

Some Minor Principles of Hypertrophy-Specific Training™

by Charles T. Ridgely

Introduction

During the last few years, Hypertrophy-Specific Training™, developed by Bryan Haycock, has grown in popularity and now enjoys widespread use by a variety of lifters worldwide [1-3]. Anyone that frequents the many online bodybuilding forums knows that hardly a day goes by without a posted question about how to set up a HST cycle. Unfortunately, many of those questions are very similar, which demonstrates at least some level of confusion about some of the topics surrounding HST and its implementation.

As is well known, the foundational, or major, principles of HST are Frequency, Mechanical Load, Progression, and Strategic Deconditioning (SD) [1-4]. There are, however, several lesser known rules of thumb that can make setting up your HST cycles easier, as well as making your cycles more productive. I like to think of these as “minor principles” because they don’t make up HST like the major principles do, but rather they follow as a consequence of the major principles. Herein, we’re going to take a closer look at some of these minor principles, while only briefly discussing the well-known major principles of HST.

Overview of the Major Principles

As mentioned above, the major principles of HST are Frequency, Mechanical Load, Progression, and Strategic Deconditioning (SD). Just to be certain we’re all on the same page, let’s briefly review these principles.

The Frequency Principle states that we should carry out our training efforts so as to create an environment of chronic loading rather than performing an infrequent, acute loading regimen as suggested by other training programs. With more traditional training programs, each body part is blasted and then left alone for about seven days to recover. With HST, however, body parts aren’t hammered to failure, but instead are worked more frequently throughout each training week.

The Mechanical Load Principle states that all muscle fiber types participate when the muscles are exposed to heavy enough loads. This contrasts with the conventional notion that you must work to momentary muscular failure before all fiber types will receive a growth stimulus. By extension of this principle, muscle fatigue is not relied upon as a gauge of the effectiveness of HST. Rather, the Mechanical Load Principle directs us to focus on working with heavy loads in order to expose our muscles to

mechanical stress. This stress causes microtrauma, which leads to muscle growth.

The Progression Principle states that the mechanical loading of our muscles must be increased, or progressed in a steady manner. In essence, since the body prefers homeostasis, a particular loading of the muscles becomes decreasingly effective at stimulating an adaptive response. To keep this adaptive process moving forward (i.e., continued muscular hypertrophy), we must continue increasing the weights that we use throughout our training cycles.

The Principle of Strategic Deconditioning (SD) states that we must observe preplanned periods of no lifting to allow our muscles to recover and become deconditioned to the loads that we use in our training. SD is a natural consequence of the Principle of Progression, really. Given time, you’ll eventually progress to a point at which you cannot further increase your weights. Once your muscles adapt to those maximal loads, muscle growth will begin to plateau. The Principle of SD helps us avoid wasting time with these plateaus by taking time off from lifting for a period of 9 to 16 days. How long you spend on SD really depends on your level of conditioning. If you’re relatively new to lifting (e.g., lifting for less than two years), then perhaps you can SD for about 9-10 days. On the other hand, if you’ve been training hard for years on end, you’re likely better off taking 14-16 days for your SD!

Now that we’ve reviewed the major, foundational principles of HST, let’s move on to some of the minor principles that are often confusing.

Full Body Workouts

The Frequency Principle states that we should carry out our training so as to create an environment of chronic loading. This calls for training the whole body several times each week. No doubt, full-body workouts are time consuming! At the same time, your workouts shouldn’t take longer than between 45-60 minutes. This doesn’t mean that you’re ruined if your workout goes over 60 minutes; it’s just best to keep things generally under an hour.

Clearly, training the whole body in 60 minutes or less offers a time constraint—especially when the gym is crowded! To combat this problem, focus your training on mostly compound exercises that work a large number of muscles at the same time. Of course, you can use some isolation exercises, but they really shouldn’t be the cornerstone of your training. All of the following exercises are great choices for your HST cycles.

Upper Body	Lower Body
Bench Press (Incline, Flat)	Squats (All types)
Dips	Leg Presses
Chins (Wide, Narrow)	Deadlifts
Pulldowns (Wide, Narrow)	Stiff-Leg Deadlifts
Rows (All types)	Leg Curls (All types)
Presses (All types)	Calves (All types)
Shrugs	
Triceps (All types)	
Curls (All types)	
Abdominals (All types)	

As a rule of thumb, it's a good idea to work mostly with your compound exercises, and then use a couple isolation exercises to finish off any body part that you think needs a bit more attention. For example, even though compound exercises, such as Bench Presses and Chins, hit the arms hard, many lifters choose to work their arms directly with 1 or 2 sets of triceps extensions and biceps curls.

