

**Strength Training with SDT  
The Singles Scene  
Strength Consolidation  
Plus Bonus Material**

**A free publication brought to you by GUS**



**[www.GroundUpStrength.com](http://www.GroundUpStrength.com)**

A free strength training pdf brought to you by Ground up Strength:  
<http://www.gustrength.com>

## Strength Training with Single, Double, and Triple Progression

By Eric Troy

<http://www.gustrength.com>

The only other person, besides me, that I've known to speak in-depth about single, double, and triple progression is Anthony Ditillo. However, to be frank, most of what he said about it makes no sense to me and he seems to have been applying the terms to established styles of training as an alternative to what others had named their training methods, such as "the pyramid system".

When Ditillo spoke of single and double progression he seems to have meant simply allowing yourself to use more than one way to progress. Or in other words to manipulate more than one parameter. This should be common sense.

Consider that there are basically three ways to progress (there are MANY ways to progress but we are only considering three direct ways). You can add weight to the bar. You can add reps to existing sets with a given weight. Or, you can add sets to an already established number of sets with a given weight.

Ditillo discusses these same parameters concerning single, double and triple progression. However, it becomes clear, with due study, that most of the time he is only talking about progressing by one parameter at any one time and is simply speaking of using more than one parameter as a means to progress over a PERIOD OF TIME. So, to simply say that there is more than one way to progress over a period of time and then to give this a name, i.e. "double progressive system" or "triple progressive system" is, to me, simply an attempt to organize his thoughts about training and has not much to do with actually using anything more than single progression since a single parameter is increased at any one point in time.

To me, therefore, it's just a name and I appreciate Ditillo's efforts at calling our attention to the fact that there are many ways to progress, I don't think that one can rightly call his ideas examples of "double progression" or "triple progression" in any way other than CHOOSING to name his ideas that.

My biggest problem with it is that even though you may only be progressing by one parameter in any given workout, if you use more than one parameter in any given training period people think this is

"triple progression". Without even knowing what that means it simple SOUNDS like "too much"!

Tell a beginner that he can also add reps and sets rather than just weight and you will likely have armchair trainers shouting, NO! Beginners can't use triple progression! When, in fact, single, double, and triple progression is tailor made for the beginner. And a trainee CAN progress by MORE THAN ONE MEANS in a workout. He or she can use only single, or use double or triple and with a minimum of reactive based training this can naturally flow with the trainees state of preparedness.

The great thing about being free to use all three is it can allow you to vary the stimulus so that you don't get burned out. It can also allow you to slowly build on the volume and then back down to a base volume while increasing intensity...built in natural peaks. With all that said, it is required to get out of the mindset of a certain number of reps being the be all and end all, and just knowing that adding reps has a benefit up to a point just as adding sets does.

So, after establishing that we are talking about load (weight on the bar), reps, and sets, Ditillo and I part ways. But I'd like to be clear that I have the greatest respect for Anthony Dittilo's teachings and his book, "The Development of Physical Strength" has had a great influence on me as well as many of his articles. He helped form my ideas about strength consolidation which basically entails increasing work tolerance at a given range - and Ditillo was a big proponent of this type of thing.

Before I begin this explanation of single, double and triple progression for strength training I need to state some very important things up front.

The first thing you will notice is that these concepts are about numbers. And I'm sure most of you reading this will be quite familiar with numbers in strength training. Most training rationales have an increase in numbers as their primary means of progression.

This may be increased weight. Increased reps. Increased sets...but it's always about numbers. So I want to be clear that there are MANY different ways to progress and many different things that REPRESENT progression. Strength training is NOT JUST ABOUT NUMBERS. There are many things you can improve that have nothing to do with

numbers and that improvement represents progression...and that can lead to higher numbers down the road.

### **What is SDT?**

The remainder of this article will sometimes refer to single, double, and triple progression as SDT for short.

SDT uses three main ways to progress and these concepts can be used at any time in ones strength training career but it should never be considered the be all and end all. There comes a point where everyone has to focus on that one "ingredient" in order to see changes in absolute strength. Individuals who are new to strength training and to resistance training in general, will find this the most useful as a primary means of training. More advanced trainees may want to use it more as an adjunct for secondary lifts or as a way to gather volume. Although even those individuals will have need for it as, for example, my use of it in the 'strength consolidation' routine.

The first thing you should notice, which should be clear from the beginning of this article, is that there is nothing new or innovative in the basic PARAMETERS of progression. It's so simple you may think this is just plain belaboring the obvious. However, even though most people are aware of these basic parameters of progression, most never really use them in the way I will outline in this article.

We will assume that rest periods will remain fairly constant for simplicity. Keep in mind, however, that depending on your needs and goals, more or less rest between sets can be used. For example, rest periods can be gradually decreased for strength endurance.

Using single, double, and single progression the way I will explain is somewhat a "reactive" based way of training and progressing. The fact is I've been teaching people how to use this for years...long before "reactive" training was a 'brand name'. But reaction is only part of it. Like any good training we make a plan but we allow ourselves to think on our feet and adapt to our changing needs.

### **To reiterate, the three ways to progress:**

1. Add weight to an existing number of sets and reps.

2. Add reps to an existing number of sets (call this increasing density/volume. Adding any number of reps to any or all sets is progression. Adding any number of reps to any or all sets is progression.
3. Add set(s). Adding a set alone is single progression even if that added set isn't the same number of reps as the previous sets. Now, you have to use logic here. If you were doing 3x5 and you added one more set of two that would be less progression than adding two reps to the first set of five. You see? Because of the rest and recovery involved. This should give you the idea that, up to a point, one should first attempt to add reps to existing sets before attempting to add sets.

Such an idea would be absolutely correct as long as one keeps in mind that it is only correct, as stated 'up to a point'.

So, during any one workout, we can use single, double, or triple progression and at any time we can add weight to the base volume. When we add weight to the base volume we start again from there or we establish a new base to work from depending on our goals.

Sometimes it's useful to simply count the reps and then look at any added reps as a percentage of the starting reps. This helps keep us reasonable because in fact many times we are making very big additions in volume without even realizing it. It doesn't seem much just looking at it but in pure mathematical terms it is in fact very large. Adding another set of five to an existing 3x5 sets is a thirty percent increase in total volume.

### **An example of something that may happen in the gym:**

Week 1: 150 x 6 reps x 2 sets

Week 2 : 155 x 6 reps x 2 sets

Week 3: 160 x 6 reps x 2 sets, 160 x 4 reps x 1 set

Week 4: 175 x 4 reps x 3 sets

Can you spot the weeks that are single progression and the weeks that are double progression?

In week two, we add 5 pounds to the bar and do the same number of sets and reps. So single progression. In week three we add 5 pounds to the bar and do the same number of sets and reps plus we add one

more set of 4. Double progression: we have added load AND volume. In week three, we add two reps to our last set of 4 from the previous week. Single progression. In week 4 we add weight but drop the volume and density back a bit, but not that much. So we consider this single progression.

This may be somewhat an extreme example when looking at week three. It's not that such thing is impossible only that if one were able to add 5 pounds to the bar AND add a four rep set it begs the question of whether more weight should have been utilized at the outset.

But such an example serves to illustrate how using single and double progression gives us a natural way to gauge our training.

### **So here is the example again labeled:**

Week 1: 150 x 6 reps x 2 sets - Base

Week 2: 155 x 6 reps x 2 sets - Single Progression

Week 3: 160 x 6 reps x 2 sets, 160 x 4 reps x 1 set - Double Progression

Week 4: 175 x 4 reps x 3 sets - Single Progression

Note that since the total number of reps in week four is the same as in week one. But the density has decreased as it took us three sets instead of two to do it. But we have increased the load fifteen pounds from the previous workout and 25 pounds since week one. So, given such a big jump in poundage and a relatively short time we consider week 4 to be single progression FROM week one, made possible and/or manifested by weeks three and four.

So, by the same token, if it took twelve weeks to get to that 175 pounds then we could not compare it reasonably to week one but instead would have to gauge our progress by the weeks leading up. To avoid the possible confusion that long and drawn out periods of progression present, I separate the progressions into four to six week phases.

