

# Think Muscle Newsletter #14

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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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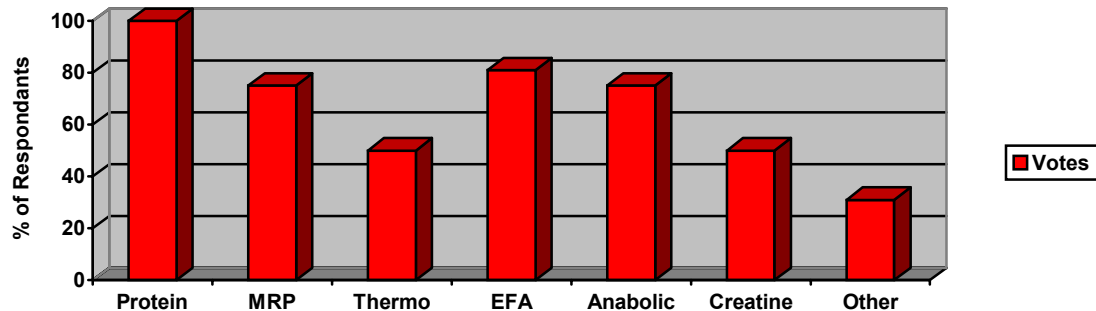


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**Our thoughts and prayers are with the victims of the incomprehensible terrorist attacks on New York, Washington, D.C. and Pennsylvania. Please consider making a tax deductible donation to the [Disaster Relief Fund of the American Red Cross](#).**

## Message from the Editor-in-Chief

Just wanted to give an update on the supplements. Many of you have responded to the survey in the last [newsletter](#) and the results are as follows:



As you can see, the Protein powder is by far in highest demand, followed by Essential Fatty Acids (EFA), a Meal Replacement powder (MRP) and an Anabolic. This is no surprise and only goes to show the education and experience of ThinkMuscle readers. Your responses reflect the correct prioritizing of currently available supplements, regardless of what is in fashion.

I am frequently asked, “If you had a limited budget, what supplements would you buy?” This is a great question. The reality is that most people don’t have an unlimited amount of money to spend on supplements; so getting the most out of their monthly investment is critical.

Assuming your diet is already in order, here is how I would prioritize supplements.

1. Protein powder – Research has demonstrated that in order for your muscle to accrue more and more mass, they need a steady supply of amino acids. (1) When used properly, protein drinks and significantly increase the effectiveness of resistance training. (2,3,4,5,6,7)
2. Essential fatty acids – EFAs such as those found in fish oils, flax oil, and CLA, actually change our fat cells from the inside out. They are able to reduce the uptake of fat into fat cells, they increase the breakdown of fat within fat cells, and they increase the oxidation of fat for fuel. These are just the benefits when trying to alter body fat levels. EFAs also decrease inflammation, heart disease, and joint pain. (8,9,10,11,12,13,14,15,16,17,18)
3. Multi vitamin and mineral – This is obvious. Of course we are supposed to get all the vitamins and minerals we need from fresh fruits and vegetables. This however is more of an ideal than a reality. A simple multivitamin and mineral is a basic component in any dietary routine.
4. A meal replacement – The same anabolic benefits are derived from a post exercise meal replacement drink as from a straight protein powder, with the added anticatabolic benefit of higher insulin levels. (19,20) Of course, MRPs are handy to

have with you when you are with people who aren't as concerned with their eating habits as you are. Nothing worse than being at the mercy of out-of-shape people oblivious to the value of good eating habits!

