

# Think Muscle Newsletter

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## Think Muscle Newsletter #10

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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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## Testosterone: The good, the bad, the ugly.

by Bryan Haycock MS

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One of the most infamous hormones around is Testosterone. You hear Clueless news anchors about it on the evening news. You hear about it in the gym. You even read about it in the “growing older with style” magazines. Depending on who you talk to, it is both the good, the bad, and the ugly of hormones.

In bodybuilding it is hailed as the king of muscle builders. Among forward-thinking baby boomers it is considered the fountain of youth. In other circles it is pointed to as the cause of all men’s shortcomings including violence and sexual promiscuity. Finally, it has even been associated with potentially lethal diseases that threaten the lives of thousands of men each year. So how can one hormone be so many different things to so

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many different people? Taking a closer look at this complex hormone may shed some light on this question.

First, what exactly is testosterone? Testosterone is the principle male hormone and belongs to a class of steroid chemicals called androgens (andro = *man*, gen = *to make*). It is produced primarily in the testes but can also be made by enzymatically converting other androgens (e.g. androstenediol) secreted from the adrenal gland into testosterone. Testosterone plays a role in everything from growth and maintenance of the male sexual organs during puberty, to male pattern baldness in the later years. It also plays an important role in bone growth, sexual behavior, male fertility, muscle protein synthesis, as well as inducing the appearance of secondary male sexual characteristics such as facial hair, body hair, and deepening of the voice.

Research has shown that resistance exercise can significantly raise testosterone levels. (1) This is good news if you're looking to build a more muscular body. When it comes to muscle growth, testosterone production is the key to success. Testosterone literally turns on the genetic machinery leading to bigger and stronger muscles. It works like this. Testosterone binds to receptors inside your muscle cells. These receptors then transport the testosterone molecule to the nucleus. The nucleus is where your DNA is located. Your DNA contains blue prints for every protein found in your body. This androgen receptor, once bound to testosterone, acts as a messenger that tells the DNA which proteins to make from the blue prints. In muscle tissue the whole process results in the production of contractile proteins, which are used to make your muscle contract more forcefully, as well as structural proteins that are used to make the cell larger to accommodate the new contractile proteins. In plain and simple terms, testosterone is a messenger that tells your muscles to grow! Still, this barely touches the surface of the many secondary roles testosterone plays in muscle tissue as well as in the brain.

Clearly, testosterone is important to both mind and body. Among the anti-aging crowd, testosterone stands as a symbol of youth and vitality. One of the signs of aging is a reduction in the circulating levels of testosterone. This in turn has been associated with a decrease in muscle mass and strength as the years go by. Doctors are now calling this "andropause". (2) Through testosterone replacement therapy, many older patients express a sense of psychological well-being and vitality they haven't experienced since they were 30 years younger. (3,4) If men desire it, in the near future hormone replacement for men will be just as common as it is for women today.

Unfortunately, testosterone is not free from negative effects on the body. One common undesirable effect of testosterone, which could be considered minor, is alopecia or male pattern baldness. The drug Propecia, a 5-alpha reductase inhibitor, prevents the conversion of testosterone into a more potent androgen called dihydrotestosterone (DHT). DHT, and a set of your parent's genes, is responsible for male pattern baldness. In many men Propecia is effective at preventing further hair loss and even allowing some to grow back. (5) On a more serious note, DHT may also be a serious risk factor for some cancers such as prostate cancer. (6) Treatment of prostate cancer often involves a total elimination of circulating testosterone. Although this helps to reduce the growth rate of

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tumors, removing a man's testosterone leaves him feeling emotionally disoriented, there is a complete loss of sex drive and sexual function, muscle is lost and fat patterning takes on a feminine characteristic, even hot flashes, usually associated with female menopause, are experienced.

All in all testosterone plays a very important role in a man's sense of health and well-being. It is the major muscle-building hormone; it increases the strength of both muscles and bones, and even affects our brains. Certainly a man's interest in keeping his testosterone levels optimized is justified despite the unavoidable risks and negative effects it may impart. A healthy lifestyle including proper diet and regular resistance exercise will ensure that you are getting all the benefits testosterone has to offer.

Don't think for a minute that testosterone is only important for men. For more information on how testosterone effects women, check out [Contrarian Endocrinology Part I: Testosterone for Women](http://www.anabolic-androgenic-steroids.com/articles/ullis/contrarian-endocrinology-01.htm) by Karlis Ullis and Josh Shackman at <http://www.anabolic-androgenic-steroids.com/articles/ullis/contrarian-endocrinology-01.htm>.

