympics. Basically, you could lean backward and almost make it a bench press, so the various Olympic-lifting organizations decided to remove the clean and press from the sport. In a nod to gender equality, the 2000 Sydney Olympics featured women's Olympic weightlifting for the first time.

EVOLVING TECHNIQUES

Throughout the 20th century the technique of the primary lifts changed as people found what worked best for getting heavy weight overhead. But while the snatch, clean and jerk, and military press were evolving on the Olympic front, many countries continued to train and compete with their own versions of lifts and equipment. The Russians favored high-repetition kettlebell lifting, which became a true sport in the 1970s and '80s. Other countries lifted heavy stones to shoulder height. Other lifts were dropped over time, but today there are two primary lifts in competition: the barbell snatch and the barbell clean and jerk.

As in any sport, there are lots of variations in program design. But despite previous regional differences, teaching methodologies are now fairly standard. The snatch and the clean and jerk are commonplace and are easier than ever to learn and integrate into your workout routine.

WHAT IS OLYMPIC WEIGHTLIFTING?

Some form of Olympic weightlifting has been around since the 19th century. Through decades of evolution, today the Olympic lifts are officially two moves: the "clean and jerk" and the "snatch."

Please note that "lifting weights" and "weightlifting" are *not* the same thing. The former refers to lifting any sort of weight—barbells, dumbbells, rocks, kettlebells, etc. The latter refers specifically to the two modern-day Olympic lifts: the snatch and the clean and jerk.

In the snatch, the weight is brought from the ground to overhead using two hands and is locked out overhead in one smooth movement while simultaneously dropping into a rock-bottom squat. The clean portion of the clean and jerk involves bringing the weight (these days a barbell or kettlebell) to shoulder level, called the "rack position." The jerk portion involves quickly dropping under the bar while simultaneously straightening out the arms until the elbows are locked, then standing up with the weight overhead. However, this isn't a pressing action—that's quite different.

There are many variations of these two lifts. They're used to not only teach the full lifts but to allow almost anyone to train and perfect some aspect of the lifts. A lot of people split the clean and jerk into two separate exercises; this is fine on a technical training level, but you can't compete in clean only or jerk only.

The primary movement called the clean begins with a barbell on the floor over the middle portion of the feet. You assume a semi-squat/hip-hinge position and explosively stand up, driving the hips forward and pulling hard with the arms. As the bar goes up, momentum kicks in; as the bar approaches the level of the solar plexus, you quickly drop into a deep squat while dropping the elbows under the bar, rotating them forward, and "catching" the bar on the front of the shoulders with the fingers of each hand holding the bar in place.

After completing the clean, you stand up, maintaining the bar in the "rack" position across the front of the shoulders. Once standing, you'll quickly drop under the bar, landing in a split stance while simultaneously straightening out the arms so the bar goes overhead. *Note:* This is not a press. You're literally moving under the bar as it rises, with your hands remaining almost at the same height they were at the start of the jerk. The arms straighten as the body is lowered.

Once the bar is caught overhead, you must keep it overhead while returning to a standing position. You must be totally locked out and stable for the lift to count. In competitions, the bar is dropped to the floor in a controlled manner, which is why bumper plates are used. For everyday Olympic weightlifting, you'll want to return the bar to rack then drop it in front of you while squatting it to the floor. This will keep your equipment from getting torn up or damaging the floor.

Snatches also start with the bar on the floor in the same position as the clean. The spacing of the hands on the bar is quite a bit wider when doing snatches—this makes the lift a little easier and more forgiving on shoulders that may not have full range of motion or for those with a tight upper back. Like the clean, the snatch starts off very explosively but, as the bar moves up, it goes all the way overhead. As the bar reaches mid-torso level, you drop into a deep squat, catching the bar overhead. From here, you stand up with full control of the bar, elbows and knees locked out, and absolutely no movement. Once the judges give a go or no-go, you'll return the bar to the floor, ending the lift.

Outside of Olympic competition you'll find variations of these two lifts, including "assistance" lifts designed to help the lifter focus on a specific portion of the movement. Other modified exercises allow lifters with limited mobility to perform the lifts. For example, the "clean" portion of the clean and jerk requires a tremendous amount of hip and ankle flexibility, something most people don't possess due to a sedentary lifestyle. So the lifter does variations that don't require getting into a rock-bottom squat.

Another training regime focuses on the clean, leaving out the jerk portion. Solely doing cleans without the jerks over time will develop speed, agility, and power.

So even though the clean and jerk and the snatch are done in competition, you can see there are a wide variety of movements to practice. Practiced on a regular basis, these explosive moves will translate into a more powerful, athletic physique.

