



# ***Supplement Testing***

# 8



## IRONMAN Research Team

The first installment of the *IRONMAN* Research Team Supplement Testing series appeared in the December '99 *IRONMAN* and received a tremendous response. It was essentially created to allow bodybuilders to try specific supplement stacks and then report their findings via an in-depth questionnaire. To make it cost-effective for those participants, the supplement stack was offered at a deep discount to the first 200 people to become a member of the team—no strings attached other than feedback on the supplements. The feature was so popular, it became a regular feature in *IRONMAN*, and now we want to give those who have read this book and understand proper supplementation a chance to try those same supplement stacks at the same deep discounts.

### IRONMAN Research Team 1: Triple-Gain Special

So you've read about all the new scientifically sound size-building supplements, but using them means losing your electricity and phone service. (Paying bills and stocking up on the hottest new supplements can sometimes be mutually exclusive.) How frustrating—and gain stifling. Without electricity, you can't whip up your postworkout protein shake.

The *IRONMAN* Research Team's original solution was to offer you a single new supplement at big savings in return for your feedback. That was a step in the right direction, but we've decided to one-up the original solution—make that two-up. Now you get three supplements at a deep discount in return for your feedback. That's right, a triple savings. The reason we're upping the ante is because we want you to try the best products at reduced prices, and we want you to experience the incredible synergistic effects specific supplements can produce.

It's no secret that a lot of supplements work best with companion compounds. In other words, they synergize with one another, which can significantly increase their effectiveness and magnify your

gains. For example, ribose and creatine work exceptionally well together to fortify muscle ATP, producing more new power at every workout, which in turn triggers new hypertrophy in your muscle fibers. In essence, you get bigger and stronger faster than if you used those products individually during different training phases. Throw in the best meal replacement in the business, which helps you stay in positive nitrogen balance throughout the day and spikes your vitamin-and-mineral intake, and you have an arsenal of core mass-building supplements that can do incredible things to your muscle size and power.

You may be thinking, "Wow, effervescent creatine, ribose and the best meal replacement around at a deep discount. What's the catch?"

None. Nada. Zip—other than your feedback. We're making this offer so you can try specific products and then fill out a short questionnaire about your experience so we can do a follow-up feature on supplement testing in a future issue of *IRONMAN*. That's it. We'd also like to get your before and after photos to help illustrate the feature. We'll even throw in an *IRONMAN* Training & Research Team T-shirt—don't forget to give us your size.

We've chosen Muscle Meals, Effervescent Creatine Elite and Ribose Size because they complement the ITRC Muscle-Building Programs featured in the magazine. Use a rock-solid training strategy with these three exceptional mass-building supplements, and you can significantly amplify your size and strength gains.

**Muscle Meals.** If you're a serious bodybuilder, you use a meal replacement or protein powder. It's almost mandatory if you want to get the enormous muscle-building, fat-burning benefits of eating six meals a day. The new-breed meal replacements not only contain a fusion of various proteins, such as whey and micellar casein for fast anabolic uptake and a slow anticatabolic trickle-feed effect, but they're also packed with vitamins, minerals and glutamine peptides. Muscle-Link's Muscle Meals fills the bill perfectly—and its new improved taste is delicious. It's the ultimate meal replacement on the market, jam-

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packed with everything your body craves to feed its muscle-building needs, including 10 grams of glutamine peptides per serving (and no aspartame). Each 20-packet box sells for \$59.95, but call now and you can get the *IM* Research Team price: Buy one, get one free—you save almost \$60. That's two big boxes for the price of one.

**Effervescent Creatine Elite.** Effervescent technology has made the number-one bodybuilding supplement almost three times better than the standard powdered variety. Effervescence separates the creatine from its salt, or monohydrate, creating free-ionized creatine, which is almost 100 percent absorbed. Most people only absorb 30 percent of a standard five-gram dose of regular powdered creatine monohydrate. Effervescent creatine's better absorption is the very reason a research study performed at a leading university showed that it increased anaerobic work capacity 194.9 percent more than powdered creatine and 84 percent more than the most popular creatine transport, creatine plus carbs. In addition, due to buffering, effervescent creatine produces no stomach upset. There's no grit and no bitter aftertaste. The retail price is \$29.95 for a 20-packet box, but you'll need one box to load and one for maintenance, so IM Team Members get a second box free—once again, two boxes for the price of one.

**Ribose Size.** There's a lot of information out on D-ribose these days, so you no doubt understand its tremendous impact on muscle recovery and growth. Basically, it's a compound that can supercharge your ATP along a different pathway than creatine, which makes it uniquely synergistic with that compound. In fact, it's been the focus of more than 150 peer-reviewed studies, and experts are saying that many athletes hit plateaus and overtrain due to ribose depletion. Ribose, with its recovery- and muscle-energetics-boosting components, is the most effective supplement to hit the bodybuilding market in years. It retails for \$49.95 for each 100-gram bottle. Agree to test it, and we'll throw in a second bottle free.

Okay, let's recap. If you're one of the first 200 people to call, you get the following:

- Two boxes (40 packets) of Muscle Meals for the price of one.
- Two boxes (40 packets) of Effervescent Creatine Elite for the price of one.
- Two 100-gram bottles of Ribose Size for the price of one.
- An IRONMAN Training & Research Center T-shirt.

All for only \$149.95 (you save about \$150).

That's about a \$300 value, but you get it all for only \$149.95 plus shipping—almost half price. To put it more plainly, you save about \$150 for a one-month supply of some of the best core mass-building supplements around—and all you have to do in return is give us feed-

back on the products after you use them for one month and, if you can swing it, before and after pictures to use in an upcoming feature. Call immediately to take advantage of this offer, and we'll rush your supplements to you. Join the *IM* Research Team, test hot new supplements and get big! Building a great physique just got a heck of a lot easier—and a lot less expensive—thanks to this new supplement-testing program. Call Home Gym Warehouse at 1-800-447-0008 today and ask for the *IM* Research Team Triple-Gain Special, and start making the best gains you've ever made.

### IRONMAN Research Team 2: GH-Boosting Special

Growth hormone is getting a reputation as a miracle rejuvenating compound. According to a bevy of studies, a surge in your GH can increase your muscle mass; burn bodyfat; strengthen connective tissues, including tendons and ligaments; help heal injuries; revitalize your skin and hair; bolster your immune system and give you more energy. It's no wonder drug companies have been overwhelmed by the demand since GH was first introduced more than two decades ago. Today aging baby boomers consider it the Fountain of Youth, which is driving demand even higher.