5. \*Prohormones – [*I can't say that I ever "recommend" someone use hormones. It is their decision, and with that decision they take full responsibility for their choice. I only provide education to those who are interested.*] Prohormones are hormones. Androgenic hormones, such as testosterone and androstenediol, have a range of androgenic as well as anabolic properties. Androstenediol is anabolic as well as androgenic but with only modest estrogenic potential and is the only *currently* available prohormone that I could recommend. Hands down the most efficient and effective method of use is in an alcohol based spray. One should never forget that, as with any hormone, the endocrine system will be affected if androgen levels rise above "normal" for any given individual. Yes, this means androstenediol, in doses sufficient to affect muscle mass, will also affect your hair, your skin, your mood, your central nervous system (CNS), your gonads, and your libido. Balance of these systems will gradually return to normal if use of androstenediol is limited to two-week periods followed by 3-4 week breaks. As with other things in life, you can't have the good without accepting the bad.
6. Thermogenics – I'll take the liberty of not compiling the numerous references to the effectiveness of ephedrine and caffeine as fat loss agents. In the very near future we will publish detailed articles on the "science" of these compounds without regard to activists and the laypress' uneducated opinions. One thing that should also be taken into consideration when discussing the usefulness of ephedrine and caffeine is the anticatabolic affects of the combination. There is also good reason to believe that caffeine may accelerate, if only temporarily, muscle gains by modulating intracellular calcium ion levels. More on that later.
7. Creatine – Everyone asks if they should use creatine. I always tell them, "sure", while hoping not to have to explain why it wasn't my first recommendation. So much has been written about creatine that anybody who isn't thoroughly familiar with it remains in ignorance by choice. I would even go so far as to say that anyone who claims creatine is dangerous isn't familiar with the research. Recent research has even shown creatine to be anticatabolic (21). At this point creatine has demonstrated safety and effectiveness easily worthy of a ThinkMuscle recommendation. In fact, it's more of a no-brainer than a recommendation if it fits into the budget.

I would love to go into great detail about the mechanisms and utility of the above supplements but that will have to wait. Suffice it to say that it isn't prudent to lump all dietary supplements into the "rip off" category. Even individuals who decide to use pharmaceuticals to reach their goals will benefit from all of the above supplements, with the possible exception of prohormones. Even if you don't have a lot of cash to spend on supplements, starting with a good protein supplement will go along way to improve your progress in the gym or out on the road.

With the overwhelmingly positive response to our last [survey](#), and the clear demand for a higher quality protein, ThinkMuscle is designing a smarter protein that takes advantage of the latest research and manufacturing technologies. Both the source and manufacturing of our products will be held to the highest standard. Why all the fuss instead of just following the inexpensive path of least resistance? Because if ThinkMuscle is going to be involved in the supplement industry, we are going to be in it for the long haul. Quality is the only way to ensure longevity in an environment where “cutting corners” and false claims are the norm. It may take longer, but most good things do.

Once again, thanks go out to all those who filled out the survey with the last newsletter. For those of you who haven't and wish to be heard, please click [HERE](#) and fill out the survey. Each and every survey is read by me personally and recorded. Your opinions matter, but only so far as you voice them.

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## **Hypertrophy-Specific Training Q&A (October 2001)**

### **Hypertrophy-Specific Training vs. HIT?**

*Mr. Haycock,*

*If you have even read this far, I would like to thank you in advance for your time. I came across your program on your [thinkmuscle](#) site. Unlike most programs yours has some solid, current research behind it. I was hoping you could answer just a few questions; although I realize you may be inundated with queries from others. I currently use a HIT routine in which the body is trained with a three way split; with each bodypart being trained once every 14 days or so on average. Believe it or not, progress is being made on such a program, but it is glacially slow.*

I too faithfully used a HIT "type" training method for at least two years. I am not surprised at all that you make progress. I did too. It was also very slow for me.

*One of the tenets of HIT is that light and medium days are eliminated in favor of complete rest and training only the maximal days. The theory is that they are a drain on recovery ability yet do not stimulate growth effectively.*

The theory of "recovery ability" based on energies of some sort is incorrect due to a lack of facts. It is much more mechanical than that. Keep in mind that I investigated HIT and Mentzer's ideas with close scrutiny (just as I'm sure you have) before I changed my training to align with his theories. The problem is that Mike M's theories are based on "stress", not the mechanical stimulus of overload.

HIT, based largely on Mike Mentzer's and Arthur Jones's ideas, is founded on "Selye's General Adaptation Model". It is a good model however it is based largely on psychological and environmental stress. Admittedly, physical stress response is very similar, and arguably intertwined with psychological stress. When working on my psych degree we spent a lot of time discussing this model and how it relates to physiology (cortisol, catecholamines, cancer etc.).

Anyway, "overtraining" is a neurological phenomenon, not a muscular phenomenon. I believe I touched on this briefly in the "Advanced Training Planning" series of articles (<http://www.thinkmuscle.com/beta/articles/haycock/training-01.htm>). The muscle tissue itself will continue to recover even if the same mechanical stress is applied to it within 48 hours (T.C. Chen, Taipei Physical Education College, and S.S. Hsieh, FACSM, The effects of a seven-day repeated eccentric training on recovery from muscle damage. Med. Sci. Sports Exerc. 31(5 Supp) pp. S71, 1999). Studies where overtraining was intentionally induced indicate that although "voluntary strength" decreases with "overtraining", involuntary strength does not. Involuntary strength is measured by stimulating the muscle with electrodes. This enables researchers to see if the muscle itself is able to generate force, or if the problem lies in the central nervous system (the electrodes bypass the CNS).

