



THE JOURNEY: HOW TO REACH YOUR FULL POTENTIAL

A Complete Strength Training Guide for Beginner, Intermediate, and Advanced Lifters

by GREG NUCKOLS

What does it take to reach your strength potential? And what do the steps to do so look like? I couldn't find a complete, accessible overview anywhere, so I decided to make it myself. This ebook will be the anchor for the website. It's a comprehensive framework, meant to get you caught up and ready to absorb the rest of the information on this site.

Be aware that a more nuts-and-bolts guide is coming (how to actually plan out your sets/reps/exercises) as well. This guide is just meant to give you an overview of the important factors and principles in play.

If you have any questions, if you think something is incomplete or confusing, or if you just plain think I messed something up, don't hesitate to let me know how I can make this guide better.

-Greg Nuckols

This is something I've been wanting to write for a while, but I've been putting it off because, honestly, it's a monster.

I could split it into a series, but I don't want people to stumble across just the second or third installment and miss the context. However, be aware up front that it's probably not one you'll want to chug through in one sitting.

This ebook will cover what it takes for you to reach your strength potential, and how to do it in the most efficient way possible. It's not going to dwell on specific topics in a ton of depth; its purpose is to give you an overview of the key factors in your journey from wherever you are now, to your ultimate potential. Resources addressing more specific topics will be linked, but the purpose of this ebook is simply to provide you with a comprehensive framework.

What does it take to be as strong as you can be?

1. Big muscles (duh). For anyone who needs more reassuring, this guide goes into way more depth on this subject later.

2. Mastery of the lifts you'll be using to demonstrate strength.

Who was the strongest athlete of all time? Anatoly Pisarenko? Zydrunas Savickas? Andrey Malanichev? The fact is, there's not a definitive way to answer that question because they competed in different sports, and strength is defined by the lifts you use to measure it. There is a very large skill component to mastering a lift: You have to get your muscles to work in a very powerful yet precise manner to lift heavy stuff as effectively and efficiently as possible.

This comes with practice – the more specific, the better.

Because of this, practice aimed at mastering the lifts you want to use to express your strength is incredibly important. This guide will mainly be talking about the squat, bench press, and deadlift since I'm a powerlifter, and that's what I know the most about, though these principles are applicable to any strength sport.

3. Healthy Joints/Connective tissue

The less wear and tear you have on your body, the more you'll be able to lift, all other things being equal. Your tendons have to be strong enough to transfer force from your muscles to the bones they're trying to move. They have a built-in "strain gauge" called the golgi tendon organ that sends a signal to your spinal cord, back to your muscles, telling them to stop contracting as hard, in an effort to prevent a tendon rupture.

Nerves called mechanoreceptors in your ligaments function similarly. And as you damage or wear away your joint cartilage, it generally heals slowly or not at all (depending on the joint), and once you've worn it away, you're not getting any more. Over time, this can lead to osteoarthritis. Acute injuries to these tissues generally take a long time to heal (serious ones, at least), and excessive stress to your tendons over time can lead to inflammation (tendonitis), which can progress to degeneration (tendinosis) if left unchecked.

Both of these generally require quite a bit of time to recover from. What's more, it's not uncommon for a soft tissue injury to turn into a long-term headache and impact your training for a long, long time after the initial injury, as collagen generally repairs itself very slowly and often incompletely.

For these reasons, maximizing results while minimizing injury risk is of utmost importance. Worth noting here: pain and injury don't always go hand in hand. That issue is beyond the scope of this guide, but if you'd like to read more, I'd suggest you [start here](#) to learn more about the [biopsychosocial model of pain](#).

4. Age

There are three key advantages to being young:

1. Your nervous system is a bit more excitable and works a bit faster, meaning you can reach maximal muscular contraction faster. This is more important for power-dependent sports (like weightlifting) than maximal force dependent sports (like powerlifting), but it plays a role in all of them. Also, your nervous system is more plastic when you're young, meaning you'll be able to learn and master movements faster (and possibly to a greater absolute degree).
2. You have a bit more of the protein elastin in your tendons, so they'll be able to store a bit more elastic energy (giving you a more powerful "bounce" out of the hole at the bottom of a squat).
3. You simply recover from hard training faster. You have higher testosterone levels, you sleep better and release more total growth hormone at night, and a multitude of other factors that help you be better able to handle high training volumes, recover faster, and progress quicker.

None of these are tremendously huge factors by themselves, but they all play a role. They all peak in your late teens, but don't start dropping off in a big way

until your 30s (neural drive) to 50s (tendon elasticity); the exception is neural plasticity, which peaks basically the minute you're born, and drops steadily from there (which is why it's easier to learn new things as a child).

If you can hit your competitive peak by your mid-twenties (some people peak sooner, but generally it takes quite a few years of hard training to build the requisite muscle mass), it helps take advantage of these factors. This is not to say that you can't get very, very strong if you start later, but there are advantages to getting to your competitive peak as soon as possible.

What constitutes appropriate training?

This is an entirely context-dependent question. There are certain factors that are more or less universal (the training must be specific to your goals, there must be some type of overload applied, etc.), but once you get into the nuts and bolts of program design, there are several factors that determine whether or not a training program will be a good fit for someone.

Some of those factors are specific to the individual. Their background, strengths and weaknesses, specific leverages, preferences, their current diet, lifestyle, and sleep habits, etc.

However, there are some factors that will apply to most individuals in larger groups of people, based on their experience level, assuming their goal is to reach their strength potential (and be as competitive as possible, if that's your aim) as fast as possible. I want you to keep two things in mind when reading the rest of this ebook:

1. I'm assuming your primary goal is to get as strong as possible, as fast as possible. If that doesn't apply to you, then the rest of what I'm about to say isn't too relevant for you because it's not in line with your goals.
2. BY NO MEANS am I saying this is the only possible way to get strong. That would be foolhardy. Simple observation is enough to tell you that there are many roads leading to Rome. So, if you're tempted to retort, "so-and-so got so strong and they did it another way," just know that you're not going to get any arguments from me. Also, this means that if you are currently in a certain position and the way you got there differs from the one I recommend, that doesn't mean you've screwed up. It just means you took a different path to get there, and that's 100% fine.

With that out of the way, it's time to really dive into the meat of this ebook. Remember, the four things we need to accomplish to get super strong:

- 1. Big muscles**
- 2. Mastery of the lifts**
- 3. Healthy joints**
- 4. Age/minimizing the time it takes to get there**

Based on your experience level, you can use those four characteristics as your focal points to guide your training. 1 and 2 are where your sweet gainz are made, while 3 and 4 are overarching principles that determine how you train to make those sweet gainz and get from point A (wherever you are now) to point B

(the strongest you can possibly be) as fast as possible, as safely as possible. Of course, safety and speed go hand in hand; nothing derails your progress faster than an injury.

Each phase of your training will be governed by a simple question: *What obstacles standing between me and my end goal are hindering me the most right now?*

This question helps give your training clarity. Until you're as strong as you can possibly be, there will always be a multitude of areas where you could seek improvement. Asking what factors are hindering you the most right now keeps you from chasing 1,000 different goals at once (which gets you nowhere), and helps you make progress at the fastest rate possible by focusing you on winning the biggest battles that give you the highest rate of return.

For new lifters, those factors are:

1. Buy-in/habit formation
2. Proficiency with the movements
3. Body/muscular awareness
4. Readiness to train and recover

For intermediate lifters:

1. Muscular size
2. Continuing to increase your capacity to train and recover

For advanced lifters:

1. Proficiency becoming mastery

2. Maintaining joint health
3. Mastering the skill of competing

The New Lifter

The first and most important factors are **buy-in and habit formation.**

No, neither are sexy, exciting topics, but they're crucially important.

If you're going to get anywhere as a lifter, you have to be willing to put in the work for years. A lot of years.

At this point, you may be thinking: "I'm ready to do it! I'm excited to see how far I can get in the next decade."

However, most people who start an exercise program end up quitting within the first year, and I'm sure many of them were just as well-intentioned as you are. It's unlikely that your initial excitement is going to get you very far.

At this point, we could redirect way off-course and talk about motivation, choice architecture, identity formation, and a bunch of other neat stuff that you probably don't care to hear about too much in an already-long lifting ebook.

However, here are the key points:

1. You need to buy into the process. This means actually spending time and

money investing in your results early on. Everyone values their time, and we assign value to things roughly based on what we're willing to spend on them. If all you "invest" in lifting is \$30/month in gym fees, and 2 hours of your week working out, then if you give it up, you haven't lost much. It makes it easier to let go. If you've been putting in an additional hour per day reading about lifting, and forked over some more cash on books and coaching, then it'll automatically start mattering more to you. It's called the "sunk cost fallacy." The more you invest in something, the more you're convinced that it's an important thing to have or do, because you're a rational person after all, and rational people wouldn't spend so much time/money/energy on something that wasn't important and didn't matter to them personally. Put your mental biases to work for you.