One question that seems to come up a lot is whether or not one should use many exercises with 1 set each or a few exercises with several sets. As with many aspects of HST, the number of exercises you use is entirely your choice, so long as your exercise selection works the whole body. It should be kept in mind, however, that the more exercises you choose, the longer you'll be in the gym, especially if you decide to do more than 1 set for each exercise. Choosing a large array of isolation exercises will likely become an increasing burden as your cycle progresses, which can lead to burnout! It's not that using isolation exercises will make or break your training; it's just that using mostly compound exercises is far more time efficient.

Supersetting Exercises

Another way to save time in the gym is by supersetting pairs of exercises that work antagonistic muscle groups (i.e., muscles that work in opposition). For example, you can perform a set of Bench Press and then immediately perform a set of Bent Over Rows. The Bench Press works the chest and triceps whereas the Bent Over Rows work the back and biceps. After a reasonable rest period, perform another set of Bench Press immediately followed a set of Bent Over Rows. Simply repeat this procedure until you've completed the desired number of sets for both the exercises. Supersetting exercises in this fashion will greatly speed up your workouts. Also note that herein, a "reasonable rest period" is defined as between 30-90 seconds in the 15s and 10s, and not more than 3-5 minutes in the 5s.

Example Supersets and Primary Muscles Targeted

First Exercise	Second Exercise
Bench Press <i>Chest, Anterior Deltoids, Triceps</i>	Rows <i>Back, Rear Deltoids, Biceps</i>
Dips <i>Chest, Anterior Deltoids, Triceps</i>	Chins <i>Back, Rear Deltoids, Biceps</i>
Squats <i>Quadriceps</i>	Stiff-Leg Deadlifts <i>Hamstrings</i>
Deadlifts <i>Quadriceps</i>	Leg Curls <i>Hamstrings</i>
Close Grip Bench Press <i>Triceps</i>	Barbell Curls <i>Biceps</i>

Changing Exercises

One question that arises from time to time deals with changing exercises in the middle of one's cycle. Changing exercises mid-cycle isn't necessarily bad, but the benefit of doing so depends on the changes you make and your objective. For instance, there is some benefit to changing to an exercise that provides more stretching of the target muscles [3]. Changing from Barbell Curls to Inclined DB Curls is one example. On the other hand, there's no need to change exercises to "confuse" the muscles in an attempt to avoid plateaus; progression and SD take care of this for you. Performing SD keeps makes your muscles responsive to the weights you're using, and progression keeps muscle adaptation (i.e., hypertrophy) moving along throughout your cycle. Generally, it's recommended that you use the same exercises throughout your HST cycle. Besides, you've already gone to all the effort to plan out your current cycle, found your repetition maximums (RMs) for each exercise, and determined your weights for every single workout day. Why change something that's working well?

Of course, one very good reason to change your routine is when an exercise causes you pain. You should stop doing any exercise that causes pain beyond normal muscle soreness. Continuing along with a painful exercise could very easily lead to an injury—which could sideline you for a quite a while! Who wants that? Simply drop any exercise that's causing you trouble. You can always change up your routine for your next cycle.

Incremental Weights

With HST, we add an incremental weight to our weights for each training day in the cycle. If these incremental weights are too small, our muscles may not really notice the difference, and thus our progression suffers. On the other hand, if our increments are too big,

excessive microtrauma, muscle fiber necrosis, and injury could result [3]. So, how big should our increments be?

It is generally accepted that our incremental weights should be about 5% of our 5RM weight for each exercise. So, for example, if your 5RM weight for the Bench Press is 160 lbs, then your incremental weight should be about 8 lbs. If you wanted to round this up to an even 10 lbs, that'd probably be fine, too. As another example, if your 5RM weight for the Barbell Curl is 80 lbs, then your incremental weight for this exercise is about 4 lbs. Certainly, you can bump this up to 5 lbs without any problems.

Once you've performed a few cycles, you may want to try using increments that are as large as 10% of your 5RM weight. Larger increments are also useful for those exercises that you may be performing every other workout day. For instance, if you perform Squats only during every other workout, you can go ahead and use 10% increments. However, those lifters that are new to HST should keep their increments closer to 5% just to be on the safe side. The following list illustrates a sample routine for which a lifter has determined the 5RM weight and the corresponding incremental weight for each exercise. Notice that the incremental weights are rounded up to the nearest 2.5-lb plate-weight.

Determining Incremental Weights		
Exercise	5RM (lbs) BW = 180 lbs	Incremental Weight (lbs)
Squats	275	15
Leg Curls	160	10
Bench Press	215	10
Bent Over Rows	175	10
Dips	BW + 50	10
Chins	BW + 40	10
Triceps Extensions	60	5
DB Curls	55	5
Seated Calf Raise	260	15

As you can see, Dips and Chins are bodyweight (BW) exercises, where extra weight is suspended from the lifter's body during the exercise. This is typically accomplished by hanging weight plates from a dipping belt that's worn around the waist. The easiest way to determine incremental weights for BW exercises is to determine 5% of the sum of the suspended weight and your body weight. In the example above, the lifter's bodyweight is 180 lbs. Since the lifter performs Dips with an extra 50 lbs, the lifter's total 5RM weight for Dips is 230 lbs. Therefore, the lifter's incremental weight for Dips is 11.5 lbs, which can easily be rounded up to 12.5 lbs for the sake of convenience.