*Why would progress be greater training at submaximal levels and only one peak day per two week cycle?*

Understand that it is not necessary to train at 100% voluntary strength levels to stimulate "growth". This is one fundamental difference between Hypertrophy-Specific Training (HST) and HIT. HST is designed only to stimulate growth. Strength of course will increase as well during HST training but this is not the primary goal of the method. It isn't necessary to push against a weight that won't move (due to load or fatigue) to induce the necessary strain to muscle that leads to growth.

After years of training I realized that I would never get any bigger training the way I was unless I could get stronger, but I couldn't get any stronger until I got bigger. I had to discover a way to get bigger without getting stronger first. The HST method allows a person to get bigger before they get stronger. Accomplishing this is dependent on frequent loading (hitting same muscle at least 3 times per week), rapid progression in loading (mandatory increase in weight every workout), and Strategic Deconditioning (a week or so completely off to allow the muscle to become vulnerable to the training stimulus). HIT training takes this "deconditioning" too far. They think the muscle is "recovering" when it is actually past recovery and beginning to decondition thus allowing the stimulus to work the next time the muscle is trained. Unfortunately, **the rate of growth is greatly dependant on the frequency of the stimulus**. So with HST you hit a muscle at least 3 times as often as with HIT, and growth is greatly accelerated.

One other very important thing to realize is that this routine does not use "heavy" and "light" days. It is all a continuous process. The weight is constantly increasing from the very first workout. The "high rep" training is only there to prepare joints and tendons for future heavy loading. Flushing tissue with lactate stimulates angiogenesis and stimulates tendon growth. (Hunt TK, Hussain MZ. Can wound healing be a paradigm for tissue repair? Med Sci Sports Exerc. 1994 Jun;26(6):755-8.) The 15s are designed simply to flush all tissues and joints (as far as possible) with lactate to encourage angiogenesis for blood flow and tendon growth to better endure subsequent heavy loads (e.g. 5s and negatives)

*Why not train one maximal day only, then utilize "complete rest" thus preserving adaptive energies?*

There is no need to preserve "adaptive energies". This is a false notion. These adaptive energies are, in reality, the ability of the CNS to recover voluntary strength. Early "thinkers" noticed the effect of stress on health and compared that to the effects of heavy resistance exercise on strength and came to the conclusion that there was some pool of "adaptive energies" that was limited. Use it all up and you can't recover. What they had not realized was that there are fundamental differences between mechanical loading and Selye's stress model. This caused them to confuse the limitations of the CNS with the resilience of muscle tissue.

Muscle tissue, as indicated earlier, has been shown to recover amidst continued loading. Take for example "synergistic ablation" studies. In these studies the gastrocnemius of an animal is cut so that the standing load is placed almost entirely on the soleus. In these studies the animal's soleus is subject to a dramatic increase in load during every waking hour. There is no "rest between sets or workouts" or any kind of sets or workouts for that matter. There is no time off to allow "adaptive energies" to do their magic. Nevertheless, the soleus will double in size and weight within days. The muscle literally grows and adapts to the new "environment" while being continually loaded. Now I'm not suggesting that people have this done to get their stubborn calves to grow, but it does illustrate an important point. That is, that the muscle can adapt while it is being loaded, or trained. The tissue does not necessarily need time off. The central nervous system, on the other hand, does need time off. The amount of time off it needs depends on how much "fatigue" was induced.

*And also, perhaps more importantly, is the issue of central nervous system fatigue. I cannot perform a whole body workout even with one set or so per muscle (8-10) without being drained for days afterward. I know there are many lifters others like this. Splitting the workout up into two sessions in the same day doesn't help and there is a limit to the number of movements you can eliminate before it is no longer whole body. Any ideas?*

Your body has adapted to HIT style training. HST is quite different in its physical demands. You will adapt to HST quite quickly if you follow the method closely. It will take about 2 weeks to adapt. I have been watching closely at least 10 people using HST training. Some are doing it natural others are using "assistance". Every person has complained of the 15s "kicking their butt". It burns too much or they feel "fried". Then, when they get to the 10s 2 weeks later they are singing my praises.:) Even if they don't understand why they are doing them they will benefit from it later. Whole body workouts are demanding, especially when reps are high. Keeping the over all volume in check will be your key to success.