- 2. You need to find a community.** In-person is best (either find someone who's already a lifter to show you the ropes, or convince a friend or two to start lifting with you), but online communities still beat going it alone. Whichever route you go, the keys are accountability and support. If your training partners don't hold you accountable if you start skipping a bunch of workouts (or if they're the lazy ones), then they're no good for you. If the people you lift with or the online community you find is permeated by negativity, it's no good for you.
- 3. You need to enjoy your training.** This is a key piece most people miss. Sticking with something is all about the things that make you want to continue outweighing the things that make you want to quit (motivation > obstacles). Motivations can be intrinsic (coming from inside you) or extrinsic

(coming from outside factors). Most people have some degree of intrinsic motivation when they start lifting (wanting to look better, wanting to lose weight, wanting to feel athletic, etc.), but almost by definition, it's not very strong. It wasn't strong enough to even get your foot in the door until you finally started training, after all. It's important, but it's not what you want to rely on; that's a big mistake a lot of people make.

Because you can't rely solely on your intrinsic motivation when you first start lifting, it's very important that you simply have fun training! That gives you some more extrinsic motivation (genuinely looking forward to the workouts themselves) to keep you going while lifting becomes a habit.

You've noticed, of course, that we usually don't have any problems finding time to do the things we really like doing, even if we know we probably shouldn't be doing them ("I should really do something productive, but I'm sure I can watch one more episode. Damn you, Netflix").

Most people miss this important fact and get way too hung up on the actual details of programming for new lifters.

When you're first starting out, you'll gain muscle and strength doing almost anything; the stimulus is so new, your body is simply going to respond strongly to it, even if it's not the "optimal" stimulus. The most important thing is that it's something you enjoy and can stick with, and that physiologically it's "good enough."

Coaches love to moan about "[program hoppers](#)," and they love talking about how new lifters are shooting themselves in the feet by not following masterful training program to the letter. What they're missing is the fact that when training

new lifters, enjoyment matters just as much as progress.

If new lifters (with a higher need for extrinsic motivation) don't enjoy a program, they won't stick with it, and if they don't start seeing the results they're looking for, they'll get demotivated and quit. If a coach fails in either of those dimensions (writing programs that work but that people hate, or writing programs that are fun but that don't get results), they've screwed up.

The actual nuts and bolts of how effective-yet-fun programming looks varies person to person. Some people enjoy more variety (in exercises, set/rep schemes, etc.) and start dreading workouts that look exactly like the rest of the workouts they've been doing for the past month.

Other people love consistency, are wary of change, and enjoy being able to see steady and measurable improvements workout to workout, comparing their performance in one workout to what they did in the same workout yesterday or last week. A good program for one new lifter may be a terrible program for another, because what constitutes enjoyable training varies person to person.

Moving on, the second most important factor is **developing proficiency** with the movements you're using to express your strength.

How do you learn a new motor pattern? Practice. Specifically, frequent, purposeful practice. The more times you do something, and do it the way you're supposed to, the faster your nervous system will master and store the pattern.

There are a few key takeaways:

1. The practice must be deep and purposeful. You can't simply go through the motions. Practice starts before the set. Visualize how the set is supposed to look and feel, trying to capture as many details as possible: how the bar

will feel on your back or in your hands, how you'll set up, how it will feel to move the load, etc. Initially, you may not be able to capture too much in your visualization, but this is a skill that will improve over time. As you approach the bar, have one cue in mind. Don't try to "think your way through the rep." Just focus on one thing that will help your performance. If it improves your performance, stick with that cue until you master it and can move on to another. If it doesn't, choose another cue. Be aware of how the reps feel as you're doing them, but don't obsess about it; use that awareness in the next step. After the set, analyze it. How did it feel? How did it look? (Take video if possible.) What could be improved upon, and what cue could help you accomplish that improvement? Repeat that process for each set. Simply doing the movements helps, but to gain proficiency with the lifts as quickly as possible, practice needs to be deep and purposeful to cement the skills and keep bad habits from developing.

2. The weights you're using should be light enough that you're in control of the load and can focus more on properly performing the movement than on avoiding death. However, the weights should also be heavy enough that it's still the same basic movement (a heavy barbell squat is pretty dissimilar to an unloaded bodyweight squat). This generally means using a load between 60-80% of your 1rm. Of course, if you're a new lifter, you have no idea what your 1rm is. So the basic rule of thumb is that you should use something between the heaviest weight that you feel very comfortable and confident with, and about 15% less than that.
3. You should stay a long way away from failure on your sets, at least early

on. The more you have to strain to complete a rep, the more your form will break down, at least until you've gained proficiency with the motor pattern. Let's say you're doing sets of 5, and the first three are beautiful, flawless reps, the fourth is a little shaky, and the fifth looks distinctly different from the first three. You're ingraining the proper motor pattern you want to learn with 60% of your work, and something else with the other 40%. That makes it take longer to gain proficiency with the proper technique. You should stay at least 3 reps away from failure (to complete a lift) as a new lifter, and almost always stop your sets before (or, if you push a rep too far, as soon as) your form starts to change at all. At first, you won't be entirely sure what that feels like, so it helps to either have training partners watch your technique, or record your sets (with the camera set up directly to your side between knee and hip height for squat, at hip height for DL, and 6-8 above bench height for bench) so you can compare how the lifts felt to how they looked. That will teach you what it feels like to complete reps with good form, what hard-but-flawless reps feel like (often a lift will feel like you screwed something up, but look great on video), and what messed-up ones feel like. To get in enough work while avoiding failure and technical breakdown, multiple sets of low reps are your best bet. The fewer reps you do each set, the less fatigue you'll develop from your first rep to your last rep, and the shorter the time you need to be locked in and focused on your technique will be.

4. Generally, training each lift 2-4 times per week will give you the best bang for your buck. Why? Two reasons: 1.) You need enough opportunities to

practice the movements. Practice is key for learning anything new. 2.) You can simply do more! You'd have to really crush yourself to get in as much work on a lift in one day as you could in three fairly challenging days. So why cap it at 4? Quite frankly, for a new lifter, you're probably not going to benefit from doing much more than that. You could practice the movements a *bit* more frequently, but probably not enough to make a tremendous difference. More importantly, muscle protein synthesis stays elevated for new lifters for quite a long time: 36-48 hours is pretty typical. For more experienced lifters, that's down to 12-24 hours (or less, depending on how hard the workout is). So with 2-4 sessions per lift, per week, you're still spending quite a bit of time actually building muscle.

The next key factor is developing muscular and kinesthetic awareness.

Kinesthetic awareness is just a fancy way of saying “knowing where your body is in space.” Developing this ability helps you do two things:

1. Better understand when the movements you're doing “feel” right or not. This feedback helps you make adjustments to perform the movements better.
2. Help external cues work better. External cues are those that focus on the outcome of the movement (i.e. for bench, you may say “throw the bar through the ceiling,” rather than “squeeze your pecs”), and are [generally more effective for enhancing performance](#). The better you understand how it feels for your body to move through space, the more sense external cues will make, the better you'll be able to apply them, and the more they'll help

your performance.

The best way to accomplish this? I've found challenging bodyweight movements to be the most effective in teaching overall body awareness. Do I have a citation for that? Absolutely not, because that would be damn near impossible to test. But of all the people I've worked with, those with backgrounds in gymnastics and martial arts almost always learn new movements faster than anyone else, and "get" new external cues the quickest. I've also found that "weird" lifts help build this type of awareness too.

Here are some suggestions of bodyweight movements that can help (start with the ones you can do): push-ups (working toward single arm pushups), dips, inverted rows, pull-ups, monkey bars, planks, rolling of all sorts, single leg RDLs (weighted or unweighted), lunges and split squats (at a speed you can control), single leg balance drills, single leg hops, L-sits, suitcase carries, waiter's carries, single arm overhead press, bent press, and single arm overhead squat.

There are certainly many more that you could try, but choosing 2-3 from that list per session, done for 2 sets of as many reps as you can manage at a controlled pace (not rushing through the motions) generally does the trick.

Now, I'm not saying that you'll directly make sweet gainz from those exercises unless you load them up and train them more like the barbell lifts, but they help you develop the kinesthetic awareness that will allow you to learn new movements better (attaining a higher end degree of proficiency) and faster.

It's also worth noting that this type of training usually doesn't do as much for someone with a strong background in sports (especially if you are pretty good at them, and have played recently), because sports training usually helps you

develop kinesthetic awareness. The people who usually benefit the most from it are folks who haven't played any sports in a long time (or ever) and haven't been challenging their kinesthetic abilities.

The next piece is muscular awareness. I hate the phrase “mind muscle connection,” but it's a common expression that gets the point across. Building this awareness accomplishes two major things:

It helps you identify your weak link in a movement if a particular muscle group isn't “pulling its weight.” If you don't know how it feels when a particular muscle contracts, it's hard to pick it out as the culprit when a lift doesn't feel right.

It makes internal cues more effective. Internal cues are ones that refer to what a particular part of your body is doing during a lift (i.e. “squeeze your pecs,” not “throw the bar through the ceiling”).

Though internal cues are generally less effective than external cues, they still have their place, especially if you're working on correcting a weak link in a movement, and you're trying to re-integrate a muscle group into a movement pattern where it hasn't been pulling its weight. If a muscle has been weak and limiting a movement, your body learns how to get more out of other muscles to compensate. When that weak muscle gets stronger, focusing on it can help get it more involved in the lift again and fine tune that motor pattern.

How do you accomplish this? “Bodybuilding”-style isolation movements. The tool is relatively unimportant. Barbells, dumbbells, machines, and cables are all totally fine. The goal isn't to move the most weight, but rather to feel the target muscle contracting to build that muscular awareness (or “mind muscle connection,” if you prefer).