Therefore, as in the above example, we have a four week phase. A new baseline is established in the fourth week with three sets of four with 175 pounds. So our new phase can start with that but keeping in mind our original starting point. In week one of this new phase we might repeat the last workout of the old phase, our starting point for this one. But in the example below we will continue to progress:

Week 1: 175 x 5 reps x 3 sets - single progression  
Week 2: 175 x 7 reps X 1 set, 175 x 5 reps x 2 set - single progression  
Week 3: 175 x 7 reps x 3 sets - single progression  
Week 4: 180 x 3 reps x 1 set, 175 x 8 reps x 1 sets, 175 x 7 reps x 2 sets - triple progression  
Week 5: 180 x 5 reps x 1 set, 175 x 8 reps x 1 set, 175 x 7 reps x 2 sets - single progression  
Week 6: 190 x 6 reps x 2 sets - basic progression

Note that in week six we add weight but drop the volume back down to the original two sets of six. Even though we have added ten more pounds we have cut the volume by more than half. So we have progressed forty pounds from our starting point and deloaded a bit from the aggressive volume we had built up.

This is example may be pushing it to the edge of what is possible except for novice trainees. But of course this way of progressing is particularly suited for novice trainees. However, all such examples are ONLY examples. They are not to be taken as a recipe for progression. Although there is nothing wrong with having a loose plan in place for how you wish to progress, SDT allows you to simply progress by whatever means you are able to do at the time. Or, whatever you feel like doing at the time.

Unlike rote linear/single progression schemes you will always be able to progress in some way and will not have to ever REMOVE weight from the bar. Personally, I cannot think of a more psychologically damaging concept for a trainee than to continually have to remove weight from the bar in order to build back up and continue progressing in the same mundane way you were doing it before. And I certainly wouldn't call such a process "efficient". So SDT represents a simple and natural way to progress. It is not contrived and stilted and that is exactly what makes it elegant.

### **How about an example using pullups?**

Week 1: 6 sets x 1 rep - base  
Week 2: 7 sets x 1 rep - Single Progression  
Week 3: 2 sets x 2 reps, 5 sets x 1 rep - single Progression  
Week 4: 1 set x 3 reps, 2 sets x 2 reps, 6 sets x 1 rep - double Progression

Week 5: 2 sets x 3 reps, 2 sets x 2 reps, 5 sets x 1 rep - Single Progression

Week 6: 2 set x 3 reps, 3 sets x 2 reps, 5 sets x 1 rep - Double Progression

Week 7: 5 sets x 1 rep w/added weight, 1 set x 3 reps, 3 sets x 2 reps - Single Progression

That should serve for now as a general introduction to the concept. This is not to be taken as a program but simply as a set of guidelines to be used as needed. My use of the abbreviation SDT was only so I didn't have to write out the words single, double, triple throughout. Please don't take this a "stamp" such as with HIT or HST. Take it as my attempt to remind you what you may have forgotten or simply had beaten from you by all the programs out there. If you have specific questions or comments visit the SDT page at Ground up Strength: <http://www.gustrength.com/training:single-double-triple-progression>

A free pdf document brought to you by Ground Up Strength:  
<http://www.gustrength.com>



## The Singles Scene: How to Train Maximally with Single Reps

By Eric Troy and Joe Weir  
<http://www.gustrength.com>

### ***Maximal Training, Maximal Results***

Few people understand how to use near maximal strength training to get results. There exists a dichotomy in many trainees mind between "maxing out" and "training" that results in needless volume gathering and a misunderstanding of how to use maximal intensities (above 90% max load) effectively.

As will become clear throughout the pages of GUS, with strength training **\*\*intensity\*\*** is job one. If completely new to strength training; intensity is simply the percentage of your maximal ability (one rep maximum) that you are working with. A one rep maximum is sometimes called FM for the maximum force you can muster. Some people define it as the percentage of any rep maximum but we will ignore that and stick only with percentage of maximal ability which is by far the most useful and fundamental definition for an individual. Other ways of measuring intensities may be more useful for those studying strength training populations but for the individual this will result in nothing but confusion.

Let's define our parameters a bit more:

### **Intensity is not:**

- 1.** As heavy as you can lift as long as you get a certain number of reps and sets, i.e. a certain workload or certain volume. There are no "buts". Intensity is job one, especially with single rep training.
- 2.** So, it is not "volume-intensity". There is no such thing as a universal sweet-spot where volume and intensity become optimal. Only what fits in with your goals given all the parameters that affect your training, such as diet, rest, stress, etc., is close to optimal. And close is all we will ever come to optimal. But that is another article.

**3.** How hard you feel you are working; how loud you are screaming; how red your face is; how much blood is gushing from your nose, or, how much you grimace has nothing to do with intensity. This perceived effort we will call "intensiveness" as coined by Kelly Bagget. Many times, this feeling of intensiveness has as much to do with fatigue as with true intensity as related to load.

That should do it for now. We may think of some more things which intensity is not as we go along. If we do we'll clue you in.

Most of you probably have your minds filled with so many doubts and concerns every time you try something new. There is always a little birdie singing in your ear. What about time? What about volume? What about mass? It would be very easy to turn this into another e-book. We'll try to avoid that but will endeavor to allay your doubts to the best of our ability.

### **We will make a few universal assumptions:**

- Lifting a given load more times, regardless of other parameters such as density, will make you stronger.
- MASS is much easier to come by than continued gains in absolute strength....SHOCKING but true.
- Volume can be easily gathered throughout a training period with other complimentary movements rather than your main lifts. These movements can also serve the very necessary purpose of useful variety which improves fundamental movement patterns, addresses weak links, etc.

We must assume you have a handful of main lifts you seek to continually improve. In order to make the most of this type of training, you must stop trying to kill two birds with one stone using your main lifts for strength and mass at the same time. This is not to say that you should never use your primary lifts with higher rep ranges as there are very good reasons to do so. Repeated exposure improves motor learning, for one thing. And the repeated effort method, which uses submaximal loads for multiple sets to failure (or near) is meant to recruit more motor units at the end after fatigue sets in. Just have the goal in mind when you do it and know that training with near maximal loads is always the bread and butter of training for maximal strength.

Singles will be used for core lifts or their chosen derivatives. Complementary movements could be single leg work, or posterior chain dominant work.

The message, for example, that the squat or any other movement is king of mass has really stymied many trainees in their quest for strength. They go along thinking squats are going to make them huge, then after a couple of years they wonder why their squat sucks. You want a big squat; you have to train for a big squat. You want big legs, you train for big legs.

Frankly, many "gurus" say you need squats to make you huge simply because they have jumped from a body part mentality to a compound lift full body or upper/lower mentality with only a superficial understanding of what this entails. Training your squats or deadlifts 5x5 style will simply stop working after a very finite period of time. Most strength training programs on the internet and in many books are NOT strength training. They are a middle ground between strength and mass. This is a general way of training which is only useful for a novice to beginning intermediate.

The whole idea of the single is intensity, it shouldn't come as a big surprise to most but you'd be surprised at how many people comment on singles, saying "There's no point; 1 rep won't make anything grow". Well, hopefully we've cleared up a few things for those people. We'd agree that a single rep may not do anything for you, but what about 5 or 6 of them, or even 10? The whole idea is to generate a given intensity, roughly 90% or higher than your relative max.

## **Performing Singles**

With singles, and with all near-maximal training, there are several schools of thought. Beyond those there are muddy waters where most trainees spend their time.

The first method is based on your PR (personal record) or one rep maximum. Different people have different ideas about a one rep maximum. Dan John says you have your sorta max, then your sorta sorta max and your sorta sorta sorta max in a tongue in cheek way of stating how ridiculous it can all become. But usually the method is fairly clear cut. We will refer to it as percentage based training.

The trainee works up to a peak at some point which hopefully results in a PR for the goal lift. Then, perhaps as much as two or three weeks later, plans a build up with percentages based on that lift, such as cycling up through 70, 80, 90 percent, etc. Only to try to meet his 1RM and then peak again.

This type of buildup may be necessary for the extremely advanced or elite lifter, but that constitutes so few of us it is practically worthless for our discussion. This is nothing more than "intensity cycling" or intensity deload. Most trainees will have very little need to cycle back intensity but rather will need to cycle volume. For these trainees it is much more efficient to stay as close to their maximal intensity as possible during near-maximal lifting activities. If they spend an appreciable amount of time away from this maximal intensity they will simply be detraining maximal strength and a percentage based program becomes nothing more than playing catch-up. In strength training, never lift lighter when you can lift heavier safely.

The alternative to the intensity cycling is planning a series of singles workouts with the goal of hitting 90 percent or above of that 1RM for a given number of reps. This results in frustration and disappointment when the trainee feels he has gotten "weaker".

