



Think Muscle Newsletter #19

April 9, 2002

ISSN: 1532-0561

20,725 opt-in subscribers

Full PDF Version: <http://www.thinkmuscle.com/newsletter/019.pdf> (542 kb)

Full Word Version: <http://www.thinkmuscle.com/newsletter/019.doc> (278 kb)

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.

Table of Contents

- 1) [Message from The Editor in Chief](#)
 - 2) [Protein, Part 2 - Protein Metabolism by Lyle McDonald, CSCS](#)
 - 3) [Common myths about Protein by Bryan Haycock.](#)
 - 4) [Reader Q & A](#)
 - 5) [Reader Survey](#)
-
-

Message from The Editor in Chief:

info@thinkmuscle.com

I am happy to announce that ThinkMuscle will now be published twice as often beginning with this issue! Sharing information once a month didn't seem nearly frequent enough to keep up with all the miss-information being circulated these days. It's my hope that twice as much ThinkMuscle to read will help you achieve twice as much success yourself!

Combating misinformation isn't the only motive behind more frequent issues of ThinkMuscle. A steady stream of reader feedback continues to warm my heart each and every day. Here is just a sample:

"I just read your 3 part article "Training for Size and Strength". I found it to be both well written and well referenced. I appreciate the detail and thought that went into its preparation and it is an eloquent tribute to the dedication and commitment that you obviously seek to bring to your profession.

My sincere thanks,

Regards

*Aamir M
Barrister & Solicitor
Canada."*

"Thank you Bryan! Btw I enjoy the newsletter. It is excellent. I run martial arts conditioning classes and find lot of valuable info from you guys. Keep at it ! Thanks again.

*Regards,
George H
Australia"*

"Hi Bryan! This is Max from Mexico City, I just want to thank you, because me and all your readers get a great site. This article as well as the others are really interesting. Congratulations,

*Thanks again.
Max V."*

All this makes the thought of putting together the Newsletter more frequently a joy rather than a chore. So look for a new issue every two weeks...or so. ;)

Another way I was hoping to show my appreciation was to create a way for all ThinkMuscle readers to benefit from the success of the Newsletter and Hypertrophy-Specific Nutrition. What I'm proposing is an HS:*Street Team*. Let me explain...

What is the Hypertrophy-Specific Street Team?

The Hypertrophy-Specific Street Team (HS:Street Team) is a way for me to give back to those who, out of the generosity of their hearts, have supported me by spreading the word about [ThinkMuscle](#), [HST](#), and now [HSN](#).

Those who become members of the HS:Street Team, will receive any number of gifts and special values for their efforts to spread the word about HSN/HST.

How will the gifts and special values be given?

In order to give most to those who give most to HSN, many of the rewards and special values will be given out based on the number of referrals (and subsequent purchases) of HSN products that a Street Team member is responsible for. This will work by assigning each Street Team member a unique code, that they will then give to people to use when they make a purchase on the HSN website. This code will provide a discount for that person, as well as credit/points for the Street Team member. The Street Team member will then be able to cash them in for HSN product (Getting the highest quality products for next to nothing ain't bad.), HS:Gear (shirts, bags, lifting straps, shaker bottles *that don't leak*, and whatever else we can come up with), and they will also be the first to know about upcoming events, products, etc from Hypertrophy-Specific Nutrition.

HS:Street Team members will also have their own forum to share strategies about how to get as many referrals as they can with the least amount of effort. Ideas such as putting their unique code on flyers, bulletin boards in gyms, on their website, and any other methods of reaching a lot of people at a time.

Who is a candidate to become an HS:Street Teamer?

HS:Street Teamers are NOT to be simple sales people or anything of the sort. Street Teamers are people who, through their own efforts, have come to know and believe in what Hypertrophy-Specific Nutrition (and HST, and ThinkMuscle) stand for. Namely, HSN, HST, and ThinkMuscle stand for 1) the free exchange of accurate and unbiased information about training, nutrition, and supplementation, 2) the highest standards in quality when manufacturing supplements and training gear, and 3) in absolute truth in advertising even if it means losing sales. Anyone who also believes in these standards, and wants to be a part of our efforts to spread these standards throughout the industry (magazines, supplement companies, gyms, etc), and wouldn't object to receiving something for their efforts, is a candidate for the HS:Street Team.

