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The Think Muscle Newsletter publishes the latest news and research on exercise physiology, dietary supplements, performance enhancement, lifestyle management, health \& nutrition, and bodybuilding \& fitness. The newsletter is dedicated to providing accurate and unbiased scientifically based information.

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## Message from the Editor in Chief

## by Bryan Haycock

Before getting to this month's edition of Think Muscle, I want to put out a call to anyone who would be willing to share his or her experiences using insulin for bodybuilding or athletic competition. If you or someone you know would be willing to talk "on the record" please contact me at bryan@thinkmuscle.com

Now, on to this month's newsletter. I have been inundated recently with emails asking questions about how to set up an HST routine. The first mention of this method of training specifically for muscle size occurred right here at Think Muscle a couple years ago (www.thinkmuscle.com/articles/haycock/hst-01.htm). Since then, HST has been translated into several languages and is practiced all over the globe. There is even an
official HST website (www.hypertrophy-specific.com/hst_index.html). So the interest and word of mouth about HST is constantly growing. As I was saying earlier, I try to respond to as many emails about HST as I can, but frequently time constraints simply don't allow me to personally respond to everyone, and I apologize to anyone who has written and not received a response from me.

In an effort to resolve more of your questions than I can reasonably address one by one, I have decided to publish an article submitted to me by Charles T. Ridgely. It's fairly well known that Think Muscle and Hypertrophy-Specific tend to attract the more educated crowd, and this month's guest contributor is just another example of this. Charles T. Ridgely, MS is a physicist currently working as a Patent Scientist for an intellectual property law firm in Newport Beach, California. As a Patent Scientist, Charles works closely with an international group of patent attorneys to ensure patent protection of a wide variety of medical and fitness-related technology for a variety of clients from around the world.

Before working as a Patent Scientist, Charles worked as a Science Curriculum Developer for Kaplan Educational Centers. As a Science Curriculum Developer, Charles wrote and edited physics passages for Kaplan's Medical College Admissions Test (MCAT) Physical Sciences courses, as well as for Kaplan's Physics Edge course book.

Charles spends much of his personal time researching and writing about various topics of interest in physics. His work has been published in the American Journal of Physics and Galilean Electrodynamics. More recently, Charles has been applying his research skills to the field of bodybuilding and more particularly to the Hypertrophy-Specific Training ${ }^{\text {TM }}$ method of training. Charles is currently studying to become certified by the International Sports Sciences Association (ISSA) as a Certified Fitness Trainer (CFT).

I found his article to be very well written and easy to understand. I think you will too. If after reading, you have additional questions, please browse the HST Frequently Asked Questions (FAQ) section of the HST message board. There you should find answers to about any question you can think of.

Enjoy the article and let me know what you think. I'm always eager to hear from you.
Best wishes,
-bryan

## Setting up a Hypertrophy-Specific Training ${ }^{\text {TM }}$ Cycle

by Charles T. Ridgely
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## Introduction to Hypertrophy-Specific Training ${ }^{\mathrm{TM}}$ (HST)

To be certain, there are a mind-boggling number of lifting programs available, all claiming to be universal in their ability to produce bigger and stronger lifters. Some programs rely on muscle fatigue, or working to muscular failure, to produce results. With these programs, a weight is lifted until it cannot be lifted even one more time. Other programs rely on increasing volume. These programs may call for adding more sets or repetitions of each exercise over time. Still other programs call for a combination of working to failure and increasing volume to produce results.

Unfortunately, a large percentage of these programs are based not on scientific evidence, or research, but rather on the basis of observations of a few elite lifters. One program that is based on scientific research is Hypertrophy-Specific Training ${ }^{\mathrm{TM}}$ (HST), developed by Brian Haycock. HST is helping many ordinary people make wonderful gains on an every-day basis, and many exceptional lifters are experiencing renewed, plateau-free growth, as well.

