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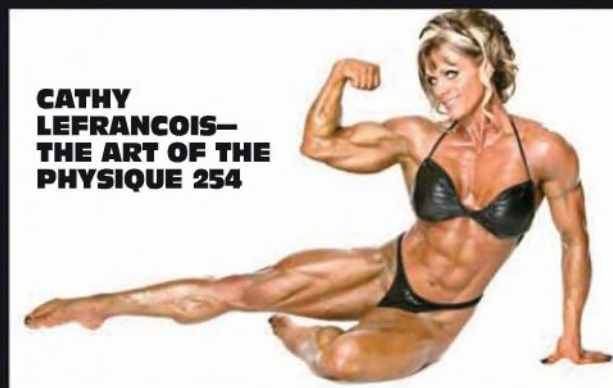
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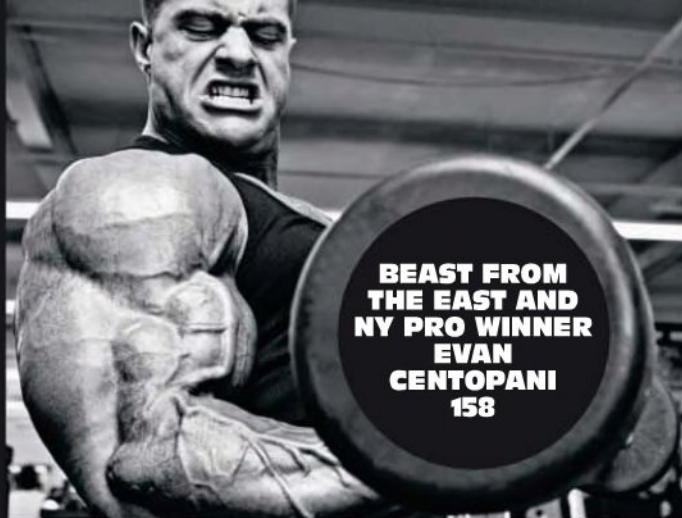
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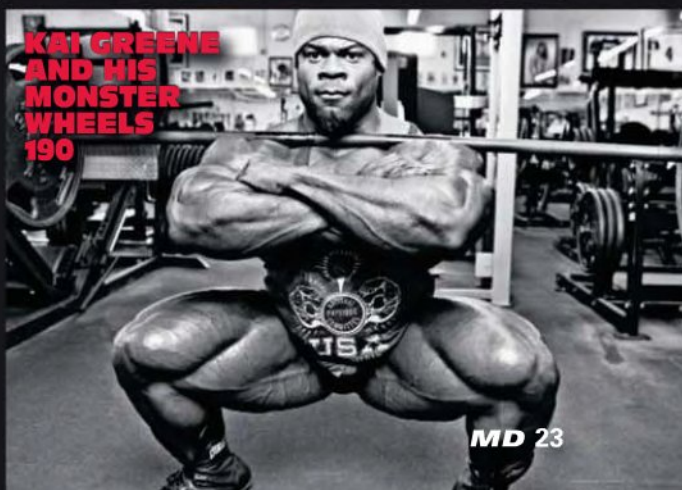
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editor's letter

By Steve Blechman Publisher & Editor-in-Chief

THE FUTURE OF BODYBUILDING!

We stand at a great crossroads of muscular development, where all things are possible— a point in time where old-school, hardcore, balls-to-the-walls dungeon

muscle torture meets today's new technology of chemical enhancement, nutrient timing and scientific training principles. Never before have we been privy to the caliber of information, performance supplementation, specialized workouts and cold iron as what's available to us today— and never before has this synthesis of old-school and new-school been as comprehensive and capable of creating the bodybuilding *beasts* we can expect to see in the future.

We at MD are **proud** of the company we keep; proud of our boy Evan Centopani, whose triumph at the New York Pro was something we all felt deeply and took pride in; proud of our support of women's bodybuilding, and the fact that we are paving the way to establish their well-deserved place in the sport; proud to bring you the training journey of each massively-pumped MD athlete, as we all count down to the Mr. Olympia. The future of bodybuilding is before us— and it looks clear, sharp and as well-defined as the legs of Kai Greene, the shoulders of Dennis Wolf, and the arms of Cathy LeFrancois.

We lead off this issue with our own Evan Centopani, fresh from his New York Pro win. Twenty-seven-year-old Evan unveiled a retooled version of his physique on May 16th and dominated onstage with bigger, harder muscles than he's ever shown before. After training with Oscar

Ardon, whose credo is, "Bodybuilding is about knowing what to do, how much to do it, and when," Evan brought not only bigger wheels and a more refined chest and back to the table— he also brought the power of *belief* in himself— and

he brought home his pro card! Read "Evan Centopani: The Future of Bodybuilding!" beginning on page 158 for his exclusive interview with Ron Harris. And don't miss Evan's description of a day in his pre-contest life in his column, appropriately renamed "Beast from the East," on page 370.

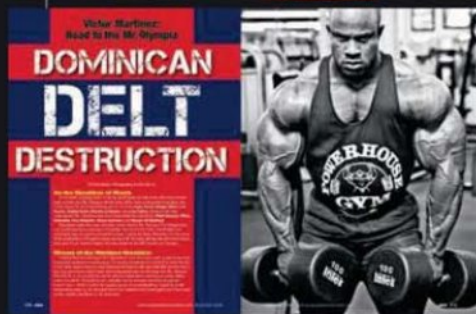
Cathy LeFrancois leads the way into the future of women's bodybuilding, starting on page 254, in "The Art of the Physique," by Cheri Owen. Female bodybuilders have emerged from hidden corners of the sport to stand proudly in the limelight alongside their brothers, gaining well-earned respect and recognition for their hard work. 'Power Cat,' as Cathy is known to her peers, brings a chiseled physique, graceful stage presence and elegant posing routines to her pro career, as well as the motivation to produce her own weekend training and diet DVDs— and envision being the future ambassador of women's bodybuilding. "I am proud to be the most popular female bodybuilder," says two-time New York Pro winner Cathy LeFrancois— and we're proud to feature her.

'The Predator' is ready to roll his monster wheels into Vegas! "Kai Greene: Road to the Mr. Olympia," on page 190 gives us the leg-blasting routine that created the freaky detail, separation, and most notably, those incredible, otherworldly, zipper-like cross-striations on his quads that Kai is known for. The program he uses is quite intensive and



unorthodox, including front squats, Jefferson lifts, walking lunges, stiff-leg deadlifts, and his own form of improvised 'butt blasting.' Could legs be his secret weapon at the Mr. O? Stay tuned!

The Road to the Olympia continues with Dennis Wolf's "Big Bad Wolf Back Attack!" on page 204. "In my first year of training, I hardly did anything for my back," says Wolf, "My shoulders and my quads started to grow." And Dennis takes a tremendous amount of shit for not having one of the best backs in the IFBB. So what's the most effective exercise Dennis can name for adding mass to his back? Barbell rows— and he is a stickler for strict form, pulling the bar to a very low point on his torso. "My upper back has good size now, so I focus everything on the middle and lower lats," says Wolf, whose tenacity earns him props for a job well done!



Victor Martinez performs "Dominican Delt Devastation!" beginning on page 218. Shoulders make the man— and they *really* make a Mr. Olympia. Victor Martinez has some of the best delts in the game today. His V-taper is *insane*— he even posts on the MD forum as 'Vshape.' So how did the 'Dominator' develop these sick delts? Beginning with the historic moment that found him stealing a library copy of *Arnold's Encyclopedia* at the age of 13, up through the years of developing his current routines, Victor Martinez has taken his shoulders from very good to truly *great*.

Branch Warren's road to the Mr. Olympia involves "Building a 'Barn Door' Back and Boulder Shoulders!" and it all begins on page 232. Branch plans to kick some serious ass at the Mr. O this year. After a freak accident tore his triceps last year and his plans for the O went up in

smoke, he rallied at the Arnold Classic. Now he's hungrier than ever, and pouring blood, sweat and tears into his back and shoulder routines. Best exercises for back? "Deadlifts, barbell rows, dumbbell rows, and pull-ups." For shoulders? "Military presses, lateral raises, rear laterals and upright rows." Will he bring home the Sandow? With his drive and determination— I wouldn't be surprised!

The rest of the book is packed to the rims as usual, with the latest breaking research and cutting-edge information from the best in the business— including the best diet for drug-free vs. chemically-enhanced bodybuilding. See you next month! ■

Cover photos of Evan Centopani and Cathy LeFrancois are by Per Bernal

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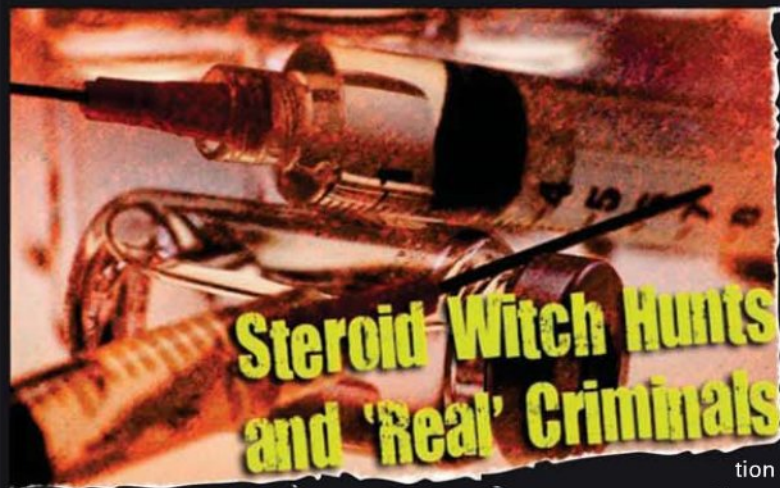
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SHAWN RAY'S Industry Insider Buzz

By Shawn Ray



There has been a rash of steroid-related incidents in Major League Baseball and other sports, which begs the question, "What's it all mean?" The federal investigations taking place across America, sweeping up some of our sport's biggest heroes— effectively dislodging them out of Hall of Fame contention and dragging their good names into ugly courtroom deliberations, only to fall short of any real convictions— is just plain wrong and a waste of tax dollars.

Basically, it's a 'supply and demand' issue among adults who choose what they want to put in their bodies, just like tobacco or alcohol— the difference being that steroids are classified as a Class III substance and are illegal, while some of the leading causes of death are alcohol- and tobacco-related. Hmmm.

Now **Barry Bonds, Roger Clemens, Mark McGwire, Marion Jones, A-Rod** and company can be thrown in with the 'real' criminals of the world, not to mention some of our most famous bodybuilders who 'use' but don't distribute for sale.

At the end of May 2009 in Houston, Texas 'Operation Farmacia de Juicy Phruit' yielded approximately 50 individuals— including professional bodybuilders, gym owners, personal trainers and even pharmacists who are in custody from at least three states including Texas, California and Georgia. The three-year operation could involve as many as 200 individuals! This is not even a follow-up to 'Operation Raw Deal,' which went down last year— it's an addition to it.

Just prior to this news breaking, there was another big bust in Lakeland, Florida involving a married couple where deputies seized \$200,000 worth of steroids and other illegal drugs after they raided the couple's house. The deputies also seized several loaded firearms. Richard Thomas told detectives he was the "biggest steroid dealer" in central

Florida and said he supplied performance-enhancing drugs to professional baseball, football and hockey players, as well as other athletes. He said he provided steroids to members of the Washington Nationals and Washington Capitals. Major League Baseball and NHL officials are investigating Thomas' claims.

When you combine these 'witch hunts' with what happened at the Belgium Bodybuilding Championships in April, where doping officials showed up at the contest and the bodybuilders fled to avoid being tested— effectively canceling the contest— it gives us all reason to 'pause' and wonder if we are heading in the right direction as a sport and a people.