CROSSFIT & OLYMPIC WEIGHTLIFTING

Thanks to the fitness phenomenon known as CrossFit, which prominently features the snatch and the clean and jerk in the workout, hundreds of thousands of people now routinely perform Olympic lifts. Like or hate CrossFit, the trend has opened up the world of Olympic weightlifting to ordinary people looking for a way to keep in shape and get strong.

CrossFit trains the Olympic lifts but not in the way that true Olympic weightlifting athletes train. Because Olympic weightlifting is very technical, the trainee must focus on perfecting technique rather than be concerned with how many repetitions are done, how fast the reps are completed, or using a specific weight. True Olympic athletes typically do no more than three to perhaps five reps at most in one set, with several minutes of rest before doing another set. They never train to fatigue as it encourages poor form that, under the heavy loads of the true Olympic athlete, will cause injuries.

Olympic athletes lift hundreds of pounds in both the clean and jerk and the snatch. Doing more than a few reps at a time is a sure road to disaster. It's not uncommon to miss a rep. This means you were unable to complete the rep and failed at some point during the movement. Lifting under fatigue increases the chances for missed lifts, which in turn increases the risk of injury. As with any other sport, Olympic weightlifting requires practice and takes years of training to be good. You train to get better, stronger, faster, and more agile, but all of these attributes worsen under fatigue.

CrossFit takes the approach that their loads are much lighter (typically 95 pounds for women and 135 pounds for men). They supposedly adjust the workout accordingly, but doing 21 clean and jerks with a bar, no matter what the weight, is unwise, especially for beginners. True Olympic lifters, especially at the Olympic level, will move 100 kilograms (220 pounds) or more depending on the lift. Here are a few records in the snatch, the most difficult lift:

MEN'S SNATCH	
WEIGHT CLASS	**RECORD**
56kg (123.5lbs)	137kg (301.4lbs)
105kg+ (231lbs+)	212kg (466.4lbs)

WOMEN'S SNATCH	
WEIGHT CLASS	**RECORD**
48kg (105.6lbs)	97kg (213.4lbs)
75kg+ (165lbs+)	187kg (411.4lbs)

Of course, as for you and me, we'll never move that much. The athletes live and breathe Olympic weightlifting and they've been training since they were very young. So how much can you expect to lift? It really depends on your body weight, gender, and experience level, as you can see from the Catalyst Athletics chart below:

	NOVICE MALE 77kg (169.4lbs)	**ADVANCED MALE 77kg (169.4lbs)**	**NOVICE FEMALE 69kg (151.8lb)**	**ADVANCED FEMALE 69kg (151.8lb)**
Snatch	58kg (127.6lbs)	101kg (222.2lbs)	35kg (77lbs)	62kg (136.4lbs)
Clean and Jerk	69kg (151.8lbs)	121kg (266.2lbs)	44kg (96.8lbs)	78kg (171.6lbs)
Back Squat	93kg (204.6lbs)	162kg (356.4lbs)	62kg (136.4lbs)	109kg (239.8lbs)
Front Squat	59kg (129.8lbs)	142kg (312.4lbs)	51kg (112.2lbs)	91kg (200.2lbs)

Source: Catalyst Athletics. To see the full chart, visit www.catalystathletics.com/article/1836/Olympic-Weightlifting-Skill-Levels-Chart

As you can see, there's a big difference in the amount of weight lifted from novice to advanced. To be fair, not all CrossFit gyms follow the same high-rep approach on Olympic lifts. In fact, in the CrossFit community, there are no recognized standards on how the Olympic lifts should be programmed into the workouts. So if you're thinking about joining a CrossFit gym, make sure you personally research the coach. The ideal teaching process is structured and breaks the movements down into easy-to-learn parts. It's also progressive, where you "earn" the right to do more complex movement patterns. Also, the focus should be on technically well-executed lifts rather than on speed/time or completing the reps no matter what.

EQUIPMENT

So you want to Olympic weightlift? Unless you're training at a facility with everything you need, you'll have to buy some gear.

THE BAR. First and foremost, you're going to need an Olympic-sized barbell. The Olympic bar is a little over 7 feet long (men's standard). The ends are 49–50mm in diameter while the shaft is 28–29mm (1.1-inch) thick and weighs 20 kilograms (44 pounds). If you buy a bar in pounds, it'll weight 45 pounds but the other dimensions remain the same. Regardless of the measurement system you use, make sure your plates correspond to the same measurement system as the bar.

If you're serious about Olympic weightlifting, you'll want to invest in a high-quality bar, not the cheap versions often found at sporting-goods stores. Ivanko, Pendlay, Eleiko, and Rogue Fitness all produce top-quality Olympic bars. There are small differences: Some have ball bearings, some use needle bearings, and others use bushings; some are sealed and some aren't. If the bar has hex nuts in the ends or Allen screws in the sleeves, it's *not* suitable for Olympic lifting. You'll also need to consider these following factors.