*You know, the funny thing is that this training program has come almost full circle to the 'old timer' routines that trained the entire body three times weekly with one set or so per muscle. Of course, the cycling is of a modern flavor as well the research behind it, but I thought interesting. That was not meant as an insult, but an observation.*

That is not insulting. I am well aware of earlier theories about training the entire body each workout. They were still grasping in the dark though. They didn't have the research that we have to day to refine the method. Nor did they understand how muscle grows on a

molecular level in response to mechanical loading, so they couldn't make precise decisions about putting it all together.

*Years ago, I utilized a 3x weekly whole body workout (one set per exercise) and experienced rapid progress but always ended up overtrained or injured. The concept of cycling didn't occur to me. It was all out training every workout. I eventually got caught up in the muscle magazine hype routines until about 3 or 4 years ago when I started using HIT. All this began over 20 years ago.*

Same here. I followed the magazine hype and did their split routines for years. I made pretty good progress but eventually ended up busting my butt day after day in the gym just to stay the same. "Chest shoulders tris, back bis, legs" was basically my routine for many years.

*As a side note, you and I are the same age and have been training for about the same length of time. The only thing I really have to show for my efforts are injuries in just about anything that bends (which is a concern on this program). You know, for both of us, the next several years will likely be our last productive training period ever. After that looms 35 and the big 40 (hello sarcopenia!).*

Don't be so sure! Give HST a try before looking towards retirement. The method of training will impact one's ability to continue to grow. New research on satellite cell activity in response to resistance exercise sheds light not only on the effects of aging on ones ability to adapt to exercise, but also on the best way to train to get the most progress out of resistance exercise.

*At the risk of sounding corny, the kids today are very fortunate. The science of diet, supps, and training are light years ahead of even 10 years ago (hell, even 5 years ago).*

Very very true. Hopefully ThinkMuscle can continue to be a source for people to become exposed to this new science, and provide information for people to discuss (and perhaps debate) in their own circle of friends and colleagues.

*Though I have yet to start your program, I'd like to thank you for what may be my best chance of achieving my goals as an injury laden drug free lifter. Thank you.*

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Every opinion is welcome...

*Mr. Haycock,*

***Are you retarded?!** I've been bodybuilding for ten years and have never ever heard anyone say something as stupid as working the same bodypart out three times a week. And who wants to train at low intensity? You go in a weight room to train hard for less than an hour then you get sufficient rest and nutrition to make the body grow before hitting the bodypart again in no less than a week. Everybody knows that.*



*It really pisses me off that you publish something so contradictory to what everyone else thinks. Who uses your system? Where are the results? I don't get it. Nobody with a body that makes heads turn implements your strategy, guaranteed, so what do you have to say to that?*

Well, I'm not really sure what to say. I could be wrong but "Thank you" just doesn't seem appropriate. I guess the best thing to do is let others who have used the HST method speak for me:

*"I am thoroughly impressed with this workout. I have lifted off and on for all of my life and have never had significant gains until now. If you remember me I am the 6' 165 lb. surfer with bad shoulder ligs. I have lost the inch off of my waist I wanted to and gained 5lbs.! That is allot for me because I have been trying to gain muscle mass since high school in the 80's and have never looked so good, and only one cycle! I am amazed."*

*"I am a 36 year old male that has worked out on and off for many years with marginal results. I am very pleased to tell you that I have been following your Hypertrophy Specific Training for 6 weeks now and have gained close to 18 pounds of mostly muscle and my strength has gone through the roof, I was benching maybe 180lbs and now am up to 240+. Once again I thank you for this fantastic routine and plan to continue using it with continued success."*

*"The HST workouts have been extremely productive. I look pretty good, after having traveled so far in just a short period of time."*

*"My strength is up dramatically...My weight is now 202lbs, and I'm pleased to say that my waist size decreased dramatically and I have an outline of abs beginning to appear. This tells me that I must have put on a substantial amount of lean mass while dropping a lot of fat."*

These are just a few comments from people who are using HST. If anyone has doubts about the correctness of HST, all they have to do is honestly apply its principles to their training. The effectiveness of the methods will then become apparent and progress will ensue where none had before. The world of science, and more pertinently physiology, is full of truths, I'm speaking of universal truths, meaning they can be universally applied. It does nothing but impede progress when people simply use the consensus of the masses, or even the opposite stance of individuality, as an excuse to reject principles of truth.