These types of busts are becoming routine and almost commonplace in all sports. I'm all in favor of getting dealers off the streets, especially those who are involved with the sale and distribution of narcotics and firearms— but to say a professional athlete is a 'criminal' for using performance-enhancing drugs like steroids is a stretch, to say the least.

If there are rules that prohibit the use of steroids in sports, that's one thing. Where there are no rules prohibiting their use, it's another thing altogether, right? To put things in perspective, 'the law' is being broken since steroids are illegal— whether or not a sports team or organization has banned them. Starting to see the big picture here?



Road to the Oympia

And so it begins, a string of IFBB pro contests and Olympia pro qualifiers. It all starts with **Dexter Jackson's** 202 Pounds & Under Pro on August 1st in Jacksonville, Florida. Then there's the PBWTampa Pro from **Tim Gardner** in Tampa, Florida on August 8th. This is followed by the Europa Pro, hosted by **Ed** and **Betty Pariso** in Dallas, Texas on August 15th. Wrapping things up is the Atlantic City Pro in New Jersey, promoted by **Stokely Palmer**, on September 12th.

These shows will bring everyone together in Las Vegas on September 24th- 27th for Joe Weider's Olympia Weekend 2009. For tickets or information on the biggest weekend in bodybuilding, visit www.mrolympia.com.

PHOTOGRAPHY BY PER BERNAL and BILL COMSTOCK

Is There A Guru In the House?

There is an ever-growing trend among bodybuilders, figure and bikini competitors— they are working with trainers/gurus more so now than at any other point in this industry! Popular 'go to' guys like **Charles Glass, Hany Rambod, George Farah, Oscar Ardon, Kim Odo, Johnny Stewart, Chad Nicholls** and **Mike Davies** are commonplace. What is lost, however, is the time when athletes trained their butts off and stepped onstage and we saw a more 'true' reflection of their hard work and independence.

That said, we are in an age when the above-listed names can no longer be ignored. Their services are invaluable to many top-level athletes— some of whom credit their trainer/guru for nearly all their success. Many athletes feel that without such help, they would not have been able to progress to the next level. I will say this about trainers/gurus— they are definitely here to stay, when you notice the talent pool of people who employ their services: **Kai, Victor, Branch, Phil, Jay, Kevin English, Betty Pariso, Cathy LeFrancois** and many others!

From South Carolina to Miami via 'Hollywood'

The new 2009 NPC Jr. USA Champion, **Darren 'Hollywood' Glenn**, is not slowing down after his unanimous victory in South Carolina this past May. Darren is steamrolling toward the NPC National Championships in Miami, Florida in November, promoted by **Steve Karel**. Darren will be competing in the light-heavyweight division and seeking his pro card, following in the footsteps of previous light-heavyweight winners such as **Phil Williams, Vince Taylor, Darryl Stafford**, myself and more recently, **Peter Putnam** last year.

Diamond Gym— Hardcore and Historic

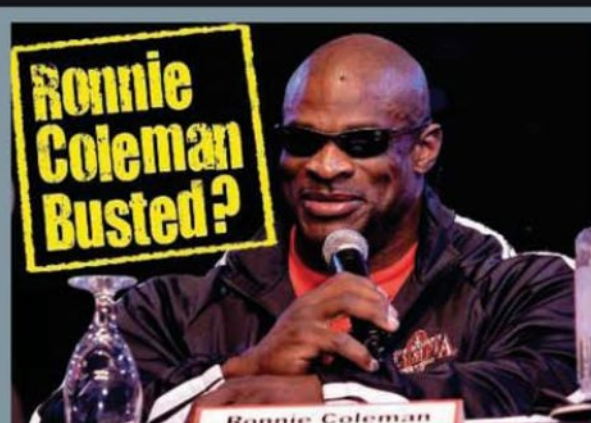
The world-renowned Diamond Gym in Maplewood, New Jersey— once owned by former Masters NPC National Champion and IFBB pro judge **John Kemper**— has a new owner, the great **Dwayne McDaniel**. Dwayne is the proud winner of titles such as Mr. New Jersey, Suburban Classic Champion, and Mr. Jr. USAs. This place was home to great bodybuilders like **Derrick Whitsett, Phil Hill, Jason Arntz, Guy Ducasse, Mat Duvall, Bill Grant** and other top national-level competitors. The 10,000-square foot, two-story gym is both hardcore and historic, featuring a mix of different types of equipment including free weights, machines, heavy bags, speed bags and lots of cardio equipment. For those of you who would like a serious workout, or if you're ever in the Jersey area, shoot Dwayne an e-mail at Dwayne@diamondgym.pro.

MD Supports Women's Bodybuilding

Steve Blechman, Editor-in-Chief and Publisher of Muscular Development, has made it clear that he is a supporter of women's bodybuilding! MD will be doing its best to showcase these ladies and their accomplishments in upcoming issues. The women have been all

but forgotten in the pages of many other magazines, as the evolution of the sport along with changing tastes of readers and fans has shifted back and forth. Now, with Mr. Blechman's support, these great athletes will get the respect they deserve— with Per Bernal shooting the best-quality photos of some of the brightest stars in our sport! MD journalist **Cheri Owen** has received tremendous feedback from these ladies for her 'Women's Bodybuilding' column in MD.

For more information on some of these ladies, check out my interviews on MuscularDevelopment.com with multi-winner of the Ms. International and Ms. Olympia, **Iris Kyle** along with IFBB pros **Dayana Cadeau, Cathy LeFrancois, Beni Lopez, Isabelle Turell** and **Rosemary Jennings**. The interviews with these amazing ladies are posted as '5 Questions with the Pros' in the MD Staff and Pros Section.



Busted! Eight-time Mr. Olympia **Ronnie Coleman** was pulled over for a speeding infraction, which lead to an arrest for "impersonating" a police officer. Ronnie, a 'retired' Arlington, Texas police officer, may have misrepresented his current employment situation with a State Trooper. Ronnie found himself poked fun at on Internet message boards and his 'mug shot' landed in the local newspaper— not the kind of publicity he was looking to receive after all those years of honorable service on the force. Ronnie says he was "shocked" and finds it hard to believe that this happened to him. There are always two sides to a story. Stay tuned.

Europa Show Added

Bodybuilding promoter extraordinaire **Ed Pariso**, out of Texas, has added another event to the 2010 calendar— a 'Europa' Show in Hartford, Connecticut slated for July 23rd and 24th. As it stands now, the pro men's prize money is \$50,000 and the weekend is scheduled to include women's pro bodybuilding, figure and bikini along with an NPC national-qualifying contest. As with all the Europa Sports-sponsored events, there will be a huge Expo hosting things like grappling, arm wrestling, 'Hottest Mom' contests, a model search, powerlifting and more! Check out the web site for details: www.visionstarinc.com/Hartford.

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Shawn Ray's— Industry Insider Buzz

Mr. Olympia and the 'Over-40' Club

We are halfway through the 2009 bodybuilding season, and so far these IFBB pros have found themselves in the winner's circle and are worthy of praise for their efforts:

Silvio Samuel, Kai Greene, Troy Alves, Eduardo Correa, Kevin English, Evan Centopani, Iris Kyle and Cathy LeFrancois. I may be going out on a limb here, but I feel the Mr. Olympia lineup is so deep that we could see a new Mr. Olympia champion in each of the next three years. You heard it here first!

Dexter Jackson, Toney Freeman, Dennis James, Darrem Charles and Troy Alves will all have one thing in common come this year's Mr. Olympia— the 'over-40 club!' While **Dexter** will be the newest addition to this cast of *aging*

world-class athletes, **Toney Freeman**, at 44, leads the group in years on planet Earth, although **Troy Alves** is the 'grandfather' (literally, folks) of the bunch at the ripe old age of 42!

While the return of the 'German Giant,' **Markus Ruhl** was widely accepted as a success and considered a stepping-stone toward his return to the Olympia stage, Markus said he is "not committed" to doing it following his third-place finish at the New York Pro this past May, and has his sights set on the Iron Man in January 2010. This decision could more than disappoint a few of his legions of fans, but his fellow competitors may be able to breathe a little easier in his absence from the Olympia stage this September— where he was bound to break a few hearts and shatter a few dreams of his colleagues.



Here's my 'pre-Olympia' picks for the top six, in no particular order: **Phil Heath, Dexter Jackson, Kai Greene, Victor Martinez, Jay Cutler and Dennis Wolf.** I believe that after this, the following guys will fight it out for the top 10, which leaves only four spots: **Toney Freeman, Melvin Anthony, Dennis James, Silvio Samuel, Branch Warren, Gustavo Badell, Moe El Moussawi and Hidetada Yamagishi.**

With these guys not in my top six, there is bound to be an 'upset' of one or two *big* names not making the top 10 this year— that's how deep the lineup is and how competitive this show has become. No one will be safe— if they come in 'off' or sleeping they will pay the price. This year's Mr. Olympia, more than any contest in recent years, is 'wide open' for any of my top-six picks to win without controversy, politics or luck! Stay tuned.

In remembrance of IFBB pro figure competitor **Amanda Jo Savell**, who was murdered by her ex-boyfriend one year ago (June 5th, 2008) in Plano Texas— we miss you!

S. RAY ■

Got a question for Shawn Ray? You can ask him directly on the MD website and have Shawn personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Staff and Pros, Q and A for Shawn Ray.

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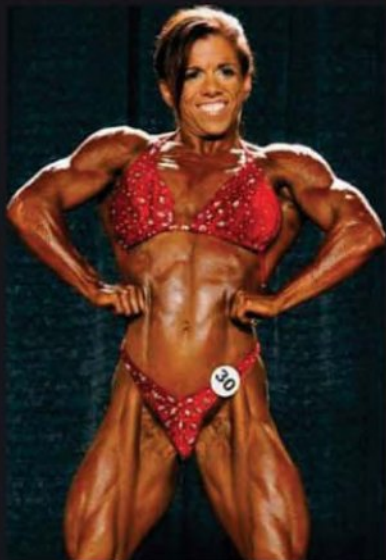


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THE GOSPEL **According to LEE**

By Lee Priest



Disclaimer:

He's got an opinion— actually a lot of opinions— and he's not afraid to express them. Being politically correct is not how Lee Priest rolls, so if you are easily offended, you may want to flip a couple pages!

New Drug Czar is Ready to Pounce on Prescription Drug Abuse!

Gil Kerlikowske, appointed by Obama just this May, is the new general in America's so-called 'war on drugs,' and one of his top priorities is to cut back the abuse of prescription drugs like the highly-addictive painkillers OxyContin and Percocet. "We get overly concerned about drugs coming in, but the pharmaceuticals are here already," he said in an interview with *USA Today*. He plans to push for the individual states to put prescription-monitoring programs in place. These will basically be databases that will make it easier for law-enforcement agencies to keep track of who is getting what and how much. Kerlikowske said he was stunned to learn recently that more people in the U.S. die from drugs than gunshot wounds.

So this guy was stunned that more people die from prescription drugs than gunshot wounds— maybe he watches too many shoot-'em-up action movies! Seems to me he should also look into the number of deaths related to alcohol and tobacco. The new idea is to give the drug companies more power, to closely monitor who is getting how much of their drugs. Not a bad idea, in theory. But don't forget, the absolute priority of all drug companies is profit. Is it really in their best interests to limit that profit by putting any limits on how much of their products are being used?

They are the ones who created the problem by formulating super-addictive drugs like OxyContin, also known as 'heroin in a pill.' What drug addict wouldn't drool over a single pill that can have them whacked out of their brains for half a day? The pharmaceutical companies are in bed with the U.S. government. So I find it hilarious that now they want to call the situation they made as a 'national health crisis.' It's going to take more than monitoring the flow of prescriptions to fix this. You already have legions of people hooked on these drugs, and where there is a demand, there will always be a supply. It's just like steroids. If the government makes drugs like OxyContin harder to get from legitimate sources, some chemist looking for a lot of extra cash will figure out how to whip some up in his little basement lab or something. I don't have an answer for this either, but this idea doesn't sound too well thought-out. At best, it's a new way for 'Big Brother' to keep better tabs on yet another aspect of your life.