Flex. True Olympic bars are designed to flex and whip as the bar is pulled up into rack position. The whip adds momentum to the plates, making it a little easier to clean or snatch. As you pull, the bar flexes; as you finish the second portion of the pull, the ends of the bar—and the plates—will continue to move up even though the center of the bar has stopped flexing. A cheap bar will not do that, and under heavy load may even snap.

Don't use a powerlifting bar, either. A powerlifting bar is stiffer with much sharper knurling. The stiff bar won't give you a good whip during the movements and the sharper knurling will cut into your hands.

Rotation. The bar needs to be able to rotate freely while the ends stay fixed. A cheap bar uses inferior components that will prevent the bar from rotating as smoothly as it should, which affects your lifting technique. To create this smooth rotation, bars are made with ball bearings, bushings, or needle bearings. While ball bearings were once the preferred standard, the newer needle bearings are the way to go with your bar. Needle bearings can better withstand the forces applied to them on the lift and when a lifter drops the bar to the ground. Yes, many people drop the barbell after they've gotten it overhead. Over time this will break the bar and you should refrain from doing this unless you miss a lift.

There are three options when it comes to the rotating sleeve: bushings, ball bearings, and needle bearings. Bushings are basically a sleeve that the bar fits through but isn't fixed in place. Bushings don't provide as smooth a rotation compared to needle bearings but can take more punishment. Bars with bushings are okay for the average lifter. Ball bearings provide smoother rotation but are nowhere near as sturdy as a bushing or needle bearings. Some manufacturers use bushing and ball bearings together, which makes them stronger and gives a smoother rotation. However, the best bars use needle bearings, which are longer and provide a more consistent rotation. But bars with needle bearings aren't as durable and are more expensive than bars made with bushings or ball bearings.

My recommendation is to stay away from ball-bearing-only bars. Get a bar with bushings or, if you can afford it, needle bearings.

Knurling. Knurling is the rough part of the bar where the hands go. On an Olympic bar, the knurling is smooth to minimize friction on your hands while the bar is rotating. In comparison, a powerlifting bar has rough knurling to help you keep your grip in the lifts. The placement and length of knurling also differs between the two bar styles.

The International Weightlifting Federation (IWF) requires center knurling on competition bars but you'll find some Olympic bars without the center knurling. It won't really matter for training. If you're doing high-rep cleans in a CrossFit routine, you may prefer a bar without the center knurling, which can rough up your neck a bit. The center knurling is important if you're doing a lot of back squats as it helps keep the bar from slipping from your shirt. If you're lifting shirtless, the center knurl will rough you up.

MAINTAIN YOUR BAR

You should keep the exterior of the bar and knurling clean. Chalk builds up in the knurling, reducing its effectiveness. In addition, old sweat will cause the bar to rust. To clean the bar, use a nylon brush to scrub off the chalk and dirt. When the bar is clean, use 3-in-1 oil on the bar and let it sit for an hour or so then wipe it off with a clean cloth.

You'll also periodically need to oil the bearings so they continue to rotate freely. Each manufacturer will have its own way of oiling the bearings/bushings. It may require you to take the bar apart to clean the area where the bearings contact the bar. Do not use WD-40 to lube the bar. Typically the bearings will be lubricated with grease, a non-detergent oil, or 3-in-1 oil.

PLATES. You should always use bumper plates, which are made of solid rubber, usually with a steel ring on the inner edge that slips over the end of the barbell. They're designed to absorb being dropped. The best bumper plates are solid rubber with a fairly wide steel plate. Do not use metal plates! Metal plates will break and ruin the bar if dropped. Mixing bumper and metal plates will also still cause damage to the bar and plates. Even bumper plates have their limits and can break if they're dropped repeatedly.

Bumper plates come in pounds and kilos. For ease of calculating the loads you lift, make sure the units of measurement match the bar you have. That is, if you have a 20-kilogram bar, your plates should also be in kilos. Conversely, a 45-pound bar should be used with plates in pounds.

PRICING BARS & BUMPERS

Top-quality bumpers and bars will run you thousands of dollars, but you can get a good quality bar for $200–$300 and a complete set of decent plates for about the same amount. Check around on Craigslist, the usual online shops, or Google "Olympic bars" and "Olympic bumper plates" for the best deals.

COLLARS. Collars keep the plates from falling off the bar. Do *not* lift without collars—if you lose control of the bar and it tips to one side, the plates will fall off and could seriously injure you. Look for a good-quality pair of collars. When you're starting off with lighter weights, using the spring variety might suffice (they'll run you about $10 pair). As you progress to working heavy, you'll need a heavy-duty set, which costs about $40. Don't skimp on this vital part of your Olympic weightlifting set.