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What does "5s/negatives" mean?

Hi,

*I read your hypertrophy program but I am confused about the rep count "5s/negatives". What does that mean? Do five negative reps?*

Hi Ken,

"5s/negatives" means for that for the 5s/negatives 2 week block use your 5 repetition maximum for all your exercises that you can't do in an "eccentric-only" fashion. Eccentric lifts, or sometimes called "negatives", are when you use more weight than you can lift. Eccentric reps should be done in a controlled fashion.

If you train alone, there are many exercises you can't do negatives on simply because you would need a partner to help you lift the weight first. If you do train alone I would suggest that you just continue using your 5 rep max for each exercise for an additional 2 weeks after finishing the first 2 week block of 5s. You should see good results using your 5 rep max for an additional 2 weeks.

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## **Creative Applications of Circuit Training: Fatigue Management Strategies for Bodybuilders Part II**

### **Circuit Training (CT) for Various Objectives**

I've put together several sample circuits for different objectives such as maximal strength development, lean mass gain, and explosive strength development. Please use these examples as templates from which you can create your own solutions, rather than viewing them as the "Holy Grail" of CT. In other words, when I point the way, you shouldn't be looking at my finger!

*CT for Strength Development* - Although many bodybuilders and fitness enthusiasts may be inclined to skip this section, let me remind you that strength and lean mass gain have a symbiotic relationship— they each depend on the other. Think of strength training as developing the neural aspect of the neuromuscular system, and mass training as augmenting the muscular portion of that system— both aspects must be addressed if you want to make maximal progress.

When you're training for maximal strength development, emphasize the following points:

1) Choose multi-joint exercises rather than single joint (or "isolation" exercises). This allows for recruitment of large amounts of muscles, and it will also help to encourage better "inter-muscular coordination," or cooperation of various muscles toward the completion of a motor task.

Also, multi-joint exercises tend to have larger ranges of motion, and thus, are more suited to maximal strength training because they allow you to accelerate through the "sticking point" of the exercise (discussed below in point #3)

2) Select relatively high intensities— those which permit between 1-4 repetitions per set. TENSION, not fatigue, is the goal when training for strength. Never sacrifice the former for the latter.

3) Accelerate through the sticking point of the exercise. In any loaded movement, it is your strength through the sticking point— that narrow region where your leverages are worst— that really determines whether or not you succeed.

4) Do a relatively high number of sets. Strength training is a form of motor learning, and a key aspect of all forms of learning is practice through repetition. Since strength training requires a low number of reps per set, you'll need to compensate by using more sets (usually between 3-8 sets per exercise).

5) Keep fatigue to a minimum, both during and between sets. Even though you might be performing 2 reps per set, you're not reaching failure on the last rep. The idea is to "keep some speed on the bar." Training to failure creates a quick build-up of lactic acid and other waste products which are thought to inhibit the nervous system from engaging high-threshold muscle fibers. With these facts in mind, I normally suggest between 3-5 minutes rest between sets of the same exercise when training for strength. This time frame ensures replenishment of energy stores and dissipation of lactic acid. With CT, you can reduce this suggested rest interval by 50 percent.

Smaller, weaker, less experienced lifters should opt toward the lesser end of that range, while bigger, stronger, more experienced athletes should opt for the greater end.

#### *A Three Week CT Program for Maximal Strength Development*

Here's an example of how CT can be applied to strength training with fantastic results. I've used many variations of this scheme with athletes from many sports, and it never disappoints!

##### *Monday*

- 1: Flat Bench Press
- 2: Stiff-leg Deadlift
- 3: Seated Low Cable Hammer Curl

NOTES: Position a bench perpendicular to a low cable pulley. Attach a triceps rope to the low cable. Sit on the bench and brace your feet against the low support brackets of the cable machine. Grasp the rope with a thumbs up grip, lean back about 45 degrees, stabilize your elbows against your sides, and perform the hammer curl.

- 4: Machine Seated Row

##### *Wednesday*

- 1: Front Squat
- 2: Military Press
- 3: Swiss Ball Reverse Trunk Twist
- 4: Barbell Curl

### *Friday*

- 1: Chins
- 2: Close-grip Bench Press
- 3: Dumbbell Shrugs
- 4: Back Extensions

Training parameters and progressions:

(Perform all sets in an accelerative style— explode through the sticking point).