With Fans Like These, You Wonder Why Bodybuilding is a Cult Sport?

You all know that I've been in this sport for most of my life now. Over the years I have seen a lot of changes.

Bodybuilding isn't what it used to be, and this time I am not talking about the physiques. Everyone has an opinion about what the sport needs to improve. What I would like to see change more than anything else is the attitude of many of the "fans" of bodybuilding. And yes, those quotation marks are intentional, because it's hard to consider some of these people fans in any real sense of the word.

When I was starting out in pro bodybuilding back in the early '90s, there was a sense of respect toward us. We met with fans at contests, seminars, and expos and returned that respect. But today, fans can be some of the most negative and hateful people toward us, far worse than any attitudes we get from the general public. They like to boast and brag that they can do everything better than the pros. How many idiotic threads have you seen with titles like "Me holding my own next to Mr. Olympia!" or similar nonsense. They say they are bigger than us, can get in better shape, pose better, would be able to interact with fans better than us. In short, they should be the ambassadors to the sport and not us, the actual professional athletes who they should theoretically support as fans of our sport.

I read the boards and I see these terrible attitudes. At times I wonder why I bother continuing to be part of this sport. No matter what I or any other pro does, we can never measure up to the expectations these people have. Heaven forbid we have a bad day. Then someone who catches us at a bad time will be all over the boards telling the world what a fucking prick we are! We can't come into a contest at less than 100 percent, or else we are all washed up. Our personal lives are dissected and ridiculed. Our girlfriends and wives are brought into it and insulted. If some fan doesn't think they are hot enough or are in shape, whew! They will let everyone know, and not in a nice way.

This sport is hard enough as it is. It's not a team sport. You get ready by yourself, doing all the training and dieting on your own. You step onstage alone and you are judged on what you bring that day. Your fellow bodybuilders don't support you, because we all want to win. That's when you really want and need the support of your fans. But it's not always there. Because for a lot of bodybuilding fans; no matter how hard you try, or

THE GOSPEL—ACCORDING TO LEE



how much you give of yourself, it's never enough.

I look at the sport today and see some definite changes for the worse. Camaraderie among bodybuilders has disappeared. You can't be friends with other pros because everyone is out for himself. But what I never expected to change was the support from the fans. I never expected to read the jealous, bitter, hateful stuff I read online now. The boards are full of expert opinions from guys who have never competed—and often, have never even *been* to a contest! But they are quick to criticize and mock competitors at the highest levels like the Arnold and the Olympia. The sad thing is, they would never say those things to your face. They come up to you at expos and pretend to be your biggest fan, just so they can go online the next day and tell everybody what an asshole you are, or how you're not so big in person, not very tall, you had a pimple or bad haircut, etc.

Just once, I would like to see one of these 'fans' be honest. Come

up and tell me you hate me! Let me know to my face that you can be a better bodybuilder than me (if only you took anywhere near the amount of juice, of course—because that's always the excuse). I would actually respect anyone who had the balls to do that! Just don't hide behind your keyboard and pretend you're so much better than every pro out there today!

Don't fool yourself into thinking you will ever be better than those you are constantly putting down. Only when you face them, and face your own shortcomings, will you realize everybody has their own shit to deal with in life. We all have days when we feel like being social, and other days when we just want to be left alone. Even a professional athlete is just another person like you, with faults and weaknesses. I am no better than you, and you are no better than me.

For those fans who have stood by this sport, who have given of themselves to improve bodybuilding, who have never hesitated to come to the defense of their favorite pro, and who have supported that pro through his off days as well as the successful times, I give you thanks from the bottom of my heart. You are why I still do this. You are why I will keep on doing this. Don't ever change!

Suspected Steroid Dealer Juiced to 'Be Like Arnold!'

It is truly mind-blowing to see the type of crap the media will jump on for a story. A bodybuilder named Richard "Andy" Thomas was arrested with over 200 grand worth of steroids, other drugs, and a loaded shotgun, assault rifle, and several handguns. He claims to be the largest steroid dealer in central Florida, and also purports to have supplied drugs to two professional sports teams I have never heard of: the Washington Nationals and the Washington Capitals.

Andy bitched that his two days in jail so far had been difficult since he is diabetic and couldn't monitor his blood sugar. The headline in the story I read about this man screamed: "Steroid suspect Richard Thomas juiced 'to be like' Arnold Schwarzenegger," as this is who he

credits with inspiring him to start bulking up back in his teenage days, though it was his own father who actually introduced him to steroids, according to his mom.



Polk County Sheriff Grady Judd was especially concerned with the fact that Thomas had said he had been importing drugs from countries such as Iran, Pakistan, Russia, China,

Spain, Mexico, and Germany to sell to professional athletes. Judd says Thomas was more than happy to identify and explain the various steroids they found in his home. Pointing at some oxymetholone (Anadrol), he told the horrified officers, "This is the stuff cops are afraid of. It makes you so strong and crazy you want to flip a car." Funny, I never once thought to do that when popping A-bombs. To Sheriff Judd's credit, he said protecting the integrity of sports is not his top priority. "If you can import anabolic steroids, what else can you import?" Judd said. "I'm more concerned about national security than professional sports." Frankly, I'm shocked that this last quote was printed, because most newspapers these days want you to believe that the fate of society hinges on cleaning up sports like baseball.

As for Arnold, I am sure the

PHOTOGRAPHY BY: PER BERNAL

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'Governator' loves to hear that even though he hasn't competed in almost three decades, people still give him the credit for inspiring them to use steroids. I wonder—if I decided to drive 150 miles an hour and wrecked my car, would anybody buy the excuse that I was just trying to be like my idol Jeff Gordon?

This Thomas character doesn't sound too credible to me. If he's such a big supplier, why did he mention two obscure teams instead of the New York Yankees or the Orlando

Magic? Doesn't every major league baseball team have a spring training camp in Florida? It sounds to me like this guy is just looking for attention, maybe even a book deal. His idiotic remarks about Anadrol show he has a penchant for exaggeration.

I do like the idea of putting more effort into national security instead of wasting billions and billions of dollars every year investigating, arresting, prosecuting, and imprisoning people for using and selling steroids. I think the average U.S. citizen is a hell of a

lot more worried about another 9/11 than he or she is about some superstar athlete using Winstrol or a bunch of gym rats on the juice. I mean really—do they think if they succeed in ridding the USA of all illicit steroid use, the country will breathe a giant collective sigh of relief? "Sure, we still have an economy in the shitter, soldiers in the Middle East dying every day, and the constant threat of terrorist attacks on our soil—but we finally took care of the real evil: steroids!"

A "Drug Dealer Protection Act" in New York State?

The governor and legislature in New York are strongly considering softening laws so that even repeat offenders convicted multiple times of trafficking in narcotics like cocaine and heroin could be put into treatment programs instead of sent to jail. Dealers would be eligible for probation after multiple prior convictions, and sent to rehab as long as they claim to be addicts themselves. After rehab, dealers could seek to have their cases dismissed unless prosecutors could prove that the traffickers had earned at least \$50,000 in profit.

Good luck with that, since most drug dealers don't accept credit cards or checks, only cash. They don't tend to keep detailed accounting records, either. The lawmakers also want to give judges the power to seal as many as



four convictions on a dealer's record, even if they decide later to be a foster parent, teacher, or work in a nursing home with your elderly loved ones.

You know I am no right-wing nut, but what happened to the three-strike law? What happened to paying for your crimes? This bullshit sounds like a 'get out of jail free card' for drug dealers. They even get free treatment in a rehab facility, whether they actually have an addiction or not. Of course they will all say they do! I don't know what the fuck these lawmakers are thinking. Do they have some special interest in softening the laws? Did the whole thing get started because some Senator or State Representative had a drug dealer for a son, and couldn't bear to see him go off to jail where his sweet little butt would be invaded more times than Palestine? If the people of New York State stand for this, they are out of their bloody minds.

The MD Block Party and the Brotherhood of Iron

Just when this Priest was having serious issues with his faith in the sport and the fans (as you read in my rant a bit earlier), I had it restored at the MD Block Party at Bob Bonhams' Strong and Shapely Gym in East Rutherford, New Jersey. For me to name all the cool people I met and hung out with that day would take pages, plus I would be sure to piss a lot of people off by forgetting to mention them.

We had a nice mix of pro bodybuilders, amateurs, recreational lifters, and their families. There was music, food, and fellowship in abundance. The day went by in a whirlwind. So many people wanted to meet me, chat for a bit, or take a photo with me, and I was happy to oblige. Bob has an incredible gym, which was celebrating its 25th anniversary, and hopefully it will be around for another 25.

I have to get back there to train one of these days, as it has one of the most impressive collections of hardcore equipment I have ever seen. Seriously, for anybody who loves training, Strong and Shapely is like freaking Disneyland. The Boss, Steve Blechman, was mingling with the crowd all day, and Gregg Valentino was doing interviews for the live streaming video filmed by MD's own Robbie Durand.

Since my buddy Shawn Ray couldn't be there, we had someone wear a paper cut-out mask of him so I could smash a key lime pie into it. I do hate to waste a tasty dessert, but this was for a good comedic cause. The atmosphere was not what you would expect with so many bodybuilders gathered in one place. For once, I didn't see any dirty looks or feel any hostile vibes. There was a sense that we were all in this crazy thing called bodybuilding together, and like it or not—we're all one big (dysfunctional) family!



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THE GOSPEL— ACCORDING TO LEE

Stupid Question of the Month!

Hey Lee, I have been wanting my girlfriend to have anal sex for the whole four years we've been together. Just about every day I watch one of my porn DVDs that are all anal action, and it drives me nuts that my girl refuses to give up the booty! She very much believes her butt is 'exit only.' The couple times I have tried, she has screamed and we had a big fight and that was the end of sex that time. I know you have had many women this way, so can you give me some advice on how to convince my gal to let me up the back door?

This is a touchy subject with a lot of women. I have found that if you have a great lady and she's really into you and into sex, you will get butt love. The 'exit only' excuse is old. If they want to make that argument, why put your cock in their mouth, or why go down on her? Isn't your mouth only for eating food, not genitals?

For a lot of guys, regular intercourse with the penis and vagina can get boring after a while, especially with the same woman. When your lady says no, do you ask why or get some background on her problems with going anal? Maybe she used to do it with ex-boyfriends or even one-night stands because she was more adventurous and willing to please back then, and now she's settled down with you, a 'nice guy,' and doesn't do that stuff anymore. If indeed that's the case (obviously I am just making a wild guess, based on my expert knowledge of female psychology and behavior), then that's bullshit! If she gave up her ass to guys she didn't love but won't let you do it even though she loves you and maybe even wants to marry you, you have every right to be upset.

Listen, you have to be nice about the subject and take things slowly. Anal sex will hurt her at first, just like her vagina probably didn't feel too comfortable the first time it was penetrated either. Losing her 'ass virginity' will have to be done slowly and with plenty of lubricant like Astroglide.[®] Unless you have the world's largest dick, it can be done. Look, if a 10-pound baby can squeeze out of her hoo-hah, your penis can make it up the last few inches of her colon. She needs to relax the sphincter fully or else it won't work.

I've been with girls who loved anal and wanted to do it every time we had sex, but if they were tense and didn't relax it was a— forgive me— pain in the ass trying to get it in! I suggest you have plenty of foreplay and at least some regular sex first, then start slowly and gently massaging and probing the anus with your finger. Proceed from there, and whatever you do, don't start thrusting away like a jackhammer first thing. Do that and I guarantee you'll probably never get another chance.