Most bodybuilders couldn't care less about revitalizing skin and hair, but GH's muscle-building, fat-burning potential has lured them to it like nerds to a "Star Trek" convention. Bodybuilders began experimenting with GH in the late '80s and early '90s, and now almost every pro is using or has used it. Many experts believe that human growth hormone is so powerful, it's the reason physique athletes are so much bigger and leaner now than they were in past decades. In fact, GH may be the single biggest reason there are so many behemoths stalking the stages at pro contests—it's the ultimate muscle-building, fat-burning compound, especially when used in conjunction with other substances—legal or otherwise.

Scientists are beginning to understand that GH has synergistic reactions with other anabolic hormones in the human endocrine system, including testosterone. The problem is, GH is a prescription drug that you have to administer intramuscularly. So the question becomes, How do you increase your GH naturally to harness its amazing power without having to inject it and risk dangerous side effects? The answer is, you take advantage of scientific training techniques and supplements that are based on the latest research.

Training for GH release involves keying in on the big compound exercises, like squats and rows, and also getting a burn in the target muscles by supersetting exercises and/or using other set-extending techniques. If you want an even bigger, better surge, you should use supplements that complement those strategies, specifically GH Stak, an effervescent growth hormone booster, and Cort-Bloc, a cortisol-

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control compound.

GH Stak and Cort-Bloc synergize to ratchet up your natural growth hormone levels. As *IRONMAN*'s European researcher Michael Gündill explained, "When GH users are unhappy with their results, the culprit is usually cortisol. Cortisol and GH are mortal enemies. Studies have demonstrated that GH's anabolic effects are blunted when cortisol level is high. Scientists think cortisol reduces the number and/or the responsiveness of GH receptors to growth hormone. What's more, high-cortisol secretion is usually associated with a reduced GH secretion. Research has shown that GH boosters fail to elevate GH secretion whenever cortisol is high." That pretty much sums up the synergy of the two supplements. Here's how and why they work.

**GH Stak.** New research points to a number of amino acids along with a host of other compounds that together can create a growth hormone tidal wave. One supplement that incorporates all of the latest research into a powerful GH-releasing compound is Muscle-Link's GH Stak.

Bodybuilders at the *IRONMAN* Training & Research Center have been experimenting with this product, effervescent tablets—like Alka Seltzer—that you dissolve in water and drink either before you train or at bedtime on an empty stomach. During the test phase of GH Stak



drug-free bodybuilder Jonathan Lawson made some spectacular gains using it, adding more than 10 pounds of muscle to his ripped competition weight the first time he tried the product for an eight-week cycle (see his before and after photos in the GH section of this book). He got that amazing result thanks to GH Stak, Cort-Bloc and his high-intensity Positions-of-Flexion training protocol, which incorporates stretch-position exercises. Stretch-position exercises are important because inordinate muscle elongation can increase growth hormone and insulinlike growth factor 1 (IGF-1) receptors. Perform them in high-intensity fashion with a GH Stak kicker, and you'll light the anabolic fuse that can ignite explosive muscle hypertrophy. According to GH Stak's developer, noted pharmacologist James Jamieson, who also invented the patch delivery system for drugs, you get a synergistic effect from the compounds in the effervescent supplement and the GH-releasing effects of high-intensity exercise.

Why is GH Stak in an effervescent form? Because studies show that there's a significant increase in GH from oral glutamine when the glutamine is in that form. The effervescent action also enhances the delivery of other growth hormone precursors, such as L-arginine, which is included in GH Stak in a more bioactive pyroglutamate form than what you get from standard L-arginine supplements.

GH Stak also contains anterior pituitary peptides that normalize somatostatin, a hormone that can shut down GH and IGF-1 receptors. That's extremely important because when you elevate GH and IGF-1, you don't want somatostatin to smother their effects. GH Stak's anterior pituitary peptides prevent the shutdown, which drastically increases the effects.

As for the research, an unpublished study on GH Stak showed that bodybuilders had anywhere from a 12 percent increase in IGF-1 levels after just one day of using the supplement all the way to a 36.6 percent increase after only six days. The results have been so spectacular that doctors at anti-aging clinics are using this product in place of GH injections. (IGF-1 levels are more stable and have a direct correlation to GH levels, which is the reason they're used to measure GH output.)

A one-month supply, or half cycle, of GH Stak retails for \$79.95, but if you call now you can get the *IM* Research Team special, a deep discount that's outlined below.

**Cort-Bloc** (phosphatidylserine). With intense training comes increased cortisol, a stress hormone that can cannibalize muscle tissue and blunt the anabolic effects of GH. Fortunately, one compound can fight that negative effect and in turn increase the power of GH: phosphatidylserine. In two Italian studies PS showed impressive anticatabolic properties in endurance athletes, suppressing cortisol by more than 30 percent. In a recent study by professor Thomas Fahey of California State University, Chico, it was shown that soy-based PS reduced blood cortisol during and after bodybuilding-type workouts by

In a recent study by professor Thomas Fahey of California State University, Chico, it was shown that soy-based PS reduced blood cortisol during and after bodybuilding-type workouts by almost 30 percent.

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almost 30 percent, an especially important finding for weight trainers who classify themselves as hardgainers.

Cortisol production is a primitive mechanism that's triggered when the fight-or-flight response is invoked. That means, if you're under a lot of stress during the day, cortisol could be causing your body to waste muscle tissue at almost every turn. It's believed that hardgainers are cortisol overproducers. In addition, the body perceives intense workouts as a threatening stress and, therefore, pumps cortisol into your system after every hard training session. It also perceives hunger as stress, a key reason to take a cortisol-control supplement like Cort-Bloc with your last meal at night prior to the three-hour fast that precedes your growth hormone booster. Remember, you want your cortisol to be low when you take your GH booster because cortisol blunts GH's anabolic effects.

With so many factors causing cortisol release and impending muscle catabolism, is it any wonder that it's so hard to build muscle? The catabolic facts regarding cortisol make it obvious that PS should be on every bodybuilder's supplement list, especially high-strung individuals who generally overproduce cortisol. Take it prior to your workouts, and by reducing your cortisol levels, you'll also get more anabolic power from your GH. By the way, Cort-Bloc contains vitamin B6, which has been linked to increases in natural growth hormone output.