It should be noted that the objective here is not to provide the scientific evidence behind HST, but rather to briefly explain the principles of HST and demonstrate how to set up your own HST cycle. A more detailed account of the science behind HST can be found at the Hypertrophy-Specific Training website, located at www.hypertrophyspecific.com.

## Key Principles of HST

An important thing to understand about HST is that it is not a rigid program which is applied to all lifters in the same way. Rather, HST is a group of principles, which, when understood intuitively, can direct your lifting efforts toward new growth without hitting the plateaus that inevitably plague lifters using other, generalized programs. In the simplest of terms, the primary principles of HST are frequency, mechanical load, progression, and strategic deconditioning. Each of these principles is briefly discussed below.

Frequency: In the HST protocol, muscles are loaded three times a week rather than the usual once per week suggested by other programs. The greater frequency of workouts provides the muscles with an environment of chronic loading. This contrasts the acute loading (i.e., high intensity once a week) of other programs.

Let's consider an example which illustrates the difference between acute and chronic loading. Say you get a new job that occasionally requires you to lift and move several boxes, each weighing 50 lbs . Naturally, the first time you do this, the next day you will be sore. The soreness occurs because your muscles are not conditioned to this particular form of exercise. Suppose that you only have to lift the boxes once every two weeks. Think you'll be sore after the next time? Probably, even if a bit less than the first time. This occurs because your muscles adapt to the load provided by the boxes during the first lifting session, but then decondition during the several days before the next box-lifting session. As a consequence of this acute loading, your muscle-building efforts are slowed at best.

On the other hand, suppose that you have to lift the boxes every day. Think you will continue to get sore as the days go by? Yes, but not for long. Lifting the boxes every day will quickly condition your muscles to the load provided by the boxes. Likely, by the end of the first week of lifting, you will no longer get sore. Your muscles will have become conditioned to a new environment wherein lifting 50 lbs-boxes occurs very frequently, or chronically. Once this conditioning has occurred to a sufficient level, you will plateau and no further adaptation will take place. That is, unless there is some sort of progression to your box-lifting efforts.

The take home point is: we want to keep the muscles in a state of adaptation with as little deconditioning as possible taking place between workout sessions.

Mechanical loading: Traditionally, muscle fatigue has been relied upon as a gauge for the effectiveness of a particular program to produce growth. According to this reasoning, one must work the muscles to momentary muscular failure so as to cause as many muscle fibers as possible to receive a growth stimulus. Often it is suggested that the fast twitch, or white, muscle fibers are not even called into action until the last few repetitions of a set. As pointed out in support of HST, however, a great deal of research suggests that all types of muscle fibers are called into action when the muscles are exposed to heavy enough loads. Because of this, HST emphasizes heavy mechanical loading of the muscles. In other words, we want to spend some time using heavy weights, and not just stay with the lighter weights suggested by many other programs.

Progression: As pointed out above in the 50 lbs-box example, your muscles will eventually become conditioned to lifting the 50 lbs-boxes. Certainly, the level of conditioning depends on several factors, including how frequently you engage in box lifting, how many boxes you lift in each bout of box lifting, and how fast you lift and move the boxes in each bout. Assuming that all of these factors remain constant, your muscles will become conditioned and no further conditioning will take place unless there is some sort of progression. In our box example, progression can take the form of lifting the boxes more often, lifting the boxes more quickly during each bout, or lifting more boxes in each bout, or even a combination of these. Of course, another type of progression can be achieved simply by lifting heavier boxes. This is the preferred method of progression in HST; namely, the mechanical loading on the muscles is progressively increased in a steady manner.