Week one: Perform 4 circuits 4-6 reps per set. Rest 150 seconds between sets.

Week two: Perform 5 circuits 3-5 reps per set. Rest 120 seconds between sets.

Week three: Perform 6 circuits 2-4 reps per set. Rest 90 seconds between sets.

### *CT for Increased Lean Mass*

When training for maximal muscle growth, the most important concept is to thoroughly exhaust the muscle being trained. The following guidelines will help ensure that you're doing it right:

1. Choose a wide range of exercises in order to fatigue the largest possible muscular regions
2. Select a moderate number of repetitions and keep tension on the muscle at all times. This is in stark contrast to the exercise technique I suggested for strength training above, and it is certainly more familiar to experienced bodybuilders.
3. Perform a moderate number of sets— generally between 2-4 per exercise, and normally no more than 16 "work sets" per workout.

### *CT for the Chronologically-challenged*

This is a personal favorite of mine when time is tight and I need an utterly efficient total body training cycle. There's barely a gram of muscle that isn't torched by this program — the next day, you won't know what part of your body hurts the worst!

### *Monday*

- 1) Pull-up
- 2) Bench Press
- 3) Back Squat

### *Wednesday*

- 1) 45-degree Incline Dumbbell Curl

- 2) Barbell Shrug
- 3) Lying Dumbbell Tricep Extension

*Friday*

- 1) Back Extensions
- 2) Donkey Calf Raise
- 3) Ball Crunch

Parameters:

Week 1:

Perform 6-8 reps of each exercise, for a total of 4 circuits. Rest 2 minutes between exercises, and 3 minutes between circuits. Use a constant weight for each exercise for all 4 sets.

Week 2:

Perform 3-5 reps of each exercise, for a total of 5 circuits. Rest 3 minutes between exercises, and 5 minutes between circuits. Use a constant weight for each exercise for all 5 sets.

Week 3:

Perform 8-10 reps of each exercise, for a total of 4 circuits. Rest 1.5 minutes between exercises, and 3 minutes between circuits. Use a constant weight for each exercise for all 4 sets.

*CT for Explosive Strength Development*

Although speed strength training might seem a bit "paranormal" to bodybuilders, it's a great way to "wake up" your nervous system, and the gains you'll experience from this type of training will definitely transfer to your more important goals— namely, improving your body composition. Some of these drills are modifications of the classical Olympic lifts, which require some instruction at first. I strongly recommend Art Drechsler's [The Weightlifting Encyclopedia](#) if you're interested in learning these very productive exercises.

*Monday (at the track)*

- 1: Clapping Push-ups
- 2: 20 yard sprint
- 3: Seated Low Cable Hammer Curl

*Wednesday*

- 1: Snatch Pull
- 2: Push Press
- 3: Swiss Ball Reverse Trunk Twist

*Friday*

- 1: Power Clean
- 2: Close-grip Bench Press
- 3: Back squats

Training parameters and progressions:

(perform all sets in an acellerative style— explode through the sticking point)

Week one: Perform 5 circuits 3-5 reps per set. Rest 150 seconds between sets.

Week two: Perform 5 circuits 3-5 reps per set. Rest 120 seconds between sets.

Week three: Perform 5 circuits 3-5 reps per set. Rest 90 seconds between sets.

### **Final Comments**

I hope I've made a strong case for the value of CT in your own training. I'm so convinced of it's value that CT is a key feature of the strength training programs I write for my clients who pay me to get them in the best possible shape as fast and safely as possible. Why not put the information you've just gained into immediate use, and construct a six week CT plan for your next training cycle? I'll bet my reputation as a strength specialist that it'll be the most productive six weeks of training you've ever experienced!

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## **Anorectic Pharmacology Part II: The Absurdity of the New Diet Drugs**

### **Xenical or Meridia for Athletes and Bodybuilders?**

Both Xenical and Meridia are indicated for obese individuals (BMI greater than 30). So would an already lean bodybuilder trying to reduce his bodyfat even further have any use for either of these drugs? I have not heard of any burgeoning black market in Venice Beach or West Hollywood for either of these drugs, nor have any of my bodybuilding patients asked me for a prescription. Xenical is a big no-no for any bodybuilder, as most bodybuilders already eat relatively healthy and balanced diets. All Xenical will do for them is increase their time in the bathroom and make them lose weight in their wallets.