So more ThinkMuscle and more great stuff for everybody! It's going to be a great year for ThinkMuscle readers!

Till next time,

-bryan

Protein, Part 2 - Protein Metabolism

by [Lyle McDonald, CSCS](#)

info@thinkmuscle.com

Introduction

This article is the second in a series of articles discussing the details of protein metabolism in bodybuilders. Part 1 addressed some basic concepts and definitions regarding protein, digestion of different forms of protein as well as total protein requirements for athletes. Part 2 of this article series builds on Part 1 with a discussion of protein digestibility and the beginning of a discussion of protein quality, which will be continued in detail in Part 3.

Section 4: Protein digestibility

An important aspect of protein metabolism is how well or how poorly a given protein is digested by the human body. Claims are sometimes made that protein powders (especially predigested or hydrolyzed proteins) are digested more efficiently than whole food proteins. Claims are also occasionally made that vegetable source proteins are more digestible than animal-based.

Protein digestibility is measured by seeing how much nitrogen is excreted in the feces compared to the amount of nitrogen which is ingested. A correction is made for the amount of nitrogen which is normally lost in the feces. Therefore, digestibility research examines how much more nitrogen is lost over normal levels when a given protein is fed.

If an individual were fed 5 grams of nitrogen (approximately 30 grams of protein) and 1 gram of nitrogen was excreted in the feces, this would represent a digestibility of 80% (4 grams retained divided by 5 grams consumed). Table 1 shows the digestibility for some common proteins.

Full text:

<http://www.thinkmuscle.com/articles/mcdonald/protein-02.htm>

Common Myths about Protein.

[From the Hypertrophy-Specific Nutrition series.](#)

by Bryan Haycock

info@thinkmuscle.com

Myth #1: High protein intakes will not affect muscle protein synthesis.

Fact: Greater availability of amino acids means more protein synthesis within muscle cells.^{1,2,3,4,5,6,7,8}

I will concede that experiments have been performed that indicate that a lab animal can survive on a very limited protein intake assuming that fat and carbohydrate intake is adequate. Simply put, the body begins to reduce that amount of amino acid oxidation in order to spare nitrogen containing compounds. Yet can we really apply this kind of example to adult humans trying to build muscle? I think not.

When the body begins getting stingy with amino acids because of low protein intake, non essential functions, such as skeletal muscle protein synthesis, drop to minimal levels. Other functions within the body such as the immune system, which uses glutamine primarily of muscle origin for fuel, also begins to suffer.⁹ This cripples the body's ability to cope with the stress and tissue damage induced by intense training. Researchers even believe that currently recommended protein intakes may actually predispose people to illness because of the limited reserve of amino acids. Here's what they have to say about current recommendations for protein intake:

"...It seems reasonable to conclude that the lowered rate of whole-body and perhaps muscle protein turnover that appears to occur in healthy adult subjects when intakes of indispensable amino acids approximate the current international figures, would probably diminish the individuals capacity to withstand successfully a major stressful stimulus. Again, for those reasons, we view the significant reduction in the rate of body protein turnover in healthy adults, which permits them to more closely approach or even achieve amino acid balance at currently accepted amino acid requirement intakes, as an accommodation. Thus we further conclude that these international requirement intakes are probably not sufficient to maintain a desirable or adapted state."(Young VR., Marchini JS. Mechanisms and nutritional significance of metabolic responses to altered intakes of protein and amino acids, with reference to nutritional adaptation in humans. Am J Clin Nutr 1990;51:270-89) Emphasis added.

Research clearly shows that by increasing blood levels of amino acids you increase protein synthesis in skeletal muscle. It has also been shown that you can maintain a positive nitrogen balance for extended periods of time and that nitrogen accretion will tend to continue as long as protein intake is high.¹⁰ Clearly if you want to maximize your gains in the gym you gotta get more protein than the average Joe.