Once you get a rhythm going, her butt will really loosen up and you can both just enjoy it. Some women even have spectacular orgasms from anal sex. If none of this works, you'll have to decide how important this really is to you. Would you break up with her and take out an ad on Craigslist looking for a gal eager to take it up the wazoo? Or will you accept that you will have to have anal sex only in your imagination and watch it in pornos? That's a question even the Great and Powerful Priest can't answer for you. ■

Can't get enough of the outspoken Mr. Priest? Go to www.musculardevelopment.com forums, and check out The Lee Priest Zone, his very own section of the No Bull forum.

**For a lot of
guys, regular
intercourse with
the penis and
vagina can get
boring after a
while, especially
with the same
woman.**



muscular development.com

By Gregg Valentino

*I must have gotten up on the wrong side of my cage this morning... YA KNOW, AFTER DEALING WITH PEOPLE ON THE INTERNET HERE'S MY NEW MOTTO, Never settle with words what you can accomplish with a flame thrower!!!... RELAX, I'M JUST PLAYING, I LOVE ALL MY NEW MD FORUM BUDDIES, AS A MATTER OF FACT, THE NEW MD TEENAGE FORUM IS KICKING ASS... AND, WE EVEN ADDED >> Teen Training Journals— For Teens only. Teens get to Create and maintain their own training journal right there on the MD forum! Log meals, lifts, schedule and more. Create a plan for success, share suggestions and advice for other teens!!!!... THANKS TO OUR SUPER FORUM LEADER ADINA aka FIT ADINA... YO', ADINA IS GREAT WITH THE TEENS AND NOW, THANKS TO HER, THE MDTEEN SECTION EVEN HAS FEMALE TEENS WHO ARE GETTING INVOLVED— THANKS TO ADINA... OOOPS, AND LET'S NOT FORGET A FEW IFBB PROS WHO HAVE BEEN HELPING OUT THE TEENS > SHAWN RAY & ERIK FANKHOUSER aka 'THE HOUSE' AS WELL AS NATURAL PRO & MD COLUMNIST LAYNE NORTON aka str8flexed ARE ALL THERE DAILY, ANSWERING THE TEENS' QUESTIONS... IT'S A DRUG-FREE ZONE FOR TEENS ONLY AND THEY ARE ALL LOVING IT... AND NOW, I GIVE YOU A "DIETING" QUOTE FROM LAYNE NORTON TAKEN FROM THE TEEN SECTION... *To be honest I don't have a 'typical' contest prep diet. It really depends upon one's individual metabolism. If I'm working with 75 different clients, it is likely that some of their diets may be somewhat similar, but for the most part, many of them will be**



drastically different. Cookie cutter diets don't work. That's why you see so many guys who have only one type of diet they try to apply to everyone have very inconsistent results. As for myself, I typically do moderately high-protein (250-275g/day), moderately low-carb (200g/day), and moderately low-fat (50-60g fat/day). But that may change, depending upon how my body responds. I am not a slave to one diet. If something is not working, I change it. —Layne Norton ... WOW— A SMART GUY, THAT LAYNE NORTON... AND HOW ABOUT SHAWN RAY, HERE IS A TEEN QUESTION FOR SHAWN RAY... Shawn, do you

agree with Gregg's opinion in the video, when he suggests that overtraining is an exaggeration for teens and we're young and with all the natural hormones floating around it's OK to do that bit more in terms of volume... Yes, I agree with Gregg. Overtraining is a term I personally feel that was created for giving guys a "Way Out" take the Easy way out from putting in the WORK! If you train Balls to the Walls, you will know when you've had enough. I tried to take guys to their "Limits" which in turn forced me to dig deeper. Trying to make a guy quit or throw up in a workout is not easy. You have to be willing to *Walk the Walk* too, if you want to find out what your made of. I trained hard and got the desired results because I was willing to do what the other guys weren't. I arrived early and stayed late. I ate while others snacked. I slept while others played. I trained when others were at the party. I reaped what I sowed and I'm now enjoying the Fruits of my Labor because I put in WORK! Work Hard now and Play later!...S.R.



NOW, MD WOULD LIKE TO WELCOME EUGENE MISHIN TO OUR MD.COM FAMILY... EUGENE HAS HIS OWN Q&A THREAD ON THE MD STAFF & PROS FORUM AND HE IS GIVING OUT SOME AWESOME FREE ADVICE TO A LOT OF OUR MEMBERS... EUGENE IS A SMART HARD-WORKING GUY AND IT'S GREAT TO HAVE HIM ON OUR FORUM, ANSWERING QUESTIONS... AS ALWAYS, I WILL GIVE YOU A FEW TEASERS FROM THE MuscularDevelopment.com FORUMS!

Q. Would you recommend I cycle carbs? Or would 200-250 grams a day be good?

A. Yes, Cycle the carbs and your body fat will drop. Play around with the carbs, like day 1 200, day 2 100 and day 3 50 grams.

Q. Can you give me an example of your meals?? How many meals, how many protein and carbs per meals??

A. Meal #1— 14 egg whites with 3 oz. uncooked oats

Meal #2— 12 oz. chicken, turkey or fish with 1/2 cup dry brown rice

Meal #3— #6 same as #2
I keep my proteins at about 450 grams a day and carbs at 300 grams Day 1, 200 grams Day 2 and 100 grams Day 3. This is very old-school, but it seems to work for me. As I get closer to my show, things will change as my body changes. Alexander Vishnevskiy (from Russia) has been doing my diet with me sending him weekly pictures. He will be coming to NY the week of my show to work with me and dial me in. Still a surprise for me what he has planned. WE WILL SEE...

Q. When you're in the off-season, do you eat a lot of carbs every day?

A. Off-season No **CARDIO**, I keep the carbs about 1 grams per pound of bodyweight, 300-350 a

day, mostly brown rice, works good for my body, keeps me lean. For contest prep, 300, 200, 100 grams, with cardio, when I cycle the carbs, I see my body change and get lean. Cardio is between 45-60 min. a day

Q. It's obvious that you were 250+ in contest shape and you were on 250 grams of protein that you can still be very big eating 1 gram of protein per pound of body weight... what do you think?

A. I started at 320 pounds and should eat 1.5 grams per pound of bodyweight. But my diet was too little protein for BB. Carbs gave me energy to train when I felt like dying on fats only. I lost too much muscle and felt like death... Now my carbs change

every day and I leaned out and have energy. Both made me fuller, Protein to hold muscle and carbs for energy to train.

I LIKE THE WAY **EUGENE'S MIND** WORKS, I EAT A TON OF PROTEIN AND EVEN THOUGH I WATCH MY CARBS, I STILL NEED A GOOD AMOUNT OF CARBS TO KEEP ME GOING... **THE KETO DIET** WORKS FOR SOME, BUT **MOST** GUYS NEED TO **ADJUST THAT DIET**... ANYWAY, IT'S GREAT TO HAVE **EUGENE** ON THE **MD** SITE, HE HAS BEEN SO GREAT WITH ALL THE FANS, YOU GOTTA GO THERE AND TALK TO HIM YOURSELF... SEE YA ON THE MD FORUMS... AHHAH THE INTERNET... *I've come across decomposed bodies that are less offensive & more interesting than,,, UMMMMMM*

NEVER MIND!!!!!!!

NOW I GIVE YOU THIS MONTH'S BABE OF THE MONTH... SHE IS JUST **18 YEARS OLD** AND ALREADY A CHAMPION... SHE EVEN HAS HER OWN **Q&A** ON THE **MD TEENAGE FORUM**... HER NAME IS **AMANDA HARRIS** AND SHE IS A VERY FOCUSED YOUNG LADY WHO IS ALREADY A STAR... **YO' AMANDA** Do you know karate???... Cos damn girl, your body is really kickin'...



Name: Amanda Harris

Forum name: Amanda HarrisUSA

Age: 18

Zodiac sign: Gemini

Hometown: Conroe, Texas

Height: 5'3"

Measurements: shoulders 40, bicep 10 R&L, chest 31, waist 23 1/2, legs 18 1/2 R 18 1/2 L, hips 33 1/2, calves 11 1/4 L&R.

Eyes: Brown

Off-season weight: 125lbs

Competition weight: 115lbs

Favorite Food: Chicken and brown rice with green beans

Favorite Junk Food: Pizza

Favorite Quote: "In life... We are not born winners or losers, We are born Choosers."

Favorite Makeup: Mac

Sports/Activities/Hobbies: powerlifting, figure. For activities, I like to swim, play volleyball and basketball. My hobbies would have to be weight training.

Favorite TV Show: "What I Like About You."

Favorite Music: Hip hop, rap, rock and a little country.

Biggest influence in your life: I would have to say my dad (Mark Harris).

Favorite Body Part to train: Chest & triceps

Your best asset (body part): My whole body

Future Plans/Goals: My future



plans are to get my pro card in figure and to be able to step onto the Olympia stage. Hey, what's up everybody? I have really loved stepping over into the NPC and Figure Competition. This has been an awesome experience, having already competed in 4 shows, including the NPC JR USA this past year.

When I was 8 years old, I started lifting with my brother, 13, and my dad. I grew up in the gym. I started after I was diagnosed with scoliosis; my parents refused to put me through the surgery and the steel rods down



my spine, so we started lifting weights and building the support muscles in my back and after 10 years of very heavy lifting and 600+ chiropractic treatments I have had an 85 percent improvement in my spine. Do not listen to the myths of lifting heavy will stunt growth — that is a lie. I am the same height as my mom and the MRIs over the years showed no malformations of my growth plates. In fact, it actually promoted growth with me.

I would like everyone to know that I am humbled and feel very honored to have my own thread here in the teen forum. If I can help any of you, please

send me your questions. All you guys get your girlfriends on here and show them what clean eating and weight training can do for them. Help me educate females about weight training and let's do away with all of the crazy myths that have plagued our sports for so long. Weight training will not turn your chick into a man — impossible! Females do not produce enough testosterone to grow big muscles. Another myth: weight training will not stunt your growth. I am living proof, I have been squatting over 200 pounds since I was 10 years old and I grew to the same height as my mom. So get them on here and I will show them what weight training can do for them. Peace... **Amanda Harris**

I'm gonna take you by surprise and make you realize, Amanda I'm gonna tell you right away, I can't wait another day, Amanda I'm gonna say it like a man and make you understand, Amanda

OOOPS, SORRY... MY BAD... I GUESS I GOT CARRIED AWAY FOR A MOMENT THERE... I WAS SINGING THAT SONG BY BOSTON CALLED "AMANDA"... ANYWAY,,, **WOW!!!!**... HEY, **AMANDA**, I hope you know **CPR**, because you take my breath away... **THANK YOU FOR BEING PART OF THE MD FAMILY, I KNOW I'M A HAPPY GUY... YOU ROCK!!**

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500-Word Essay Contest

By David Burton

This month we have yet another female winner; the ladies seem to be taking over this contest! Our winner is known on the forums as "TheSpawn." She has close ties to the industry and as a result, felt compelled to pen this piece to get across her feelings about the sport. I was very impressed with the quality of this entry and saw a potential winner as soon as I read it. The author herself could well have a future in writing in this industry if she wants to. Here now is this month's winning essay.

Living with Bodybuilding

by TheSpawn

I've never been a part of this community. Never seen anything besides what I've read in fitness and BB magazines. But here I find myself, living with bodybuilding.

It's a side that I didn't expect to see. Or wanted to see on such an intimate basis. I want to believe there is friendship and loyalty in this industry. But that belief is fast waning. What I see is heartache, pain, betrayal. From my perspective, I have never experienced so much negativity. I see someone pouring their hearts into this sport. And in return, they receive ridicule. Snide remarks. They are called liars, cheats. Their characters are attacked. Their families are put in the line of fire. And support is hard to come by. When support is given, it comes with terms and conditions. Nothing is free. And the price paid is sometimes too high.

I want to believe there are good people in this industry. That when they extend their hand in friendship, they are not waiting with the other hand for a favor. It's just getting hard to recognize those who are true and real.