Strategic Deconditioning (SD): As you steadily increase the mechanical load on your muscles, you will eventually reach a point where you cannot add any more weight. At this point, you will have reached your maximum lifts. Because of this, there is a natural limit to the length of time during which you can increase the mechanical loading on your muscles. And to confound things even more, you will eventually become conditioned to these maximal weights-meaning, they will lose their effect on your muscle growth mechanisms. When that happens, any further progress will be phenomenally difficult at best. So, we can either beat ourselves to a pulp lifting heavy weights day-in and day-out, hoping for some sort of progress, or we can find a way to make renewed progression possible. With HST this is where Strategic Deconditioning (SD) comes into play. Strategic Deconditioning comprises between 9 to 16 days of no lifting to allow the
muscles to become deconditioned to the heavy weights you've been lifting for the previous 6 to 8 weeks. After about 7 days of SD, your muscles will be essentially completely repaired from the damage you've inflicted on them up until your final workout. From about the $7^{\text {th }}$ day onward, your muscles will then become unaccustomed to these weights. Therefore, if you do a good job of not doing anything at all, when you return to the weights between 9 to 16 days later, progression of those submaximal weights will produce further growth all over again. Hence, by "SDing" you'll avoid the plateau that would have otherwise been inevitable.

## Basic Layout of a HST Cycle

A HST cycle is typically an eight-week, mass-building macrocycle which is comprised of at least three mesocycles. Each mesocycle provides a repetition range which specifies a number of repetitions you will perform with each exercise. The recommended repetition ranges are a 15 -rep range, a 10 -rep range, and a 5 -rep range, although other rep-ranges are certainly acceptable. These rep-ranges are generally referred to as the $15 \mathrm{~s}, 10 \mathrm{~s}$, and 5 s , respectively. It should be stated up front that the secret of HST's ability to produce renewed muscle growth is not to be found in the rep-ranges. Rather, the principles of HST discussed above hold the secret to renewed growth. The purpose of the rep-ranges is to guide you in choosing effective weights that progress throughout the HST cycle. It is straightforward to see that during the 15 s , the weights will be much lighter than the weights used during the 5 s.

A fourth mesocycle may include negatives (i.e., eccentric repetitions) and/or a continuation of the 5 s or even the addition of drop sets. SD can be considered to be a fifth, or final mesocycle. The following table summarizes the primary mesocycles in a HST cycle.

| One HST Cycle |  |
| :--- | :--- |
| Weeks 1-2 | 15 s |
| Weeks 3-4 | 10 s |
| Weeks 5-6 | 5 s |
| Weeks 7-8 | Negatives, More 5s, or Drops |
| Weeks 9-10 | SD |

Each mesocycle comprises at least six individual workouts. The weights you use should progress from workout to workout as you work through each mesocycle. The lighter weights you use for the 15 s develop tendon strength, prepare the body for future heavy loads, and encourage the body to heal any old injuries. The weights used for the 10s are great for hypertrophy, but also serve as a transition from the light weights of the 15 s to the heavier weights used in the 5 s . The weights used for the 5 s are great for developing strength and hypertrophy. Negatives enable you to use even heavier weights than in the 5 s , and develop hypertrophy via loaded stretching of the muscles. SD allows time for your muscles to forget their conditioning, so that the submaximal weights used in your next HST cycle will be effective for producing further growth.

## Selecting Exercises

As discussed above, a key principle of HST is working the muscles with a high frequency each week. While most modern-day programs suggest hitting each muscle group once each week, in HST we want to hit the whole body two or three times each week. Of course, working each muscle group three times per week is more preferable if you can handle that level of frequency. One example of a full-body routine that can be used three times each week is:

Squat<br>Stiff-Leg Deadlift<br>Inclined Bench Press<br>Chins (Wide Grip, Narrow Grip)<br>Rows (Wide Grip, Narrow Grip)<br>Shrugs<br>Shoulder Press<br>Lateral Raise<br>Rear Delts<br>Dumbbell Curls<br>Lying Triceps Extensions<br>Calf Raise<br>Abdominal Crunches

Another example of a full-body routine that can be used three times each week is:
Squat
Leg Curl
Inclined Bench Press
Wide Grip Pulldowns
Dips
One-Arm Rows
Inclined Hammer Curls
Lying Triceps Extensions
Shrugs
Abdominal Crunches

Alternatively, an abbreviated version of this routine might be:
Squat
Leg Curl
Inclined Bench Press
Chins
Dips
Seated Rows
Shrugs