PLATFORM. You shouldn't lift on bare concrete or a wood floor. Concrete will tear up the plates and bar and you'll put holes in the wood floor. Ideally you'll want an Olympic lifting platform made of plywood with a veneer, and rubber flooring in the middle portion. The prices range from $300 up to well over $1200.

JERK BLOCKS. Jerk blocks or boxes elevate the bar from the ground, which allows you to work on specific parts of the clean and the snatch. You can buy a variety of boxes made specifically for Olympic weightlifting work or make your own (Google "build jerk blocks" for directions on how to make your own for around $200).

Blocks are useful tools for refining your form or focusing on weaker portions of your pull. For example, if you don't do well pulling from the floor because you lack hip mobility, the blocks allow you to work within your range of motion without risking bad back position or faulty technique. You should, of course, be working to improve that hip mobility.

Use taller blocks to focus on jerks without the clean portion. You can even use the boxes as you would a squat rack so, if you're squatting, the boxes can be used to check depth or (if you lose it) to catch the bar.

SHOES. If you're really serious about the sport, invest in good-quality Olympic weightlifting shoes, which are very firm with an elevated heel that helps you get into that rock-bottom squat when doing full Olympic cleans or snatches. The elevated heel overcomes lack of ankle dorsiflexion, which will prevent you from getting deep into a squat, cause your torso to fall too far

forward, or cause your knees to go too far forward or inward (valgus). If you choose to not use Olympic weightlifting shoes, get a pair of Chuck Taylor Converse or other solid-sole shoes. Don't use cross-trainers or running shoes—they don't provide the needed support in the ankle and arches. In addition, they're designed to absorb energy, which will take power away from your lifts.

There's some physiology at work here in the feedback mechanisms between your feet, legs, and brain that the squishy shoes mess up. Basically, there are sensors in your feet that provide feedback to your brain. Being barefoot or in firm shoes keeps that feedback intact. Using soft, energy-absorbing shoes limits the feedback, thereby limiting information to the brain, which should be telling the legs to produce force in response to the pressure in the feet.

BELTS & STRAPS. Beginner- to intermediate-level weightlifters should avoid using the belt until they're working with heavy weights daily. Once you're regularly using heavy weights, invest in a belt.

Some lifters also use lifting straps that loop around the bar and each hand. The straps take the grip out of the equation as well, eliminating the problem many have of tight wrists and forearms in the rack position. However, I don't necessarily recommend this on a long-term basis as I think you need to work on strengthening your grip to improve your wrist and forearm mobility.

CHALK. Lifting chalk, made from magnesium carbonate, improves your grip. You can get a six-block box for around $15. A box should last a while (at my gym we go through a full box every six months or so). You can also get chalk in a bag, designed for climbers so they can attach it to their belt or climbing harness for easy access. The chalk bag cuts down on the mess. If you use blocks, you'll want to keep them in a bucket or box. Don't use chalk made for playing pool. Made with talcum, pool chalk has the opposite effect—it makes your grip slippery.

RECORDING DEVICE. It's always a good idea to record your sets, especially if you don't have a coach watching and fixing your technique. Record your lifts and then review the footage to see where your form may be breaking down or what needs to be tweaked. If you have a long-distance coach (e.g., one you're working with over Skype), you'll be able to send the clip to your coach for evaluation. If you don't have a video camera, an iPad, tablet, or smartphone will work, too.

PLYO BOXES. A set of three plyo boxes (18-inch, 20-inch, and 24-inch heights) is useful for doing box jumps, a plyometric exercise that improves your explosiveness. If you have flat jerk boxes, the taller versions can be used as well.

ROLLERS, BALLS, STICKS, & BANDS. Your muscles and associated tissue get stiff whether you exercise or not. If you've ever had a massage and the therapist found a place that hurt a lot to the touch, you've experienced a trigger point. Or perhaps you get headaches for no reason; these can be caused by trigger points or a mechanism known as referred pain. A good massage therapist can help get rid of these tight spots, but the next best thing is what's known as self-myofascial release (SMFR). *Myo* means "muscles" and *fascial* refers to the "fascia," tissue that covers and connects all the muscles throughout the body.

Foam rollers and *lacrosse balls* are ideal at-home solutions. Rolling them across your back, legs, and hips, looking for tender areas, will help release the tissue. You can pick up foam roller online or in most sporting-goods stores; the denser the better. If you find that lacrosse balls are too hard at first, use a firm tennis ball.

You can also buy a *stick massager* that looks like a rolling pin. Two popular brands are The Stick and the Tiger Tail. This rigid roller performs the same function as the foam roller but can reach areas that the foam roller or ball doesn't work well on, such as the calves. It's readily available online at Amazon.com or PerformBetter.com.