Myth #2: You can only assimilate 30 grams of protein at one sitting.

Fact: The body has the ability to digest and assimilate much more than 30 grams of protein from a single meal.

Speaking of high intakes of protein, people have been perpetuating the myth that you can only assimilate ~30 grams of protein at a time, making protein meals any greater than a 6 oz. chicken breast a waste. This is anything but true. For example, the digestibility of

meat (i.e. beef, poultry, pork and fish) is about 97% efficient. If you eat 25 grams of beef, you will absorb into the blood stream 97% of the protein in that piece of meat. If, on the other hand, you eat a 10 oz steak containing about 60 grams of protein, you will again digest and absorb 97% of the protein. If you could only assimilate 30 grams of protein at a time, why would researchers be using in excess of 40 grams of protein to stimulate muscle growth?¹

Critics of high protein intakes may try to point out that increased protein intake only leads to increased protein oxidation. This is true, nevertheless, some researchers speculate that this increase in protein oxidation following high protein intakes may initiate something they call the “anabolic drive”.¹³ The anabolic drive is characterized by hyperaminoacidemia, an increase in both protein synthesis and breakdown with an overall positive nitrogen balance. In animals, there is a correspondent increase in anabolic hormones such as IGF-1 and GH. Though this response is difficult to identify in humans, an increase in lean tissue accretion does occur with exaggerated protein intakes.^{14,15}

The take home message is that, if you are going to maximize muscle growth you have to minimize muscle loss, and maximize protein synthesis. Research clearly shows this is accomplished with heavy training, adequate calories, and very importantly high protein consumption. This means that meals containing more than 30 grams of protein will be the norm. Not to worry, all that protein will certainly be used effectively by the body.

Myth #3: Protein must be rapidly digested to build muscle.

Fact: Both rapidly and slowly digested proteins offer significant benefits to athletes

Recent research has brought up the notion of “fast” and “slow” proteins.¹¹ They are designated as such according to the rate at which they raise blood levels of amino acids after they are consumed. Whey protein for example is considered a fast protein and causes a rapid increase in amino acid levels. Casein on the other hand is considered a slow protein.

Both rapid and slow proteins offer benefits to someone trying to build muscle. Research has shown that proteins that enter the blood stream rapidly significantly increase protein synthesis. Proteins that enter the blood stream slowly have a pronounced effect on protein breakdown, significantly inhibiting it even at low quantities.

By using a combination of proteins that exhibit both fast and slow properties one should be able not only to jump-start protein uptake into muscle cells during a grueling workout, but also ensure that protein synthesis is jump started and that protein break down is kept at a minimum during the hours following their workout. Take the fast protein before training, and a slow protein after for maximum anabolic effect.

In summary, it is a mistake to say that a “fast” protein is better than a “slow” protein. Both types of protein should be used in strategic fashion to alter protein metabolism in favor of net protein deposition (i.e. muscle growth).

Myth #4: A protein must have added peptides of specific molecular weights to effectively build muscle.

Fact: The body’s digestive tract makes its own variable molecular weight peptides from the whole proteins you eat.

As soon as protein hits the stomach it is attacked by powerful stomach acids. This acid, along with an enzyme called pepsin, serves to change or denature the proteins structure preparing it for further digestion in the small intestine. In the small intestine several other enzymes work to break down the protein into various molecular weight peptides and free amino acids. Each enzyme acts on a specific part of the amino acid chain cleaving it in the appropriate place. Whether you’ve just eaten a steak, scrambled eggs or a glass of whey protein, the end result of digestion is the same, a full spectrum of molecular weight peptides and a moderate amount of free amino acids perfectly suited for absorption into the body.