Cort-Bloc retails for \$49.99 for one 60-capsule bottle. Call now, agree to test it, and we'll throw in a second bottle at a deep discount. We'll also throw in an *IM* Training & Research Center T-shirt. The number is 1-800-447-0008. Ask for the *IM* Research Team GH-Boosting Special. So, to summarize, make that call and you get the following:

- Two boxes of GH Stak (60-day supply).
  - Two 60-capsule bottles of Cort-Bloc.
  - An *IRONMAN* Training & Research Center T-shirt.
- All for only \$159.95 (you save more than \$100).

That's \$260 worth of supplements, but you get it all for only \$159.95 plus shipping and handling. In other words, you save more than \$100 for a two-month supply of two of the best growth-hormone-boosting supplements around—and all you have to do is give us feedback on the products and before and after pictures to use in an upcoming feature. If you don't feel particularly photogenic, you can skip the photos, but we do want extensive feedback via the questionnaire and comments after you make your spectacular progress. (That's what we get out of the deal, feedback to use in a future supplement feature in *IRONMAN*—and before and after photos are a big plus.)

Call 1-800-447-0008 immediately to take advantage of the *IM* Re-

search Team GH-Boosting Special. Ask for it when you call—don't forget to give us your T-shirt size—and we'll rush your supplements to you to test. Join the Team, test hot new supplements and get big from your workouts! It's a plan to grow on.

### IRONMAN Research Team 3: Cell XL Special

Bodybuilders know that certain compounds can make muscle tissue engorge, or swell. Creatine is one. Because it's an osmotic catalyst, it can force more water into the muscle cells, giving the muscle structures a fuller, rounder appearance. That's what accounts for some of the initial weight gain creatine users experience. Be aware, however, that many of the high-sugar formulas, with up to 75 grams of sugar per serving, can also cause fat-cell volumization. That equates to a whopping 1,200 extra calories a day during a loading phase, so what you get with those formulas is some muscle-cell volume from creatine and lots of fat-cell swelling from sugar overload—not what most bodybuilders are after.

Bodybuilders want volumization to occur only in muscle cells and to leave the adipose-cell volumization to the circus fat man. While research isn't plentiful, there have been a handful of studies done on increasing muscle-cell volume through nutrition—and with the plague of muscle-wasting diseases ravaging mankind, there should be many more in the future.

Researchers at Ergogenix LLC pored over all the studies that were even remotely linked to cell volumization. After weighing all the evidence and testing numerous compounds, they've designed the definitive muscle-cell volumizer for Muscle-Link, AnaVol-R. It was created specifically for bodybuilders who are looking for muscle size without bodyfat gain. Here are the ingredients and an explanation of each as they appeared in the feature "Anavolics" in the November '99 *IRONMAN*.

Creatine monohydrate, five grams. When creatine was first introduced into the market, one of the main effects touted was cell volumizing. Recently, a study by Ziegenfuss, Lowery and Lemon was published online in the *Journal of Exercise Physiology* (October 1998); it showed a 3 percent increase in water inside the cell after a three-day loading routine. That's consistent with the results most of us see with creatine loading: a gain of about 2 to 3 percent of bodyweight during loading (four to six pounds for a 200-pound person). What about creatine solubility? AnaVol-R is titrated, or balanced, at a pH of approximately 4.5. That's the pH at which creatine is soluble, just as occurs in the effervescent formulas. Five grams of creatine, delivered at a pH of 4.5, should be absorbed well and tolerated well.

D-ribose, two grams. D-ribose (the R in AnaVol-R) is a new-

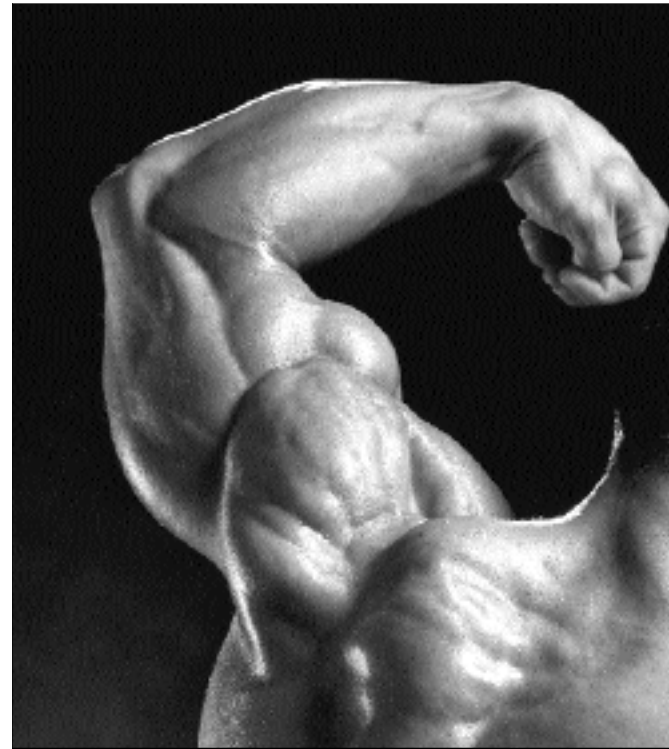
Bodybuilders want volumization to occur only in muscle cells and to leave the adipose-cell volumization to the circus fat man. While research isn't plentiful, there have been a handful of studies done on increasing muscle-cell volume through nutrition.

AnaVol-R is designed to promote cell volume increases to support an anabolic phase of metabolism. It's designed to allow—even force—your body to grow.

comer to sports nutrition. That's not because it was undiscovered, but because it couldn't be manufactured cost-effectively until recently. Numerous studies are looking at the use of D-ribose for low-cellular-energy states in disease and ischemic conditions. They've all shown a positive effect of D-ribose supplementation on adenosine triphosphate (ATP) and total adenine nucleotides (TAN). The benefit of adding D-ribose to AnaVol-R is twofold. First, by maintaining cellular ATP, it ensures that cellular energetics are favorable toward the anabolic processes. Second, if the high turnover in ATP required by exercising muscle affects cellular ATP, it may also affect other nucleotides. What does that mean exactly? We've all heard of DNA and RNA. The acronyms stand for deoxyribonucleic acid and ribonucleic acid. If you look carefully, you'll see the prefix ribo-, as in ribose, or D-ribose. DNA and RNA are the genetic molecules that determine the structure and function of all human cells. If we are robbing the cell energy nucleotide pool, we may be affecting the nuclear, or genetic, nucleotide pool, which is not a good thing. D-ribose, at the very least, will support the formation of new ATP and repair or salvage existing ATP (Brault, J.J., and Terjung, R.L., 1999). Possibly, it may aid in promoting the cell's ability to respond to stimuli such as training or volume changes (Bernofsky, 1980; Coffey, et al., 1965; Hellsten-Westling, et al., 1993). What's more, D-ribose also aids in the insulin response of AnaVol-R (Goodman, C., and Goetz, F.C., 1970; Malaisse, W., and Malaisse-Lagae, F., 1969).