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## Planning your training frequency: Timing is everything.

From the **Hypertrophy Specific Training** series.

By Bryan Haycock MS.

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Whether you are sold on heavy weight and low reps, or less weight and more reps, if your training frequency is not planned with the same scrutiny as other aspects of your routine, you may be wasting time unnecessarily. With a little insight into the factors affecting the optimal timing of your workouts, you may just experience more success than you believed you could.

Knowing exactly when your muscles need to be trained again after the previous workout is difficult to judge with absolute certainty. Recent research in the area of muscle

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damage and recovery is showing results that may surprise you. Science is now showing us things that may change the way you train forever!

When you lift weights, you cause damage to your muscles. This is often referred to as “microtrauma”. Microtrauma involves the tearing and shearing of delicate protein structures within your muscle cells. This may sound bad but in reality it is necessary for the initiation of growth after your workout.

This microtrauma may be expected to require you to postpone your next workout until your muscles are back to normal. It is this logic that your average personal trainer will use when he/she tells you to wait, sometimes a full week, before training the same body part again. Recent research however is showing us that putting off your next workout until your muscles have “fully recovered” may not be necessary or even desirable! (1,2,3) In a study performed at the University of Alabama (4), two groups of subjects performed the same periodized resistance training routine either once per week or three times per week. **The results showed that muscle mass increases were greater in the three workout per week group, compared to the one workout per week group. In addition, the strength increases in this group were on average 40% greater!** So what does this mean to you? It means the fear of overtraining, which sometimes verges on paranoia, may be preventing you from getting the most gains you can in the gym.

So science is telling us that training a muscle group approximately every 48 hours may be more effective than training it once or twice per week. If you train your whole body three times per week with your current workout routine it might take several hours to complete. I doubt many of us would have time for that. Does this mean you can't reap the benefits of more frequent training? Once again, new research provides us with some answers.

In a study performed at Montclair State University (5) researchers investigated the effect of a single set vs. a multiple set routine on increasing upper body strength. They had the subjects perform either one set or three sets of bench press, incline dumbbell press and flat dumbbell flies using ten reps, three times per week for 12 weeks. This kind of study has been done before but this one is particularly valuable because it involved previously “trained” subjects. This is significant because untrained subjects will usually respond positively to virtually any training routine. Just because a training strategy works for beginners doesn't mean it will work for experienced lifters. **These researchers found that doing a single set of each exercise was equally effective as doing three sets of the same movements in increasing the subjects one repetition maximum (1RM) on bench press.** The take home message is that you needn't do more than a single work set to achieve the same relative gains of doing multiple sets. This makes incorporating a whole body workout into your schedule much more feasible.

A sample whole body workout might look like this:

- 10-15 minute warmup on bike or treadmill
- Squats, 1-2 warm up sets and 1 work set of 6-8 reps

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- Leg curls, 1 work set of 6-8 reps
- Bench press, 1 warm up and 1 work set of 6-8 reps
- Chins or pull ups, 1 work set 6-8 reps. (Add weight as necessary)
- Dips, 1 work set of 6-8 reps. (Add weight as necessary)
- Seated rows, 1 work set of 6-8 reps
- Lying tricep extensions, 1 work set of 6-8 reps
- Preacher curls, 1 work set of 6-8 reps

You will notice that this type of training relies heavily on compound exercises. This is necessary to keep the number of exercises down. Don't worry about this however; compound exercises should be the foundation of any muscle/strength building program.

This is just some of the research used to create [Hypertrophy Specific Training](#). If you want to get the most out of your efforts in the gym, you have got to incorporate new knowledge as science uncovers it. The message here is that by reducing the volume of sets per exercise, and by increasing the frequency that you train each muscle group, you may experience new gains you thought previously impossible. Through a little bit of trial and error you should be on your way to the physique you've always wanted. More info on [Hypertrophy Specific Training](#) can be found at <http://www.thinkmuscle.com/newsletter/008.htm>.

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### Reader Mail:

#### Hypertrophy Specific Training Q&A

I've been getting a lot of reader feedback since I wrote about Hypertrophy Specific Training in the Newsletter. I've done my best to answer as much as I could individually. Then I figured it would save time just to begin answering some of the more common questions here.