The *resistance band* is for stretching and available online and in sporting-goods stores. Make sure to get one with about 30 pounds of resistance. Don't use rehab bands (what you get if you go through physical therapy, or what you'll find in most department and sporting-goods stores)—they're too light for our purposes and will break. We need to create resistance heavy enough to build reactive strength in the body, not just rehab an injury.

SAFETY

If you're healthy, you should be able to do the Olympic lifts and most of the variations with little trouble. However, you should also make sure you have no prior injuries or shoulder mobility problems. Jerks and snatches involve bringing weight overhead, which necessitates strong shoulders. The clean by itself is a great exercise to develop explosive power and speed, and bad shoulders shouldn't present a problem in most cases.

As with any exercise program, see your doctor to make sure doing the exercises in this book will not cause you problems. If your physician doesn't know about Olympic weightlifting, find a good physical therapist and have an evaluation done prior to starting any Olympic lifts.

Once you consult with your doctor and/or physical therapist, here are some guidelines to follow when doing Olympic weightlifting.

BEFORE YOU LIFT

CLEAR THE LIFTING AREA. There should be nothing on the platform except you and the bar—make sure the lifting area is free of obstructions such as extra bars, plates, or collars. If you miss a lift, any extra equipment can make it harder to safely escape the falling bar. All it takes is one misstep—or trip—to seriously injure yourself.

Case in point: One of the best CrossFitters in the country overdid it at a CrossFit competition. He missed the lift and fell, landing against a stack of plates with his bar falling right onto him. He broke his spine and was paralyzed from the waist down. So give yourself ample room to escape a lift if needed.

CHECK YOUR EQUIPMENT. First off, check your bar for damage and, if applicable, make sure the sleeves are screwed in tight. On some less-expensive models, the sleeves are held on by a screw, or screws. The screws should be securely fastened.

You'll also need to make sure you have the same size, weight, and number of plates on each side (i.e., if you have two 25-pound weights on the left side, you need two 25-pound weights on the right side rather than one 50-pound plate). If the number of plates is uneven, this tends to make the bar lean to the side with more plates due to the offset center of gravity, increasing the risk of dropping the bar. If your bar is supported on a squat rack and you have to change the bumper plates, load and unload one plate at a time, alternating sides. If you take all the plates off one side first, the bar will become unbalanced and fall off the hooks.

Also check for cracks in the plates. If a plate is cracked and you drop the bar, the defective plate may damage the floor/platform and the bar. A cracked plate could possibly come apart while you're lifting it, causing serious injury. Examine the collars to ensure that they're undamaged and are properly securing the plates. Use collars rated for Olympic weightlifting and always use the same type on either side of the bar. Don't use a spring collar on one side and a clamp collar on the other—it's not smart to mix safety equipment.

Any boxes used should be undamaged and strong enough to hold the weight you're lifting. Review squat racks (J-hooks and other components) for abnormal wear and tear.

SAFETY CHECKLIST

Whether you're a long-time lifter or first timer, you should always go through these safety tips.

- Clear the lifting area.
- Check bar for damage.
- Check weight and dimensions of plates on both sides of the bar.
- Check the plates for cracks.
- Check the collars for damage; they also should be a matching pair.
- Check that the collars are properly securing the plates.
- Check the lifting boxes for damage and weight limit (they must be able to hold the weight that you're lifting).
- Check the squat rack for any abnormal wear and tear.

ESCAPING A MISSED LIFT

If you miss a hang clean, simply push the bar forward and move backward. Missing a full clean is trickier. However, even missing at rock bottom you can get away by pushing the bar forward and jumping backward.

Getting out from under a snatch can be a little more difficult but, basically, you need to move in the opposite direction of the bar. So if the snatch is missed going overhead (the most common miss), the bar will be heading behind you. Release the bar (which will continue on its backward trajectory) while simultaneously moving yourself forward quickly.

If you miss the snatch or otherwise lose control of it while at the bottom of a squat and the bar is overhead, you'll have to quickly determine which way the bar wants to fall, let it go, and move in the opposite direction as quickly as possible.

NUTRITION

Eating right is an important part of any fitness program, but with so many next-great-diets out there with conflicting information, what's right? Paleo this, gluten-free that. No fat, no carbs, no animals. South Beach, Atkins, Ornish. Arrgghh, it makes my head hurt and makes me want to scream!

I'm going to tell you the secret to being healthy, losing fat (if you need to) or gaining muscle (if you want). Normally you'd have to pay thousands for this top-secret information (really, I saw it on Facebook so it must be true) but I'm giving it to you for the price of this book.