Pinitol (or Inzitol™), 50 milligrams. Pinitol is a methylated sugar (3-O-methyl-1,2,4 cis-3,5,6 trans hexahydroxycyclohexanol) that has two effects of significant value: increased glucose uptake by the muscle cell and increased glycogen synthesis. Pinitol is an isomer, or type, of inositol. It's extracted from soy and sugar pine heartwood. It was first discovered to have hypoglycemic effects—that is, it lowers blood sugar—in 1987 (Narayanan, C., 1987) and later found to enhance insulin function as well.

Pinitol was first discovered in the methanol fraction of *Bougainvillea spectabilis*, a botanical used in traditional healing for many purposes, including diabetic-associated conditions. It was later found to be a component of pH 2.0 D-chiro-inositol glycan insulin putative mediator (Fonteles, M.C., et al., 1996). Infusion of pinitol leads to an insulinlike action without causing hypoglycemia. Therapeutically, that's very important, as it demonstrates some means of regulatory control to prevent the negative consequences of hypoglycemia. To the athlete it means not getting sluggish and drained. It's not yet clear how that happens, but it may be due to selective action at the muscle to in-



crease glycogen synthesis.

Of all the proposed so-called insulin mimickers and insulin co-factors, pinitol is the one with the most promise.

Maltose-and-dextrose blend, 24 grams. Dextrose is a sugar found in nearly every powder, bar and candy, and like other sugars it has four calories per gram. It's used in creatine delivery to prompt an insulin spike, which increases nutrient uptake by the cells. Using a lot of it will give a greater insulin spike, but it will also give you a big tummy. If you want to look eight months pregnant, go for the high-dextrose-content formulas. What's more, if you take a large amount of sugar at once, the sugar will go to your liver for storage rather than the muscle (Charrington, A., Vanderbilt University Medical Center). It has to do with the amount of sugar in the portal blood, the blood that delivers nutrients from the intestines to the liver, compared to what's in the peripheral bloodstream, the circulating blood supply to the body. Too much sugar, and it doesn't do the job.

Maltose is a type of sugar, a disaccharide, that has a higher glycemic index than dextrose and is well tolerated. It's not so potent a signal for insulin release that it will trigger hypo-

While the researchers found that the additional protein didn't enhance physical performance, it did have an interesting side effect in that the men who ate the high-protein diet acquired increased body protein stores and muscle mass.

Studies have shown that eating smaller meals throughout the day can increase protein synthesis, and a recent French study showed the importance of combining whey protein for fast, anabolic reactions and casein for a slower, anticatabolic trickle-feed effect.

glycemia, but it will aid in promoting the insulin signal without adding a large number of carbs. Consequently, the sugar blend is designed to promote an adequate insulin response to enhance the cell volume effect of the nutrients without making you fat. A maltose-and-dextrose blend of 24 grams, added to the two grams of D-ribose, provides 26 grams of sugar, stimulating insulin release.

Chromium GTF, 100 micrograms. Chromium doesn't do much and is really too weak to be considered as a single-ingredient product. Whenever insulin function is a factor in product action, however, there's a place for chromium. Chromium picolinate has received all of the attention in the supplement market, and it's given in doses as high as 500 micrograms (that's micrograms, not milligrams). High doses may have potential for adverse long-term effects. Picolinate may be fine, or it may be linked to negative cellular events. As it may not be entirely safe, the picolinate form may not be worth the risk.

Chromium GTF acts as a co-factor to insulin. That means the insulin is actually doing the work, but the chromium GTF performs a function or functions that allow insulin to do its job better.

Proprietary blend of amino acids, dipeptides and tripeptides. Dipeptides and tripeptides are carried across the intestinal membrane by separate carriers, which allows for a greater concentration of amino acids to reach the bloodstream. It doesn't take a great concentration of certain amino acids to cause a muscle cell to swell, and the volumizing effect is enhanced in the presence of insulin. Now you can see why the pinitol, sugars and chromium GTF play such vital roles in the formula.

With the above ingredients in the formula, AnaVol-R is designed to promote cell volume increases to support an anabolic phase of metabolism. It's designed to allow—even force—your body to grow.

If you'd like to try AnaVol-R, you can do it now at a special low price. A one-month supply retails for \$99.95, but you can get two big canisters for that price—if you agree to give us your feedback. That's right, it's a buy-one-get-one-free deal, and all you have to do to get it is fill out a questionnaire after you use the product.

In addition, bodybuilders know that protein contributes to muscle-cell volume, and studies have proved that. In one study that was published in the *American Journal of Clinical Nutrition* (28:29-35; 1975), two groups of men trained hard, performing "heavy physical activity." One group took in 100 grams of protein per day, and the other took in 197 grams, almost double the amount of the first group. The study lasted 40 days.

While the researchers found that the additional protein didn't en-

hance physical performance, it did have an interesting side effect in that the men who ate the high-protein diet acquired increased body protein stores and muscle mass. That's right, they gained more muscle—and isn't that what bodybuilders are after?

Other studies have shown that eating smaller meals throughout the day can increase protein synthesis, and a recent French study showed the importance of combining whey protein for fast, anabolic reactions and casein for a slower, anticatabolic trickle-feed effect. There are also studies on glutamine that have shown how important it is to recovery and cell volumization.

The premier protein powder that embraces all of those findings is Muscle-Link's Pro-Fusion. It's a perfect blend of whey, micellar casein and egg proteins with a whopping 10 grams of glutamine peptides per serving. With two scoops you get 45 grams of protein and 220 calories, so you can use a full serving in water as a stand-alone protein feeding or add half a serving mixed in water to solid-food meals for an extra protein blast to feed your muscles and swell those cells. (Just don't miss meals, or you risk losing muscle.)

Pro-Fusion retails for \$49.95 for one two-pound canister, but you can get two big canisters for that price if you call now and agree to give us feedback for a future feature in *IRONMAN*. We'll even throw in an *IRONMAN* Training & Research Center T-shirt—don't forget to give us your size—and we'll rush you your supplements to test.

Call 1-800-447-0008 and ask for the *IM* Research Team Cell-XL Special, and you get the following:

•A two-month supply of AnaVol-R.

•Two big canisters of Pro-Fusion protein.

•An *IRONMAN* Training & Research Center T-shirt.