The small intestine has special transporters which actively pull peptides across the brush border membrane and into intestinal cells. All the various peptide transporters have yet to be clearly identified. As a result of these transporters, peptides can be actively absorbed faster than free amino acids. Within intestinal cells, peptides are further broken down into individual amino acids by enzymes called protease (prote = protein, ase = to split or cleave). It has been shown that a very small percent of digested peptides can enter the blood stream by squeezing between intestinal cells. Even though some peptides make it into the blood stream intact, they are quickly broken down by proteases on the surface of liver and muscle cells. If by some small chance peptides actually make it all the way into these cells, they are rapidly broken down by proteases within the cell.

So you see, all this talk about adding various molecular weight peptides simply means that they predigested an already easily digestible protein. This simply adds to the expense of manufacturing the protein. The added cost, of course, is passed on to the consumer.

Myth #5: Arguments over who’s protein scores highest on various methods of protein assessment will make or break your success in the gym.

Fact: As protein intake increases the influence of protein quality decreases. In other words, high quantity can significantly make up for low quality.

The quantity of protein in the diet may in fact add importance to the scoring assessment of a given protein. In fact, if you only eat 35- 45 grams a protein a day you better make sure you chose the highest quality protein you can find. On the other hand, if you eat quantities of protein common among bodybuilders, say 1.6 - 1.8 grams per kilogram, the

large amount of amino acids overcome slight differences in scoring. Once you achieve a certain levels of quality in a protein supplement, increasing it further will not significantly change it's effectiveness when consumed in quantities sufficient to pack on muscle.

Here is a quick overview of the various methods used to determine protein quality. Keep in mind that tests used to determine protein quality use the lower threshold of protein requirements. This creates a metabolic environment far different from that seen in a well fed bodybuilder or athlete.

Chemical scoring

The most obvious way to determine the quality of a given protein is to break it down into it's individual amino acids. This amino acid profile is then compared to a standard profile. Egg protein is the standard that is used in a Chemical Scoring scale for protein quality and has a rating of 100. Take for example a protein that has a limited amount of a specific amino acid. This amount is then compared to the amount found in egg protein. If the amount in the test protein is 75% of that found in egg then the test protein gets a rating of 75. From this you would assume that if you could feed a person an amount of this protein that is exactly his requirement, you would see nitrogen excreted in the urine in the amount of 25 percent of the nitrogen fed.

Although it is relatively easy and inexpensive to do a chemical scoring of any protein, it does not always accurately predict how well the body can utilize it. So the advantages of chemical scoring in determining the quality of protein are that it is easy and inexpensive. It's drawback is that it cannot tell you anything about the digestibility of the protein. Chemical scoring also involves a procedure that may destroy certain amino acids and this may lead to inaccurate values. It is also insensitive to substances in a given protein that can adversely effect digestibility. To discover this variable the test would have to utilize living animals.

Biological value (BV)

Biological value (BV) scoring does utilize in vivo testing. To determine the actual amount of a given protein that will be used by the body it is necessary to measure not only urinary, but also fecal losses of nitrogen when that protein is fed to human beings. This method is used internationally.

When measuring the BV of a protein source, two nitrogen studies are done. The first study determines how much nitrogen is lost from the body even when no protein is fed. This amount of nitrogen loss is assumed to be inevitable and that the body will naturally lose it regardless of the amount of nitrogen in the diet. In the second study an amount of the protein is fed that is slightly below what is required. As before, the nitrogen losses are then measured, but this time they are compared to the amount of nitrogen consumed. To determine the actual BV of the protein the results are then derived using this formula :

$$BV = (N \text{ retained} / N \text{ absorbed}) \times 100$$

The obvious advantage of this method over chemical scoring is that it uses human beings. There are a few problems with this method however. One, there are inter-individual physiological differences that can effect the results. Two, the test subject does not always represent the people that will be consuming the protein in the real world. Finally, just because nitrogen is being retained does not mean that it is being effectively utilized. In fact, following a period of low protein intake, body organs generally have first dibs on incoming amino acids. There is considerable exchange of proteins among tissues that is hidden from view when only nitrogen intake and output are measured. One tissue could be shorted (e.g. skeletal muscle) and a test of biological value would not detect this.