Another popular approach is to select alternating exercises that are performed every other workout day. For example, one might choose the following alternatives for working the legs.
A. Squat
Leg Curl
B. Deadlift
Stiff-Leg Deadlift

With these exercises, A is performed on Monday, B is performed on Wednesday, and A is performed on Friday. On the following Monday B is performed, A is performed on Wednesday, and B is performed on Friday. This is shown more clearly in the following table.

| M | W | F | M | W | F |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A | B | A | B | A | B |

One example of a full-body routine that includes alternating exercises is:
A. Squat
Leg Curl
B. Leg Press
Inc. Bench Press
Leg Curl
Chins
Rear Delts
Shrugs
Curls
Triceps Extensions
Calf Raise
Dips
Rows
Rear Delts
Shrugs
Curls
Triceps Extensions
Calf Raise

In this routine, Squats are alternated with Leg Presses while Inclined Bench Presses are alternated with Dips, and Chins are alternated with Rows.

Exercises can be performed with an Upper/Lower body split two or three times each week. Using the full-body routine given above, one might split the upper- and lowerbody exercises as follows:
A. Inc. Bench Press
Wide Grip Pulls
Dips
One-Arm Rows
Inc. Hammer Curls
Lying Triceps Ext.
B. Squat
Leg Curl
Shrugs
Ab Crunches

The Upper routine is performed every other day, and the Lower routine is performed on the intervening days, as shown in the following table.

| M | T | W | TH | F | S |
| :---: | :---: | :---: | :---: | :---: | :---: |
| U | L | U | L | U | L |

Another very popular technique is the $\mathrm{AM} / \mathrm{PM}$ routine. With the $\mathrm{AM} / \mathrm{PM}$ routine, you workout both in the morning and in the evening. This enables you to either split up your upper- and lower-body work or double your volume by doing full-body work twice. The following table illustrates a typical Upper/Lower body split performed on an AM/PM routine.

|  | M | T | W | TH | F |
| :---: | :---: | :---: | :---: | :---: | :---: |
| AM | Upper | OFF | Upper | OFF | Upper |
|  |  |  |  |  |  |

Of course, other types of routines and splits are entirely possible. For instance, some may prefer to use a four day split routine, while others may prefer using a six day split routine. These more traditional split routines are certainly an option so long as one keeps in mind that higher frequency is a fundamental principle of HST. Optimally, the whole body is worked 2-3 times each week.

When you choose your exercises, remember to keep things simple. There's no need to go crazy and then burn out. Try to avoid choosing so many isolation exercises that you're in the gym for two hours every workout. The objective is to hit the entire body with a reasonable volume without taking much longer than about 45-60 minutes per workout.

## Finding Your Rep-Maxes

Once you have chosen your exercises, you'll need to find your 15, 10, and 5 rep-max (RM) weights for those exercises. For those readers that are new to the iron game, a RM specifies the maximum number of times you can lift a weight before hitting muscular failure. With HST, the RMs guide us in determining how much weight to use for our exercises. For instance, what is the maximum weight that you can squat 15 reps with? Once you know this weight, it becomes your 15RM weight.

One way to determine your RMs is to perform the exercises to find your 15RM, 10RM, and 5RM. You can test your 15RM on Monday, your 10RM on Wednesday, and your 5RM on Friday. A good thing about this method is that it's very accurate on an individual basis. One drawback is that it takes an extra week to test all of your RMs, and the amounts of weight may vary depending on a variety of factors, such as sleep, nutrition, stress, recent illness, overtraining, and the like. It should be understood that after you test your RMs, you need to take a 9-16 day SD in order to prepare your muscles for the upcoming HST cycle.

Estimation is a far less time consuming way of finding your RMs. With the estimation method, you use online calculators or some other similar device to estimate your 15RM, 10RM, and 5RM based on other RMs that you already know, such as, for instance, your 12RM or 8RM. A good thing about estimating your RMs is that it's easy and takes very little time. A drawback is that it's generalized and thus may not be very accurate on an individual basis.