All for only \$149.95 (you save more than \$150).

That's a \$300 value, but you get it all for only \$149.95 plus shipping and handling—half price. To put it more plainly, you save more than \$150 for a two-month supply of two of the best muscle-cell-volumizing supplements available, and all you have to do is give us feedback on the products and before and after pictures to use in an upcoming feature. If you don't feel particularly photogenic, you can skip the photos, but we do want extensive feedback and comments on the questionnaire after you make your spectacular progress. (By the way, before and after photos are a big plus, so send them if you can.)

Call 1-800-447-0008 right away to take advantage of the *IM* Research Team Cell-XL Special. Ask for it when you call. Join the Team, test hot new supplements and grow. Call now!

Ephedrine and caffeine help the body burn more fatty acids during activity by increasing fat mobilization. Guggul supplements help optimize thyroid output as your calories decrease so you avoid those frustrating plateaus.

**With  
Adipokinetix  
you can lose  
fat, preserve  
muscle tissue  
and at the  
same time  
increase your  
sex drive.  
Yohimbine  
vastly  
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of the  
norephedrine  
and the  
caffeine by  
allowing the  
increased  
adrenergic  
hormones to  
do their job.**

#### **IRONMAN Research Team 4: Fat-Burning Special**

If you're a serious bodybuilder, you're always trying to pack on mass, but when the weather starts to heat up, you also begin thinking about getting lean. You don't want to get caught with your abs covered in a shroud of definition-blurring fat.

You start the fat-burning process by gradually paring back your calories. After a few weeks of that you begin supplementing with some proven fat burners and metabolic stimulators, and then you're on your way to a ripped physique, able to reveal sliced and diced abs at the pool, lake or beach on the very first warm day.

The most popular fat-melting stack is an ephedrine-caffeine compound taken with a guggulsterone supplement. The ephedrine and caffeine help the body burn more fatty acids during activity by increasing fat mobilization. Guggul supplements help optimize thyroid output as your calories decrease so you avoid those frustrating plateaus—the ones that don't seem to budge no matter what drastic aerobic or calorie-cutting actions you take. An EC compound with a guggul supplement gives you a double-whammy fat-melting effect.

The top-of-the-line EC compound is Syntrex Innovations' Adipokinetix, although it's really an NC stack, as it contains norephedrine. It's been a best-seller in the bodybuilding world, has crossed over into Joe and Josephine Public's world and has received rave reviews from almost everyone who's tried it. Derek Cornelius, Adipo's developer, explains how it works:

"Adipokinetix is a supplement that mobilizes and burns fat tissue without sacrificing muscle and organ tissue. You should be familiar with the ECA stack—a combination of ephedrine, caffeine and aspirin. Adipokinetix is similar to ECA but is a vast improvement. It takes fat mobilization and burning to a new level. Adipokinetix contains precise ratios of 1R,2S norephedrine HCl, caffeine, yohimbine HCl and now 50 milligrams of theophylline. The aspirin is left out because some people are sensitive to it. Furthermore, aspirin is cheap, easy to get and can be easily added to the stack if you can tolerate it.

"The first two compounds—1R,2S norephedrine and caffeine—work together in much the same way ephedrine and caffeine work. The difference is that studies have shown norephedrine to be the most potent and most thermogenic of the ephedrine alkaloids. Norephedrine also lacks some of the central-nervous-system-stimulating effects of ephedrine. In practical terms that means an individual will still feel a little wired but not nearly as much as he or she will feel with ephedrine. Another plus for norephedrine is that it doesn't have the negative associations that ephedrine has—there are no Food and Drug Administration restrictions and no negative publicity. In the coming years norephedrine will definitely be the compound of choice for easy, effective weight loss—instead of the ECA stack, you'll hear about the

NCA stack.

"Norephedrine and caffeine work synergistically to drastically increase the body's production of adrenaline and noradrenaline—the adrenergic hormones—which bind to the adrenergic receptors. There are a number of different adrenergic receptors: the alpha sub 1, alpha sub 2, beta sub 1, beta sub 2 and beta sub 3. We are mainly interested in the alpha-sub-2, beta-sub-2 and beta-sub-3 receptors—for they're the ones that mainly affect fat loss and mobilization.

"Among other things, the beta-sub-2 and beta-sub-3 receptors are responsible for the mobilization and burning of adipose tissue; so they are the receptors that you want to stimulate, for they ultimately affect fat loss in a positive way. Another positive benefit of stimulating the beta-sub-2 receptors is an anticatabolic effect on proteinaceous tissues. Thus, you simultaneously lose fat without sacrificing much or any muscle tissue.

"The other receptor that we're interested in is the alpha-sub-2 receptor. Studies have shown that it blocks the mobilization of adipose tissue. In terms of fat loss it's the bad guy. In fact, it's the receptor that causes women to have a harder time losing adipose tissue—especially in their lower bodies. Women have many more alpha-sub-2 receptors than men, and they have an even greater number in their lower bodies. To combat those nasty receptors, we need a compound that's naturally occurring, easy to get, potent, lacking negative side effects and able to block them. Yohimbine is the answer.

"Yohimbine does all of the above with an added bonus—it's a proven aphrodisiac. Thus, with Adipokinetix you can lose fat, preserve muscle tissue and at the same time increase your sex drive—regardless of your gender. Both men and women benefit. Yohimbine vastly improves the effectiveness of the norephedrine and the caffeine by allowing the increased adrenergic hormones to do their job. Basically, it cripples your body's negative feedback loop for maintaining your bodyfat.

When you ramp up your fat-burning with Adipo, you also want to optimize your thyroid output to prevent a stagnant metabolism, and that's where guggulsterones come in. Muscle-Link's Thyro Stak is a potent guggul compound that has also proven itself in the bodybuilding realm, and it's no doubt so effective because it includes a number of other compounds that synergize with the guggul extract. Here's an explanation of how it works from Daniel Gwartney, M.D.:

"Thyro Stak includes five ingredients that have been shown to support or enhance thyroid activity even in low-calorie environments.

"The main ingredient is an herb that has received little attention in Western medicine, though it's been used in Ayurvedic medicine for many centuries. Commiphora mukul contains a class of active compounds known as guggulsterones, and, while there isn't a great deal of published research on the compounds, what there is indicates that guggulsterones, specifically guggulsterones Z and E, have thyroid-

**Diet is very  
important,  
specifically  
eating six  
meals a day  
with protein  
at each  
feeding. That  
keeps your  
blood sugar  
level on an  
even keel,  
feeds your  
muscle  
growth  
throughout  
the day and  
wards off  
cravings.**



Certain fats have the ability to promote growth by significantly reducing muscle breakdown. Research has discovered that people need a combination of saturated, mono-unsaturated and polyunsaturated fats, especially athletes.

stimulating activity. Subjects in those studies showed an increase in thyroid hormone levels and an increase in the conversion of T4 [less potent thyroid hormone] to T3 [more potent thyroid hormone]. They showed lower cholesterol and blood triglyceride levels as well, further indicating increased thyroid activity.