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*Q. Dear Bryan, I can't thank you enough for your article on the above mentioned [HST]. 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.*

*If after another 6-12 weeks on this routine and I want to slim/diet down for the summer months (July - Sept) should I change this routine such as working each body part intensely once a week in order to sculpt or just keep on doing what I have been? Many thanks,  
John W.*

**A.** Hi John,

First of all, congratulations on the results! Second, it really is my pleasure sharing things I've learned over the years, especially the useful stuff. ☺ Now to your question...

Hypertrophy specific training should not be altered according to caloric intake. Although you will notice decrements in performance when calories and/or carbs are very low, the training stimulus will still be optimized when the program is followed as [outlined](http://www.thinkmuscle.com/newsletter/008.htm) (see <http://www.thinkmuscle.com/newsletter/008.htm>). While calories are high, the program will optimize the anabolic effects of feeding. While dieting, the program will minimize the catabolic effects of starving (i.e. dieting).

*Q. Dear Mr. Haycock,*

*I read your article on hypertrophy targeted lifting at ThinkMuscle.com and was immediately interested. I've been lifting for seven years now using a four day per week routine that targets each body part once per week. I have never tried a complete body routine in an entire workout, nor a weekly routine where a body part is worked 3 times. My goal in weightlifting has always been to gain muscle, but not specifically for the purposes of exhibition. I'm really excited to try your program out, but I feel I need some questions answered before I put it to effective use.*

*If you could answer a few of these questions concerning your program, I'd be grateful.*

*1. One of my biggest concerns is how to warmup for your program. With reps of 15 this may not be a problem, but what do you recommend the trainee do as he begins lifting with poundages near his 5-10 rep max?*

As weights get heavier, do a warm up set or two as you normally would. Pick a weight that is perhaps 50-70% of the weight you will be using. Be careful not to over do it though. The reps should be easy, producing more of an "active stretch" than a strength challenge. You will find that when you train a body part more frequently, it requires less

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warm up to feel ready to perform. Still, listen to your muscles, and give them the time they need to get ready before you beat the crap out of them.

***2. How does the trainee determine his \*RM as he cycles through your program getting stronger? (I've read your articles at mesomorphosis.com with its different program design and wasn't quite certain how to work RM determination into the program design at ThinkMuscle.com).***

Get all your max lifts recorded BEFORE you begin the program. That means, before you start, you will know your 15 rep max, your 10 rep max, and your 5 rep max. This way you will know exactly how much weight you will use each workout for each exercise for at least the next 6 weeks. Undoubtedly, you will rapidly get stronger, making your previously established max inaccurate. This is NOT important. The next time around, rather than finding your maxes all over again, simply add 5-10 pounds to all your lifts. In other words, go back over your previous cycle and add 5 – 10 pounds to each weight that you recorded before for the next cycle. Keep in mind that training at your absolute max weight is not necessary to grow....trust me.

***3. Is this type of program designed to be completed in 60 minutes or less? What kind of rest should I take between sets?***

This workout should not take longer than 60 minutes. I can't really tell you what kind of rest periods to take because it depends on how much effort you are putting into it. I'm sorry if this sounds vague. Overall, rest periods should be around 1.5-2 minutes. When moving from one body part to the next try to alternate between opposing body parts. This way your chest, shoulders, and tris can rest while you hit your back and bis. After a while you will find your aerobic capacity going up as this closely resembles sort of a power circuit.

***4. Your table that begins with the column labeled "Adjustments: 10RM routine" gave no explanation as to its use. How should this tool be used?***

This is just a way of making weight increments when finding your maxes. For example, if you are looking for your 10 rep max, and you only get 6 reps, the table indicates you should decrease the weight 10 pounds. This works best for small muscle groups like bis and tris. The table as a whole is not important. I just thought it might help.

***5. During the week of 5 Reps w/ negatives, how should the negatives be used? During each day of the two week period on every exercise or only during the second week as you near your 5RM? On each set of each exercise?***

Negatives begin AFTER the last 5-rep week. The weight should be approximately your 2-rep max. Yes, negatives should be used on each exercise (where possible) and during each workout of the final two-week cycle calling for negatives. This is where Hypertrophy Specific Training differs from traditional routines. Never fear, if volume is kept low and training frequency kept high, you will experience breakthrough growth.

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*Thanks for motivating me to try a radically different routine. I've always work in different rep schemes to avoid extended periods of lifting at my heaviest. Your writings have pushed me to break out of my routine!*

*Sincerely,  
Greg M.*

No problem Greg, and good luck! Be sure and let us know how it goes!

-bryan

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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. *Testosterone: The good, the bad, the ugly.* by Bryan Haycock MS

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

2. *Planning your training frequency: Timing is everything.*

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

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3. *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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