A more accurate approach is to use a theoretical method to determine your current RMs. For example, you can use linear regression to determine your theoretical 15RM, 10RM, and 5RM based on your latest RMs from your other workout programs. A great thing about this approach is that it's very accurate on an individual basis. Of course, the main drawback is that it's mathematically intensive, and not everyone has the math skills to use this method.

## Setting up a Workout Log

Setting up and maintaining a workout log or journal is essential. Not only does a workout log enable you to carefully plan your HST cycles, but it also gives you a direct means by which to monitor your progress, as well as any problems that might arise in your training over time.

Once you know your 15RM, 10RM, and 5RM weights for all of the exercises you have chosen, you can enter them into your workout log. Your 15RM weights are the weights you will use on the last workout day of the 15 RM mesocycle (i.e., the 15 s ). Your 10RM weights are the weights you will use on the last workout day of the 10s, and your 5RM weights are the weights you will use on the last workout day of the 5 s .

Next, you must subtract weight from your 15RM, 10RM, and 5RM to determine the weights you'll use as you work up to your RMs. Before you can do this, however, you must determine a decrement value for each exercise. The decrement value is the amount of weight you subtract from your RM weights for each workout day preceding the workout on which you use your RM weights. This is explained more clearly below. The decrement value typically is about $5 \%$ of your 5RM weight. For example, if your 5RM weight for a particular exercise is $160 \mathrm{lbs}(\mathrm{kg})$, then your decrement value for this exercise is $0.05 \times 160 \mathrm{lbs}(\mathrm{kg})$, or $8 \mathrm{lbs}(\mathrm{kg})$.

Once you know the decrement value for each of your exercises, you are ready to determine the weights you'll use throughout the cycle. To do this, you work backwards from the RM weight, subtracting the decrement value from the weight for each workout day to determine the weight for the preceding workout day. For example, suppose your 15 RM for a particular exercise is $120 \mathrm{lbs}(\mathrm{kg})$ and that your decrement value is $8 \mathrm{lbs}(\mathrm{kg})$. The weight you will use on the $6^{\text {th }}$ workout day of the 15 s is $120 \mathrm{lbs}(\mathrm{kg})$. On the $5^{\text {th }}$ workout day, you will use $120 \mathrm{lbs}(\mathrm{kg})-8 \mathrm{lbs}(\mathrm{kg})$, which equals $112 \mathrm{lbs}(\mathrm{kg})$. On the $4^{\text {th }}$ workout day, you will use $112 \mathrm{lbs}(\mathrm{kg})-8 \mathrm{lbs}(\mathrm{kg})$, which is equal to $104 \mathrm{lbs}(\mathrm{kg})$. Continuing along, on the $3^{\text {rd }}$ workout day, your weight will be $104 \mathrm{lbs}(\mathrm{kg})-8 \mathrm{lbs}(\mathrm{kg})$, or $96 \mathrm{lbs}(\mathrm{kg})$. On the $2^{\text {nd }}$ workout day; $96 \mathrm{lbs}(\mathrm{kg})-8 \mathrm{lbs}(\mathrm{kg})$ gives a weight of 88 lbs $(\mathrm{kg})$. And, for the $1^{\text {st }}$ workout day of the $15 \mathrm{~s}, 88 \mathrm{lbs}(\mathrm{kg})-8 \mathrm{lbs}(\mathrm{kg})$ gives a weight of 80 lbs (kg). For this exercise, therefore, the weights you will use during the 15 s are 80,88 , $96,104,112$, and $120 \mathrm{lbs}(\mathrm{kg})$. The following table summarizes the weights used in the 15 s of this particular example.

| 15 s | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weight | 80 | 88 | 96 | 104 | 112 | 120 |