“Thyro Stak also contains phosphates, which are found in such high-energy compounds as ATP and phosphocreatine. Thyroid activity is closely linked to the amount of energy you have, so it’s a good idea for everyone to take an ample amount of phosphates daily. Numerous studies have shown the effect of phosphate supplementation on metabolic rate. Of particular interest is a study published in 1996, which demonstrated that phosphates can prevent a decrease in T3 and stimulate an increase in resting metabolism in subjects who are on low-energy diets. That, in addition to phosphates’ positive effects on creatine storage, buffering lactic acid and increasing ATP, firmly establishes the value of including phosphates in Thyro Stak.

“The product contains niacin, selenium and magnesium. Niacin plays a role in supporting the co-factors necessary for energy production, such as NAD(H) and NADP(H). More than 200 enzymes require NAD and NADP. NAD is involved in energy production, while NADP(H) is used in a variety of processes, including fatty acid synthesis, glutamate oxidation and antioxidant activity. Niacin has also been shown to decrease cholesterol levels. Some people are sensitive to the flushing effect of high doses of niacin, but the effect is short-lived, and it’s possible to build up a tolerance with continued usage.

“Selenium is a mineral that has received a great deal of attention in recent years. Selenium appears to have a major regulatory impact on the enzyme 5’-deiodinase, which converts T4 to T3. Low levels of selenium can impair thyroid conversion—but excess selenium also has a negative effect on thyroid conversion.

“Magnesium is present in more than 300 identified enzymatic reactions. It’s involved in glycolysis, the Krebs cycle and creatine phosphate production, among others. Magnesium even has a role in protein synthesis. Subjects in a 1992 study showed increases in strength and lean body mass after a few weeks of increasing their magnesium intake.”

Of course, you can’t just swallow a few capsules and expect to have all your bodyfat melt away like magic. You also have to train hard—the more muscle you have, the more calories your body burns—and you have to eat right.

Diet is very important, specifically eating six meals a day with protein at each feeding. That keeps your blood sugar level on an even keel, feeds your muscle growth throughout the day and wards off cravings. It’s very difficult to eat six solid-food meals every 24 hours, but that’s the very reason meal replacements were created. One of the best is Muscle-Link’s Muscle Meals. Here’s why.

**Fusion of micellar casein, whey and egg proteins.** For obvious reasons mother’s milk provides all the essentials for rapid growth, and it’s

no accident that it contains approximately equal amounts of casein and whey protein. Fast-growing infants, who instinctively eat at least six times a day, need both slow and fast absorption of amino acids. Muscle Meals provides a perfect balance of micellar casein and whey, along with egg protein, so you get both anabolic and anticatabolic actions.

**Glutamine peptides.** This is the most potent form of glutamine, one of the key muscle-building amino acids. It’s up to 10 times more effective than L-glutamine supplements due to better absorption. Why do bodybuilders need extra glutamine? Experiments reveal that the entry of glutamine into the muscle cell can increase its volume, which directly translates into growth. Also, glutamine makes up two-thirds of the muscles’ free amino acid content and rapidly exits the cells after a workout. Therefore, bodybuilders should keep glutamine intake high to prevent catabolism and promote anabolism, and Muscle Meals makes it much easier with its 10 grams of glutamine peptides per serving. Glutamine has also been linked to growth hormone release.

**Anticatabolic fats.** Certain fats have the ability to promote growth by significantly reducing muscle breakdown. Research has discovered that people need a combination of saturated, monounsaturated and polyunsaturated fats, especially athletes, as those fats have been shown to promote growth hormone release, strengthen the cardiovascular system, enhance bodyfat metabolism and promote testosterone production. Muscle Meals has the perfect balance of essential fats. It also includes medium-chain triglycerides, which serve as an alternate energy source without fat storage.

**Potassium and magnesium.** The two minerals are essential to bodybuilders, and a number of scientific studies verify that taking them increases lean muscle mass rapidly. Remember, the more muscle you have, the more calories your body burns.

No aspartame. Headaches and other health-related maladies have been linked to aspartame, which is why many supplement manufacturers are switching to sucralose as a sweetener. Sucralose was recently approved by the United States Food and Drug Administration (FDA), and by the Joint FAO/WHO Expert Committee on Food Additives (JECFA). It has been consumed by millions of people internationally since 1991 and is backed by more than 100 scientific studies conducted over a 20-year period, which have conclusively determined that sucralose is safe. It’s approximately 600 times sweeter than sugar, and that means almost zero calories in a serving and very little, if any, insulin response.

Now you have a better understanding of how Adipokinetix, Thyro Stak and Muscle Meals can work together and form the core of your fat-burning-supplement arsenal. To make it easier for you to experience that synergistic combination, call 1-800-447-0008 and ask for the *IM* Research Team Fat-Burning Special. It’s an unbelievable deal. Here’s what you’ll get:

While bodybuilders know about testosterone’s ability to make people frisky, they use it to jack up muscle mass, aggression and strength. Testosterone can make you an animal in the gym and help turn your body into a lean, mean mass machine.

The best pro-hormone available in cyclodextrin form is 4-androstenediol. It's a direct precursor to and metabolite of testosterone; however, it converts much faster and more efficiently than other pro-hormones.

- Four 20-packet boxes of Muscle Meals (a \$240 value).
  - Three 180-capsule bottles of Adipokinetix (a \$105 value).
  - Three 180-capsule bottles of Thyro Stak (a \$120 value).
  - An *IRONMAN* Training & Research Center T-shirt.
- All for only \$229.95 (you save more than \$235).

Add it all up and the retail value comes to more than \$465, but you get it all for only \$229.95 plus shipping and handling. That's more than half off. In other words, you save more than \$235 for a three-month supply of three of the best fat-burning/muscle-sparing supplements available—and all you have to do is give us feedback on the products via the questionnaire that comes with your order and before and after pictures to use in an upcoming feature. If you don't feel particularly photogenic, you can skip the photos, but we do want extensive feedback and comments after you make your spectacular progress, with your abs resembling carved chunks of granite. (Before and after photos are a big plus, however, so get them if you can.)