Meridia may have some hope for bodybuilders, although not much. A couple of studies have shown Meridia to have some thermogenic activity (2). Thus it is possible that Meridia has some muscle sparing activity similar to other thermogenics such as ephedrine. However, the studies on Meridia measure only total weight loss, with no distinction between fat loss and muscle loss. It is possible that Meridia could be used as a mild thermogenic by those who are overly sensitive to ephedrine, but at \$100 per month Meridia is probably not worth it for most. This brings me to my next issue:

### **Cost Effectiveness of Xenical and Meridia**

This is probably the most absurd aspect of these new diet drugs. In general, insurance companies will not "foot" the bill for anti-obesity drugs. Unless you are morbidly obese, you have to pay for these drugs out of your own pocket. The cost for a months supply of either Xenical or Meridia is roughly \$100 per month or more.

Let's look at the economics of this. For Xenical, this is a ridiculous price. No trials have yet shown it to be effective in people whose diets are not closely monitored. My guess is that very few people will lose any weight at all from Xenical. So it is basically \$100 down the toilet, quite literally considering some of the side effects of this drug.

Next, let's look at Meridia. Let's assume for a second that this drug is as effective as the studies say. Judging by two published studies mentioned above, taking 10-15 mg per day of Meridia for one year will produce anywhere from 6.6 to 9.46 lbs. greater weight loss than you would if you were given a placebo (3). Do the math yourself - at best you are paying \$126.85 per pound of weight loss! To make matters worse, you don't know how much of this weight loss is actually from fat and not muscle. And this is all assuming of course that the these studies are actually representative of how well Meridia really works.

Another way to evaluate the cost effectiveness of Meridia is to compare it to other diet drugs. A 1973 review study funded by the FDA did a meta-analysis of 105 studies on various diet drugs. The conclusion of this review study was that these diet drugs available in 1973 (mostly amphetamine-like stimulants) induced patients taking the drugs to lose a half a pound a week more than the placebo group (5). Most of the studies reviewed were short term, none lasting more than a few months. Since this review study was completed, a half a pound a week more than the placebo group has become the standard to evaluate the scientific effectiveness of a diet drug in short term trials.

Short term trials may be the better way to evaluate a diet drug, as After 3-6 months of use a drug may lose its effectiveness. Just about all weight loss drugs and other methods lose their effectiveness after 6 months of use from a combination of lowered resting energy rates and from a decreased energy expended with exercise.

So does Meridia live up to this standard of .5 lbs. per week? Let's look at some of the shorter trials of Meridia to see how it compares to the classic stimulant drugs looked at in the 1973 review study. One of the largest short-term trials on Meridia on 1,047 total patients showed that this is not the case. At 10 mg per day, patients lost .32 pounds a week more than the placebo over 24 weeks. At 15 mg per day, this number moved up to .42 pounds a week more than the placebo - not quite up to par. Only at 30 mg per day did

Meridia prove as effective as the "gold standard" of .5 pounds per week more than a placebo (2).

To be fair, some studies did show Meridia to induce a loss of more than .5 pounds a week more than the placebo, but these trials were very short term (12 weeks or less) and had lower sample sizes (1). However, the "kicker" in evaluating Meridia's cost effectiveness is comparing it to far cheaper over the counter diet drugs.

Let's look at phenylpropanolamine (PPA), commonly sold as Dexatrim or Accutrim. Short term trials have shown PPA to be about exactly as effective as Meridia - inducing anywhere from .3 to .5 pounds a week greater weight loss than a placebo (6). PPA cost just "pennies a day", and has an excellent safety profile as well. PPA is not a miracle worker, but will do the trick just as well as Meridia for a tiny fraction of the price.

Another drug to look at is ephedrine. This is a similar drug to PPA (also called norephedrine) which has never been approved as a diet drug. It is sold strictly as a decongestant, but this has not stopped bodybuilders from using it as an energizer and fat burner. When combined with caffeine, ephedrine is at least as effective as Meridia and plenty of trials have showed it to induce .5 pounds more weight loss per week than a placebo (7). Like PPA, it is also just pennies a day to use. More trials need to be done to compare its safety and efficacy compared to PPA.