Wait for it. Are you ready? Don't eat processed foods. Bam. Top-secret stuff there.

Seriously, though, eliminating processed foods will kickstart fat loss and help increase muscle by getting you to eat real foods with an emphasis on increasing your lean protein intake to about 35 percent of your daily calories.

A good rule of thumb: If it comes in a box or a bag, it's probably processed. There are exceptions, such as a bag of fresh-frozen vegetables or a box of steel-cut oats. But by and large, if it's in a box or bag, it's processed.

Processing foods is typically done to improve shelf life or change the flavor of something. It's done by adding chemicals, including coloring and preservatives—all of which can be potentially harmful to your health. Manufacturers also like to sneak in fats, salt, and sugar, the three things your brain craves and you can become addicted to. This makes it much more likely you'll eat more and continue to buy the "food."

RULES FOR HEALTHY EATING

Here are a few simple guidelines for maintaining a proper diet.

1. Eat lean protein with every meal.
2. Eat vegetables with every meal.
3. If you're trying to lose fat, stay away from starchy carbs except after a workout.
4. Avoid sugary foods and drinks.
5. Drink water—at least half your body weight in ounces—every day.
6. Avoid *all* soft drinks.
7. Avoid alcohol.
8. Watch your portion sizes.
9. If you're fairly knowledgeable about nutrition, are doing well with your diet, and still want to get leaner, you may need to count calories plus track your macronutrients.

There's no way you can be 100 percent compliant for long, so shoot for 90 percent adherence to these rules. This means it's okay to eat pizza on a Saturday night as long as you get right back on track the next day.

Look at it this way: If you eat 4 meals per day (counting snacks), that's 28 meals per week. That means you can keep to clean-eating 25 meals with 3 cheat meals per week and still do fine.

PROTEIN. Your body needs protein as much as it needs fats. Technically, you can survive without carbs, but you can't live without protein. In addition to building muscles, protein is essential for healthy bones, hair, nails, and skin—basically the raw fuel for virtually every cell in your body. Animal proteins contain many essential nutrients without which your body will start to break down. For example, many vegans need B12 shots because their protein sources don't naturally have it.

Other essential nutrients that can only be obtained from animal protein sources include branched chain amino acids (BCAAs), which help promote muscle building and the production of creatine, a compound used as a source of fuel in short, intense bursts of activity (like a 100-meter sprint).

One of the biggest myths about protein is that too much of it will ruin your kidneys—no study has ever proven that to be true. However, if you have kidney issues, you may need to reduce your protein intake—consult with your doctor. Otherwise getting 30–35 percent of your daily calories from protein should not be a problem.

There's a lot of disagreement about how much protein a person needs. The U.S. Recommended Daily Allowance (RDA) for men is a measly 54 grams of protein. However, current research says that you need .75–1 gram of protein for every pound of lean muscle mass you have. If you're a 175-pound male with 25 percent body fat who's training hard, you'd actually need at least 130 grams of protein, almost 80 grams more than the RDA, especially if your goal is to pack on muscle.

Even if you're trying to lose fat, it's important to keep your protein intake consistent with your calculated protein needs—you'll lose body fat whether you fill the remaining daily caloric requirements with more carbs and less fats *or* less fats and more carbs. Of course, the total daily calorie allotment must be the same regardless of the carb/fat ratio. For example, if you require 2000 calories a day and you're getting 700 calories from protein, whether you get 800 calories from carbs and 500 from fat or the other way around, the effects will be the same in the long run.

There are hundreds of studies showing the importance of protein in the diet, including research that points to accelerated fat loss by adding more lean protein and cutting carbs (but not below 20 percent or so). In essence, it seems that it doesn't really matter if you're on a low-fat or a low-carb plan—protein is the key.

VEGETABLES. Eat vegetables with every meal—they're loaded with vitamins and minerals. Most people don't eat anywhere nearly enough veggies as they should and require supplements to get adequate levels of some nutrients.

In addition, vegetables are dense and fibrous and you can eat a lot of them before getting full. While starchy carbs fill you up faster, you get hungry faster, too, which promotes overeating.

Go for a rainbow of vegetables: greens such as spinach, kale, broccoli, and green beans; red veggies such as peppers and beets; orange/yellow options like carrots, butternut squash, and sweet corn; blue/purple vegetables like eggplant and endive. Remember to be smart about preparing your vegetables, too. A little butter (never, ever use margarine!) and salt is okay, but don't slather your veggies with them, either.

SIMPLE CARBOHYDRATES & SUGARY FOODS. Starchy and sugary foods, or simple carbohydrates, keep you satiated for a shorter period of time compared to consuming protein and fats. Thus, you end up hungry sooner and eat more, contributing to overeating.