Tailoring Beginning Weights

A common area of concern is whether or not the beginning weights in the 15s rep-range of the cycle are actually beneficial. Simply, when taken in view of your SD, the weights in the 15s are indeed beneficial [1-3]. Broadly speaking, a good measure of the effectiveness of your cycle is the difference between your final, 5RM weight and your beginning weight in the 15s. The larger the difference, the more effective your cycle will be. You can improve the effectiveness of your cycle by either increasing your 5RM weight or decreasing your beginning weight in the 15s. Although the latter seems like the easier of the two options, you may still be wondering: How low is too low?

Generally, I like my first weight in the 15s to be no lower than 50% of my 5RM. Adhering to this rule of thumb will put your beginning weight at around 44% of your 1RM. Although this is lower than the accepted training-zone [5], when considered in view of your SD 44% of 1RM ought to be plenty effective as a beginning weight in the 15s! A relatively stricter rule of thumb is that the beginning weight in each mesocycle (i.e., 15s, 10s, 5s) should be equal to or greater than 70% of the RM weight for the mesocycle. This implies that your first weight in the 15s should be greater than about 70% of your 15RM for each exercise. Likewise, your first weight in the 10s should be greater than about 70% of your 10RM, and your first weight in the 5s should be greater than about 70% of your 5RM weight. Let's consider an example to see how these rules are applied to setting up your cycle.

Suppose your 15RM, 10RM, and 5RM weights for a particular exercise are 120, 140, and 160 lbs, respectively. The incremental weight for this exercise is 5% of 160 lbs, which is equal to 8 lbs. For simplicity, we'll increase the incremental weight to 10 lbs. Using the incremental weight and the RMs given above leads to the following weights for this exercise.

15s	70	80	90	100	110	120
10s	90	100	110	120	130	140
5s	110	120	130	140	150	160

These are the weights obtained by straight calculation without using any additional rules. While there's a large difference between the first weight in the 15s, 70 lbs, and the 5RM, 160 lbs, there's also a lot of overlapping from one mesocycle to the next and the first couple of weights in each mesocycle are too low. Let's fix these problems.

The easiest problem to see is that 70 lbs is less than 50% of 160 lbs. Thus, the first weight in the 15s is too low. So, we'll definitely be dropping the 70-lb weight from our cycle! Now, let's use the 70% rule. Noting that 70% of 120 lbs is 84 lbs, 70% of 140 lbs is 98, and 70% of 160 lbs is 112 lbs, we easily find that the beginning weight

in each mesocycle is too small. After dropping all of the weights that are too small, we're left with the following.

15s	90	100	110	120	
10s	100	110	120	130	140
5s	120	130	140	150	160

Since we now have less than 6 weights for each mesocycle, we'll certainly need to repeat some of the weights for more than one workout day.

The concept of repeating weights leads to another thing that seems to cause trouble: zig-zagging weights. Notice that in the 10s, the first 3 weights are also used in the 15s; and in the 5s, the first 3 weights are also used in the 10s. This overlapping of weights is commonly referred to as "zig-zagging weights." Zig-zag won't render your cycle useless. Remember, it's the difference between your 5RM weight and the first effective weight in the 15s that's most important. Despite this, some lifters just don't like zig-zag. So, let's reduce the zig-zag by dropping the first 2 weights in the 10s and 5s, and then repeat the heaviest weights in each of the mesocycles. Our weights are now as follows.

15s	90	100	110	110	120	120
10s	110	120	130	130	140	140
5s	130	140	150	150	160	160

The weights used in this cycle now differ greatly from the original weights obtained by straight calculation alone. As you can see, performing a little tailoring on your weights can improve the effectiveness of your cycles, as well as give you greater lifting satisfaction as you work through your cycles.

Volume of Exercise

The question of how much training volume to use seems to be the one that causes the most confusion among those new to HST. The Official HST Method [1] recommends using 1-2 sets per exercise throughout your cycle. More specifically, you should use 2 sets during the first week of each mesocycle, and 1 or 2 sets during the second week of each mesocycle, depending on how you feel as the cycle progresses. Note that as the loads increase, doing 2 sets will get real tough. It doesn't matter if you cannot finish your second set. We're not concerned with pumping out a particular number of sets! Rather, we're concerned with exposing the muscles to mechanical stress in order to cause microtrauma.