Net protein utilization (NPU)

Net protein utilization (NPU) is another test of protein quality. Like biological value testing, NPU tests involve two nitrogen balance studies. One involves measurements on zero intake, and the other on submaximal intake. The formula is :

$$\text{NPU} = (\text{N retained} / \text{N intake}) \times 100.$$

This method often involves animal test subjects and is more frequently used. Its draw backs are that if a low NPU is obtained, it is impossible to know if it is because of a poor amino acid profile or low digestibility.

Protein efficiency ratio (PER)

Protein Efficiency Ratio (PER) is the best known procedure for evaluating protein quality and is used in the United States as the basis for regulations regarding food labeling and for the protein RDA. This method involves rats who are fed a measured amount of protein and weighed periodically as they grow. The PER is expressed as :

$$\text{PER} = \text{weight gain (g)} / \text{protein intake (g)}$$

The benefits of this method are it's expense and simplicity. It's drawbacks are that it is time consuming; the amino acid needs of rats are not those of humans; and the amino acid needs of growing animals are not those of adult animals (growing animals and humans need more lysine, for example).

The PER is used to qualify statements about daily protein requirement in the United States. You are assumed to eat protein with a PER that is equal to or better than that of the milk protein casein; if the protein's PER is lower, you must eat more of it to meet the RDA. Food labels have to take protein quality into consideration, using the PER of casein as a reference point. If a food has a protein quality equal or better than that of casein, the RDA is 45 grams. If the protein quality is less than casein you need 65 grams for the RDA.

You may be wondering if it makes any difference if you eat your protein from a supplement or from food. Remember that by the time it gets absorbed into the blood stream, all your body knows is how much of each amino acid was present in the food you ate. If you have the money, it is certainly convenient to just drink down a high quality

protein supplement. Beyond that, it makes no difference in what form you get your protein from as long as its a complete protein and sufficiently digestible.

Protein digestibility-corrected amino acid score (PDCAA)

As outlined above, protein quality can be measured by the quantity of indispensable amino acids they contain. If a protein contains all the amino acids essential for life, it is called a complete protein and is given a high score. Because some proteins are not as efficiently digested there arose a need to not only test for the amino acid composition of proteins but also for digestibility. This type of testing is called protein digestibility-corrected amino acid score (PDCAA). It is now a federally accepted standard for determining protein quality for preschool aged children.

Some foods however, contain anti-nutritional factors. These factors sometimes occur naturally like in some beans, or are a result of heating and/or cooking, and inhibit the ability of the body to digest and thus absorb certain amino acids. Research has shown the PDCAA method of scoring protein often over estimates the quality of foods containing anti-nutritional factors.¹²

The take home message from all this is that arguments about who's protein scored highest on this test or that test are really meaningless to the average well fed athlete.

Conclusion

Certainly exposing these myths about protein leaves advertisers with less fodder to bombard you with. Nevertheless, getting rid of these misconceptions will only benefit you the consumer. Knowing the truth about protein will not only save you money but may also open up new opportunities for muscular gains. Knowledge is the key to effective supplementation with protein or any other supplement. Don't let your purchasing decisions be controlled by false claims and misleading pseudo science. A wise man once said, "...know the truth, and the truth shall set you free." In this case, the truth will give you the freedom to make educated decisions about protein supplementation and the freedom to discern between marketing hype and honest manufacturers offering quality products.

References:

1. Tipton K., Ferrando A., Phillips S., Doyle, JR D., Wolfe R. Post exercise net protein synthesis in human muscle from orally administered amino acids. *Am. J. Physiol.* 276: E628-E634, 1999
2. Bennet, W. M., A. A. Connacher, C. M. Scrimgeour, and M. J. Rennie. The effect of amino-acid infusion on leg protein turnover assessed by L-[15N]phenylalanine and L-[1-13C]leucine exchange. *Eur. J. Clin. Invest.* 20: 37-46, 1989