Your body breaks down sugary or starchy foods into glucose, storing what it needs to maintain stable blood sugar levels and for energy. When the stores are full, glucose is transported to other cells for use. Once the glucose is stored for energy or absorbed in the cells, any remaining glucose is stored as fat.

This is one reason why, if you do eat starchy carbs, you should do so within an hour *after* a good workout. You want to replenish the glucose and glycogen stores so your overall blood sugar stays at normal levels.

I don't recommend a pre-workout drink or meal that's sugary or starchy. The reason? Glucose stored for energy will be used before glucose stored as fat, so if you eat foods that produce an abundance of glucose, your body will use the stored glucose before burning fat.

However, if you eat sensibly and only consume starchy carbs or sweet fruit after a workout, you'll be just fine. Yes, fruit contains sugar in the form of fructose, but it also contains a plethora of important vitamins necessary for proper health. Just don't go overboard.

WATER. Most people don't drink enough water. The easiest way to tell if you're properly hydrated is by checking the color of your urine. If it's pale yellow to clear, you're probably getting enough water. If it's yellow or darker, you need more water. (If it's dark brown, you need to go to the hospital ASAP!)

The rule of thumb is to drink half your body weight in ounces of water. Some people will count unsweetened tea with this, but not coffee. Your body is 70 percent water so if you're dehydrated, your body will start to shut down.

Don't overdo your water intake, though. Too much water and not enough salt will trigger hyponatremia, a state where the sodium levels in your body are too low. Some symptoms include dizziness, vomiting, headaches, nausea, short-term memory loss, lethargy, and fatigue. If you sweat a lot during exercise, *do* drink water but perhaps supplement your drink with some salt to help keep the water/salt ratio in the proper range.

SOFT DRINKS & ALCOHOL

Don't drink soft drinks. Besides the high sugar content, the added chemicals can wreck havoc on your body. I'm sure you've seen the videos where Coke is used to clean pennies and toilets—that's the phosphoric acid eating away at the dirt. Yes, it can eat your insides as well if you consume a lot of sodas every day.

While sugar in soft drinks is bad for you, artificial sweeteners are even worse. They trick the brain into thinking it's getting sugar and, until the brain and body get actual sugar, you'll continue to eat or drink. In fact, current studies are showing causation between consumption of artificial sweeteners and obesity.

You don't need to eliminate alcohol in your diet—just drink sensibly. Imbibe on an empty stomach (yes, you read that right) and make sure you don't have more than two drinks. To prevent fat gain, alcohol should be consumed on an empty stomach, or eat only lean protein before drinking. The science is that alcohol is a toxin and the body shuts down all fat and carb burning until the alcohol is removed from the system. So instead of being burned off, carbs and fats immediately get shoved into storage. Also avoid mixed drinks like margaritas—there's a lot of added sugar. If hard liquor is your preference, order it straight up, on the rocks, or cut with water.

OLYMPIC WEIGHTLIFTING BASICS

While the following are basic positions, they're very important. Failure to master them means a failure to reach your full potential in the Olympic lifts. The foot positions will be what feels natural to you, perhaps with a little tweaking. The rack position requires flexible wrists, elbows, and shoulders—if you're tight in those areas, a good rack position will be tough to hit, making your cleans less efficient.

The hang position is important both as a starting point for the hang versions of the clean and snatch and as a transition point when doing both lifts from the floor. If you don't understand the hang position and how it differs between cleans and snatches, you'll have problems generating force and being able to lift heavier weights.

HANG POSITION. Midway through the first pull, the bar is a little above knee level, the hips are not yet fully extended, and the torso is still inclined. This is the hang position for the clean and snatch, which is used a lot for training the movement segments as well as for those who struggle with the first pull. This term is also used for a point in time for the clean or snatch from the floor. The clean hang position (page 62) uses a hook grip. There's also a snatch version (page 105) that uses a wide hook grip, which makes the position a little deeper.

Clean hang position

RACK POSITION. You're in rack position when the bar is across the fronts of your shoulders, resting on the tips of your fingers, and lightly touching your throat. The upper arms should be parallel to the floor. See the rack position directions (page 63) in the Clean chapter for directions on how to get into the position.

Rack position

KETTLEBELL RACK POSITION. In the kettlebell rack position, the bell rests against the back of your forearm, with your elbow tight to your side and into your ribs, and your palm angled toward your body. The bell's handle sits on the bone on the heel of your hand, below your pinky and across to the webbing of your thumb/forefinger. The handle of the bell should be at or slightly below your clavicle (collarbone).

Kettlebell rack position

SCARECROW POSITION. Scarecrow position is a point in time during the clean and the snatch where the bar has traveled up to about chest level with the elbows as high as they can go before the turnover into rack position (the clean) or getting the bar overhead (the snatch). The scarecrow position allows us to isolate a very short, fast part of cleans and snatches.