Understanding how training volume is used in HST calls for a change in our thinking of volume in general. The two most important aspects relating to volume are the mechanical stress (i.e., tension) applied to muscle tissue

and the amount of time this stress is applied, relative to the conditioning of the tissue. Since we're always increasing the weights that we use, after having done our SD, our muscles are always deconditioned to the load. Thus, we should be thinking in terms of the amount of time our muscles are exposed to those loads.

From the very first instant that we lift a weight, our muscles are exposed to mechanical tension. Applying tension to the muscles causes microtrauma, which through a chain of physiological events leads to hypertrophy of the muscles [1-3]. The longer the tension is applied, greater is the resultant microtrauma. For this reason, every repetition is valuable, not just the last couple of reps, as is often suggested. Thus, it's best to think in terms of the total number of repetitions performed per bout of exercise. Simply stated, performing more repetitions increases the time under tension experienced by your muscles.

Since the HST rep-ranges decrease from 15 reps down to 5 reps, your time under tension also decreases to a third of its beginning value. Many lifters prefer to keep their time under tension constant, or even increasing, throughout their cycle by adding sets when the rep-ranges decrease. The objective of this is nothing more than to expose the muscles to tension for as long as possible without overtraining or becoming injured.

Another approach to the volume question is to consider the training volume you're using now. If you've been lifting for a long time and have grown accustomed to a particular training volume, you can try spreading that volume across each week when you switch to HST. For example, if you've been using the 5x5 program, you're likely accustomed to performing about 25 reps for each body part per week. Thus, when you switch to HST, try doing 2 sets of each exercise. When you get to the 5s, you'll be doing 6 sets of 5 reps, which gives you 30 reps on a weekly basis.

It must be stressed that training volume is a very individual thing. Asking someone else how much volume you should use is a lot like asking someone else how long you must stand in the sun until your skin tans. Simply put, nobody can truly tell you what volume you should use because everyone's different! This means that ultimately you'll have to find out for yourself what's best for you, and the recommendations in the Official HST Method [1] are a great place to start.

Training to Failure

There is no HIT-style failure training in HST. After lifting to momentary muscular failure, the muscles need at least seven days rest before strength levels recover. Doing this with the frequency that HST requires would easily lead directly to burnout, overtraining, and possibly injury.

HST-style failure generally is defined as lifting with superb form until your form begins to deteriorate and/or

you have 1 or 2 repetitions left in the tank. You will train to HST-style failure on your 15RM, 10RM, and 5RM workout days. However, many experience strength increases throughout their HST cycles. Indeed, if your strength increases, you'll easily avoid failure on your RM days, too!

Training & Diet: A Duality

Often times, questions appear on bodybuilding forums about whether or not HST is working. Usually, the people asking this question claim that they are doing HST precisely as directed, but they aren't gaining any muscle. The cause of this is almost always found in the lifter's diet [3-4]. Many times, the problem is that the lifter simply isn't consuming enough calories. To put on new muscle, not only do you have to eat more calories than your maintenance requirement, but you also must eat more than enough to cover the energy expenditure of your training. Considering that HST comprises 3 full-body workouts each week, you should expect to be eating quite a lot if you're trying to put on muscle. A great source of diet-related information, as well as calculators, can be found in "Eating for Size," by Bryan Haycock [6].

Indeed, diet can make or break any lifting routine, not just HST. Diet really isn't a minor principle at all, but instead is a major principle on par with, if not surpassing, the major principles of HST. I like to think of diet and training as a duality—they rise together and fall together!

Final Thought

An important thing to keep in mind is that HST is not a rigid system, wherein if you break a "rule" you won't grow. Rather, HST is comprised of a group of principles that allow for a whole of lot of variation. It's useful to think in terms of the law of diminishing returns. That is, the further you stray from the principles of HST, the less muscle growth you can expect—but it's not an absolute, all or none situation!

References

- [1] Haycock, Bryan, "Hypertrophy-Specific Training: Official HST Method," http://www.hypertrophy-specific.com/hst_index.html
- [2] Haycock, Bryan, "Strategic Deconditioning: Priming the Muscle for Growth," http://www.hypertrophy-specific.com/hst_artcls_stratdecon.html
- [3] HST FAQ, <http://www.hypertrophy-specific.com/cgi-bin/ib3/ikonboard.cgi?s=4b98290e1216528a81e2210019e2239b;act=SF;f=13>
- [4] Discussions on the HST Forum, <http://www.hypertrophy-specific.com/cgi-bin/ib3/ikonboard.cgi>
- [5] Hatfield, Frederick C., *Fitness: The Complete Guide*, International Sports Sciences Association, 7th Ed., p. 6.25.
- [6] Haycock, Bryan, "Eating for Size," http://www.hypertrophy-specific.com/HSreport/iss04/eat_size.html