With the weights for the 15 s determined, you're ready to move on to the 10 s . The procedure for determining the weights for the 10 s is identical to that discussed above for the 15 s . Starting with your 10RM weight, you work backwards through the 10 s subtracting the decrement value from the weight for each workout day to determine the weight for the preceding workout day. Continuing with the example above, if your 10RM weight for a particular exercise is $140 \mathrm{lbs}(\mathrm{kg})$ and your decrement value is 8 lbs $(\mathrm{kg})$, then the weights you will use for this exercise during the 10s are:

| 10s | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weight | 100 | 108 | 116 | 124 | 132 | 140 |

Finally comes the 5 s . As with the 10 s and the 15 s , during the 5 s you work backwards, subtracting the decrement value from the weight for each workout day to determine the weight for the preceding workout day. Thus, if your 5RM weight is 160 lbs ( kg ) and your decrement value is $8 \mathrm{lbs}(\mathrm{kg})$, then the weights you will use for the 5 s are:

| 5 s | 1 | 2 | 3 | 4 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weight | 120 | 128 | 136 | 144 | 152 | 160 |

After having performed this procedure, you will have all the weights you will need for this particular exercise throughout your HST cycle.

One other point worthy of mentioning is that each of the exercises you choose for your HST cycle will have distinct 15RM, 10RM, and 5RM weights. Because of this, the decrement value for each exercise will be different. Accordingly, you must perform the procedure discussed above for each exercise you intend to use during your cycle.

## Dealing With Zig-Zagging Weights

Zig-zag is a term typically used to describe weights in one mesocycle being less than the RM weight used in the preceding mesocycle. For example, suppose your weights for the 15 s are $50,60,70,80,90$, and $100 \mathrm{lbs}(\mathrm{kg})$, and the weights for your 10 s are 70,80 , $90,100,110$, and $120 \mathrm{lbs}(\mathrm{kg})$. Putting these weights in a simple table gives:

| 15 s | 50 | 60 | 70 | 80 | 90 | 100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 s | 70 | 80 | 90 | 100 | 110 | 120 |

Looking at the weights used for the 10s, it's easy to see that the first four values (which are shaded for clarity) are weights with which you can easily crank out 15 or more reps. Because of this overlapping, or zig-zagging, phenomenon, your 10s may not be as productive as they could be.

A popular way to reduce zig-zag is by repeating some weights. For example, you could drop the first and second weights in the 10s and then repeat the remaining four weights. This is shown in the following table.

| 15 s | 50 | 60 | 70 | 80 | 90 | 100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 s | 100 | 100 | 110 | 110 | 120 | 120 |

Now, the zig-zag is reduced to only the first two weights in the 10s. Another way to reduce zig-zag is shown in the following table.

| 15 s | 50 | 60 | 70 | 80 | 90 | 100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 s | 90 | 100 | 100 | 110 | 110 | 120 |

As can be seen, this approach confines the zig-zag to three days of the 10s. Many lifters find this level of zig-zag beneficial for Central Nervous System (CNS) recovery and prevention of burnout later on in the cycle.

Still another approach to reducing zig-zag is as follows:

| 15 s | 50 | 60 | 70 | 80 | 90 | 100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 10 s | 90 | 100 | 110 | 110 | 120 | 120 |

This approach confines the zig-zag to just two days, while the heavier, more productive weights are repeated on the remaining days of the 10 s .

It should be noted that a little zig-zag can be a good thing; it allows for a little CNS recovery and can stave off burn out and overtraining which might otherwise occur later on in the cycle. But if the zig-zag is too severe, the productivity of the cycle may be compromised. You will have to experiment a little to find the level of zig-zag that works best for you.

## How Much Volume Should be Used?

This is probably the most puzzling question in the realm of bodybuilding. The question of volume is complex, being intimately hinged on a variety of factors which go far beyond the scope of this writing. Of course, in order to set up a HST cycle (or any other cycle, for that matter), one must have some idea of how much volume is required to stimulate muscle growth.

In the simplest of terms, volume may be viewed as the number of repetitions performed multiplied by the number of sets performed. In other words, the total volume of an exercise is equal to the total number of repetitions, or the number times you actually move the weight. Accordingly, the total volume of the exercise is directly proportional to the total amount of work performed during the exercise.