Using percentages as a guideline is helpful, as long as we adhere to a set of principles, which we will outline shortly.

Another method is reactive based. This method seeks to gauge the emotional or physiological response of the lifter as he prepares to lift. This is done by monitoring the physical signs of emotional or psychological stress of the body, such as accelerated pulse. While there is certainly something to this, and the psychology of strength is just as important as its physiology, there are many factors, such as injury history, which influence a lifter's stress response, some of which cannot be easily ameliorated and some of which can.

In fact a lifter's stress response may have more to do with his past failures than his preparedness at that time. Clearly mental preparedness is something that must be considered and dealt with all on its own. While gauging how we feel is important, it is only one tool in the box and can be multi-faceted. Indeed, the experienced lifter knows how to get in the zone and how he/she feels at the beginning of the workout may not reflect at all how he/she feels at the end.

This is to say nothing of how prepared we feel in a physical sense. There are many factors that you can't change once you hit the gym. But when you are feeling sluggish approaching your first lift that is not a cue to abandon your workout. You may change plans, or, you may find that if you approach it with patience and thoughtfulness, you can still get a good lift in, and maybe a great one. This is where a good dynamic mobility warm-up, foam rolling, and a proper lifting warm up and acclimation come into play.

I (Eric) have also heard many trainees, who have a good plan of attack, complain that they felt great coming in, but the workout fell way short of their expectations. These trainees, especially, are going to appreciate the information presented here. Because they will learn that there are ways to get their body to respond the way they want, or failing that, how to get a good session in based on their best ability at that time. One that can be justified within the larger context of their training; can be sustained; and can be built upon.

Before we get to the specifics, we must put to rest one very silly approach to single rep training: Dinosaur Training. Kubik did a lot to spread the word about maximal training and singles specifically. But there are very few principles in this method we can hang our hats on. Dinosaur training is basically the bust your nut method. Rest assured, when Kubik says he can only manage a few singles, he is speaking for himself. This method will only break you down, not build you up.

Yes, yes, TRAIN HARD. I've never actually met a person who did not believe they were TRAINING HARD. Hard does not replace smart. Nobody says it is supposed to be easy.

You will learn to take some of these vague seeming concepts and make them guidelines. You will then bridge those guidelines with a concrete set of principles:

First off, a single is not a PR attempt, it's a relative max. The difference may not be clear to you now but it is night and day. You are not at a powerlifting meet and all attempts need to be performed safely and with good form. That is the glaring difference between a PR and a relative max. You can argue that you can't possibly maintain 100% correct form at these weights and we'll agree with you, but your form still has to be good. If your back squat looks like a squat goodmorning or your deadlift looks like a scared cat, then that's probably too much weight and not enough form.

Before beginning to use singles you must understand this concept of a relative max. The relative max is simply that which is related to your preparedness at any given time. There is no kinda-sorta max here. Only what you lift matters. Not what you think you could have lifted or what you lifted a couple of weeks ago. Throw out all those maxes, actual or imaginary, as they will most likely mislead you more than help you.

## **Beginning with Single Rep Training**

For people who have previously only had experience with volume oriented training keeping them in the near 80% range (sometimes up to 85), we are assuming that you have learned and honed in the lifts well. If, like most trainees, your method of learning the lifts was to pick up a bar, try a few reps and then begin a volume oriented program where you aggressively load the bar as often as possible, chances are you need to work on a lot of things before you get into near maximal training, as you may have developed many faulty movement patterns...compensations that will result in injury if you jump too fast into singles. Don't blame us if you don't take this seriously.

You should have enough experience to make a pretty good guess as to your maximum lift. If you have no idea what to shoot for, then you are not ready at all for this. As you go about the warm-up and acclimation you should be getting an even better feel for how much you can lift that day. You should also try to avoid making large 'jumps' in weight when it comes down to your working sets.

## **The Warm Up and Acclimation**

To begin, make an educated guess for your max. Let's say you think you can hit about 150 (on whatever exercise). After your foam rolling (should) and dynamic mobility warm-up (should again) you will perform warm-up sets for your chosen lift. We will plan to go for 6 to 7 singles at above 90% on this first day.

Using squats as an example and projecting a max of 150, it may look something like this:

Bar X 6-8  
75 X 3

95 X 3  
100 X2  
125 X 2  
125 X 1  
135 X 1  
145 X1 (MAX)...

By the time you get to 135 you should have a pretty good idea of how it is going to go. Again, do not make huge jumps.

For instance, going from 135 to 155 pounds during your working sets can be a bit problematic. If 135lbs is relatively challenging you shouldn't jump by 20lbs. In the realm of singles a 5lb difference can make a hell of a difference. Back on point, if you hit 135, and fail at 155 you really don't have a good idea of what your relative max is. It could be at 140, 145, or 150, and it could even be 135.

By making that jump you've skipped over 3 possible maxes and putting Murphy's Law into affect you could fail on all 3 (going down in weight from 155 rather than up from 135) and have a workout with 4 failed attempts! This could have been easily avoided by simply attempting 140 pounds and realizing it was too heavy. It's much better to chip away at your maxes rather than trying to crush them right away...it's a marathon after all and not a sprint. If you lifted 135 like it was a feather then 155 may be appropriate.

The message is don't bite off more than you can chew and be prepared to make decisions on the spot and not based on any sort of spreadsheet progression.

In this example we stop at 145 because it is pretty difficult and so we decide it is the best we can do with perfect form. You are NOT to attempt maxes beyond what you can do with very good form.

This warm-up and acclimation is just an example. Some people may need more high rep sets at the beginning. Some people may want fewer jumps. This example is a conservative one. Rest periods should be liberal. There has been a warm-up myth floating around the internet that rest periods during warm-ups should be kept to 1 to 2 minutes only or you will "lose your pump" or you muscles will get cold. Nothing of the sort. The rest periods at the beginning of the warm-up phase may be relatively short but after that you may need longer rest periods. We are trying to get ready to lift heavy weight here and quality also has to be maintained during the warm-up and acclimation

phase. Rest as long as you think you need it and a little more for good measure. Do NOT race through near maximal workouts. This is strength training not muscle pumping (more on rest later).

By the time you even begin to lift your body should be thoroughly warmed up. The purpose therefore is not to warm up your muscles but to get them acclimated to the task at hand, which will result in heavier lifts. A little lactic acid can facilitate a good session. A lot will ruin it.

### **Back to the workout:**

- 145 is your max for the day. That is ONE SINGLE.
- The 135 that came before this was around 93%. So that is another.
- We already have two of our 6 to 7 reps in the bag.
- Now, for our next lift we go back to 135.
- 135 is relatively fast and easy. We get a good quality rep. That is single number 3.
- Now we put on 140.
- This is more challenging than we expected. But good. Single number 4.

Where to go? This is where fractional plates or a means of micro-loading is very important.

It would be nice to be able to try something like 137.5 rather than 135. That's a big difference here. Nevertheless the goal is to get in good quality reps at the highest intensity we can muster.

If the 140 was too challenging we may want to strip more off and go as low as 130 for the next lift. It's in the ballpark.

- So after a good rest, 130 lbs is fast and easy. Feels great. 4 singles.
- Feeling good about ourselves, we go for 140 again (after another long rest).



- It's easier than the first time. In fact it feels great. 5 singles.
- So the heck with it, we put on 145 again. Hit it. Good quality. Not the fastest lift in the world but not ugly either. We've repeated our "max" for the day. 6 singles.
- We drop back down to 140 and hit our last single for the day, ending on a very good note.
- We've done 7 singles at above 90% of our relative max of the day.

This scenario where we have repeated our max is not unusual. For those suited to this type of training it is common to feel stronger as the workout progresses. In fact that is the goal. Becoming a tent stake is not what we are going for. In this workout we have learned just how fast we can get stronger through neural facilitation. Not everyone will have this type of experience at first. But you can look forward to it in the future. Along the way you may learn some tricks to enhance it, but you have to experiment.

The percentages are a guideline and illustration. Don't get too caught up in them...they are only a tool to help us know we are in the ballpark. A more experienced lifter may know quite well when he is at the right intensity without any thought to math. For our purposes, we will assume we need a benchmark.