Scarecrow

SHORT-STOP POSITION. This position is named for its resemblance to the stance of a baseball player at short stop. Stand tall with your feet shoulder-width apart, hands on your thighs. Push your hips back and let the knees bend slightly. The hands slide down the thighs to rest on the knees. Your chest is out and spine is neutral.

Short-stop position

STARTING FOOT POSITION. This is called the *pulling stance* for both the clean and the snatch: feet hip-width apart, not any wider, and turned out slightly. In the jerk, the starting position is referred to as the *drive stance*.

ENDING FOOT POSITION. This varies depending on the lift and whether you're doing a full version or the power version. In the clean, the ending foot position is called a *squat stance*; in the snatch it's the *catch stance*. For the jerk, you'll either end in a *parallel stance* (feet slightly out to the side) or *split stance* (one foot in front and the other in back).

HALF-KNEELING POSITION. This stance is also known as the 90/90 position. To get into the half-kneeling position from standing, get on one knee.

Half-kneeling position

- The foot, knee, and hip of the lead leg should be aligned. You can check by using a stick or your forearm to make sure the knee and foot are directly in front of the hip and the hips are straight ahead.
- The shin of the lead leg should be vertical.
- The rear knee should be directly under the rear hip; the rear thigh should be vertical from the front and from the side.
- You should be on the ball of the rear foot and it should be directly behind the knee, which should be in line with the hips.
- Picture headlights on your hip bones and shoulders. The headlights should point straight ahead.

TALL-KNEELING POSITION. From standing, get on both knees.

Tall-kneeling position

- Your knees should be positioned under the hips but not together.
- Your thighs should be vertical from the front and sides.

ARE YOU READY TO OLYMPIC LIFT?

You may be mentally ready to start Olympic lifting but are you physically prepared? In this section we cover some easy self-assessments to make sure you're clear for training the Olympic lifts. If you do find problems or weaknesses, we'll show you how to improve those areas. Be safe, not sorry. Since the self-assessments can only go so far in uncovering problems, before you begin, get checked out by a good doctor or physical therapist.

These assessments are based on the Functional Movement Screen (FMS), a system developed by Gray Cook and Lee Burton. The FMS has been used on thousands of professional athletes to determine their risks for injury, as well as give them the tools to get moving well. The screens intentionally place you in extreme positions to see how you handle them or compensate.

The screens are the Overhead Squat (OHS), Hurdle Step (HS), Inline Lunge (ILL), Shoulder Mobility (SM), Active Straight-Leg Raise (ASLR), Trunk Stability Push-Up (TSPU), and Rotational Stability (RS). The correctives or fixes are done from the most primitive (ASLR and SM) to the transitional patterns (TSPU and RS), then up to the HS, ILL, and OHS.

Typically, if there's a problem with one of the "Big Three" (HS, ILL, OHS), the fix lies in one of the more basic "little four" (SM, ASLR, TSPU, RS). What this means is that if you have a tough time with the overhead squat, which is part of the snatch, you need to look at the lower-level movement patterns and clear them. Those fixes should translate into a better overhead squat.

I've modified the screens to make it easy to assess yourself. If you want to do the full screen, you'll need to find a certified FMS professional (functionalmovement.com/experts).

Each assessment is followed by suggested exercise fixes that will clean up your restricted or weak movement patterns. The correctives covered have been proven to work on most people most of the time. Some of these fixes will clear up a movement problem quickly, but other issues may take longer. Do the exercise fixes every day, not just training days. The more often you do them, the faster you'll get cleared to do Olympic lifts.

Pick two or three fixes for each screen you have problems with. If you try to do each one, you'll spend all day doing nothing but correctives. If you have multiple areas that need work, remember to start with and focus on the ASLR and SM. Pick one or two fixes for each one and don't spend more than 5 minutes working them.

Again, these screens show poor movement patterns caused by weakness or imbalance. If you have any pain, see your doctor or physical therapist before embarking on a lifting program.

SCORING THE SCREENS

For this book you'll score yourself on a pass/fail basis; either you can do the movement or you can't. If you fail on more than 2 of these screens, you aren't physically ready to do the Olympic lifts. I highly encourage you to seek out a qualified FMS trainer who can help you rebuild your foundational movements.FMS pros will also do a clearing test on the SM, TSPU, and RS patterns to look for pain that might not have occurred in the screen.

For example, as part of the SM screen we check for shoulder impingement because pain means there's an underlying issue that a doctor needs to check out, as most FMS pros aren't physical therapists or doctors. It's a little challenging to self-score as we want to think we're better than we are. I highly recommend recording your screen so you can go back and see it rather than trying to feel it out.