I am not writing this because I want to put down bodybuilding. I am writing this because today I live bodybuilding on a level different from a competitor. I see the anger, the sadness. I see the hopelessness, the pain. And I want to scream. And I want to shield them from this. But how do you shield them from something they love?

My acceptance is being tested. But my support is unwavering. I hope they can see that I will never doubt their abilities. That I see and recognize the hard work. The sacrifices made. The missed opportunities. And the loneliness they've experienced.

And that in the sport of bodybuilding, I am not just a fan. But a friend. Always.

This piece is a unique look inside the industry from the point of view of the wife of a popular IFBB pro. For those who do not know "TheSpawn" from the forums, her real name is Rhaine and her husband is none other than MD's own Lee Priest. Her essay is a real eye-opener. Rarely do we get to see the point of view of those who live up close and personal with the struggles of a top bodybuilder; further still we almost never get to see a point of view which forces us to remove our rose-colored spectacles and consider how hard life could be for a professional bodybuilder.

Normally as a fan we see pro bodybuilding as a dream, nothing but eating, sleeping and training, but Rhaine's piece tells us the other side of the story, we see

how shallow this sport can be and how it must be not only on those directly involved but also those loved ones around them. For those within the industry reading this it may be time to sit up and take notice, and take a long hard look at yourselves and maybe consider the quote from the bible "Do unto others as you would have them do unto you," because one day you may be made to regret the way you have treated those people. Rhaine's article has helped opened my eyes and I can only hope that it opens the eyes of others, too.

Well done then to Rhaine — aka "TheSpawn" — for being a deserved winner of this month's contest with this provocative, yet *honest* article. ■



MD **RESEARCH** **Training**

By Steve Blechman and
Thomas Fahey, EdD



Whole-Body Training Increases Testosterone and Androgen Receptor Activity

Muscle mass increases in direct proportion to blood levels of testosterone. Bodybuilders can increase testosterone levels by taking anabolic steroids or doing intense, whole-body weight training. Testosterone works by binding to androgen receptors in muscle cells. The steroid-receptor complex influences the cell nuclei (cell genetic centers) to increase protein synthesis.

Researchers from the University of Connecticut at Storrs found that whole-body exercise increased testosterone levels more than isolated lower-body exercise (knee extensions). The elevated testosterone levels increased androgen receptor activity during recovery from the workout, which would presumably increase protein synthesis and muscle growth. This study showed that intense, whole-body exercise triggers three processes that are critical for promoting muscle protein synthesis: 1) increased muscle tension, 2) increased testosterone, and 3) increased androgen receptor activity. This is important information for bodybuilders who want to maximize the effectiveness of their workouts. (*Journal Steroid Biochemistry and Molecular Biology*, 114: 195-199, 2009)

Amino Acid Availability Critical for Muscle Growth

Muscle mass declines gradually in middle age, a condition called sarcopenia. Muscle loss eventually leads to decreased strength and quality of life. Muscle is in a constant state of synthesis and breakdown and requires adequate protein intake to maintain size, even when overloaded through weight training. Amino acids that make up proteins serve as chemical signalers and building blocks for muscle proteins.

Stuart Phillips from McMaster University summarized how weight training and protein intake cause muscle growth. Leucine is the key amino acid for turning on muscle protein synthesis (mTOR pathway), but muscle hypertrophy grinds to a halt without the full complement of essential amino acids. Following intense resistance exercise, muscle protein synthesis occurs in direct proportion to protein intake, peaking at 20-40 grams. The mTOR pathway is most active in fast-twitch muscle fibers, which respond best to high-intensity weight training. Peak muscle growth occurs when you concentrate on these fibers by emphasizing high-stress training programs.

People over 40 years of age are less responsive to key amino acids, so they should consume protein often during the day to maintain muscle mass and prevent atrophy (muscle breakdown).

Older adults should combine weight training and adequate protein intake to preserve muscle mass as they age. (*Applied Physiology Nutrition Metabolism*, 34:403-410, 2009)

Feed Your Muscles If You Want Them To Grow

Muscle tension triggers key chemical pathways within muscles (i.e., mTOR) that stimulate protein synthesis and muscle growth. The availability of key amino acids in the blood such as leucine is also critical for turning on the mTOR pathway. The amino acids also serve as the building blocks for making muscle protein.

Researchers from the University of Birmingham in the U.K. Maastricht University in the Netherlands found that weight training increased protein synthesis best when the athletes were fed. They measured the incorporation of a labeled amino acid (carbon 13) in active leg muscles during one-leg exercise with the subjects either fed or unfed. You can maximize protein synthesis from strength training by maximizing blood amino acid levels during or after training. The take-home message is to feed your muscles if you want them to grow. (*Medicine Science Sports Exercise*, 41: 144-154, 2009)

Weight Training Increases Pain Tolerance

Vince Lombardi, the legendary Green Bay Packers football coach once said, "When the going gets tough, the tough get going." He knew instinctively that intense training improves physical and mental toughness and increases the capacity to withstand pain. More than 50 percent of Americans don't meet the minimum exercise recommendations of 150 minutes of moderate-intensity or 75 minutes of high-intensity exercise per week. One obvious reason is that they can't stand the pain.

An interesting study by Brian Focht

and Kelly Koltyn from Ohio State University and the University of Wisconsin-Madison found that a weight training workout increased pain tolerance. Time of day did not alter this effect. Other studies found that aerobic exercise had similar effects on pain tolerance. Don't let the pain of exercise get you down. You will get used to it. (*Journal Strength Conditioning Research*, 23: 891-897, 2009)

Moderate Squat Training Loads Develop Leg Power Best

Athletes and soldiers have been doing squats in one form or another for thousands of years, to improve athletic performance. Surprisingly, we don't know which training program causes the greatest transfer of strength from the weight room to power on the playing field. Most athletes assume that squatting 400-600 pounds will make them powerhouses on the football field or basketball court.

A superb literature review by Keir Hansen from New Zealand and John Cronin from Australia summarized studies on the effects of squat load on measures of leg power such as vertical jump, standing long jump, and sprint speed. Surprisingly, heavy squats or plyometrics by themselves did little to develop leg power. Moderate-intensity squatting (50 percent of maximum effort), particularly when practiced ballistically, developed power best. The authors recognized the limitations of published research.

Most studies lasted 12 weeks or less and used relatively untrained subjects. They suggested that a periodized training approach involving practicing specific skills, maximum overload, high-speed sub-maximum overload, and plyometrics works best for increasing power and performance on the playing field. It is difficult to say whether these results apply to elite athletes with exceptionally high levels of strength. (*Strength Conditioning Journal*, 31: 17-33, 2009)

Loaded Treadmill Running Improves Sprint Speed

Sprint speed in a straight line is mainly determined by how hard and how fast the athlete can push against the ground. Sprint speed is important in power sports such as football, soccer, basketball, baseball, and track and field. Unfortunately, it is extremely difficult to improve.

Ryan Ross and colleagues from the Department of Health and Exercise Science at the College of New Jersey found that loaded sprint training on a treadmill increased 30-meter sprint times on a track. Combining sprint training with a periodized weight-training program was marginally more effective than sprint training alone, but the differences were not 'practically' significant. Weight training alone had no effect on sprint speed.

The study showed that resisted sprint training on a treadmill can improve sprint speed on the track. This is important information for power athletes. (*Journal Strength Conditioning Research*, 23: 385-394, 2009)

Muscle Tension Promotes Protein Synthesis

Muscle tension and time under tension are critical for muscle protein synthesis and increases in muscle mass and strength. Skeletal muscle is a highly-reactive tissue that increases in size in response to overload, such as strength training, and atrophies in response to inactivity.

Espen Spangenburg from the University of Maryland, in a review of literature, summarized the effects of muscle tension and training load on muscle protein synthesis. Mechanical loading (weight training) turns on muscle protein synthesis by activating the mTOR-signaling pathway. Muscle tension also increases the movement of amino acids into

muscle cells, which form the building blocks for making new muscle tissue. Muscle tension also activates muscle growth factors, such as IGF-I to stimulate protein synthesis. Sensors in the muscle cell membranes detect muscle loading, which trigger chemical pathways that make new muscle protein.

Muscle tension, along with the availability of key amino acids and other nutrients and hormones, are key ingredients for promoting muscle growth. (*Applied Physiology Nutrition Metabolism*, 34:328-335, 2009)

IGF-I Binding Globulin Good Marker of Biological Strain During Weight Training

IGF-I is an important anabolic hormone that works with growth hormone to promote muscle hypertrophy. A portion of IGF-I is bound to a carrier chemical called IGF-I binding globulin. Bound IGF-I is less biologically-active than unbound IGF-I.

Bradley Nindel and colleagues from the U.S. Army Research Institute of Environmental Medicine in Natick, Massachusetts, found that long-duration aerobic or resistance exercise increased IGF-I binding globulin more than no exercise (control) or short-duration aerobic or resistance exercise. IGF-I levels changed little during the experiment.

This study showed that hormone changes during exercise are difficult to interpret. Factors such as blood hormone levels, binding chemicals, and receptor activity interact with muscle tension, nutrient availability, and rest, to determine training effects such as changes in strength, muscle mass, power, aerobic capacity, or endurance. (*Medicine Science Sports Exercise*, 41: 1261-1270, 2009)

High-Carb, Low-Carb Diets Cause Similar Weight Loss

People lose more weight on low-carbohydrate, low-calorie diets than on low-calorie, high-carbohydrate diets—at least during the first six months. At one year, caloric intake and caloric expenditure are more important than dietary composition for losing weight. Dietary compliance (eating the prescribed diet) is always a problem in weight-loss studies. Australian scientists found no difference in weight loss after one year in people following low-calorie diets—either high in fats or high in carbohydrates and low in fats. Both diets reduced heart disease risk factors, but the low-carbohydrate groups had the largest decreases in triglycerides (blood fats) and increases in HDL (good cholesterol) and LDL (bad cholesterol). Low-calorie dieting helps people lose weight regardless of the composition of the meals, but physicians should monitor blood lipid levels in people consuming high-fat diets. (*American Journal Clinical Nutrition*, 90: 23-32, 2009)

EPO Promotes Weight Loss

Most people associate EPO with Tour de France bicycle racers and doping scandals. EPO is a hormone produced by the kidneys that stimulates the bone marrow to produce new red blood cells. Like other hormones, it has a variety of other physiological effects. In patients with kidney disease, for example, EPO increased exercise capacity, daily physical activity levels, improved sleep, increased body warmth, boosted appetite, and enhanced the quality of life. In altitude studies in obese people, EPO triggered significant weight loss and improved insulin resistance. In a Danish study, transplanting an overactive EPO gene in obese mice caused a 23 percent decrease in weight. When fed a high-fat diet, the EPO-

treated mice gained 22 percent less weight than control animals. The EPO-treated mice also gained more muscle and muscle blood vessels. EPO protected animals against dietary-induced obesity, improved blood sugar control, promoted fat metabolism, and increased muscle mass. (*PLoS one*, online Journal; published June 12, 2009)

Calcium Supplements Do Not Promote Weight Loss

High calcium and dairy food intake are linked to lower bodyweight and total fat. Several large, well-controlled studies showed that low calcium and dairy intake are linked to increased body fat in adults. Low calcium intake is an excellent predictor of excess body fat and weight in children. These studies prompted many people to eat more dairy products and take more calcium supplements. Jack Yanovski and colleagues from the National Institutes of Health in Bethesda, Maryland found no difference in weight in obese or overweight people who took 1,500 milligrams of calcium per day for two

years. This was a well-controlled study involving 340 overweight and obese men and women. However, another recent study found that a supplement containing calcium and vitamin D increased weight loss in overweight women with low calcium intake. Calcium is a vital nutrient for bone and muscle health. Low levels of calcium trigger the brain to increase food intake. The relationship between calcium in the diet and weight control are controversial. (*Annals Internal Medicine*, 150: 821-829, 2009; *British Journal Nutrition*, 101: 659-663, 2009)