Just like the movements to build kinesthetic awareness, the goal isn't necessarily boatloads of sweet gainz (since compound exercises like squats, presses, deadlifts, rows, pull-ups, etc., [do just as good of a job at building muscle mass, especially in new lifters](#)), but rather to make it easier to learn the lifts you're trying to build proficiency in, and to make it easier to assess problems and correct your lifts down the road.

The last key factor for new lifters is developing the ability to train hard and recover from training. This is often termed GPP (general physical preparedness), but most people only think of conditioning when they think of GPP. Though that's important, there are a few other factors, so I prefer the more encompassing term "[work capacity](#)":

- 1. Body composition.** A high body fat percentage [generally goes hand in hand with poor insulin sensitivity](#), and for every pound of tissue gained, a [smaller percentage of it will be muscle, and a greater percentage of it will be fat](#). There are a few reasons for that. Higher body fat levels are generally accompanied by [lower testosterone and higher estrogen levels in men](#) (since fat tissue contains the enzyme aromatase, which converts testosterone to estrogen. It should also be noted that the causality here is bidirectional; with low testosterone, it's easier to gain fat, and more fat further lowers testosterone); lower insulin sensitivity, especially in muscle, will mean more of the energy you consume is stored in fat tissue, and there's mounting evidence that the low-grade inflammation associated with obesity [can decrease anabolic \(muscle-building\) signaling and increase catabolic \(muscle](#)

[wasting\) signaling in your muscles](#) (and a [second source](#)). Quite simply, you'll respond better to training and recover better from training if you're leaner. If you're a male over 20% bodyfat, or a female over 30% body fat, getting down to the 12-15%/20-25% range will make it easier to train hard, recover well, and build more muscle and strength.

- 2. Aerobic conditioning.** I've already written a pretty in-depth piece on the importance of aerobic conditioning for strength athletes, so rather than rehash that here, I'd encourage you to [check it out](#). The degree to which you need to do any dedicated conditioning work varies person to person (some people just naturally have higher aerobic fitness), but a general rule of thumb is that if your resting heart rate is in the high 50s or low 60s and you're under 200lbs, or it's in the mid 60s and you're over 200lbs, you probably have a sufficient aerobic base for powerlifting.
- 3. Nutrition.** This is also a topic that is impossible to address in a single paragraph. I'd highly suggest the book "[The Renaissance Diet](#)" by my friend Dr. Mike Israetel for an in-depth treatment of the subject.
- 4. Lifestyle factors.** This primarily means sleep and stress management. Lack of sleep and increased stress decrease how well you can burn fat, build muscle, and recover from training. I'll address this in much more depth at the end of this ebook.

How you work toward the goal of being able to train harder and recover better depends largely on where you're at right now. If you're portly, then you should try to lose fat ASAP, whereas if you're already lean, you shouldn't try to lose any weight. If your nutrition is in line, but your baseline conditioning is poor,

then you should work on improving your conditioning. If your conditioning is good but your sleep habits are atrocious, then you'd benefit most from getting more high quality sleep.

A word of reassurance if you're overweight to start with: You really don't need to worry about how losing weight will impact your initial strength/muscular progress. Though new muscle is most easily added in a caloric surplus, it's entirely possible to gain muscle and strength while losing fat. This is especially true for people who are both new to lifting and overweight to begin with. If you set your calories to lose about 1% of your bodyweight per week, consume enough protein (about .82g/lb, or 1.8g/kg), and train hard, then you should have no issues gaining muscle and strength as you lose weight.

How Long Does This Phase Last?

A major mistake new lifters make is sticking with beginner programs for too long. Your two most important objectives are to buy into the process and make training a habit, and to become proficient with the movements. The third objective (building kinesthetic and muscular awareness) helps with the second objective, and the fourth (ability to train hard and recover well) sets the stage for future training to be more productive.

Once you've gained proficiency with the lifts, there's no point in dilly dallying with beginner programs any more. A lot of people will run a beginner's program entirely too long until they plateau multiple times and wind up frustrated.

Most of the strength gains you make on a beginner's program come from neurological improvements – your nervous system learning the lifts you're

performing. When you first start lifting, you may have enough muscle to squat 300lbs already, but you can only squat 135 because your nervous system doesn't "understand" the lift yet; you haven't built that proficiency.

Over the span of a few months, you should be able to add weight to the bar at least weekly, and your squat may skyrocket into the 300s. Your muscle mass may have only increased by 10-20%, but your squat went up to a much greater degree because your nervous system adapts to stressors much faster than your muscles do. When you hit a wall and your lifts stop going up as quickly, it's because you're finally bumping up against the limits of how much you can lift with your current muscle mass.

To continue getting stronger, you have to gain more muscle. And simply put, a beginner training routine optimized for learning the lifts isn't optimized for gaining a ton of muscle mass. Hypertrophy training generally involves training with accumulated fatigue because the main driver of muscle growth is [training volume](#), but movements are best learned when your muscles and nervous system are both fairly fresh (another reason volume per session shouldn't be too high, and sets of your main lifts shouldn't be pushed close to failure).

When you hit a wall for the first time on a beginner's program, it's time to shift training styles. Otherwise, you can only continue to get stronger as you gain muscle, and you're stuck with a training routine that's adequate for gaining muscle, but not optimized for it.

So, how long should you be on a beginner's routine before shifting to an intermediate routine? It depends on the person. Simply stick with it until you're having a hard time adding weight week to week without grinding reps. That

lets you know that the easy strength progress you get from gaining proficiency with the lifts is about to run out, so it's time for a change. In general, this may take you anywhere from 2-6 months.

Also, it can happen for different lifts at different times. Is your bench progress slowing, while your squat and deadlift are still shooting up? Then change your bench training, but keep training your squat and deadlift the same way until they too are topped out.

Further reading for new lifters

[Avoiding Cardio Could Be Holding You Back](#) →

[Gender Differences in Training and Metabolism](#) →

[In Defense of Program Hoppers; DUP Revisited](#) →

[The Belt Bible](#) →

[Succeed Every Day: A Complete Guide to Habit-Forming](#) →

THE JOURNEY, PART 1: A COMPLETE GUIDE TO
PROGRESSING FROM BEGINNER TO ADVANCED

NEW LIFTER'S GUIDE

BUY IN



Actually spend time and money. Invest in your results.

Find a community – in person or online.



Enjoy your training. Find something you actually like to do.

DEVELOP PROFICIENCY

1. Weights should be light enough that you're in control, but heavy enough that it's still the same basic movement.
2. Stay a long way from failure on your sets, at least early on. Focus on ingraining perfect technique.
3. Training each lift 2-4 times per week will give you the best bang for your buck.

MUSCULAR AND KINESTHETIC AWARENESS

HOW TO

CHALLENGING BODY-WEIGHT MOVEMENTS:

Such as, push-ups, lunges and split squats, dips, carries, single-arm and single-leg work

Developing *kinesthetic* awareness helps you do two things:

1. Better understand when movements "feel" right or not.
2. Better understand and respond to external cues.

Developing *muscular* awareness helps you do two things:

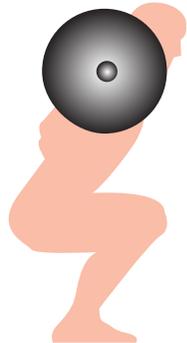
1. Identify your weak links and weak muscles in a movement.
2. Better understand and respond to internal cues.

HOW TO

BODYBUILDING-STYLE ISOLATION MOVEMENTS

Curis, flyes, leg curls, calf raises, hip thrusts, delt raises, shrugs

WORK CAPACITY



1. **Body composition:** You'll respond better to training and recover better if you're leaner – 12-15% bodyfat for men, 20-25% for women.
2. **Aerobic conditioning:** A sufficient aerobic base for powerlifting is a resting heart rate in the high 50s/low 60s for <200lbs., mid-60s for >200lbs.
3. **Nutrition:** Calorie intake in line with your goals, and approximately 0.8 grams of protein per pound of bodyweight.
4. **Lifestyle factors:** Lack of sleep and increased stress decrease how well you can burn fat, build muscle, and recover from training.

Intermediate Training

You're out of low-hanging fruit. You've gained proficiency with the lifts, so the easy neurological gains are in your rear-view mirror. Now it's time to grow. You have two primary goals in this phase of training.

1. Increase muscle mass
2. Continue increasing your work capacity

I'll address these in reverse order. Everything that applied to the subject of being able to train hard and recover well from the previous section still applies here. If you're not lean yet, keep cutting. If your conditioning is still lacking, keep improving it. If your sleep and diet are still poor and your stress is still high, then keep working on addressing those things.

Increasing your work capacity is of utmost importance because, as previously mentioned, training volume is the #1 driver of hypertrophy. You've got to handle high training volume to grow, so you need to be able to recover from that

training volume. On top of appropriate nutrition, adequate sleep, low stress, and favorable body composition, simply increasing your training volume over time will help build that work capacity.

Now it's time to talk about getting jacked. Before addressing exactly HOW to get jacked, though, I first need to touch on WHY training to gain muscle mass is so important for strength athletes, since I always get a surprising amount of pushback about this idea. If you're already on board with the importance of gaining as much muscle as you possibly can, feel free to jump to the section titled "implementation."