Let's consider some examples using HST mesocycles. Suppose you perform one set of an exercise during the $15 \mathrm{~s}, 10 \mathrm{~s}$, and 5 s . Your total volume is then $15 \mathrm{reps}, 10 \mathrm{reps}$, and 5 reps, respectively, as summarized in the following table.

| Mesocycle | Sets | Reps/Set | Volume |
| :---: | :---: | :---: | :---: |
| 15 s | 1 | 15 | 15 Reps |
| 10 s | 1 | 10 | 10 Reps |
| 5 s | 1 | 5 | 5 Reps |

This immediately tells us that your total volume is dropping over the course of the cycle. Of course, volume is not the only thing that is dropping. In fact, several important factors are dropping, one of which being the total amount of work that you are performing with the exercise.

Now suppose that you perform one set during the 15 s , two sets during the 10 s , and three sets during the 5 s . Your total volume is then 15 reps, 20 reps, and 15 reps, respectively.

| Mesocycle | Sets | Reps/Set | Volume |
| :---: | :---: | :---: | :---: |
| 15 s | 1 | 15 | 15 Reps |
| 10 s | 2 | 10,10 | 20 Reps |
| 5 s | 3 | $5,5,5$ | 15 Reps |

As can be seem in the table above, your volume increases from the 15 s to the 10 s , but then drops when you get to the 5 s . This may be a beneficial amount of volume, depending on the level of weight you are using, as well as your physical conditioning at the time you perform the cycle.

Another, somewhat counterintuitive, example is performing one set during the 15 s , one set of 10 reps followed by two sets of 5 reps during the 10 s , and then four sets during the 5 s . In this case, your total volume is $15 \mathrm{reps}, 20 \mathrm{reps}$, and 20 reps, respectively.

| Mesocycle | Sets | Reps/Set | Volume |
| :---: | :---: | :---: | :---: |
| 15 s | 1 | 15 | 15 Reps |
| 10 s | 3 | $10,5,5$ | 20 Reps |
| 5 s | 4 | $5,5,5,5$ | 20 Reps |

With this approach, your volume increases from the 15 s to the 10 s , and then stays constant through the 5 s .

Some may argue that mixing set-rep schemes during the 10 s is not productive. But it must be remembered that we are not gauging muscle growth on the level of fatigue induced during sets. Rather, mechanical load is the primary stimulus for muscle growth, as well as the total number of times you are capable of lifting that load. Some lifters may not be able to perform two whole sets of the 10s when they reach their 10RM weight. Based on this reasoning, the only way to achieve the desired volume with the mechanical load on the bar may be to perform smaller sets following the first, primary set of 10 s.

The same reasoning can be leveled at the 5 s , as well. Suppose you cannot achieve 5 reps with the last two sets of the 5 s . You can either give up or you can do more, smaller sets until you reach the desired level of volume. The following table shows one example wherein the 5 s are performed with smaller sets.

| Mesocycle | Sets | Reps/Set | Volume |
| :---: | :---: | :---: | :---: |
| 15 s | 1 | 15 | 15 Reps |
| 10 s | 3 | $10,5,5$ | 20 Reps |
| 5 s | 4 | $5,5,4,3$, <br> 2,1 | 20 Reps |

Clearly, in the 5 s , this lifter was forced to stop short of 5 reps on the third set in order to avoid muscular failure due to fatigue. To make up for this, the lifter performed three more sets having three reps, two reps, and finally one rep. Doing this enabled this lifter to achieve the desired level of volume, and thus the desired level of work, while avoiding muscular failure arising due to fatigue.

The bottom line on volume is: you should use as much volume as you can while still remaining healthy and without injuring yourself. Because this is a very individual criterion, the amount of volume you should use is also going to be very individualistic. You will have to find out for yourself what is best for you. The HST FAQ offers loads of advice to assist you in finding the volume which is best for you. Barrowing from the HST FAQ, the general consensus is as follows.