Low-Carb Diets Decrease Memory

Low-carbohydrate diets help you lose weight, but you might forget you lost it. Carbohydrates are the principal fuel for the brain and central nervous system. The brain can also use ketones, which are produced from fats during low availability of carbohydrates. However, ketones make the brain more acidic and interfere with its function. Researchers from Tufts University found that low-carbohydrate diets impair memory. They examined 19 women, aged 22 to 55 who consumed a low-carbohydrate diet for three weeks. The women experienced a gradual deterioration in spatial memory, reaction time, attention, mental skills, and short and long-term memory. People following the low-carbohydrate diets also showed deterioration in mood, which might help explain why these diets are so difficult to follow for prolonged periods. Optimal brain function requires a minimum of 125 grams of carbohydrates per day. (*Yahoo Health*, May 20, 2009)

Gila Monster Saliva Could Help You Lose Weight

Exenatide (Byetta), manufactured by Eli Lilly & Company, is a synthetic version of a hormone found in the saliva of Gila monsters. Exenatide is used to treat type 2 diabetes by increasing



MD RESEARCH Fat Loss

By Steve Blechman and
Thomas Fahey, EdD

insulin secretion, reducing glucagon secretion (prevents increases in blood sugar), and slowing the movement of food out of the stomach. A study by Eli Lilly Laboratories in Indianapolis found that injecting exenatide two times daily for two months caused an 11-pound weight loss, compared to a 3-pound loss in a placebo group (received fake exenatide). The subjects also participated in a diet and exercise program. Exenatide is currently not approved by the Food and Drug Administration for weight loss. Getting bit by a Gila monster is an effective weight-loss method, but is not recommended for general well-being. (Paper presented at the Annual Meeting of the Endocrine Society, June 11, 2009)

Acetic Acid Helps Cut Fat

Acetic acid is the principal chemical component in vinegar. It has a similar structure to the thyroid hormone T3. Scientists have known for over 50 years that acetic acid increases metabolic rate, but it has never gained popularity as a weight-loss supplement. Japanese researchers, in a study on mice, found that feeding acetic acid with water decreased body fat and fat accumulation in the liver. Acetic acid promoted fat oxidation (fat burning) and thermogenesis (calories dissipated as heat). A similar study by Spanish researchers on rats found that a compound formulated from acetic acid (TRIAC) increased metabolism and promoted fat breakdown, without suppressing normal thyroid function. TRIAC is available as a cream. Acetic acid could be a valuable component in weight loss supplements. (Journal Agriculture Food Chemistry, in press; published online May 26, 2009; American Journal Physiology Endocrinology Metabolism 294: E688-E697, 2008)

Does Acidosis Cause Obesity?

More than 66 percent of Americans are overweight or obese. Many of these people try to lose weight, but

only about 5 percent are successful after one year. Positive energy balance—consuming more calories than expended—is the obvious answer to the problem. Americans are a hard-working and generally disciplined people, so the answer to the obesity epidemic is probably more complicated than a positive energy balance. Shoma Berkenmeyer from Ruhr University in Germany speculated that disturbances in acid base balance caused by the diet are responsible for the obesity epidemic in developed countries. Excess fatty acid oxidation leads to increased acidity, which promotes fat gain. She suggested that people eat more high-quality protein to maintain muscle mass and eat more fruits and vegetables to minimize acid buildup. She speculated that increased acid levels (hydrogen ion)

are linked to obesity, degenerative diseases, and premature death. We need more data to support her hypothesis. (Medical Hypotheses, published online May 2009)

Blame Ghrelin for Your Weight-Loss Woes

Why is weight loss so difficult? The body is extremely efficient at storing and preserving energy. During caloric restriction (i.e., dieting), the gut releases a chemical called ghrelin, which activates fat metabolism, free radicals, and uncoupling proteins in the cells of the hypothalamus, which trigger hunger. This process activates a variety of energy control pathways in the brain that increase food intake and slows metabolic rate. This explains why people stop losing weight on a diet and exercise program, even though they are eating less and burning more calories than they did before they started the program.

Ghrelin is a hunger-promoting hormone, while leptin suppresses hunger and slows metabolic rate. Bodybuilders preparing for a contest lose large amounts of body fat in a short time, which presents major challenges to the regulation of the weight 'set point.' Estonian researchers found that ghrelin increased 26 percent and leptin decreased 28 percent during the 10 weeks before a bodybuilding contest (Estonian national championships). This explains why 'cutting' for a contest is so excruciatingly difficult and painful.

Overcoming the body's energy control mechanisms is extremely difficult. For example, most studies show that people must run 20 miles per week or more to successfully lose weight through exercise and mild caloric restriction. Energy preservation mechanisms served humans very well when food was scarce and they exercised regularly. It's less helpful in modern times when we have fast-food restaurants within two or three blocks of every house in America, and we seldom walk anywhere. (Progress in Lipid Research, in press; published online May 4, 2009)

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2009 Jr. Nationals contest coverage

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allowing our continued devotion to NPC and IFBB contest coverage, MD covered the Jr. Nationals this weekend in Chicago, IL.

catchy read and listen as Shawn Ray, Mike Liberator, Ill Comstock and the rest of Team MD covered the Jr. Nationals. Check out the MD website for articles, stage and paparazzi pictures and video interviews, previews and post game updates from the Jr. Nationals this past weekend.

Jon Balarnea

KICK ASS!

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RACE DAY

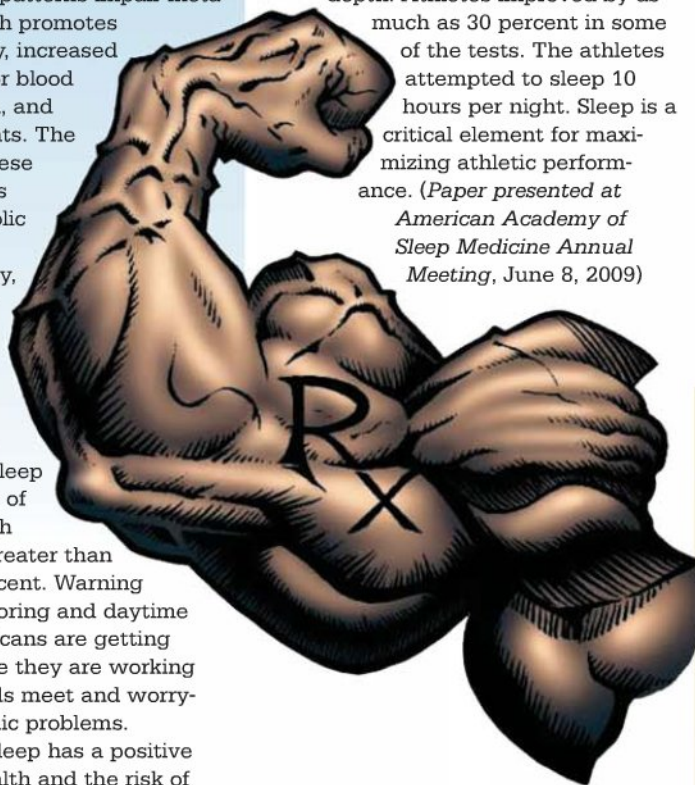
Inadequate Sleep Increases Blood Pressure

Sleeping less than 7-8 hours per night can ruin your health and increase the risk of heart attack, stroke, and diabetes. Poor sleep patterns impair metabolic health, which promotes abdominal obesity, increased insulin levels, poor blood sugar metabolism, and abnormal blood fats. The combination of these health problems is called the Metabolic Syndrome. The Cardia Sleep Study, conducted by scientists from the University of Chicago and Northwestern University, found that inadequate sleep increased the risk of hypertension (high blood pressure; greater than 140/90) by 37 percent. Warning signs included snoring and daytime sleepiness. Americans are getting less sleep because they are working more to make ends meet and worrying about economic problems. Getting enough sleep has a positive effect on your health and the risk of disease. High blood pressure is easily treated. See your doctor if you are having sleep problems. (*Archives of Internal Medicine*, 169: 1055-1061, 2009)

Sleep Promotes Athletic Performance

Athletes get more colds and flu following intense athletic competitions or periods of heavy training. This is partly due to psychological stress and inadequate sleep, which increases the risk of upper respiratory illnesses. Athletes

can improve performance and reduce the risk of illness by getting more sleep. A Stanford University study showed that tennis players who increased nightly sleep and made up for accumulated sleep deprivation showed improvement in sprint drill times, service accuracy, and hitting depth. Athletes improved by as much as 30 percent in some of the tests. The athletes attempted to sleep 10 hours per night. Sleep is a critical element for maximizing athletic performance. (*Paper presented at American Academy of Sleep Medicine Annual Meeting*, June 8, 2009)



Is Chiropractic Effective?

Many medical doctors put chiropractors in the same category as snake oil salesman and charlatans. On the other hand, many athletes swear by them and claim they relieve spine-linked pain when traditional medicine is ineffective. Most insurance companies cover chiropractic care and some companies allow patients to use chiropractors as their personal physicians. Daniel Palmer developed chiropractic principles in the late 1890s. He believed that 95 percent of disease is linked to pressure on the

spinal nerves caused by displaced vertebrae. While this belief is still central to the field, most chiropractors use a variety of physical therapy techniques and many chiropractors work closely with physicians in treating their patients.

Critics say that little scientific evidence supports the value of chiropractic, and that manipulation of the upper spine is potentially dangerous because it can damage arteries feeding the brain. The controversy involves politics, economics, and turf as much as it does evidenced-based treatment. Studying the effect of treatments on back and nerve pain is extremely difficult because of individual differences in pain tolerance and physical fitness. Also, back and neck pain often go away by themselves, so successful medical or chiropractic treatments might be purely coincidental. (*New Scientist*, May 29, 2009)

Stem Cells Build Muscle

Stem cells are the 'utility infielders' of tissues. They have a unique ability to transform themselves into specialized cells in the muscular, nervous, cardiovascular, and immune systems. Canadian researchers from Ottawa Hospital Research Institute developed a technique to regenerate muscle by boosting muscular stem cells with a protein called Wnt7a. The protein stimulated the development of muscle satellite cells, which is a critical step in muscle hypertrophy. The researchers speculated that triggering skeletal muscle stem cells could one day help treat diseases such as muscular dystrophy, age-related decreases in muscle tissue (sarcopenia), and muscle wasting from surgery, trauma, and physical inactivity. The technique, if proven safe and effective, would be of obvious interest to bodybuilders and other weight-trained athletes. This is an experimental procedure that will not be clinically available anytime soon. (*Ottawa Hospital Research Institute*, press release, June 2009)

Low Muscle Mass and Strength Increases the Risk of Metabolic Syndrome

The Metabolic Syndrome (MS) is a group of symptoms that include hypertension (high blood pressure), insulin resistance (poor blood sugar regulation), abdominal obesity, abnormal blood fats, type II diabetes, blood-clotting abnormalities, and inflammation. MS is an important marker of poor metabolic health and is linked to heart attack, stroke, poor sexual performance, depression, low testosterone levels, and possibly cancer. Regular exercise is an important lifestyle habit that reduces the risk of MS. An Australian study from the University of Sydney of more than 1,000 men aged 35 to 81 showed that those with the lowest levels of muscle mass and strength had the greatest risk of Metabolic Syndrome. Other factors predicting MS included age, blood levels of sex hormone-binding globulin, and marriage. The researchers speculated that weight training could cut down on the incidence of Metabolic Syndrome by 25 percent. (*Metabolism Clinical Experimental*, 58: 1013-1022, 2009)