3. Castellino, P., L. Luzi, D. C. Simonson, M. Haymond, and R. A. DeFronzo. Effect of insulin and plasma amino acid concentrations on leucine metabolism in man. *J. Clin. Invest.* 80: 1784-1793, 1987
4. Fryburg, D. A., L. A. Jahn, S. A. Hill, D. M. Oliveras, and E. J. Barrett. Insulin and insulin-like growth factor-I enhance human skeletal muscle protein anabolism during hyperaminoacidemia by different mechanisms. *J. Clin. Invest.* 96: 1722-1729, 1995
5. McNulty, P. H., L. H. Young, and E. J. Barrett. Response of rat heart and skeletal muscle protein in vivo to insulin and amino acid infusion. *Am. J. Physiol.* 264 (Endocrinol. Metab. 27): E958-E965, 1993
6. Mosoni, L., M. Houlier, P. P. Mirand, G. Bayle, and J. Grizard. Effect of amino acids alone or with insulin on muscle and liver protein synthesis in adult and old rats. *Am. J. Physiol.* 264 (Endocrinol. Metab. 27): E614-E620, 1993
7. Newman, E., M. J. Heslin, R. F. Wolf, P. T. W. Pisters, and M. F. Brennan. The effect of systemic hyperinsulinemia with concomitant infusion of amino acids on skeletal muscle protein turnover in the human forearm. *Metabolism* 43: 70-78, 1994
8. Watt, P. W., M. E. Corbett, and M. J. Rennie. Stimulation of protein synthesis in pig skeletal muscle by infusion of amino acids during constant insulin availability. *Am. J. Physiol.* 263 (Endocrinol. Metab. 26): E453-E460, 1992
9. Newsholme, A.E., Parry-Billings M. Properties of glutamine release from muscle and its importance for the immune system. *JPEN.* 14 (4) supplement S63-67
10. Oddoye EA., Margen S. Nitrogen balance studies in humans: long-term effect of high nitrogen intake on nitrogen accretion. *J Nutr* 109 (3): 363-77
11. Boirie Y, Dangin M, Gachon P, Vasson M-P, Maubois J-L, and Beaufrère B. Slow and fast dietary proteins differently modulate postprandial protein accretion (amino acid turnover / postprandial protein anabolism / milk protein / stable isotopes) *Proc. Natl. Acad. Sci. USA* Vol. 94, pp. 14930-14935, December 1997
12. Sarwar G. The Protein Digestibility-Corrected Amino Acid Score method overestimates quality of proteins containing antinutritional factors and of poorly digestible proteins supplemented with limiting amino acids in rats. *J. Nutr.* 127: 758-764, 1997
13. Millward, D.J. Metabolic demands for amino acids and the human dietary requirement: Millward and Rivers (1988) revisited. *J. Nutr.* 128: 2563S-2576S, 1998
14. Fern EB, Bielinski RN, Schutz Y. Effects of exaggerated amino acid and protein supply in man. *Experientia* 1991 Feb 15;47(2):168-72

15. Dragan, GI., Vasiliu A., Georgescu E. Effect of increased supply of protein on elite weight-lifters. In: Milk Protein T.E. Galesloot and B.J. Tinbergen (Eds.). Wageningen The Netherlands: Pudoc, 1985, pp. 99-103

Reader Q&A

by Bryan Haycock

info@thinkmuscle.com

Question:

How did you arrive at the optimum number of reps for hypertrophy in [HST](#)?

Answer:

Muscle tissue does not distinguish between rep ranges. There is not a special number of contractions that "triggers" a hypertrophic response. The only thing that triggers hypertrophy is sarcolemma distortion and subsequent microtrauma and to a MUCH lesser extent, metabolic activity. Metabolic activity is more anticatabolic, then anabolic. These pathways of mechanotransduction have been mapped and are not in question. Yes, there are always more details to be ironed out, but the pathways are now established that go from mechanical load to muscle cell growth.

In order to adhere to the principles of training induced muscle hypertrophy we must have progressive load. Progressive load sufficient to cause hypertrophy will limit the number of times the muscle can successfully contract against the resistance. There are several old studies that narrowed it down to a range of perhaps 20 reps (if the muscle is deconditioned) all the way up to 120% of your 1RM. So, depending on how conditioned the muscle is, you can use any rep range between 20 reps and negatives.