### **Rest Between Sets**

Rest between sets is one of the most misunderstood variables in resistance training. Far from just determining how much you can lift and how many times you can lift it, inter-set rest has far reaching impact, including how you recover between workouts. The rest periods should fit the goals of the workout. In this case, therefore they should be long and longer.

Remember what we said about anxiety? Well, rest periods that are too short can and will INCREASE anxiety coming into a big lift. Anxiety is not your friend. Any type of emotional or psychological duress will detract from your performance.

The two common recommendations for low rep strength training are 2 to 5 minutes or 3 to 5 minutes. Let's just throw out the 2 to 5 minutes here and now.

It can take longer for neural recovery to occur than metabolic recovery, simply speaking. When neural fatigue sets in your ability to perform will drop off considerably but you will have nothing to measure it by.

We need to make something clear about neural fatigue. Many experts are pretending to know things they simply don't and can't know. They can't know it because it is not known. Such is the case with neural fatigue. We only know that at some point fatigue occurs at the neuromuscular junction when an action potential fails to cross from motor neuron to muscle fiber. Although there is much speculation we simply do not know what the mechanism for this is. We only know it happens.

So if someone tries to tell you all about neural fatigue, and neural recovery, and CNS overtraining as if it is all a foregone conclusion; tell them we said they are full of...hot air. We must observe the results of training in order to model training.

In this type of training, time is on your side. Complete neural recovery is said to occur in roughly 5 minutes or beyond and it cannot be sensed. After a few minutes you may feel ready to go but what you're feeling is most likely metabolic recovery. Sometimes you may need more time to recover metabolically (i.e. still huffing and puffing after a tough set) but have recovered in the neural sense.

It is completely within reason to take 7 to 10 minutes after a particularly difficult attempt, or after a failed attempt. The best strategy is to rest as long as you think you need and then tack on some more for good measure. We will assume that neural fatigue is not going to enhance strength gains. Any other factors that any other type of fatigue may enhance are simply not a part of our plan here. We are maximizing the amount we can lift not how quickly we can get finished.

There is no set time that you should rest for, do what you have to do. If you need more time between sets of deadlifts but less time between sets of military press, then by all means take more time. You may also need more time after a failed attempt as often a failed attempt will expend more energy than a completed rep.

## Volume and Progression

Now that we've established how to begin, its time to think about how to keep moving forward and, as mentioned earlier, one rep isn't going to amount to a whole lot and likewise, our 7 reps do not mean a thing in the big scheme. So we need plan to move forward.

Always keep quality in mind. Without quality you might as well stick to volume and grind reps out.

You want to get in enough reps to elicit a training effect but you also don't want to pound away with 10 sets a week on deadlifts.

Keep the amount of sets, and the effects they have, in mind. Obviously the above is going to be very hard on your joints, your CNS, and not to mention your sanity. The way to get around this and make them work in the long run is by changing, or cycling, the volume. A high, moderate, very high and low volume scheme has worked well for me in the past (Joe). That might look something like:

Week 1: 7 to 8 singles  
Week 2: 5 to 6 singles  
Week 3: 9 to 10 singles  
Week 4: 2 to 3 singles

There's nothing stopping you from switching that around or playing with the reps. Keep the very high volume to somewhere around 10, you will know why as soon as you do the first '10' workout.

Each of these workouts will be performed in the same fashion. Finding the max and then performing the planned singles based on that max. Remember that every single above 90% of the day's max counts...even if it came before the max during the acclimation.

Again, the goal is to get all your singles within 90-100% of your relative max and ideally they should be tightly spaced with respect to that max. To get the highest intensity, you'll want to hover as close to that max as possible.

During the workout is when most of your decisions will take place. Exercise selection, rep/set ranges, etc are all important decisions to make, but all of those can be made on paper beforehand. Even these

can change throughout a workout though, and being prepared to fly by the seat of your pants, although contradictory, is important.

For example, suppose you hit the gym thinking you'll get 6 singles at 150 pounds but you can't hit a single rep. It's no big deal, you just do your sets using 90% and above at closest weight (that weight should be in the same ballpark). Or you may complete all the sets at your target weight or even higher, which is a bonus. Taking either of these cases, what happens during the next workout when you can't add even 5lbs to the bar or you are lifting less? That's the time to pack up your things and go home.

Just kidding. Just stay calm and think about what is going to happen for that workout. Perhaps you did not acclimate enough and need to go back and do a couple more acclimation sets. Or you may need more rest between sets. Or, it could be time to use micro-plates and load by a couple of pounds rather than 5. It could even boil down to being a shitty day and a shitty workout is the result. Those are 4 answers to your problem, but there are many more and it takes a bit of thought and experimentation to figure out what's going on.

That being said, missing a lift is nothing to be concerned about. As long as overall ability remains consistent or increases you are golden (more later on failure).

With correct planning you will rarely display a decrease in overall ability. Warning, though, this type of training is addictive. What we are outlining here will empower you and likely make you feel like Superman. While some trainees can use cycle after cycle of singles with nothing more than an exercise change, others will find they need to use singles more judiciously.

This article only covers how to perform the singles and how to plan a cycle of singles. How to manage the stressors and plan complete programs goes way beyond the scope and is an individual thing. If you need help with that then you'll need to join our forum and ask.

Any increase in weight for even a single set is progression, so if you've increased the weight on an exercise by a pound since the last workout, you've progressed. If you hit 5 singles at X lbs last week and did 7 singles at that weight this week, you've progressed by 2 reps. Both cases are examples of single progression, but if you increased the weight to X+Y and did 7 singles, you've gotten double progression (weight and sets). You'll rarely get triple progression since the sets

usually don't go above one rep. Single progression may seem very minimal but its still progression, and those 'pound' or rep increases can add up to quite a bit before you know it. No one form or combination is the end all be all, the best thing to do is use everything to your advantage and keep next week in mind and the week after that, and the week after that...

## Failure

Nobody likes failure but unfortunately it is bound to occur. Depending on the nature of the failure, meaning how much of the rep did you complete, how hard were you pushing yourself and for how long, you may need to think about how that impacts your workout for that day.

A failed attempt can have unforeseen affects; either negative or positive depending on a host of hard to predict factors. As we stated above a heavy and prolonged attempt (struggling at a sticking point) may have a greater impact than a single successful attempt, and this should be reflected in your training logs and could be considered as being the same impact as 2 successful attempts.

Or for example, you might miss an attempt on squats without much of a fight, rest and fail again in the same way. You may want to count those two attempts as one successful rep since they were fast and didn't take an overly significant effort. However if you stuck at it and pushed until you were blue in the face without moving the bar much past parallel, you may want to count that as 2 reps. It all depends on the context of the failure, the effort exerted, the exercise and weights involved, etc. And no, you can't fail 5 times in a row and say you did your 10 singles and go home, that's not fair.

It is open to interpretation. As a successful attempt can well be a "dirty" attempt. And remember, dirty reps are not allowed. Similarly we are working to maintain quality so sometimes it is better to dump a rep than to get it done at all costs which usually means a very ugly lift at the end. Save the ugly reps for your PR or competition day.

This is not to say that valiant struggle is not allowed. It is and can be good as long as you don't lose your head about it.

For instance, I (Eric) have found that a failed rep (but safely done) can have a similar facilitation affect (see Facilitation tab) as two or three successful reps when using some type of staged or waved sets

(whatever people call that). (Stay tuned for an upcoming article where I discuss failure further, and how one can turn even a failed attempt into an empowering one).

But it is not magic. You do not know what will happen until it happens. If a certain effect is reproducible for you and the repercussions are favorable then put it in your toolbox. If not, disregard it.

As always, when in doubt, do less and live to fight another day. It will take time to learn what you can tolerate and what you can't. I (Eric) respond quite well to CNS intensive training and can tolerate a great deal of it. I have a lot of wiggle room in that regard. Yet some of the people I work with have much less tolerance. That is to say nothing of the other factors such as injury history.

We differ from many trainers in that we don't believe that the fastest possible progression is always the best. We are aware that most of our readers are not professional athletes or involved in any type of strength competition. This, you should be glad to know, gives you MORE freedom as the needs of the professional leading up to a competition have nothing to do with the needs of the non-professional.

Also, you may have heard that "overload" is important. However that does not always mean linear overload. Proper training results in cumulative effects. Many ways of accumulating those effects exist. Also, it is quite possible to get a training effect from one workout even if you are advanced. There are some advanced trainees, who, if they haven't trained this way, will see that training effect in action when they end up with their relative maxes being also PR's (at least, potentially, in the beginning).