## Increase your volume if:

you're never sore;
you're never tired; or
you're not growing.

## Maintain your volume if:

you're slightly sore most of the time;
you're tired enough to sleep well, but not so tired that you lose motivation to train; or you're noticeably "fuller."

## Decrease your volume if:

you're experiencing over use pain, and strain symptoms in your joints and/or muscles;
you're tired and irritable all the time, yet don't sleep well; or your strength levels are significantly decreasing.

Please feel free to consult the HST FAQ for a far more thorough explanation of the factors affecting volume, as well as many other factors affecting your training.

## What Comes After the 5s?

Once you finish the 5 s, you have choices on what to do during the two final weeks of your HST cycle. Certainly, if at this point you are feeling overtrained or are injured, you may wisely choose to terminate the cycle and go into a nice, rehabilitative SD. On the other hand, if you're still raring to go, then you can do one of the following.

By far the most popular, and likely most beneficial, approach is to use your 2RM for negative, or eccentric, repetition training. With negatives, you generally have a partner help you lift the weight and then you lower the weight under control. You may choose to perform five of these negative reps or you may choose to perform two concentric, or positive, reps on your own followed by three negative reps where your partner helps you lift the weight. The choice is really yours so long as you can perform the negatives without injuring yourself.

Another popular approach is to perform drop sets in place of negatives. With drop sets, you generally use a much lighter weight than your 5RM, such as your 15RM weight, and you do the drop set as quickly after your 5 RM set as you can. You can continue working out with your 5RM weights at the same volume you've been using and then do additional drop sets; or, you can use less volume with your 5RM weight and add drop sets.

Alternatively, you can continue to increment your weights on up to your 4RM or your 3RM. You can also add drop sets to these workouts. The only caveat is to watch out for failure. With such few reps, failure can come on rather quickly.

Of course, if you don't want to use any of above-discussed methods, you can always continue working with your 5RM weights. Choosing this approach is beneficial because the 5RM weights are heavy enough to remain productive for two more weeks.

## Sample Workout Log

The following pages provide a sample workout $\log$ for an entire HST cycle. Although the $\log$ is rather generic, it should be enough to get you started with your own HST cycle. Please feel free to print and use it for your own HST cycles.

The first page is dedicated to finding your 15RM, 10RM, and 5RM weights. As you can see, the first page is organized into a row-column arrangement. There are spaces for you to write in your exercises, the dates on which you train, the amount of weight you use, and the number of repetitions you perform. There are also spaces for you to write in the weights and repetitions you use for your warm-ups (WU). The information you record on the first page will help, and indeed enable, you to set up the rest of your HST cycle.

The mesocycles are identified by "15RM," "10RM," " 5 RM ," and " $5 \mathrm{RM}+$ +." The last mesocycle implies that you will go beyond your 5RM by performing negatives, drop sets, or working toward your 4RM or 3RM. Of course, you can continue working with your 5RM if you want.

Each mesocycle spans two pages. For instance, the first three workouts of the 15 s are on the page labeled " 15 RM ," and the following three workouts of the 15 s are on the second page labeled "15RM."

Exercises are bundled together in pairs. It is hoped that this will help you superset pairs of exercises that work antagonistic muscle groups. This will greatly speed up your workouts.

Estimated rest times are specified for each mesocycle. The rest times are loosely related to the amount of weight used in each mesocycle. Certainly, you can choose your own rest times, if you wish.

As mentioned above, after you set up your HST cycle, you need to take a 9-16 day SD to reset the muscles' level of conditioning, and prepare them for the upcoming heavy loads.

## Full PDF version of the Sample Workout Log ( 29 kb )

## 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
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[4] HST FAQ, http://www.hypertrophy-specific.com/cgibin/ib3/ikonboard.cgi?s=4b98290e1216528a81e2210019e2239b;act=SF;f=13
[5] Discussions on the HST Forum, http://www.hypertrophy-specific.com/cgibin/ib3/ikonboard.cgi

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Best regards,
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