Call 1-800-447-0008 immediately and ask for the *IM* Research Team Fat-Burning Special. We'll even throw in an *IRONMAN* Training & Research Team T-shirt—don't forget to give us your size—and we'll rush you your supplements to test. Join the Team, test hot new supplements and get your physique ripped and ready. Don't be caught with your abs covered by a blanket of fat. Call now!

### IRONMAN Research Team 5: T-Boosting Special

When you think about anabolic hormones, testosterone should be first on the list. It's been injected, taken orally and even taken through a patch delivery system, usually to increase libido. While bodybuilders know about the hormone's ability to make people frisky, they use it to jack up muscle mass, aggression and strength. Testosterone can make you an animal in the gym and help turn your body into a lean, mean mass machine.

Synthetic testosterone has been banned by most athletic organizations, however, and it can have some undesirable side effect, like hair loss and acne. It's much safer to coax your testosterone higher with supplements like tribulus terrestris, essential fatty acids and pro-hormones, specifically the new sublingual cyclodextrin complexes that are more effective and safer at lower dosages than the encapsulated oral pro-hormones of the past.

### The Latest, Greatest Pro-Hormone Innovation

Yes, pro-hormones are chemical compounds, but with the new sub-

lingual cyclodextrins, the pro-hormone enters your bloodstream immediately via the tissues in your mouth, bypassing the liver, so you can get optimal effects from small doses—only 25 milligrams taken two to three times a day. Low dosage is one reason side effects are few and far between with the sublingual cyclos; the fact that they bypass the liver is another. Oral pro-hormones, on the other hand, disintegrate in the stomach and then make their way to the liver, where they're almost completely deactivated—most estimates suggest only 5 percent of an oral dose remains active. As the liver is also the place where a lot of the aromatization enzymes reside, the possibility of side effects is much higher with encapsulated oral pro-hormones. Fortunately, the new sublingual cyclodextrins and their direct-to-bloodstream delivery bypass that problem.

The best pro-hormone available in cyclodextrin form is 4-androstenediol. It's a direct precursor to and metabolite of testosterone; however, it converts much faster and more efficiently than other pro-hormones. Here's how Patrick Arnold, the scientist behind so many pro-hormone innovations and the president of LPJ Research, explains cyclodextrin technology:

Cyclodextrins are a form of carbohydrate, or sugar, molecules linked together. They're formed by an enzymatic synthesis that starts with starch. The enzymes, which are called transglycosidases, are derived from bacteria, and they couple the starch molecules together to form a truncated conical molecular structure with a hollow cavity inside. Each cyclodextrin molecule looks like a cheerleader's megaphone.

What make the cyclodextrin molecules so interesting to us—and to the drug industry in general—are their unique properties. The cyclodextrin "cone" is just about the perfect shape and volume to fit a steroid molecule inside. Chemically, the inside of the cone is nonpolar, meaning fatty, or oil-like, which allows it to latch onto the steroid molecule. The outside of the cyclodextrin cone, however, is polar, meaning waterlike.

When a steroid molecule and a cyclodextrin molecule link up, they form a 1-to-1 complex. Think of the cyclodextrin as a molecular "condom" for steroids. The remarkable thing about it is that it's water-soluble. So, while steroids themselves won't dissolve in water, a cyclodextrin-and-steroid complex will, which significantly increases its bioavailability over standard oral administrations.

Cyclo-Diol by Ergopharm is the number-one cyclodextrin pro-hormone on the market. Studies have shown that cyclodextrin complexes are the future of pro-hormones, safer and more effective than any other form.

### Tribulus Synergy

Bodybuilders have been using the herb tribulus terrestris for years as a natural anabolic. Trib can stimulate luteinizing hormone (LH) pro-

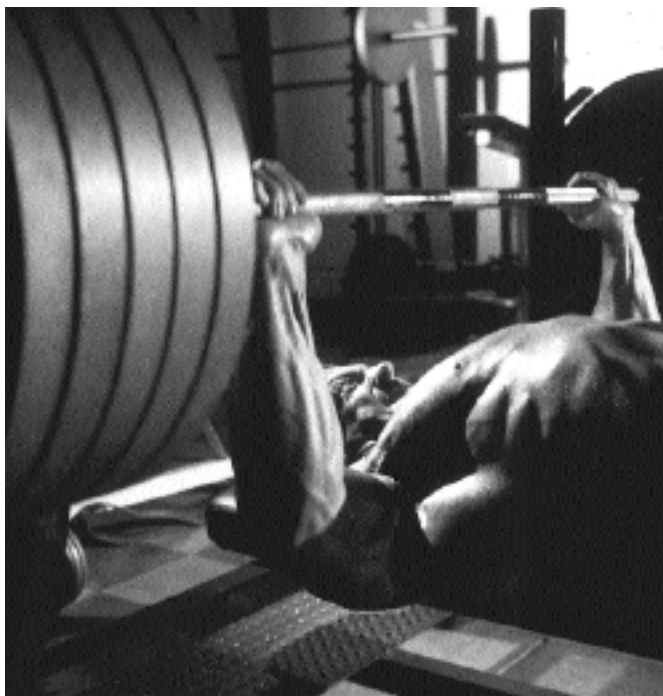
Research conducted by Balco Labs on strength athletes shows that ZMA's precise combination of zinc, magnesium and vitamin B6 can increase total and free testosterone levels by 30 percent.

The results of the double-blind study showed that the group that got oral magnesium supplements had significantly greater strength gains than the control group. Other studies show that serum magnesium levels may be reduced in response to strength training.

duction from the anterior pituitary gland, which in turn stimulates testosterone production. Clinical studies have shown that trib can increase free testosterone levels by as much as 40 percent.

The newest trib supplement on the market is Muscle-Link's TMZ, but it's far more than just tribulus. It also contains a number of other synergistic compounds that can help boost testosterone. The following is an explanation of those other ingredients from Rehan Jalali and Sofia Ghani, Pharm.D.:

**Muira puama.** This is an herb that's also known as potency wood. It's native to Brazil and has been used as a powerful aphrodisiac and nerve stimulant for many years. A French study done at the Institute of Sexology in Paris under the direction of Dr. Jacques Waynberg, one of the world's foremost authorities on sexual dysfunction, involved approximately 262 patients who complained of impotence and lack of libido. The results showed that muira puama supplementation had a tremendous positive effect in the majority of the subjects. It seemed to correct impotence and improve sex drive through an unknown mechanism, but that effect may be due to increases in testosterone levels or,



possibly, a positive effect on nitric oxide (NO) levels, which would improve erectile function.