### **Facilitation (also called potentiation or post-synaptic potentiation)**

Facilitation works like this:

A nerve impulse arrives from at the NMJ (neuro-muscular junction). Ach (acetylcholine) is released into the synaptic cleft. This is excitation. Some stuff happens and what results is an action potential which travels the fiber to the muscle.

When Ach is released it excites the postsynaptic membrane of the connecting neuron, thus changing membrane permeability. If threshold for excitation is reached, the change in membrane potential between the two motor neurons increases the flow of positive charges into the cell and this is called the EPSP (excitatory post-synaptic potential). This EPSP must be at threshold for the neuron to discharge. But even if it is not the resting membrane potential is temporarily lowered and its tendency to fire is increased.

Basically the neurons potential to fire and thus stimulate its motor unit(s) is on more of a "hair-trigger". It is less "inhibited" than it was prior to the beginning of a training session.

This results in both temporary changes during a workout and repeated exposure to very heavy lifting results in more permanent changes. This is part of the explanation for neural changes accounting for strength gains, especially early on (1).

## Summary

To begin, make an educated guess for your max. Let's say you think you can hit about 150 (on whatever exercise). After your foam rolling (should) and dynamic mobility warm-up (should again) you will perform warm-up sets for your chosen lift. We will plan to go for 6 to 7 singles at above 90% on this first day.

Each of these workouts will be performed in the same fashion. Finding the max and then performing the planned singles based on that max. Remember that every single above 90% of the day's max counts...even if it came before the max during the acclimation.

Using squats as an example and projecting a max of 150, it may look something like this:

Bar X 6-8  
75 X 3  
95 X 3  
100 X2  
125 X 2  
125 X 1  
135 X 1  
145 X1 (MAX)...

By the time you get to 135 you should have a pretty good idea of how it is going to go. Do not make huge jumps.

It's much better to chip away at your maxes rather than trying to crush them right away.

In this example we stop at 145 because it is pretty difficult and so we decide it is the best we can do with perfect form. You are NOT to attempt maxes beyond what you can do with very good form.

Some people may need more high rep sets at the beginning. Some people may want fewer jumps. This example is a conservative one. Rest periods should be liberal.

The rest periods at the beginning of the warm-up phase may be relatively short but after that you may need longer rest periods. Rest as long as you think you need it and a little more for good measure. Do NOT race through near maximal workouts.

It is completely within reason to take 7 to 10 minutes. The best strategy is to rest as long as you think you need and then tack on some more for good measure. We are maximizing the amount we can lift not how quickly we can get finished.

There is no set time that you should rest for, do what you have to do.

### **Back to the workout:**

- 145 is your max for the day. That is ONE SINGLE.
- The 135 that came before this was around 93%. So that is another.
- We already have two of our 6 to 7 reps in the bag.
- Now, for our next lift we go back to 135.
- 135 is relatively fast and easy. We get a good quality rep. That is single number 3.
- Now we put on 140.
- This is more challenging than we expected. But good. Single number 4.



It would be nice to be able to try something like 137.5 rather than 135.

If the 140 was too challenging we may want to strip more off and go as low as 130 for the next lift. It's in the ballpark.

- So after a good rest, 130 lbs is fast and easy. Feels great. 4 singles.
- Feeling good about ourselves, we go for 140 again (after another long rest).
- It's easier than the first time. In fact it feels great. 5 singles.
- So the heck with it, we put on 145 again. Hit it. Good quality. Not the fastest lift in the world but not ugly either. We've repeated our "max" for the day. 6 singles.
- We drop back down to 140 and hit our last single for the day, ending on a very good note.
- We've done 7 singles at above 90% of our relative max of the day.

This scenario where we have repeated our max is not unusual. For those suited to this type of training it is common to feel stronger as the workout progresses. In fact that is the goal.

Again, the goal is to get all your singles within 90-100% of your relative max and ideally they should be tightly spaced with respect to that max. To get the highest intensity, you'll want to hover as close to that max as possible.

## References

1. Marcardle, William D.; Katch, Frank I.; Katch, Victor L. //Exercise Physiology: Energy, Nutrition, and Human Performance.//4th ed. Baltimore: Williams & Wilkins, 1996.

If you have questions or comments visit the Singles Scene page at Ground Up Strength: <http://www.gustrength.com/training:singles>

A free pdf document brought to you by Ground Up Strength:  
<http://www.gustrength.com>

## **Strength Consolidation: An Example**

By Eric Troy

<http://www.gustrength.com>

All strength athletes, at certain times, must consolidate their gains and they will do this instinctually by adding reps to their present limit. As a matter of fact this is an "old-school" way of training and it is still prevalent. There is not a NEW way that is better by virtue of science or Russian periodization. The ways that work haven't changed...our attitudes and expectations have.

This could also be described simply as getting comfortable with a certain weight range. If you have ever had your deadlifts get "stuck" at a certain weight range it is possible that your mistake is to continually look at that next big deadlift PR instead of increasing your work tolerance at that weight range.

Most trainees today have been indoctrinated into thinking they can't think. Or that they are not allowed to think, react, gauge, and otherwise adapt to their own internal progress. They expect rote systems. And it's a shame because some of the best training is done by the individual with self-knowledge rather than by group consensus.

Realizing that people cannot change their thinking all at once, I am willing to try to define what I mean by strength consolidation and to give you one example of a system. This is not a simple endeavor so I will ask something in return from you. I ask that you meet me half-way and be willing to think on your feet a little bit while using this system. Call it practice.

The use of the word "consolidation" in this article, and any further use on this website, is in no way connected to the so-called "consolidation" routines of High Intensity Training (HIT), SuperSlow®, or Heavy Duty™ training systems.

## **What is strength consolidation?**

First of all, strength consolidation is not something I invented. I may be one of the first or few people to use the term in regards to training for strength but the concept has always been around albeit not always in a conscious, spelled-out way.

The definition of the word "consolidate" is "to make firm or secure". So consolidation is a process of firming or securing our strength gains.

As defined by Michael Fekete:

**"Consolidation occurs when the exerciser slows down or ceases progression to allow him or her to firmly establish the results achieved so far."**

*- Fekete, Michael. Strength Training for Seniors: How to Rewind Your Biological Clock. Alameda: Hunter House, Inc., 2006*

A good, simple definition. Except that it implies a duality that is not actually present. We are not talking about consolidation as APART from progression.

Consolidation being a separate "stage" of training in which no other advantage is gained other than to firm up the gains from the previous "progression" stage is consistent with most sources definition. So, consolidation is the same as "maintenance" and "recovery". Such definitions are inadequate. Maintenance implies NO PROGRESS and NO CONNECTION to PROGRESS. At best it implies recovery from the high demands of the previous training stages but to maintain is simply to stop gaining. There is nothing in the word maintenance that implies consolidation.

Since most sources severely overestimate the amount of training needed to maintain maximal strength levels they would therefore underestimate the amount of training needed to consolidate. This makes sense because most so-called strength training sources are simply not concerned with maximal strength in and of itself but speak of the more nebulous concept of "fitness".

Consolidation is not "something other than" progression. They are connected and one cannot exist without the other. Take that

statement as far as you would like. Ultimately, it means that there is no right or wrong time to consolidate your gains.

**"When a powerlifter is squatting with a weight close to his limit, he knows he'll progress much faster if he periodically attempts adding repetitions to this weight rather than simply trying to peak out with a maximum every week of so, thereby training on "nerve" in place of common sense...By gradually adding repetitions to a 90% limit weight and eventually going into increased sets and repetitions with this weight, not only will our limit single attempt increase, but our muscular size and repetition strength will increase also, since we would be progressing as fast as our system would be capable of without using "artificial aids" (steroids)"**

- Anthony Ditillo in *"The Development of Physical Strength"*

Ditillo, in the quote above, is describing a process of consolidation. Notice that in no way does he imply that progress ceases. Just the opposite! He is saying that consolidation is part and parcel with progress.

### **Why consolidate?**

We have a long and very informative discussion on consolidation in the comments to Anuj's post: <http://www.gustrength.com/anuj-training:importance-of-progression> The Importance of Progression

I tend to think that I am at my best when commenting informally or spontaneously so I invite you to read that discussion before continuing this article. It may seem a little rambling but sometimes a good ramble is just the thing and I sometimes think that the difference between rambling and writing (for me) is simply a matter of editing! You can read it complete with typos so that you know this was not contrived.