### **Redirecting the Quest for the New Phen-Fen**

The pharmaceutical industry has basically failed at finding effective new drugs for treating obesity so far. With the prevalence of cheap and effective drugs such as PPA and ephedrine available, there is really no point in paying \$100 per month on drugs that are potentially even less effective. I believe obesity research should refocus itself dramatically to get serious about finding effective treatments.

The Amgen studies so far on Leptin are not that exciting from a fat loss point of view. But they are helping to open the scientific window on the Leptin Resistance Syndrome that the obese seem to have. The story is similar to the insulin resistance picture seen in some types of obesity. But leptin clearly won't live up to the media's hype as the new cure for obesity.

One absurd aspect of the research on diet drugs is that 99% of the studies only measure weight loss instead of fat loss. The key to long-term weight loss is keeping the muscle, so only measuring total weight loss is quite useless. New studies should measure both fat loss and muscle loss using new advances in body composition measurement. I believe ephedrine and/or PPA--the Beta adrenergic drug category will prove superior to most diet drugs in this aspect, as thermogenic drugs have been shown to have a strong muscle-sparing effect during dieting. The diet drug industry needs to radically refocus itself from weight loss to fat loss, a concept easily understood by bodybuilders but still somewhat mysterious to diet drug researchers.

Another aspect of diet drug research should be on how to "cycle" diet drugs for optimum effect. The concept of "cycling" drugs is old hat for bodybuilders. The idea is that the human body will adapt to most drugs if taken for too long, so you will get more effect



from drugs if you take them intermittently rather than continuously. One study on Phentermine lasting nine months showed that a group taking this drug intermittently in a one-month on, one month off pattern actually lost slightly more weight than a group taking phentermine continuously (7). Since few diet drugs have been shown to induce weight loss for longer than six months, perhaps intermittent "cycles" could prolong the effects of these drugs. Future research should emphasize this concept.

These are just a few ideas for finding an effective treatment for obesity. In Part III of this series, I will go into more detail about what the research says about diet drugs and outline my personal suggestions for fat loss drugs and supplements.

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## **Team Think Muscle**

### **Be on the Cutting Edge!**

Spread the word about the Think Muscle Newsletter and send the latest information on health, fitness, nutrition, training, and supplementation to all your colleagues, friends, and family. Give all these people THE BEST and latest information to allow them to increase their knowledge base and develop their best body ever! By sharing this incredible information, you are giving the gift of health. ACT NOW! Anyone can subscribe to the FREE weekly newsletter by sending an email to [thinkmuscle-subscribe@listbot.com](mailto:thinkmuscle-subscribe@listbot.com) or subscribe online at <http://www.thinkmuscle.com/newsletter.htm>. You can also send us the name and email addresses of five of your friends and we will automatically send them an invitation to join and a copy of our most recent newsletter. Imagine people you refer getting this amazing and detailed information for FREE. They will definitely be indebted to you! If you refer five people to us, we will also enroll you for FREE into Team Think Muscle which will give you some great benefits in the future -- more details to come!

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## **Reader Survey**

### ***Tell Us What You Think?***

#### *1. [Message from the Editor-in-Chief: Prioritizing supplements](#)*

- It was good.
- It was okay.
- I didn't like it.
- I'm not interested.

#### *2. [Hypertrophy-Specific Training Q&A \(Oct. 2001\)](#)*

- It was good.
- It was okay.
- I didn't like it.
- I'm not interested.

3. [Creative Applications of Circuit Training Part II: Fatigue Management Strategies for Bodybuilders](#)

- It was good.
- It was okay.
- I didn't like it.
- I'm not interested.

4. [Anorectic Pharmacology Part II: The Absurdity of the New Diet Drugs](#)

- It was good.
- It was okay.
- I didn't like it.
- I'm not interested.

5. *What type of articles would you like to see in the future? (Check all that apply.)*

- Anabolic Steroids and Pharmaceuticals
- Anti-aging medicine
- Body Transformation
- Children's Health and Nutrition
- Competitive Bodybuilding
- Diet and Nutrition Reviews
- Dietary Supplements
- Exercise Physiology
- Fitness Competitions
- Fitness Psychology
- General Health Topics
- Lifestyle Management
- Men's Health
- Powerlifting
- Seniors Health Topics
- Sports Specific Training
- Women's Health and Nutrition

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We hope you have enjoyed the latest issue of the Think Muscle Newsletter. Suggestions? Comments? Questions? We'd love to hear them!

Best regards,

**The Think Muscle Editorial Staff**

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