**ZMA™.** This is an exciting new vitamin-and-mineral combination. It's a special combination of zinc, magnesium and vitamin B6. The zinc is specifically formulated as zinc aspartate and zinc mono L-methionine, which makes it incredibly bioavailable because of the two forms of chelates. The magnesium is also found in a chelated form bound to aspartate, which makes it very bioavailable as well. In fact, the magnesium and zinc are bound together to the aspartate, which can also, chemically speaking, enhance absorption, meaning you get more of their benefits.

ZMA is the creation of Balco Labs and Executive Director Victor Conte, who's been studying the effects of minerals and trace elements for more than 15 years. Research conducted by Balco Labs on strength athletes shows that ZMA's precise combination of zinc, magnesium and vitamin B6 can increase total and free testosterone levels by 30 percent. That study, which has been accepted for publication in the *Sports Medicine, Training, and Rehabilitation Journal*, showed that nightly supplementation with ZMA increased strength and power as well.

A 1996 study titled "Zinc Status and Serum Testosterone Levels of Healthy Adults" by Ananda Prasad, M.D., Ph.D., that was published in the journal *Nutrition* showed that taking 30 milligrams of supplemental zinc daily doubled the testosterone levels in six months of healthy men who were experiencing moderate zinc deficiency. Now, that's a testosterone booster! In addition, zinc has been shown in several research studies to increase growth hormone and insulinlike growth factor 1 (IGF-1) levels, and it has antioxidant activity that helps support the immune system.

Magnesium is a macromineral that's involved in more than 300 enzymatic reactions in the body, including glycolysis, the Krebs cycle, creatine phosphate formation, nucleic acid synthesis, amino acid activation, cardiac- and smooth-muscle contractability, cyclic AMP formation and, most important for strength athletes, protein synthesis. Magnesium is a versatile mineral that has some major implications for athletes, and it's been studied quite extensively. It competes with phosphorous and calcium for absorption in the intestinal mucosa, which is the reason you don't want to take magnesium together with calcium and phosphorous.

Magnesium is also a cofactor of the enzyme creatine kinase, which converts creatine into creatine phosphate, or phosphocreatine, the storage form of creatine. Since creatine monohydrate supplements are extremely popular and have been proven effective, magnesium may be an important mineral in helping to optimize creatine function.

As for magnesium's key role in protein biosynthesis, it's necessary for the activation of amino acids and helps "make" proteins. In other words, protein synthesis depends on optimal magnesium concentra-

Protein synthesis depends on optimal magnesium concentrations. It's hypothesized that low magnesium levels may negatively affect protein metabolism and may result in diminished strength gains in a structured workout regimen.

Getting a balance of the essential fatty acids (EFAs) can improve the action of insulin, decrease muscle breakdown, increase growth hormone secretion and optimize hormone production.

tions. It's hypothesized that low magnesium levels may negatively affect protein metabolism and may result in diminished strength gains in a structured workout regimen.

Increased losses of magnesium from the body have been seen during and after exercise, and athletes do seem to have magnesium deficiencies. One 1992 study published in the *Journal of the American College of Nutrition* titled "Effect of Magnesium Supplementation on Strength Training in Humans," studied the effects of a dietary magnesium supplement on strength development in 26 untrained subjects during a seven-week strength-training program. The results of the double-blind study showed that the group that got oral magnesium supplements had significantly greater strength gains than the control group. Other studies show that serum magnesium levels may be reduced in response to strength training, and it's been noted that maximal contraction of the quadriceps correlates positively to serum magnesium status.

The final ingredient in the ZMA formula is vitamin B6, which is also known as pyridoxine and has some major influences on protein synthesis. The coenzyme form of the vitamin is associated with a vast number of enzymes, the majority of which are a part of amino acid metabolism. It's necessary in glycogen catabolism to unlock carbohydrate energy, and vitamin B6 has been shown to diminish the actions of certain steroids such as cortisol.

TMZ is obviously a state-of-the-art natural testosterone booster, one that can complement any pro-hormone regimen.

#### Essential Anabolic Fats

The new line on fats is that there are good ones and bad ones. Saturated fat, for example, has been shown to increase cardiovascular disease, and it's the primary reason dietary fat has gotten such a bad rep. Good fats, however, include omega-3 and omega-6 fatty acids, and they can do wonders for health, athletic performance and muscle growth. Because of the popularity of lowfat diets, however, most people are deficient in them, especially athletes.

Getting a balance of the essential fatty acids (EFAs) can improve the action of insulin, decrease muscle breakdown, increase growth hormone secretion and optimize hormone production. In fact, noted bodybuilding author and researcher Dan Duchaine has said that EFAs are the most anabolic legal supplement available.

The new Omega Stak from Muscle-Link contains a perfect balance of the essential fats. While the EFAs in this product used to come from hemp oil, that's no longer the case. Omega Stak has been reformulated, and now all the EFAs are derived from sources like flaxseed oil, among others. That means there's no more threat of failing a drug test. It's completely safe and legal and still has a perfect balance of EFAs.

Using Omega Stak along with Cyclo-Diol, the best cyclodextrin pro-hormone, and TMZ, the new tribulus-zinc-magnesium-muira puama complex, should give you a blast of muscle size and strength that's like nothing you've never experienced. All three ingredients of this synergistic testosterone-boosting combo are available at health food stores or by mail order from various companies, but we want to make it easier for you to try it. We're offering all three in the *IM* Research Team T-Boosting Special. Here's what you get:

**Cyclo-Diol, two bottles, 60 25-milligram lozenges in each, a \$99.90 value.**

**TMZ, two bottles, 120 capsules in each, a \$79.90 value.**

**Omega Stak, two bottles, 270 1,000-milligram capsules in each, a \$79.90 value.**

**All for only \$149.95 (you save \$110).**

Add it all up and it comes to about \$260, but if you call 1-800-447-0008 and ask for the *IRONMAN* Research Team T-Boosting Special, you can get all of the above for only \$149.95, a savings of \$110. Call now and take advantage of the *IM* Research Team T-Boosting Special. We'll even throw in an *IRONMAN* Training & Research Team T-shirt—so don't forget to give us your size. We'll rush your supplements to you to test so you can experience firsthand why testosterone is the king of the anabolic hormones. Join the Team and get ready to grow as you've never grown before.

Noted bodybuilding author and researcher Dan Duchaine has said that EFAs are the most anabolic legal supplement available.