While using HST, your reps decrease over time simply because the load is constantly increasing. It's that simple. There is no magic number, though others might have you believe there is.

Question:

Its spring time again and I need to get rid of the extra "hibernation fat" that I accumulated over the winter. What kind of weight loss program is most effective?

Answer:

All weight loss programs that recognize a few basic, yet important principles of proper weight loss can be effective. These principles include:

- Exercise (not appetite) should be the “primary” strategy for controlling body weight and increasing health.
- Eating habits must be adjusted not only to ensure weight loss, but also to ensure adequate nutrition.
- Fat loss will slow and eventually stop on any weight loss program.

Of course, when trying to apply these principles to each individual, some concessions and a little creativity may be needed to reach goals and overcome plateaus.

Also, don't be surprised at the simplicity of weight loss principles. When any thing becomes marketable (diets) misinformation will begin to permeate the market as a result of false claims. Money nearly always has a detrimental effect on the dissemination of accurate and unbiased information, no matter what the industry.

Question:

Can you give us an overview of the next HSN supplements that are about to come out?

Answer:

First let me say I really appreciate your interest in the [HSN](#) line. It is a project I have put my heart and soul into, and I am determined to make it the highest quality and most dependable (trustworthy) supplement line you can use.

The next HSN product will be a fine grain creatine. Now before you say, “Creatine is boring. Where's the cutting edge? Where's the magic?! Where are the top secret compounds?!” let me say that HSN products will not come out of nowhere and certainly will not be “secret” (secrecy is fertile ground only for deception). They can't. Why? Because all HSN products must be proven to work *before* I will offer them. In order to be proven, they must first be tested and evaluated by other researchers in an open, peer-reviewable manner. This will all be a process open to the public. Therefore, very little of what HSN will introduce in the “near” future will be completely new.

By sticking to this policy of research before marketing, I can say with confidence, and without any risk of deception, that my products will do exactly what I say. If I make ANY claim about what an HSN product will do, I will provide all of the peer-reviewed research to substantiate that claim.

After the creatine I will release a meal replacement (MRP) version of the [Primer](#) and [Driver](#) called Prime+ and Drive+. These will have carbs as well as vitamins and minerals and will still be differentiated by being fast and slow protein products. Having a low-carb and high-carb version of high quality proteins will make adjusting carb levels easy. Just use Primer and Driver while keeping carbs low, and switch to Prime+ and Drive+ when you bump them back up again.

The response to the Primer and Driver thus far has been very positive. You can expect the same quality and great taste in future products.

Question:

Why is it that my husband seems to lose weight so easily while I struggle for every pound?

Answer:

The ease with which a person loses weight depends on several factors. Some of these factors include:

- Body size (height, frame size)
- The amount of lean mass (muscle) a person has
- Hormone levels

Without going into too much detail, the bigger you are the more calories you burn in a day. Likewise, the more muscle you have the more calories you burn. So the bigger and more muscular you are, the easier it is to lose weight.

Hormones like estrogen can make losing weight much more difficult. Testosterone, on the other hand, facilitates fat loss. This alone can account for some of the differences seen between men and women.

Additionally, thyroid hormones play a major role in regulating body weight. If you have been “sort of dieting” for a long time, your thyroid levels may be reduced. The only way to get thyroid levels optimized for fat loss is to refeed yourself with more healthy food and calories for a couple weeks before attempting to diet again. Blood tests may also be helpful in detecting hormonal deficiencies that may hinder weight loss.

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 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!

Reader Survey

Tell Us What You Think?

1. Message from the Editor-in-Chief:

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

2. Protein, Part 2 – Protein Metabolism by Lyle McDonald, CSCS

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

3. Common Myths about Protein by Bryan Haycock.

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

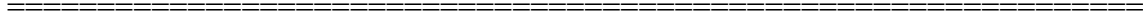
4. Reader Q&A

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

6. 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



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
URL: <http://www.thinkmuscle.com/>

© 2002 Think Muscle. All rights reserved.