### **The system**

2. The first thing I must firmly establish is that this "system" is not a training program and is meant to be used for one or two exercises at a time. If doing two exercises then one should be

lower body and one upper body. NEVER try to do two upper body movements or two lower body movements in the same training period. This method is EXTREMELY AGGRESIVE. If you thought I was about to describe a way of "backing off" from training, then think again. This isn't a deload. There is no way of gauging the effect of this for every individual. This is one or two exercises a week each done ONE DAY a week.

- 3.** For hybrid or "full-body" movements this should be used for only one exercise. So, also for Olympic lifts, for which caution should be used and the numbers given should be reduced.
- 4.** For deadlifts and squats, consider making this a deadlift only or squat only day. You stand the best chance of success this way. At the most, throw in some static core work or some single joint exercise. But it would be best to get in and out. So, in this way, we are "backing off" our total volume for that day.
- 5.** This one is not so much a rule as a guideline. Read through The Singles Scene at the beginning of this document. Before using this method of consolidation it would be beneficial to have some experience using singles. It is NOT required but using this method assumes that you have some experience with maximal training and specifically, experience using singles. If you've never systematically used singles training, most of the numbers I suggest will probably have to be greatly reduced, perhaps by as much as half. However, I have great confidence that after you read "The Singles Scene" you will be excited and will WANT to use singles in your training, at which time you will experience great gains in your strength. Meaning this method can be saved for a rainy day. But all the basics are included here.
- 6.** NOT FOR BEGINNERS! The intensities used in this method are inappropriate for beginners. That includes those just now switching from bodybuilding training to strength training, unless that training included dedicated strength training as part of its philosophy. If you are not sure, ASK! I cannot, and will not attempt to give a universal definition of beginner, intermediate, or advanced trainees. All you really need is a reasonable mastery of the lift(s) and experience doing those lifts at intensities of at least 85 percent or higher with at least some emphasis on intensities greater than ninety percent.

Before describing it I once again have to give props to Anthony Ditillo. I did not realize (or remember) until reading back through "The Development of Physical Strength" that he described something very similar to this just after the quote I used above. Undoubtedly when I developed this I must have been influenced by that. I read so much that I don't always know where everything comes from but at least part of this comes from Ditillo.

However, in terms of intensity, I am a bit more aggressive in my training philosophies than Ditillo although that is because of our differing definitions of the word. I am going to spell out this method step by step. [<http://www.gustrength.com/training:single-double-triple-progression> Single, Double, and possibly triple progression] will be used at the end and, again, I owe much to Anthony Ditillo for that. But again, my ideas are an "adding on" and take many other concepts into consideration. Ditillo is big on the idea of "intensity cycling" (although he doesn't call it this) and this is a concept that I personally despise:

From The Singles Scene by Joe Weir and Eric Troy -  
<http://www.gustrength.com/training:singles>

**"This type of buildup may be necessary for the extremely advanced or elite lifter, but that constitutes so few of us it is practically worthless for our discussion. This is nothing more than "intensity cycling" or intensity deload. Most trainees will have very little need to cycle back intensity but rather will need to cycle volume. For these trainees it is much more efficient to stay as close to their maximal intensity as possible during near-maximal lifting activities. If they spend an appreciable amount of time away from this maximal intensity they will simply be detraining maximal strength and a percentage based program becomes nothing more than playing catch-up. In strength training, never lift lighter when you can lift heavier safely."**

#### **A few points:**

We are not "setting back the weight" and working back up by adding reps and sets in single, or double progression. We are using a near-maximal weight and adding reps to that (single progression).

We are not basing our starting weight on a "limit" weight or a one rep maximum. Basing this type of training off a maximum established a few weeks ago or even last week would have us use a weight that was much too low or much too high. This type of thing is what is sometimes called a "raw" max and it is a silly and ill-defined concept. Instead we will use a "relative max".

What to do with the rest of your training is not a topic that can be covered in this article. A good choice, if in doubt, would be to deload all your training except for this. However, if you want in-depth advice simply ask an in-depth question by posting a comment on the strength consolidation page at Ground Up Strength:

<http://www.gustrength.com/training:strength-consolidation>

Relative max is a term I use to describe a trainee's best single for any given day. This best single may or not be a personal record. So the max is relative to your ability on that day.

## **The Plan**

The initial period of this plan is 4 weeks. So call that "phase one" if you like. This phase will be establishing a baseline from which to proceed, using the single, double, and triple (if possible or desirable) as mentioned above.

I'll describe it using deadlifts as the exercise but it can be any compound lift, especially the slow lifts. The word "DAY" is the same as WEEK. So "DAY ONE" is also "WEEK ONE".

### **Day one:**

Begin by following the same procedure for doing a singles workout as described in "The Singles Scene". Find your relative max for the day (your best quality single).

Here is the procedure (with example) for finding your max taken from the article:

You should have enough experience to make a pretty good guess as to your maximum lift. If you have no idea what to shoot for, then you are not ready at all for this. As you go about the warm-up and acclimation you should be getting an even better feel for how much you can lift

that day. You should also try to avoid making large 'jumps' in weight when it comes down to your working sets.

To begin, make an educated guess for your max. Let's say you think you can hit about 150 (on whatever exercise). After your foam rolling (should) and dynamic mobility warm-up (should again) you will perform warm-up sets for your chosen lift....

Using squats as an example and projecting a max of 150, it may look something like this:

Bar X 6-8  
75 X 3  
95 X 3  
100 X2  
125 X 2  
125 X 1  
135 X 1  
145 X1 (MAX)...

By the time you get to 135 you should have a pretty good idea of how it is going to go. Again, do not make huge jumps.

*Again, I encourage you to read the The Singles Scene in full before applying this plan.*

After establishing your max go for eight to ten singles at 90% (around 90% you don't have to be exact...88.6789 would be fine as well). The max that you just did will count as ONE of those singles (so 7 to 9 more singles, in reality).

Unlike a regular singles workout, ALL the singles will be at the SAME WEIGHT.

So using the above max of 145 pounds, we have:

145x1  
130x1  
130x1  
130x1  
130x1  
130x1  
130x1  
130x1  
130x1



Notes:

- Don't worry if you can't get eight to ten singles. Don't push yourself if that means sacrificing quality a great deal. If you can only do, for instance, five singles, then your next workout will be adjusted accordingly.
- If using a weight that is ninety percent of your max seems too heavy and you are sure that you cannot get the singles in then by all means reduce the weight. The intensity is simply a guideline to get you in the ballpark.

That is it for day one.

### **Day Two:**

Follow pretty much the same warm up as for the first day (depending on your needs of course) and repeat the same relative max you did on the first day....this can be a few pounds lighter if you want.

The reason you are repeating the same max is basically for a staged effect...potentiation.

Then...after the max warm up and max from day one take the same weight as you did the 8 to 10 singles (counting the max) with on day one and attempt 6 to 8 doubles.

Note that this is a HUGE jump in workload but no jump in intensity.

Adding reps to the singles is an example of "single progression".

That is it for day two.

### **Day Three:**

Same procedures...same weights...

Except try for 5 to 7 triples.

That's it for day 3.

### **Day Four:**

Take the ~90% weight you used for all the singles and perform two the three sets for reps to near failure. You should feel like you have at least one good rep left in you. On the last set you can go to failure, meaning that this is the last rep you feel that you can do with reasonably good form (in other words, even if you could do another rep it would be a 'forced rep' or a 'cheat rep', which is unacceptable).

For example, using the 130 pounds given in the example above:

- 1.** Do a set of 130 pounds to NEAR failure...that may be about 2 good reps left or one good rep left, or 1.5 good reps left...it depends on how it works for you. Doesn't matter how many reps. Even if it's only 3 that's fine. Or 4 or 5. Whatever happens happens.
- 2.** After a GOOD rest - and I mean as long as you want or need up to 5 or 6 minutes - do another set, same as first. This time TRY to repeat the same number of reps because that will just make it easier to progress off...don't bother doing more reps than the first set unless it is just ridiculously easy which is doubtful. Take your time between reps so that you can be thinking whether this set will be it. The best way to no that is if this second set is more to failure than the last. In other words if the second set feels much like the first set then you can probably move on. If the last rep is the LAST rep, you're done. If you do not understand what I am getting at here then you probably lack the experience to be doing this in the first place!
- 3.** Only after you gauge the toughness of the second set should you try to go on to a third. There is no need to push it. Two sets are fine. If you do go on to a third set don't worry about what happened on the first two. If you only have two reps in you then just do two. If all you have is one rep in you...then you probably shouldn't have bothered moving on to the third.