Testosterone Supplements and Health

Low levels of testosterone in the blood are linked to premature death and an increased risk of heart attack, stroke, type II diabetes, and the Metabolic Syndrome. Despite mounting evidence, hormone replacement therapy in aging men remains controversial. Many physicians are concerned that testosterone might increase the risk of prostate cancer and strokes stemming from increased hematocrit (thicker blood). Researchers from the University of Sheffield in the United Kingdom, in a review of literature, discussed the risks and benefits of testosterone therapy in aging men. Most studies showed

reduced total body fat, increased lean body mass, improved insulin sensitivity, and reduced abdominal fat deposition. They also showed a decrease in LDL (bad cholesterol), HDL (good cholesterol), and inflammatory chemicals, with no effect on triglycerides. Supplements also caused improvements in symptoms in patients suffering from heart-related chest pains (angina). We have no long-term, well-controlled studies to determine the effect of testosterone supplements on the incidence of heart attack or stroke. (*Atherosclerosis*, in press; published online May 2009)

Low Testosterone Linked to Alzheimer's Disease

Low testosterone levels contribute to many symptoms of aging including loss of muscle and bone mass, depression, coronary artery disease, and decreased sexual performance. Eleanor Drummond and colleagues from the University of Western Australia found a link between low levels of testosterone and an increased risk of Alzheimer's disease in aging men. Low testosterone levels were associated with increased levels of 'beta-amyloid' and 'hyperphosphorylated tau,' brain chemicals associated with Alzheimer's. They also linked low testosterone with decreased mental performance, particularly those linked to memory. This study presented more evidence on the importance of maintaining testosterone levels for normal brain function during aging. (*Current Opinion Endocrinology, Diabetes and Obesity*, 16: 254-259, 2009)

Lipoprotein(a) Linked to Heart Attack

High levels of blood cholesterol, low-density lipoprotein (LDL) and triglycerides, and low levels of high-density lipoprotein (HDL) increase the risk of heart attack and stroke. Americans

have healthier-looking blood fat profiles than they did 40 years ago, but cardiovascular disease remains a serious public health issue. A study from the Copenhagen University Hospital in Denmark showed that people with high levels of lipoprotein(a) showed an increased risk of heart attack. People with the highest levels of the fat (top 5 percent) increase their risk of heart attack by 260 percent, while those with slightly elevated levels increase their risk by 20 percent. Lipoprotein(a) is not a common test during most medical examinations. Also, the relationship between this blood fat and heart attack does not mean that one causes the other. We need more research to determine the health effect of high blood levels of lipoprotein(a) on cardiovascular risk. (*Journal American Medical Association*, 301: 2331-2339, 2009)

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MD RESEARCH Supplements

By Steve Blechman and
Thomas Fahey, EdD

Hydrolyzed Proteins Absorbed and Digested Faster Than Intact Protein

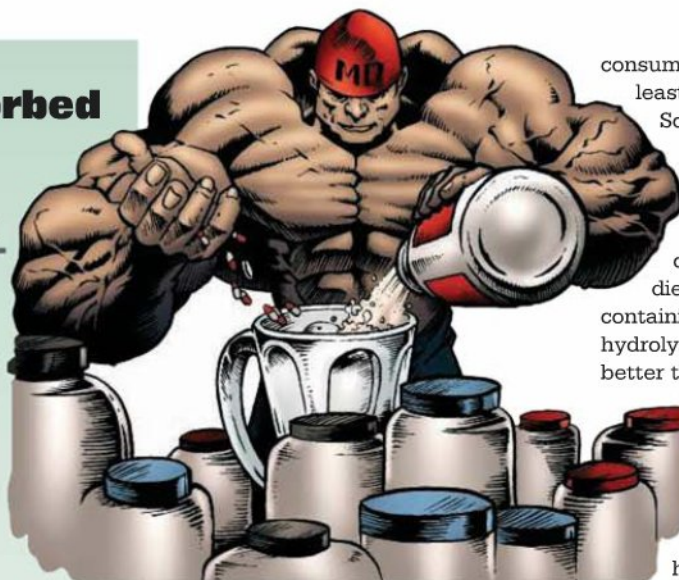
Many athletes take protein or amino acid supplements before or after weight training to boost muscle mass and strength. The amino acids from protein act as building blocks for protein synthesis and muscle growth. Also, key amino acids such as leucine turn on chemical pathways that promote protein synthesis.

A Dutch study found that hydrolyzed whey protein (HWP) supplements increase protein digestion and absorption in the intestines more than whey protein. Hydrolyzed whey protein contains protein hydrolysates, which are small packets of amino acids produced by breaking down proteins with acids or enzymes. The body absorbs HWP better than WP, which results in higher blood levels of specific amino acids (e.g., leucine and phenylalanine) and a greater potential for muscle protein synthesis.

The study showed that a whey protein supplement containing protein hydrolysates increased blood levels of amino acids and their incorporation into skeletal muscle better than whey protein alone. (*American Journal of Clinical Nutrition*, 90: 1-10, 2009)

The Power of Placebo in Sports

A placebo is a substance or technique with no physiological benefit that works by the power of suggestion. Athletes search for any supplement or drug that will give them an edge over the competition. They spend their hard-earned money and sometimes risk their health to gain that slight edge that



means the difference between victory and defeat. Many supplement manufacturers would go out of business without the placebo effect. Athletes want supplements to work, so they do.

British scientists showed the power of the placebo in an experiment using bogus caffeine. Men given placebo caffeine did two more reps during a maximal knee extension endurance test, compared to when they performed the test without supplements. The study showed the power of positive thinking and the performance-enhancing capacity of placebos. (*International Journal Sports Physiology Performance*, 4: 244-253, 2009)

Collagen Hydrolysates Maintains Protein Balance In Older Adults

People lose muscle mass and strength as they age—a condition called sarcopenia. Low protein intake is a common problem in older adults. Also, aging impairs protein absorption during digestion. Some aging specialists have suggested that older adults

consume supplements containing at least 25 grams of protein per day.

Some types of proteins might be more effective than others.

A study from the University of Arkansas Medical School showed that older women on low-protein diets given protein supplements containing fortified collagen hydrolysate maintained lean body mass better than people taking whey protein supplements. Other studies showed that collagen protein hydrolysate supplements increased the healing rate by 100 percent in patients with pressure ulcers. Protein hydrolysate supplements pro-

mote tissue healing following trauma induced by exercise (i.e., eccentric exercise) or disease and might promote recovery in bodybuilders. (*Journal American Dietetic Association*, 109: 1082-1087, 2009; *Advances Skin Wound Care*, 19:94-96, 2006)

Whey Protein Increases Muscle Glycogen

Glycogen is the storage form of carbohydrate and is an important fuel for performance in endurance and high-power sports. Following a meal, insulin increases, which speeds the transport of glucose (sugar) into the cells and stimulates glycogen synthesis.

In a study on muscle tissue isolated in the laboratory, Japanese researchers showed that whey protein containing enhanced levels of branched chain amino acids had increased rates of glucose uptake. These amino acids work by increasing the effectiveness of insulin. Insulin is a powerful anabolic hormone that helps the body recover after exercise. Supplementing weight protein following exercise promotes protein and carbohydrate metabolism during recovery. (*Journal Nutrition Science Vitaminology*, 55: 81-86, 2009)

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MD RESEARCH Supplements

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Thomas Fahey, EdD

Protein Supplements Promote Muscle Protein Synthesis

Timing is everything when it comes to taking supplements to promote muscle protein synthesis. Three studies from Finland showed that nutrient timing is critical for maximizing muscle protein synthesis following weight training and increasing gene activity toward protein synthesis. Feeding protein supplements high in essential amino acids after weight training promoted muscle protein synthesis. Cells use amino acids to make new proteins, but amino acids do a lot more than that. Amino acids activate signaling proteins in muscles that turn on protein synthesis and increase muscle fiber size.

Muscle tension, blood levels of amino acids (particularly leucine), and insulin are key factors triggering muscle growth. They activate signaling pathways inside the cells that promote protein synthesis in the muscles and modify muscle protein breakdown, remodeling, and repair. Chemicals called ribosomal protein S6 kinase and the target of rapamycin (mTOR) are important cell signaling molecules that are sensitive to small changes in energy status and are major forces in protein synthesis. They work like biological computer programs to line up amino acids needed to produce new muscle tissue. Key amino acids such as leucine turn on the system better after exercise. Protein supplements high in branched-chain amino acids stimulated the mTOR pathway and suppressed myostatin, a chemical that inhibits muscle growth.

The take-home message is that bodybuilders should take a protein supplement high in essential amino acids after weight training. (*Journal Applied Physiology*, 106: 1720-1729, 2009; *European Journal Applied Physiology*, 102: 205-213, 2008; *Amino Acids*, published online, July 2008)

Creatine Increases Muscle Mass in Young but Not Old Muscle

Muscle mass and strength decrease with age. People lose approximately 20 percent of their muscle mass between ages 40 and 60 and it declines more rapidly after that. Creatine monohydrate is a popular supplement in bodybuilders and other weight-trained athletes, because it increases muscle mass and strength in some people, but its effects in older people are controversial.

In a study on young and old rats, South African researchers found that creatine, resistance exercise, and creatine plus resistance exercise cause substantial increases in muscle mass in young animals. Creatine alone had no effect on muscle mass in older animals and a small effect (approximately 14 percent) when combined with resistance exercise. Changes in muscle mass due to resistance exercise alone were similar in younger and older animals. The results of this study may not apply to healthy human bodybuilders. (*Journal of Applied Physiology*, in press; published online May 14, 2009)

Antioxidants Suppress The Beneficial Effects Of Exercise

Cells naturally produce highly-reactive chemicals called free radicals during metabolism. Free radicals are linked to aging, cell membrane destruction, DNA damage, and suppression of the immune system. Antioxidant vitamin supplements suppress the action of free radicals. This could be a mistake.

A study from the University of Jena in Germany and Harvard University found that in people involved in an exercise training program, supplementing the antioxidants vitamin C (1,000 mg) and E (400 i.u.) inhibited improve-

ments in insulin sensitivity, one of the benefits of exercise. Exercise is known to increase insulin sensitivity. Training causes improvements in physical fitness by stressing the tissues and organs. Blocking these stresses with vitamins may do more harm than good. (*Proceedings National Academy Sciences*, 106:8665-8670, 2009)

Whey Protein Prevents Hunger Better Than Soy Or Casein Protein

High-protein diets generally cause the greatest weight loss during the first six months of dieting. Protein suppresses hunger by maintaining more steady levels of blood sugar. The liver converts the amino acids from proteins into blood sugar in the liver via a process called gluconeogenesis.