Why some people lift more and others lift less

There are, by my count, six factors that largely determine how much weight you can lift right now:

- Muscle size
- Muscle fiber types
- Segment lengths (height, limb lengths, torso length, etc.)
- Motor learning factors
- Motivation/arousal/fatigue
- Muscle origins and insertions

Muscle Size

A bigger muscle, all other things being equal (and those "other things" are the rest of this section), is a stronger muscle. There's no way around it; past a point, you simply have to grow. I won't harp on this one too much more, as I'll

be talking about it in more detail later.

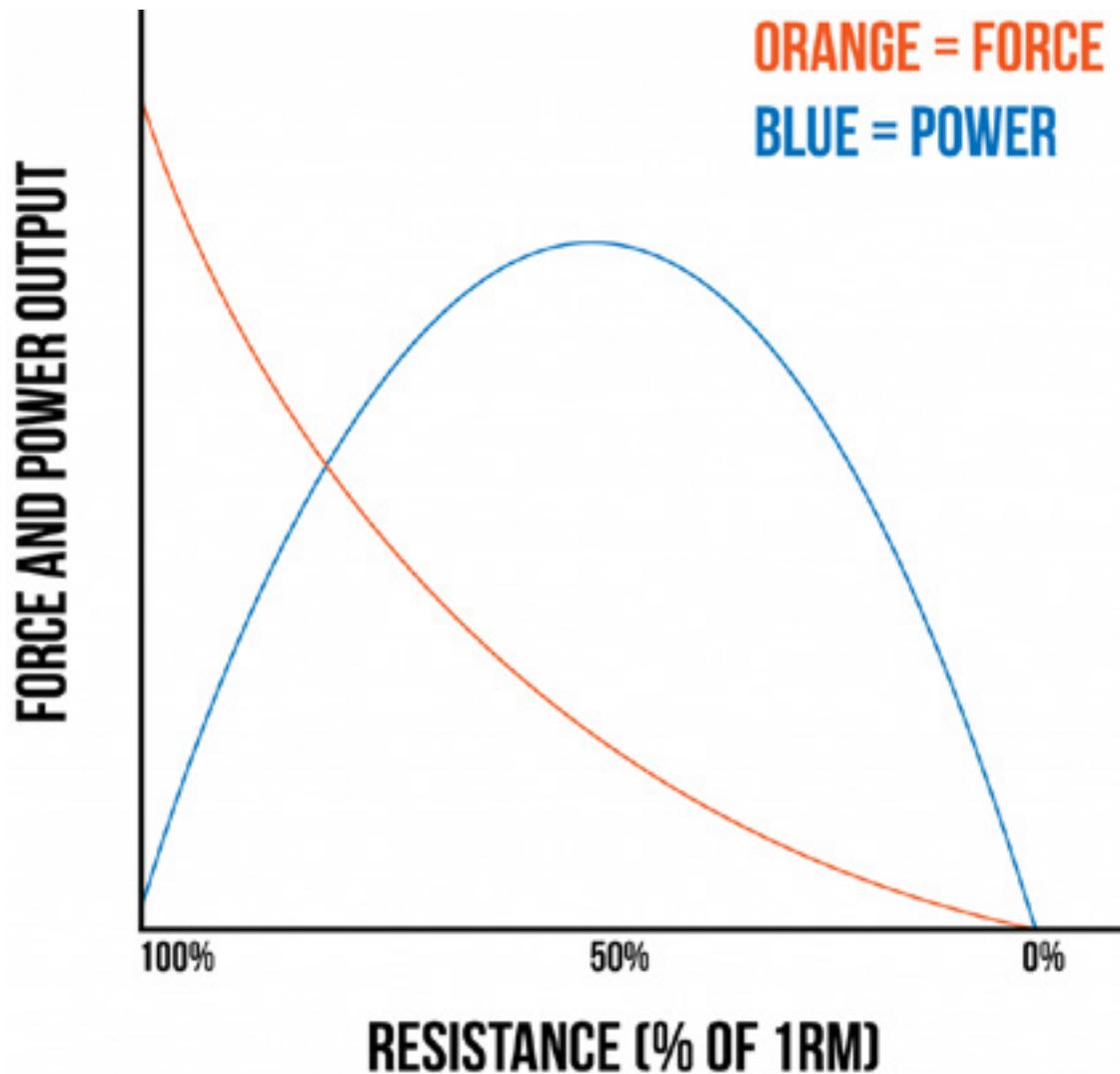
Muscle Fiber Types

I wanted to get this one out of the way early, because it's often misunderstood. Most people are under the assumption that you'll lift more if you have a greater proportion of type II (fast twitch) muscle fibers. However, that belief is based on a misunderstanding of terms.

Type I muscle fibers and Type II muscle fibers differ in several major ways. Type I muscle fibers are less fatiguable (making them great for endurance exercise) and take longer to reach maximal force when stimulated. Type II fibers, on the other hand, are more fatiguable but can reach maximal force much faster when stimulated (making them great for power-dependent exercise).

However, the maximal force production for a given area of Type I fibers is very similar to the maximal force production for a given area of Type II fibers. Depending on what study or textbook you look at, there may be up to a 10% difference. However, this difference doesn't mean much in the real world since all your muscles have a mix of Type I and Type II fibers.

If you compared someone with 70% Type II fibers to someone with 70% type I fibers (both of whom would be outliers), the difference in maximal force production would only be about 4%. Type II fibers simply reach maximal force output sooner, making them better for *power-dependent* activities like sprinting or jumping. Powerlifting, though (contrary to what the name may lead you to believe), is NOT a power-dependent sport. Power output actually peaks around 30-60%1rm and is quite low with maximal loads.



All of which means, fiber type distribution doesn't influence how much you can lift very much at all.

Two caveats:

1. Type II fibers are more responsive to strength training and grow more than Type I fibers do, so fiber type distribution may limit long-term strength potential somewhat. However, that's purely theoretical, because research has shown that elite powerlifters (average squat/deadlift of about 285kg/630lbs, and bench 170kg/375lbs) actually have about the same [Type I/Type II fiber](#)

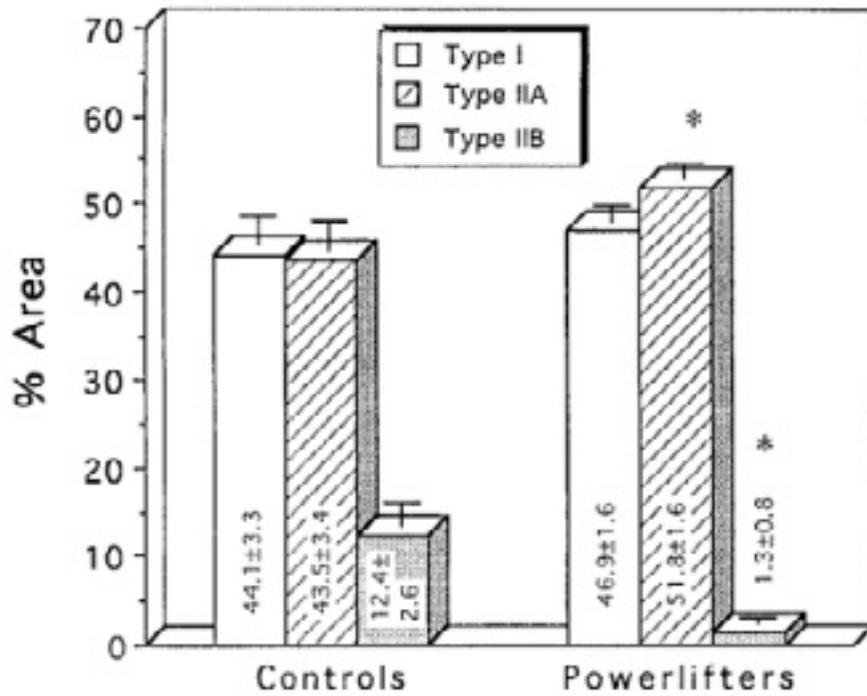


Figure 9. Percent fiber type cross-sectional areas (* $p < 0.05$).

Similar proportions of Type I and Type II (IIa and IIb combined) fibers in pretty strong powerlifters and untrained controls. From Fry et. Al, 2003.

[ratio as untrained people](#), which leads you to believe the sport itself didn't select for people with a fiber ratio skewed toward Type II. So it may be a concern for someone with an unusually high proportion of Type I fibers, but it won't be for the vast majority of people.

- Since Type II fibers reach peak force output faster than Type I fibers, there's a small chance that they'll allow for more speed to be developed off the chest on bench, out of the hole on squat, or off the floor on deadlift, and that speed may help you get max weights through the sticking point of the lift more effectively. However, that's a bit of a stretch for both squat and bench

because the muscles are already contracting quite hard to control the weight while lowering it; for max loads, all your slow twitch fibers are probably recruited already (since they're the ones recruited first – [Henneman's Size Principle](#)) before you reverse the weight, so regardless of fiber type breakdown, the additional fibers activated as you reverse the lifts are primarily fast twitch anyways.

And for deadlift, most people are weakest off the floor. Taking longer to reach maximal force output would mainly just affect how long it took for the bar to break the floor, not the speed of the lift itself. For someone who is weaker in another part of the movement, being able to develop more speed earlier in the movement may give a small advantage, but not enough to be a tremendously important issue.

Keep in mind, I'm only saying fiber type distribution is largely unimportant for powerlifting. For other sports, it certainly matters. More Type I fibers are beneficial for endurance events, and more Type II fibers are beneficial for power-dependent sports.