Let's suppose that on triples day with our 130 pounds we performed 5 triples. For day four we may do something like this:

130x5x1  
130x5x1  
130x3x1

Now we have established a base from which we will work and this concludes day four, also concluding the formal phase of the method.

The remainder consists of taking the baseline we establish and progressing using single, double, or triple progression. See the first article in this document, Strength Training with Single, Double, and Triple Progression.

If you have any questions or comments visit the strength consolidation page at Ground Up Strength:

<http://www.gustrength.com/training:strength-consolidation>

A *free* strength training pdf brought to you by Ground Up Strength:

<http://www.gustrength.com>

A free strength training pdf brought to you by  
<http://www.gustrength.com>

## **Bonus Material: Breaking the Volume, Load, Repeat Cycle – Thoughts Related to this Material**

Trainees face one major problem when attempting to make the transition from bodybuilding or fitness training to strength training: A lack of expertise and focus in the industry as to what strength training actually is.

While it is true that strength is many things to many people a “strength trainee” there is one overriding goal for most strength trainees: increasing absolute strength.

Increasing absolute strength means that one’s priority is always first and foremost increasing *force production*. Any methodology that, as a regular feature, diverts attention and resources away from this primary goal will fail to deliver results.

Many so called strength training programs are built based on universal assumptions about strength development. These programs could rightfully be called “post facto” programs. Meaning they become strength training programs after these assumptions are met. People caught up in the cookie cutter mentality are caught up in this post facto philosophy: “I am a strength trainee because I do this.”

This statement should become, “I am a strength trainee *therefore* I do this.”

This material is meant to help you ask the right questions and provide a springboard from post facto strength training mentality to goal oriented strength training bent on increasing force production.

## **Prioritizing Certain Movements or Lifts**

You can get strong by engaging in a variety of strength oriented activities. However if you want to increase absolute force production you must set aside certain lifts as priorities for periods of time.

While a powerlifter or weightlifter focuses on a handful of lifts as a competitor this does not mean that all strength trainees must spend their careers always prioritizing a few primary lifts. It simply means that a few lifts must be prioritized for certain periods of time in order to see large increases in force production over time across the board. There are many exercises you may choose to focus on over your strength training lifetime but in order to see progress each lift must be given its due.

Usually programs are developed using periods of one week as a complete cycle of workouts. A "week" need not necessarily be 7 days. It could be a 9 day period, for instance. The terms microcycle, mesocycle and macrocycle are used sometimes to describe the periods a strength training program is separated into but this is needless and confusing jargon for the do it yourself strength trainee and as such we will abandon such terminology. Regardless, when designing your plan ask yourself one very important question:

### **What lifts do I want to prioritize?**

However, there are some other questions and guidelines to consider as well. Questions to ask may be:

- 1.** Which are the most complex lifts?
- 2.** What are my special needs?

These are lifts which require the most intermuscular coordination. They use the greatest number of muscle groups and especially large muscle groups. As well, they may be the most technical and skill oriented.

Although you may be able to back squat much more than you can clean, for instance, the clean is a more complex and technical lift. It requires a much greater rate of force development and greater control and coordination. Putting cleans after squats in a workout would NOT be a good idea. So even if squats were your priority you would not do so. You would either need to put cleans on a different day when you could ensure that recovery was sufficient to support them or you would abandon them.

In general, however, the most complex lifts would come first in a workout and earliest in the week.

So here are the things to consider when arranging the routine in order of importance.

1. Most complex and heavy movements first
2. Lighter and higher volume second.
3. Priorities based on weaknesses, injuries, postural problems, etc.

Then you must develop ways to distribute stress over the week and over a period of weeks.

### **The Ever Popular 5x5**

There is no better way to illustrate how NOT to sustain strength training than to examine the 5x5 programs that are so very popular on bodybuilding forums now.

Right off the bat the typical 5x5 fails to deliver one crucial aspect of our strength training philosophy. It makes it very difficult, if not impossible, to prioritize a lift.

This illustrates a common problem people have when breaking into strength training. The typical cookie cutters they are exposed to have them using the same lifts for "hypertrophy" and for force development. Do you see the conundrum here?

You've been told that volume is inversely related to intensity, after all.

If I could leave you with ONE thing after you've finished reading this publication, it would be to STOP using the same lifts for strength as you do for hypertrophy.

Your priority lifts are for 'force development' as mentioned above. Hypertrophy, on the other hand is a side effect of strength training and frankly is easy compared to continued gains in maximal strength.

You no need to use the same lifts for both maximal strength and hypertrophy work. Strength and hypertrophy are related but the practice of gaining each is different. Basically if you "lift heavier" on your main lift and choose a secondary lift that is both complimentary and at a little higher volume you use that to start accumulating volume and for "hypertrophy".

One particular program, the so-called "Dual Factor 5x5" or "Advanced 5x5" is the epitome of nonsense so will serve as our illustration.

Here is an example of how this program is described on the internet.

**Monday:**

Olympic Squats 5x5 (same weight)  
Benching 5x5 (flat, close grip or regular)(same weight)  
JS Rows 5x5 (same weight)  
Accessory (low volume triceps and abs)

**Wednesday:**

Olympic Squats 5x5 (reduced 15-20% from Monday) or Front Squats 5x5  
Standing Military Press 5x5 (same weight)  
Deadlifts 5x5 (same weight) (if you pull 2.5x bodyweight do 3x5)  
Pull ups 5x5 (use weight if you need it)  
Accessory (biceps and abs)

**Friday:**

Olympic Squats 5x5 (working up each set)  
Benching 5x5 (flat or incline)(same weight)  
Rows 5x5 (same weight)  
Accessory (low volume triceps and abs)

All sets are done with the same weight, called 'sets across' for everything unless otherwise noted. Each week you bump up the weight on the 5x5 sets by 5 or 10 pounds.

Without getting into all the details of the program the idea here is that it is a volume loading protocol. The "loading" is a continual increase in workload from week to week.

This "volume" phase is supposed to last for 4 to 6 weeks, depending on some magical rules regarding training status, followed by a one (or two) week deload and then an intensity phase.

The idea is that the volume loading period represents a period of over-reaching during which fatigue is accumulated, then dissipated during the deload and resulting in personal records being set during the final "intensity" phase.

Apparently some big heads got together on some internet board and decided that this is what the Fitness Fatigue Model meant. Simply that accumulating fatigue would result in higher lifts. This is complete nonsense and has nothing to do with "dual factor" versus single factor. The fitness fatigue model does not spell out a universal way of training for all trainees. You can read more about that here:

<http://www.gustrength.com/training:fitnessfatigue>

This type of training exists in a middle ground between strength and mass work. The entire notion of such training suggests that it can never be considered "advanced". While one or two 5x5 programs may be useful for a beginner strength trainees should begin to program according to individual needs sooner rather than later as this will help state off complications due to inappropriate loading down the line.

For that matter, an extended loading period could hardly be considered an improvement over a standard weekly periodized 5x5. Whether one wants to label "DFT" loading as advanced does not change the fact that it is still middle-ground mass/strength work. Again it doesn't allow you to work on individual lifts based on your needs for those lifts. It doesn't allow you to periodize those lifts. It doesn't allow you to pick one or two priority lifts to use more advanced protocols on....in short it is amateurish and shortsighted and you are simply trading volume for intensity and productivity. INTENSITY must CERTAINLY be a bigger factor than VOLUME in strength work.

**Another big problem is QUANTITY over QUALITY.**

We all know that sometimes that "effort" to get through fatigue or to get up that one big rep, or even to fail helps us a lot. But that should not be the way the MAJORITY of our lifting is.

In fact the whole notion of the repeated effort method (Zatiorsky) is that the lifting of nonmaximal loads to failure results in the final reps recruiting a maximal number of motor units.

But there is a reason that Westside puts maximal effort days before RE days. Maximal force production is at the heart of strength training and it should never be replaced by volume over intensity, no matter what the rationale.

Programs like 5x5's are supposedly justified by the 'median' trainee. You are not the median trainee. The median trainee does not exist. It



is a mere concept represented by the statistical mid range on a graph. You must realize that the word "average" is not a tangible reality but only a concept. You'd be better served to design your training based on known facts about yourself rather than universal concepts.

A way to understand this is to relate to the average family. If I were to say the average family has 2.5 children it should be fairly obvious that I do not mean that there actually exists a family with one half a child.

These programs have the trainee counting reps and sets rather than learning the concept of quality.

The two main things you need to know how to do is 1. how to distribute stress over the week and over a period of weeks and 2. the difference between what the average middle ground strength training approach does and how strength work can be periodized and manipulated.

In order to distribute stress we basically need to understand about the effects of fatigue. The only reason you can load in this aggressive manner with volume loading protocols without getting weaker is because, simply speaking, the CNS effects are just not that strong. You're basically getting metabolic "volume" fatigue and a generalized kind of fatigue in terms of your body's reaction. The body does not distinguish between these stressors. Ask yourself how this concept of building up a lot of "fatigue" really relates to "gaining strength". It only does in a very roundabout way. You are basically trying to juggle chainsaws, donuts, feathers, and needles at the same time. Because all you can FEEL is the endocrine effects. That is you only know when to stop when "you feel overtrained" or have started to overreach.

Here are some selected references. There are many more.

**PSYCHOLOGICAL VARIABLES ARE BETTER DETECTORS OF OVERTRAINING THAN PHYSIOLOGICAL VARIABLES:** Theriault, D., Richard, D., Labrie, A., & Theriault, G. (1997). Physiological and psychological variables in swimmers during a competitive season in relation to the overtraining syndrome. *Medicine and Science in Sports and Exercise*, 29(5), Supplement abstract 1237.

**MONITORING OVERTRAINING - ANOTHER ATTEMPT:** Hill, M. R., Motl, R. W., Estle, J., & Gaskill, S. (1997). Validity of the stamina index test for monitoring elite athletes. *Medicine and Science in Sports and Exercise*, 29(5), Supplement abstract 46.

BIOLOGICAL MARKERS DO NOT RECOGNIZE OVERTRAINING : Van Heest, J. L., Skinner, J., Cappaert, J. M., Rodgers, C. D., & Ratliff, K. (1966). Monitoring training stress in elite swimmers using biological markers. *Medicine and Science in Exercise and Sports*, 28(5), Supplement abstract 1083.

BLOOD FACTORS NOT ASSOCIATED WITH OVERTRAINING:  
Rowbottom, D. G., Keast, D., Goodman, C., & Morton, A. R. (1995). The haematological, biochemical and immunological profile of athletes suffering from the overtraining syndrome. *European Journal of Applied Physiology*, 70, 502-509.

DIAGNOSING OVERTRAINING WITH BLOOD FACTORS IS OF LIMITED VALUE:

Lehmann, M., Wieland, H., & Gastmann, U. (1997). Influence of an unaccustomed increase in training volume vs intensity on performance, hematological and blood-chemical parameters in distance runners. *The Journal of Sports Medicine and Physical Fitness*, 37, 110-116.

BLOOD AND ENDOCRINOLOGICAL PARAMETERS NOT RELATED TO THE ONSET OF OVERTRAINING: Knizia, K., Gastman, U., Netzer, N., & Steinacker, J. M. (1997). Monitoring high-intensity endurance training using resting hematological, blood-chemical, and serum/plasma endocrinological parameters. *Medicine and Science in Sports and Exercise*, 29(5) , Supplement abstract 1267.

BLOOD FACTORS NOT ASSOCIATED WITH RESPONSES TO INTENSIFIED TRAINING:

Mackinnon, L. T., Hooper, S. L., Jones, S., Gordon, R. D., & Bachmann, A. W. (1997). Hormonal, immunological, and hematological responses to intensified training in elite swimmers. *Medicine and Science in Sports and Exercise*, 29, 1637-1654.

But guess what, such a feeling wouldn't be TOO much different than training for swimming. Does swimming make you stronger? It makes your stronger at swimming. BTW, the dual factor training model was developed looking at endurance athletes and swimmers in particular.

I hope this is making sense. This over-reaching is over-reaching in terms of volume and workload. IF you were to over-reach with CNS intensive work you wouldn't get ANY noticeable endocrine effects! You

would hardly have anything to go on except on thing.....you'd get weaker at whatever intensity range you had over-reached at.

When you use "general fatigue" as a benchmark for periodization you get all these different fatigue affects but if you get weaker you don't know what the hell is up whether it's the CNS or "you're just tired" and need recovery time. So, when you mix it all together in this big lump, for one thing, you will never know how heavy you can and can't lift and for how long. I could go on and on but sufficed to say that this is all a big tadoo about nothing. Yes, we will be deloading. But no we don't need to use fatigue as a METHOD of strength training. It's a SIDE EFFECT.

When it comes to fatigue in general you can basically say that you have either more immediate but short lasting effects or less immediate but larger and longer lasting. Now, if you do really high intensity CNS intensive work you will basically feel it right after but the fatigue will dissipate really quickly. Why? Basically low volume. The actual affects on the CNS you really won't be able to tell. All these people going on about "CNS burnout" are going on about something that very little is known about and very little can be measured and quantified regarding training's effects on the nervous system.

Taking out the notion of work at 90% of 1RM or above you can basically say that the fatigue from "VOLUME" will last longer than the fatigue from more maximal work of lesser volume. When I say more maximal I don't mean MAXIMAL. It's oversimplified because of "power work" and such but it will serve. (It doesn't all have to be perfect it only matters if you get results).

Knowing this can help you plan during the week. In general, all things being equal, if you try to accumulate your volume later in the week instead of at the beginning so that you have the weekend to recover you will manage fatigue better.

Another basic concept I would like to impart is getting away from using your main lifts as both strength and hypertrophy work. The concept of strength and mass are interrelated, that is true. But training for each IS different. Functional mass is a side effect of effective strength training. When mass becomes a goal of maximal strength training then you are no longer doing maximal strength training. This may come as a big surprise to some of you but continual gains in maximum strength are harder to come by then mass.

Basically, "lift heavier" on your main lift and choose a secondary lift that is both complimentary and at a little higher volume, etc....you use that to start accumulating volume and for "hypertrophy".

That definitely means generally "5x5" squats should become something you do much less often. But even with some of the other lifts where you do, say 5x3, you have to learn a new way of thinking about that which doesn't really involve such set notions of reps and sets.

In the past you may have started a program thinking about your 5x5 max or some other such notion. We can pretty safely predict that this max will not change too much over a short period and that such changes won't make a difference to our purpose since we are simply using intensity cycling, etc to just move up to a new max.

But in order to get away from the set/rep mentality and move into more advanced more "hardcore" strength work you need to get your mind around the concept of the relative max and how maxing and going for a PR may differ. This also involves the concept of quality. See what most people don't realize is that the closer you get to your absolute maximum the more relative it becomes. I.E. it is relative to your ability on that day due to all sorts of known and unknown factors.

A lot of people give this arbitrary info about how often you can "max". I've read people say you shouldn't max more than once a month or something. You can feel sure that the person saying that doesn't lift heavy things and doesn't know shit about maxing as opposed to going for a PR. When a powerlifter goes to a meet he/she is looking for the heaviest lift he/she can do PERIOD. So basically they would like to see a PR. Do lots of powerlifters go for PR's that often during non-competition training? NO. But do they use maxes often. Yes. How often depends on their own concepts of training of course and how they periodize.

Now, if your relative 5x5 max changed by, say, 3 to 4 pounds, that won't amount to a hill of beans.

But a difference of 3 or 4 pounds in your relative 1RM can certainly make a difference if you are using very high intensities. Using singles is the epitome of very high intensities. If you read The Singles Scene in this publication and embark on your first singles cycle you may see that small changes in your relative ability are really going to make a

pretty good difference with the weight range you would use for that day.

Doing single between 270 and 300 versus 275 to 305.....that's actually a pretty big deal. Whereas 4x6 squats versus 5x5 squats is not that different on any given day...it's just progression that matters.

Likewise if you just rely on 5x3 and straight loading protocols with somewhat straight rest periods you are missing out on the ability to lift at a much higher intensity.

That's another thing...rest periods. This kind of thing, as stated is about quality. And high end strength work is about allowing as much rest between "sets" as you need. Being in a hurry will always hold you back. So time management will have to change if you need it to change. So more supersets and stuff for supplemental work, that kind of thing.

A *free* pdf brought to you by Ground Up Strength:  
<http://www.gustrength.com>