Segment Lengths

So far, we've been talking about how much force a muscle can contract with. Now we're talking about the torque required to produce movement at a joint.

Torque takes into account both the force applied and the length of the lever (or moment arm) it's applied against. Basic application: If you're sitting on a seesaw and someone much larger is sitting across from you, if you're both sitting at the

end of your respective sides, the other person will be sitting on the ground, and you'll be way up in the air. If they move closer to the middle (the fulcrum), it can balance out the seesaw, even though they're larger.

So, let's say two people are squatting, and everything is the same about them (same basic technique, same level of training, same amount of muscle mass, etc.) except that one of them has longer femurs.

That means that either the moment arm the quads are working against to extend the knees (the distance between the knee and the center of mass – roughly mid-foot), the moment arm the glutes/adductors/hamstrings are working against to extend the hip, or both will be longer for the person with longer femurs. That means that his muscles will have to contract harder (produce more force) to produce the required torque to squat a given weight.

Femur and torso length affect both squats and [deadlifts](#) in this manner. Additionally, total height factors in; since the length of basically all segments will be longer, it requires more muscular force to produce the requisite torque to lift any given load. Finally, arm length is important for both deadlift (shortens the ROM, making the lift easier) and bench press (increases the total ROM).

However, taken as a whole, segment lengths really don't matter too much for OVERALL powerlifting performance. For starters, you're probably not as special of a snowflake as you think you are. Although there is some variability in relative segment lengths, it's usually less than 10% except for extreme outliers (so that guy who squats twice as much as you doesn't do so because you have long femurs. If yours were the same length, he may squat 1.8x as much as you instead of 2x as much).

As far as height goes, required torque increases with height, but so does overall muscle mass. The scaling is allometric, not linear, so shorter people still have a bit of an advantage, but it's taken into account with the [Wilks formula](#), which levels the playing field for shorter/lighter lifters and taller/heavier lifters.

Finally, the advantage that different segment lengths provide in one lift is abolished by a disadvantage in another. Long femurs may be bad for squatting, but they're usually good for deadlifting (since long arms and legs tend to go hand in hand). Long arms may be good for deadlifting, but they're usually bad for benching.

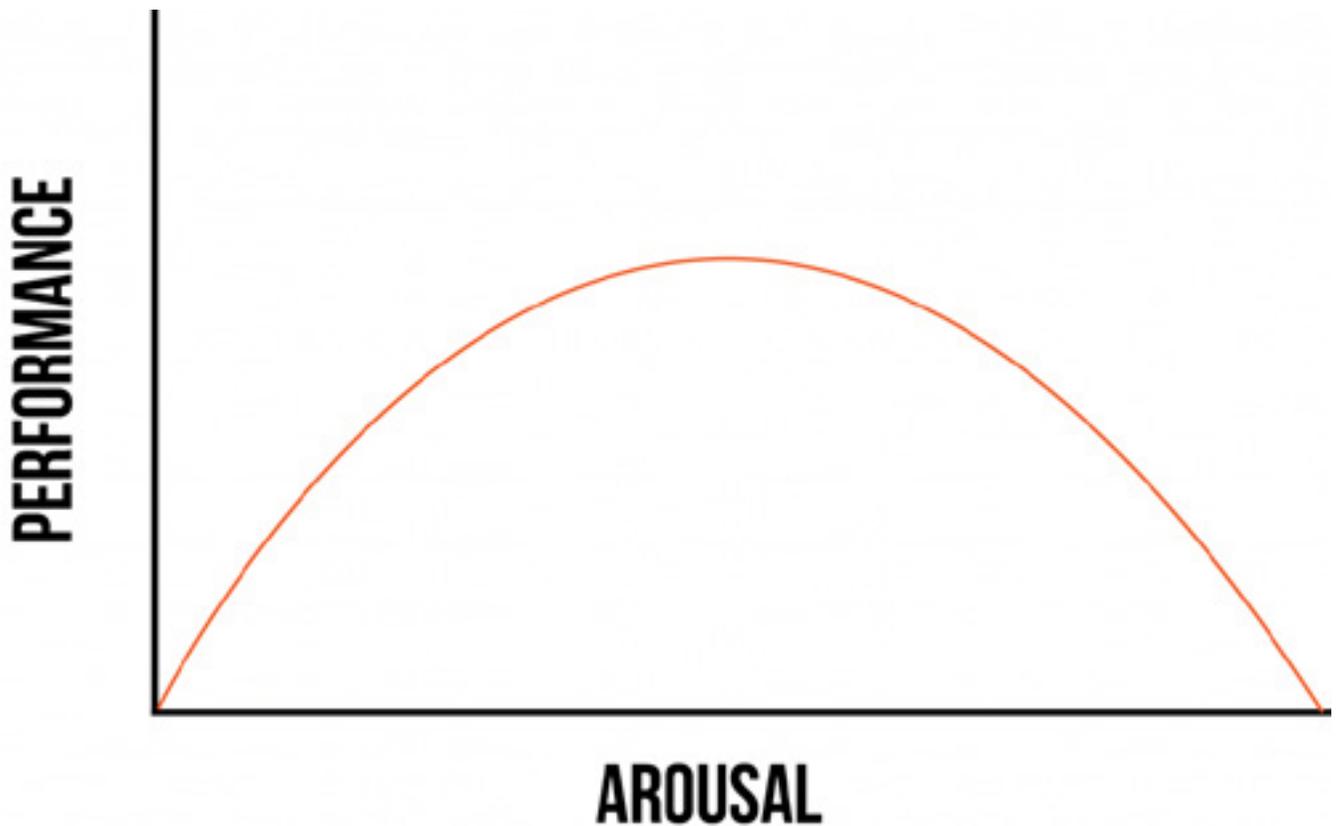
On the whole, segment lengths do affect performance in each lift a bit, but not as much as people who use them as a crutch would like to believe (usually a difference of less than 10%). Furthermore, a disadvantage in one lift usually becomes an advantage in another.

Motor Learning/Neuromuscular Efficiency

We've already talked about this a bit, and we'll discuss it more again later, so we'll skip this piece for the time being.

Motivation/Arousal/Fatigue

These all relate to how much you can lift *today*. If you're more motivated to lift, you're less fatigued (basic application of Banister's Impulse-Response model, otherwise known as the fitness-fatigue paradigm), and if you are at optimal arousal (with both too little and too much being detrimental – [Yerkes-Dodson Law](#)), you'll be able to lift more.



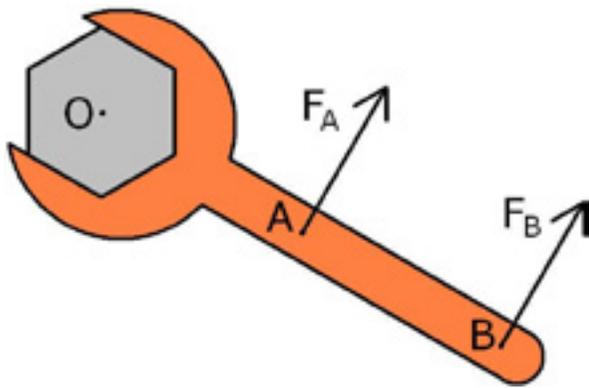
Muscle Origins and Insertions

This is a huge factor not many people talk about. Our bodies aren't actually built very well for lifting heavy things. When you compare humans to comparably sized animals, we tend to be far weaker.

The primary reason for that is difference in muscle attachments. A muscle that attaches further from a joint is capable of producing more torque at that joint. Our muscles, for the most part, attach very close to the joints they move.

This is good for allowing large ranges of motion (because a given amount of movement at a joint requires less tissue extensibility), but means that the force (linear) our muscles produce isn't translated very efficiently into torque (angular) at our joints.

Here's a simple illustration. If you grip this wrench at point A, you'll have to

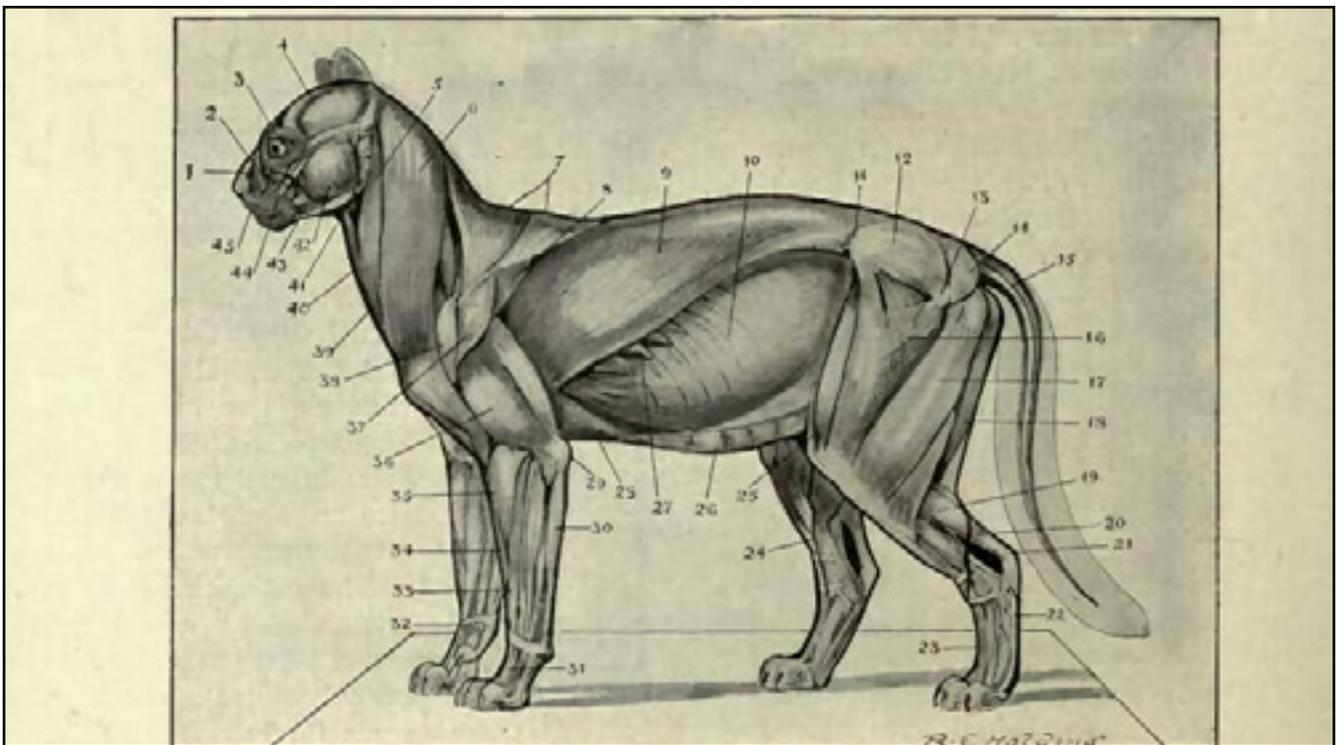


Grab at point B if you want to actually get the job done. Grab at point A if you're trying to get a sick forearm pump.

pull a lot harder to turn the bolt than if you were gripping it at point B.

For the most part, humans' muscles attach in a manner more similar to point A, and other animals' attach in a manner more similar to point B.

So you'll see what I'm talking about, let's compare the hamstrings of a human and a cat. Look how far down the tibia and fibula the hamstring muscles (marked 17 and 18) of a cat insert, compared to how close to the knee human hamstrings insert. That means that if a human and a cat contract their hamstrings with the same amount of force, the cat will produce WAY more knee flexion torque.



Humans have some variability in muscle attachment points, and this variability matters far more than variability in segment lengths, because a small change can make a big difference.

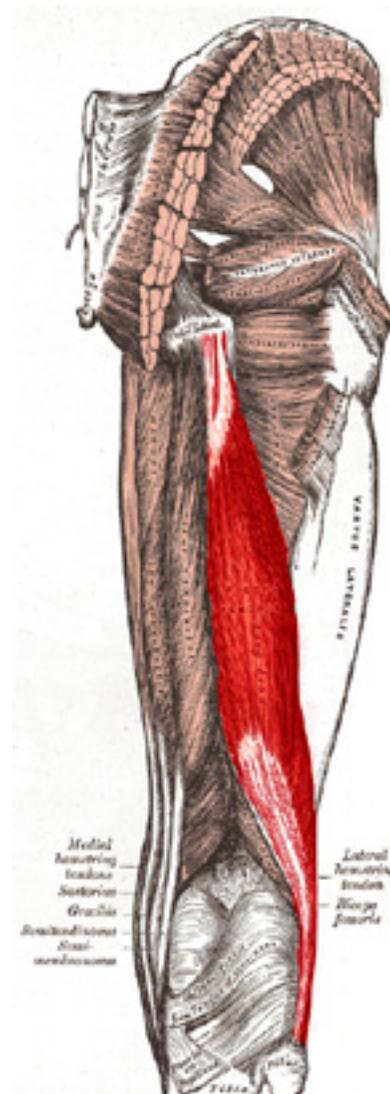
Just to illustrate: Let's say you're comparing hip extension torque for two people doing good mornings with their torsos parallel to the ground. One person's torso is 10% longer than the other person's. That means the moment arm (basically the front-to-back distance from the barbell to their hip joint) is 10% longer for the person with a longer torso, so they need to produce 10% more hip extension torque to lift a given load.

Now let's say you're comparing two people with the same torso length, but one person's ischial tuberosity (the origin point for the hamstrings) protrudes an extra inch, or their hamstrings originate a bit further down on the ischial tuberosity – which is entirely within the realm of possibility. Pelvises come in all shapes and sizes.

Let's say the distance between the hip joint and the origin of the hamstrings is about 3 inches on average. That extra inch means they produce ~33% more hip extension torque if their hamstrings contract with the same force.

Because muscles attach so close to joints (usually not more than 2-4 inches away), small variations can make a big difference.

If your pecs insert farther down your humerus, you're more apt to be a big



bencher. If your lats insert farther down your humerus, you're more apt to be able to do some really heavy weighted pullups. If your patellar tendon inserts a bit farther down your tibia, you'll probably be able to squat more. You know that guy who can curl a ton without impressive biceps? I'd bet he has biceps that insert farther down his radius.

So what do we do with all this?

Now let's take a look back at each of these factors to see where we should direct our efforts in training.

Origins and insertions: This may impact what technique will allow you to lift the most weight (another reason why the notion of universal "[perfect form](#)" is laughable), but you can't really change them, barring surgery.

Motivation/arousal/fatigue: These are all acute factors. Learning how to mitigate fatigue and manage arousal are good skills to acquire, but they have more to do with how much you can lift today rather than long-term strength potential.

Motor learning/neuromuscular efficiency: Proficiency/mastery comes with practice. The incremental gains in neuromuscular efficiency that come with continued practice after the initial improvements when you start lifting aren't enough to explain the size of the strength differences between people.

Segment lengths: Similar to muscle origins and insertions, these may affect technique to a certain degree, but you've got to play the hand you're dealt.

Muscle fiber types: Ditto. Plus, they don't really matter too much for power-lifting anyways.

Muscle size: Ding ding ding. We have our winner.



Some of the top guys in the world today, looking suspiciously swole.

Of the factors we've discussed, muscle size is the only one you're able to change in a major way in the long run, except for motor learning/neuromuscular efficiency (however, the differences between people in this area are pretty small after the initial rapid progress when you start lifting).

Before going any further, I'd just like to point out that training with a focus on gaining mass to dominate at powerlifting is directly supported in the literature. [One study](#) found that in elite level powerlifters, performance in all three lifts was strongly correlated ($r=0.8-0.9$ for some) to muscle thickness in the prime

movers (although bizarrely, it was most strongly correlated to subscapularis thickness in all three lifts, just as an aside). [Another](#), hot off the presses, found again that one of the strongest predictors of performance in national-level lifters was muscle mass per unit height. Big is strong.

Here are a couple of direct quotes:

Brechue and Abe. “The Role of FFM Accumulation and Muscle Architecture in Powerlifting Performance.” *European Journal of Applied Physiology*. (2002).

“Performance of the SQT, BP, and DL was strongly correlated with FFM and FFM relative to standing height ($r = 0.86$ to 0.95 , $P < 0.001$).”

Lovera and Keogh. “The Anthropometric Profile of Powerlifters: Differences as a Function of Bodyweight Class and Competitive Success.” *The Journal of Sports Medicine and Physical Fitness*. (2015).

“...more successful powerlifters typically have higher degrees of muscle mass expressed per unit height and/or bone mass but similar segment lengths and segment length ratios to their less successful peers.”

And just to reiterate, both studies found that the key issue was muscle mass per unit of height, meaning that, since you can't make yourself any taller or shorter, simply gaining more muscle is almost always an advantage. Think of muscle mass as potential strength. If you gain mass, you may not necessarily be stronger right away (i.e. if you trained with lower weights and lost a bit of technical efficiency with max weights), but you have the potential to be stronger.

If you stay the same size, you have a cap on how strong you can possibly get.

When comparing two individuals, the one with more muscle may not necessarily be the stronger one (for all the factors listed above – muscle attachments, segment lengths, technique, etc.), though he probably will be. However, when comparing small you to jacked you, all other things being equal, jacked you will be stronger.

All of those other factors (apart from muscle size), particularly segment lengths and muscle attachment points, largely explain why some relatively light people who aren't overly jacked-looking can still lift huge weights. It's not that their smaller muscles contract any harder than yours do; it's that either they have body segment lengths that are advantageous for a certain lift, requiring less torque to lift a given weight, or they have muscle attachment points that allow them to produce more torque at a joint with the same force of muscle contraction. There wasn't any special training that allowed them to lift heavy weights with relatively little mass; most of it simply has to do with how they're built.

So, the primary goal of intermediate training is to get into the highest weight class possible, as fast as possible, while still being fairly lean (below 15% body fat for men, and below 25% for women) and protecting the joints as much as possible.

Some people balk at the idea of moving into higher weight classes, because people lift more in higher weight classes, so they think it will benefit them to get into a lower weight class. However, remember the bit about levers and torque. If you are taller than someone else, you have to produce more muscular force to generate sufficient torque to lift the same amount of weight. Being taller than other people in your weight class automatically puts you at a disadvantage.

Conversely, if you can get super jacked and be one of the shortest people in your weight class (while staying fairly lean), it puts you at an advantage. Though you may be more competitive now in a lower weight class, it's probably not where you'll be most competitive long-term.

As some of my weightlifting friends are fond of saying: "Weight classes are height classes in disguise." Of course, if you don't plan on competing and are just trying to get strong for its own sake, it should be obvious that gaining as much muscle as possible is a definite advantage.

Implementation

So, you have three primary goals:

1. Get freaking jacked
2. Accumulate the least amount of joint wear and tear possible
3. Maintain or increase proficiency with the lifts

Here's a general outline for how to accomplish that:

1. Ramp up your training intensity for the main lifts a bit (doing most of your training with 75-85% of your max, with very little work below 70% and very little above 90% unless peaking for a meet) to continue improving your technique and skill lifting heavy weights.
2. Include more variation for your main lifts. This will allow you to push your lifts hard, while avoiding monotony and overuse injuries from sticking with the exact same movements all the time. Paused squat, front squat, close

- grip bench, bench from pins, opposite stance deadlifts, deficit deadlifts, etc.
3. Keep volume for your main lifts low to moderate, and stay at least 1-2 reps shy of failure at all times (avoiding technical failure). You don't need a ton of high quality, heavy work to maintain and improve neural factors, but getting the bulk of your training volume from your main lifts will generally beat you up a bit more, and limit how much total training volume you can handle per session and per week.
 4. Get the bulk of your training volume from accessory lifts for all major muscle groups, with sets of 6-15 reps, training each muscle/movement 2-3 times per week for 4-6 sets (or 40-70 total reps) per session. I recommend accessory lifts over lighter sets of squat, bench, and deadlift to cut down on risk of overuse injuries, and to keep training specificity high for the main lifts (since lifting heavy stuff for low reps and lighter stuff for higher reps are different skills, you don't want to "water down" the motor learning you're doing your main lifts, unless you're splitting your training into more distinct phases, as we'll discuss later).
 5. Plan for weight increases and PR attempts for the big lifts on a realistic time scale. At first, use 4 week training blocks, shooting for small PRs every 4 weeks. When you aren't hitting PRs consistently on that time scale any more, transition to 8 week cycles, then 12. You should be able to PR every 12 weeks (during bulk phases) throughout the duration of your time doing intermediate, hypertrophy-focused training.
 6. Periodization isn't overly important for hypertrophy, but varying your training a bit simply helps keep workouts feeling fresh.

Study	Sport	Injury rate per 1,000 hours	Most common regions
Winwood	Strongman	5.50	Low back
Keogh (2006)	Powerlifting	4.40	Shoulder
Quinney (1997)	Powerlifting	3.70	Low back
Calhoun (1999)	Olympic weightlifting	3.30	Low back
Hak (2013)	CrossFit	3.10	Shoulder
Raske and Norlin (2000)	Olympic weightlifting	2.60	Low back
Raske and Norlin (2000)	Powerlifting	2.60	Shoulder
Haykowsky (1999)	Powerlifting	1.10	Low back and shoulder
Siewe (2011)	Powerlifting	1.00	Shoulder
Eberhardt (2007)	Bodybuilding	1.00	Not specified
Brown (1986)	Powerlifting	0.84	Shoulder
Siewe (2014)	Bodybuilding	0.24	Shoulder

From strengthandconditioningresearch.com

7. Split your training into bulking and cutting phases. This generally allows you to gain muscle at a faster overall rate than attempting to gain it with minimal body fat fluctuations. Aim to gain about half a pound per week until your body fat percentage reaches about 20-22% for men, and 28-30% for women, then slowly cut back down to 10-15% for men, and 20-25% for women, losing about 1% of your bodyweight per week. I'd highly recommend [this article](#) for more in-depth details.
8. Don't tie up too much of your time in training to peak for competitions. A simple 3-4 week peak will be enough for most people to hit very solid lifts on the platform since you're training the main lifts fairly heavy throughout this period.

On top of the reasons given above, a major reason to make your training more "bodybuilding-centric" during this phase is that bodybuilding-style training has an astoundingly low injury rate. When looking at injury rates in various

strength sports, bodybuilding generally fares considerably better than powerlifting, weightlifting, or strongman.

Remember the importance of maintaining joint health over the long haul. Yes, you can absolutely build a ton of muscle doing more heavy powerlifting-specific training [as long as you're doing enough sets](#).

However, the goal for this phase is to build that muscle while minimizing risk to set you up for greater long-term success, and even the [best study to date](#) comparing volume-equated “powerlifting-style” vs. “bodybuilding-style” training found that, while they produced similar hypertrophy, getting that volume from heavier training caused more aches and general feelings of being worn down.

How long does this usually last? Again, it depends on the person and how quickly they gain muscle (which is largely genetic). It's generally a period of 3-8 years. The first time you gain less than 3-5 pounds of muscle (comparing at similar body fat percentages) in a year of consistent training and diet, it's time to transition to advanced training and start wrecking worlds.

Further reading for intermediate lifters

[The New Approach to Training Volume](#) →

[High Bar and Low Bar Squatting 2.0](#) →

[Everything You Think is Wrong With Your Deadlift is Probably Right](#) →

[Tucking the Elbows for Bench – You're Probably Doing it Wrong](#) →

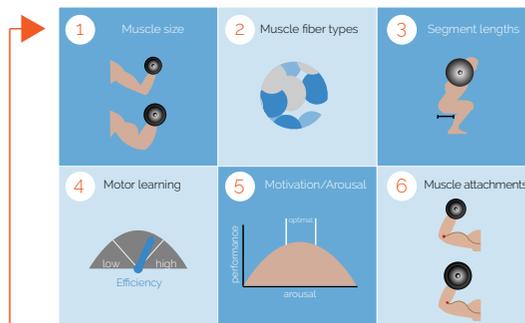
INTERMEDIATE LIFTER'S GUIDE

1 Continue increasing your work capacity.

- Training volume is the #1 driver of hypertrophy.
- You've got to handle high training volume to grow, so you need to be able to recover from that training volume.
- On top of appropriate nutrition, adequate sleep, low stress, and favorable body composition, simply increasing your training volume over time will help build that work capacity.

2 Increase muscle mass.

There are six factors that determine how much weight you can lift:



Muscle size is the only factor you're able to change in the long run, except for motor learning/efficiency.

Implementation

Your mission: Get jacked, accumulate the least amount of joint wear and tear possible, maintain or increase proficiency with the lifts.

1 Ramp up your training intensity for the main lifts, doing most of your training with 75-85% of your max.

2 Include more variation for your main lifts: paused squat, front squat, close-grip bench, deficit deadlifts, etc.

3 Keep volume for your main lifts low to moderate, and stay at least 1-2 reps shy of failure at all times.

4 Get the bulk of your training volume from accessory lifts for all major muscle groups.

5 Plan for weight increases and PR attempts for the big lifts on a realistic time scale.

6 Periodization isn't overly important for hypertrophy, but varying your training a bit keeps workouts feeling fresh.

Advanced Training

At this point, you have most of the muscle you're ever going to get (unless you've been drug-free to this point and decide to start taking vitamin S), so your job is to get everything you can out of it.

That requires moving from proficiency to mastery with the lifts.

Though by this point, you've already taken care of the low-hanging fruit in terms of neuromuscular improvements, there's still room for improvement.

There's actually a surprising amount of neural coordination that goes into lifting really heavy stuff. You have to activate the vast majority of the muscle fibers in your prime movers, you have to coordinate their contractions so that the sequencing of the lift is perfect (both intermuscular and intramuscular coordination), and then those muscle fibers have you contract and relax very rapidly (rate coding), and the more rapidly they can do so, the more force the muscle can produce.

Activating the muscle fibers and coordinating the movement can both be

learned with submaximal weights (about 80-85% of your max works nicely).

However, there are slight changes in technique that take place with maximal loads (not form breakdown – the extra weight just changes how force is distributed throughout the system slightly), meaning the general coordination can be honed even further. Additionally, rate coding (the speed at which the fibers can contract and relax) doesn't start accounting for increases in muscular force until the muscle is already contracting at about 80-85% of its maximal force, meaning that it is also best trained with even heavier loads, and can still be improved upon once you reach the advanced level.

Periodization also plays a larger role in advanced, purely strength-focused training, as it [contributes more to strength development](#) than muscle hypertrophy.

Here's a general outline of how advanced training should be set up:

1. The offseason period is dedicated to building specific work capacity for the main lifts, meaning lots of submaximal training utilizing variants of the main lifts (high frequency, high volume, relatively low intensity, and high variation to decrease risk of overuse injuries). This prepares your body to handle the very heavy loading necessary to drive mastery of the lifts with maximal weights.
2. In the offseason, accessory work should be dedicated primarily toward fixing specific muscular weaknesses that are hindering performance in your main lifts. Cut back on the amount of other “bodybuilding” work you do so more of your energy can be devoted to the main lifts. It's hard to mix high volumes of squat, bench press, and deadlift with equally high volumes of accessory lifts, making the latter a poor use of time and energy since you're

- simply not going to achieve much extra hypertrophy from them anyways.
3. As you approach a meet, decrease training frequency and volume for each lift so you can increase intensity.
 4. During the last ~6 weeks before a meet, be very conservative with accessory work. That's not enough time to add much extra muscle, and the more energy you use on accessories, the less you have to devote to your main lifts.
 5. Try to maximize the number of high quality lifts you can get in with 85-95% of your 1rm while minimizing fatigue for the last 4-6 weeks before a meet. You want to be as fresh as possible for each heavy session so your high output work can be as close to maximal output as possible (very high specificity necessary for mastery). Your goal is to practice the lifts as much as possible in a hyper-specific manner, which necessitates very high loads and very low fatigue.
 6. Try to compete about twice per year. You want enough time between meets that you can reasonably improve your total each time you step on the platform, but you also want to practice competing so that you get practice managing meet-day nerves, picking attempts, cutting weight, etc. You can certainly compete before reaching the advanced level, but this is when the skill of competing matters the most.

How long can you continue improving once you've reached this level? As with each of the other phases, it depends. There's no reason you can't keep improving until injuries start to set in, or until the aging process finally catches up with you. You'll never reach 100% technical perfection, so there's always some room to improve there. You'll also be able to continue gaining a little

muscle each year. Not a ton, but enough to make a small difference.

Further reading for advanced lifters

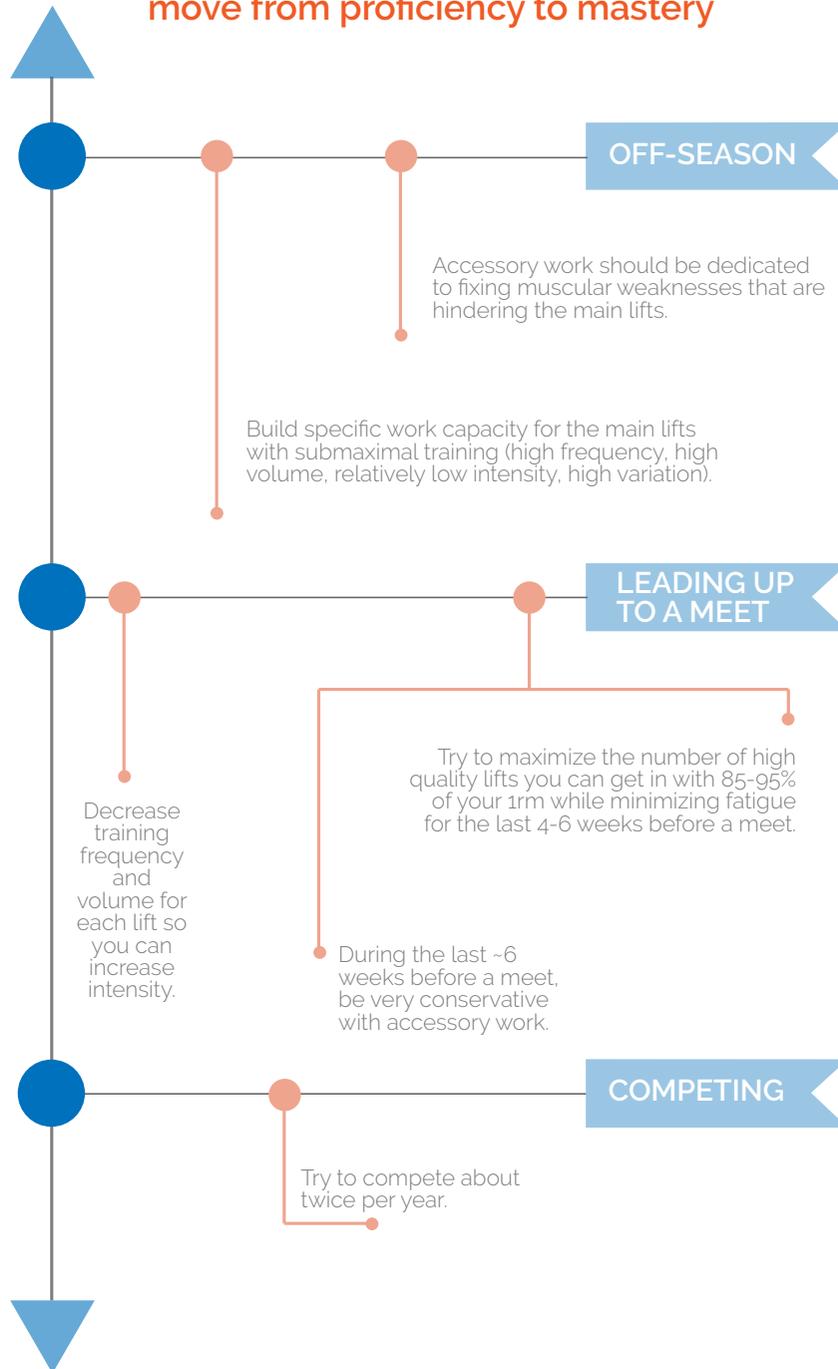
[Hamstrings: The Most Overrated Muscle for the Squat 2.0](#) →

[Unleash Your Inner Superhero](#) →

THE JOURNEY, PART 3: A COMPLETE GUIDE TO
PROGRESSING FROM BEGINNER TO ADVANCED

ADVANCED LIFTER'S GUIDE

move from proficiency to mastery



Final Notes and Anticipated Questions

I want to point out something I didn't state explicitly. Beginner, intermediate, and advanced are defined in this guide by the primary factors limiting performance, NOT arbitrary strength standards. How much you can lift at the end of each of these phases is mostly dependent on how well you chose your parents (the genetic hand you were dealt). This isn't a guide for breaking world records. It's a guide for reaching your own strength potential.

This guide has focused primarily on training. However, I want to reiterate that training doesn't take place in a vacuum. Proper nutrition, sufficient sleep, and stress management all play just as big of a role as proper training, if not bigger.

You don't get stronger in the gym.

Most people don't stop to consider this basic fact. At the end of a workout, you've accumulated some fatigue and you're weaker than when you walked into the gym.

You get stronger outside the gym.

So what do we do with this information?

It should make you look at training from a slightly different perspective.

Rather than looking at training with the perspective of “I’m going to do this because it will make me bigger and stronger,” you should look at training thinking, “I’m sending my body a message, and I would like it to respond to that message by strengthening and growing.”

It may seem like a semantic difference, but it’s an important one, because it helps put the entire training process in perspective.

You see, it’s not the training itself that makes you bigger and stronger. It’s how your body RESPONDS to the training that makes you bigger and stronger.

Your body adapts by responding to what it perceives to be a threat. When you work out, you’re sending your body the message that being forced to lift heavy weights is a “threat” (via stress to your muscles, bones, and connective tissues) that it needs to respond and adapt to.

That’s all well and good when lifting is the only major threat your body perceives. It will generally have no issues adapting to it.

But what happens when you throw more threats at it? And what are these threats? Anything your body perceives as a significant stressor.

When your body is trying to respond to multiple threats at the same time, it doesn’t respond quite as well to any of them. You can think of it as multitasking. If you’re trying to read a book, play a video game, and work on a project for school or work simultaneously, you won’t retain much of what you read, your kill:death ratio will be horrendous, and you’ll certainly do pretty lousy work

on your project.

Two of the most important threats that keep your body from responding well to training are lack of sleep and chronic life stress, such as a stressful job, a bad relationship, financial worries, etc.

Without going too much into the nuts and bolts of your body's stress response, it meets these threats by making sure you have plenty of energy floating around your blood stream, available for use to keep you more alert and to make sure you'd be capable of fighting or running away if the situation called for it (for most of human history, those were the two basic ways we responded to most threats, hence the common term "fight or flight" response).

Ensuring you have enough available energy to meet these stressors is your body's primary adaptive response. Most importantly for the context of lifting: This is an inherently catabolic ("breaking down tissue") process. Your body breaks down stored glycogen and proteins to make sure you have enough available energy to respond to the threat.

That's bad news for the lifter. Getting bigger and stronger is a fundamentally anabolic ("tissue building") process.

So when the stress from day-to-day life and lack of sleep tell your body it needs to be in a catabolic state, you're going to have a hard time carrying out the anabolic process of building muscle.

If you want to get into the nitty gritty a bit more, there are already articles on Strengththeory about how lack of sleep [makes it harder to lose fat and gain muscle](#), and about how [chronic stress literally doubles how long it takes you to recover from lifting](#).

But right now, we can keep it simple. Training is like having a conversation with your body. You give it the message that it needs to get bigger and stronger via stress on the muscles, bones, and connective tissue. You hope it will respond to that message appropriately. But when stress builds up and you're not sleeping enough (which is a stressor of its own, which also compounds the effects of whatever chronic stress you're under), *you're effectively sending your body mixed messages, telling it that it should both tear itself down and build itself up.*

The end result is something similar to the multitasking scenario from earlier. It doesn't do a very good job getting bigger and stronger, and the training stress makes you less able to cope with the stressors of day-to-day life and lack of sleep until eventually your body is so worn down that you completely burn out, often resulting in some sort of [sickness or infection](#); when your body's ability to respond to threats is overwhelmed, bacteria or viruses that would usually be stopped cold by your immune system are able to multiply enough that you wind up sick with a cold, flu, or respiratory infection.

So remember, when you're trying to tell your body it needs to get stronger, you need to make sure you're managing your day-to-day stress and sleeping enough, otherwise you'll get nowhere.

If you have any questions or criticisms after reading this guide, please email me. I want it to be as thorough, understandable, and accurate as possible, so if you didn't understand something or think I screwed something up, please shoot me an email at greg@strengtheory.com to let me know how I can improve it.

Further reading for all lifters

[Sleep, Pt. 1: Wrecking Your Diet, One Night At a Time](#) →

[Poor Recovery and Increased Muscle Breakdown: Insufficient Sleep Part 2](#) →

[Stress: The Silent Killer \(Of Gains\)](#) →