Dutch researchers found that whey protein suppressed appetite better than soy or casein protein, provided that whey made up 10 percent of the total calories. Whey was less effective than soy or casein when it made up 25 percent of the total calories. At higher intake levels, whey protein caused a marked increase in insulin release, which lowered blood sugar and promoted hunger. This effect is important for recovery from training, but it is less desirable in people trying to lose weight. Whey protein suppresses hunger better than other forms of protein, provided you don't eat too much of it. (*Physiology Behavior*, 96: 675-682, 2009)

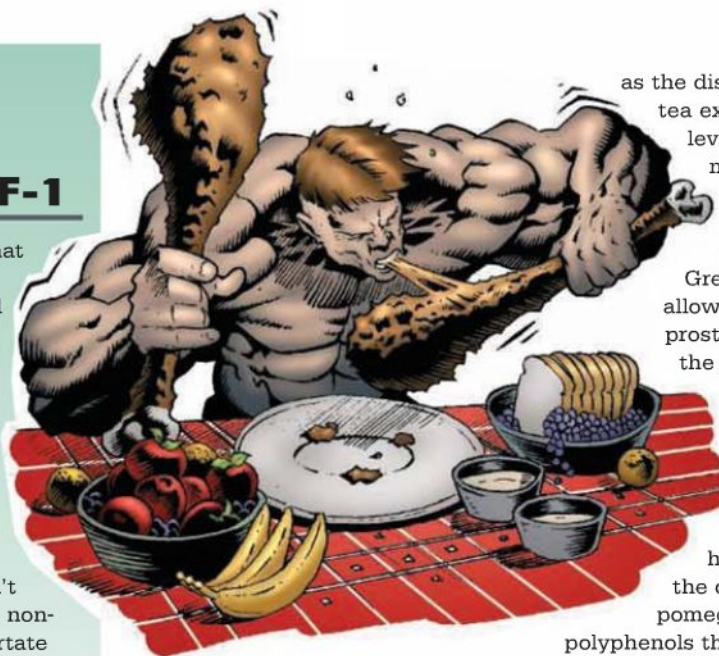
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Arginine Supplements Cause Gradual Decrease in IGF-1

Arginine is an amino acid that stimulates growth hormone release, and is sometimes used to treat growth deficiencies in children. Growth hormone works largely by increasing the release of IGF-1, a powerful anabolic growth factor. Arginine is also the central ingredient in athletic supplements designed to boost growth hormone. French researchers found that you can't fool Mother Nature! They gave non-athletic subjects arginine aspartate (30 grams daily) for 21 days. IGF-1 increased during the first four days of the experiment, but decreased after that. This study demonstrated an important lesson for bodybuilders: drugs and supplements will not work indefinitely. Feedback systems will eventually limit almost any stress the body encounters. (*Fundamental Clinical Pharmacology*, 23: 339-344, 2009)

Soy Proteins Do Not Influence Reproductive Hormones in Men

Soy proteins contain isoflavones that could have estrogen-like effects in humans. Many bodybuilders avoid supplements containing soy because they fear that 'plant estrogens' might interfere with training gains and testosterone metabolism. Jill Hamilton-Reeves and co-workers from the University of Minnesota combined the results of 32 studies involving soy protein and male reproductive hormones using a statistical technique called 'meta-analysis.' They found that consuming soy protein or isoflavones ('plant steroid' in soy) had



no effect on total testosterone, sex hormone-binding globulin, or free testosterone. The authors concluded that soy protein does not interfere with male reproductive hormones. We need more research to help us understand this controversial question. (*Fertility and Sterility*, in press; published online June 12, 2009)

Green Tea Extract Slows Prostate Cancer Growth

Green tea extract may prevent prostate cancer and slow its growth during the early stages of the disease. Green tea contains powerful antioxidants called polyphenols (epigallocatechin gallate, or EGCG) that prevent cancer, heart disease, and stroke. Jim Cardelli and colleagues from Louisiana State University Health Sciences Center in Shreveport found that men with prostate cancer given capsules high in EGCG showed decreases of 9 to 19 percent in hepatocyte growth factor, vascular endothelial growth factor, and prostate-specific antigen—all important markers of the disease. In prostate cancer, levels of prostate-specific antigen (PSA) increase rapidly

as the disease progresses. Green tea extract decreased PSA levels by 10 percent in most men with prostate cancer. Some men showed a 30 percent decrease in tumor size.

Green tea extract might allow older men treated for prostate cancer to outlive the progression of their disease. In other words, they'll die from something else first. Green tea extract has been selling like hotcakes in supermarkets and health food stores across the country. Red wine and pomegranates also contain

polyphenols that might reduce the progression of prostate cancer.

(*Cancer Prevention Research*, in press; published online June 19, 2009)

Low-Carbohydrate Diet Prolongs Survival in Prostate Cancer

Insulin and insulin-like growth factor (IGF-1) are highly anabolic hormones. High blood levels due to diet, physical activity, or genetic factors might stimulate cancer cell growth. High-carbohydrate diets increase both hormones, and might promote cancer. Duke University researchers injected mice with prostate cancer cells and fed them one of three diets: 1) very high-fat/no carbohydrate, 2) low fat/high carbohydrate, or 3) high fat/moderate carbohydrate. Animals fed the 'no carbohydrate' diet lived longest, had lower tumor size, and lower levels of insulin and IGF-1. They also lost the most weight, which might have explained the results. Low-carbohydrate diets may prolong life in men with prostate cancer. We do not know if the results of this study apply to humans. (*Cancer Prevention Research*, in press; published online May 26, 2009)

Meal's Glycemic Index Does Not Affect Muscle or Liver Glycogen Use During Exercise

Carbohydrates are the main fuels during exercise at intensities above 65 percent of maximum effort. Carbs are important fuels during intense exercise because they provide more energy per unit of time than fats. While people have plenty of fat to fuel exercise, carbohydrate stores are limited to approximately 400 grams distributed in the liver and skeletal muscles. Post-exercise meals are critical for restoring depleted glycogen stores, but should these meals be high or low in simple sugars?

British researchers found that the glycemic index of a meal consumed between two intense bouts of endurance exercise (90 minutes at 70 percent of maximum effort, on two consecutive days) had no effect on the depletion rate of muscle or liver glycogen. Glycemic index is a measure of how fast foods increase blood sugar. High-glycemic index meals are high in simple sugars, while low-glycemic index meals contain more complex carbohydrates and fats. During the second exercise session, intramuscular fat use during exercise was higher following the high-glycemic index meal. This was an interesting and sophisticated study, but we need more research on the influence of diet during repeated days of intense exercise. (*American Journal Physiology Endocrinology Metabolism*, 296: E1140-E1147, 2009)

Medium-Chain Triglycerides Increase Endurance

Medium-chain triglycerides (MCTs) have been called nutritional optimizers and 'fatless fat.' They provide a lot of energy in a small volume, just like fat,

yet are absorbed and used rapidly, just like carbohydrates. They may also reduce body fat, improve carbohydrate and protein metabolism, enhance absorption of essential minerals, and decrease the risk of cardiovascular disease by reducing blood fats. Japanese researchers found that endurance capacity was higher following two weeks on a diet high in MCTs (6 grams per day, for two weeks), compared to following a diet low in MCTs. The exercise consisted of 40 minutes on a stationary bike at 60 percent effort, followed by exercise to exhaustion at 80 percent effort. Blood lactate and perception of effort were lower during exercise following the high-MCT diet. These results do not agree with other studies in the literature. (*Journal Nutritional Science Vitaminology*, 55: 120-125, 2009)

Diets High in Branched-Chain Amino Acids and Fat Promote Insulin Resistance

Bodybuilders and people trying to lose weight often take supplements containing branched-chain amino acids to help them maintain muscle mass and depress appetite. Also, they often consume diets high in fats and low in carbohydrates. A Duke University study using rats showed that obese animals that ate high-fat diets and branched-chain amino acids developed insulin resistance. Branched-chain amino acids, by themselves, had no effect on insulin metabolism. The researchers concluded that consuming branched-chain amino acids did not present a problem as long as total caloric consumption was not excessive. Many athletes take large amounts of branched-chain amino acids, and often consume 3,000-8,000 calories per day. Most likely, the results in mice do not apply to intensely-training athletes. (*Cell Metabolism*, 9: 311-326, 2009)

Eating Fish Once A Week Prevents Heart Failure

Fatty fish, such as salmon and mackerel, are high in omega-3 fatty acids, which prevents heart attack and coronary artery disease. Omega-3 fatty acids are heart-healthy because they reduce triglycerides (blood fats), lower blood pressure, and help stabilize the heart. In heart failure, the heart cannot meet the body's need for blood. It is the main cause of hospitalization in people over 65. Symptoms include extreme fatigue, abnormal heart rhythms, coughing, wheezing, and weakness. The study examined nearly 40,000 Swedish men and showed that eating fish once a week reduced the risk of heart failure by 12 percent. This is not a large effect, but it provides more evidence for the health benefits of fish and omega-3 fatty acids. (*European Heart Journal*, 30: 1495-1500, 2009)



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Controlled Drugs Found In Weight-Loss Products

Annual sales of weight-loss products in the United States exceeded \$5 billion in 2008. While most companies make high-quality supplements that promote fat loss, the Food and Drug Administration (FDA) found that 69 products contained prescription drugs and other substances not listed on the labels.

For example, Venom Hyperdrive 3.0 contained the prescription weight-loss drug sibutramine (Meridia), which increases blood pressure and heart rate. It could interact with other drugs and cause serious medical complications. ALR industries, the supplement's maker, removed sibutramine from the product.

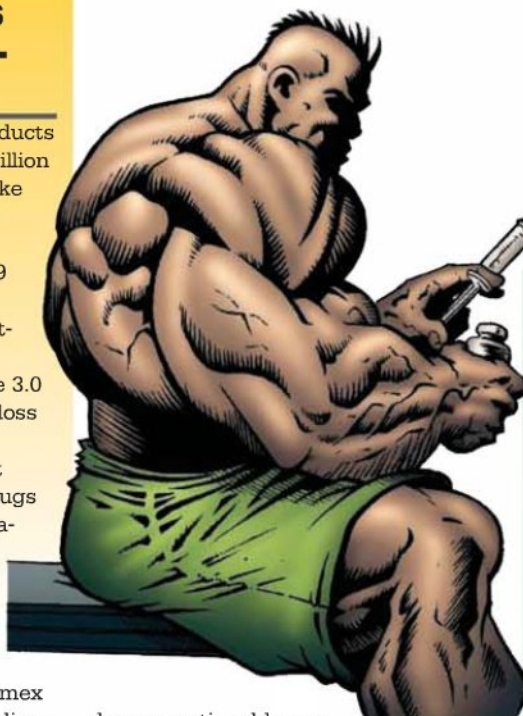
Illegal ingredients in other products included rimonabant (unapproved weight-loss drug), Bumex (diuretic), Dilantin (anti-seizure medication), and phenolphthalein (unapproved laxative). Be careful of what you put in your body. (*Forensic Drug Abuse Advisor*, 21 (4) 21: 31-32, 2009)

Steroids Linked to Heart-Related Sudden Death

Heart-related sudden death in athletes is relatively rare. Most cases are due to drug overdose and congenital defects (present at birth), such as hypertrophic cardiomyopathy, Marfan's syndrome, and structural abnormalities in the heart. Two recent case studies reported heart-related sudden death in athletes who had used anabolic steroids. The scientists provided no evidence that steroids caused the deaths.

The athletes also used heart-stimulating drugs such as ephedrine and norephedrine. Young people, athletes and nonathletes sometimes die prematurely. Some of these athletes take steroids, but they also drive automobiles, brush their teeth, and pay taxes.

Anabolic steroids may have negative effects on the heart. Case studies that



draw questionable conclusions from coincidental relationships do not contribute to our knowledge of anabolic steroids. (*Forensic Drug Abuse Advisor*, 21 (4) 21: 30, 2009)

Hair Analysis for Steroids in the Olympics?

Olympic and most professional sports have stringent, random drug testing programs for athletes. Anabolic drug use, however, is still a problem. Some athletes take drugs that are difficult to measure, such as testosterone creams, growth hormone, and IGF-1.

Hair analysis for anabolic drugs might be a way to accurately measure long-term or past drug use. Chemical markers of steroids are often present in hair for many months after athletes take the drugs. Chinese researchers studied normal anabolic steroid levels and their metabolites in 80 hair samples taken from non-athletes. Concentrations of these chemicals varied greatly and overlapped in samples taken from men, women, and children. DHEA levels were higher in Chinese subjects used in

this study than in research on other racial and ethnic groups.

Hair testing would be a less intrusive method than urine or blood testing for detecting drug use in athletes.

However, we need more research to determine its validity and reliability. (*Forensic Science International*, 184: 32-36, 2009)

Anti-Steroid Propaganda in England

A series of well-controlled studies conducted in the United States and Europe since 1984 found that only 2 to 6 percent of high school and college-age students have used anabolic steroids one or more times. Conversely, 50 to 75 percent of students have used alcohol or tobacco.

In spite of these statistics, the news media and politicians speak of steroids as though they were an international plague. A "BBC News" report speculated that steroid use among young people in Great Britain has doubled in the last five years. They presented no data for their assertion; it was based on the speculation that the easy availability of steroids on the Internet has led to an explosive increase in sales.

Schoolchildren should not take anabolic steroids. However, irresponsible articles that overestimate the steroid problem lead to unneeded and expensive drug testing programs that dilute scarce financial resources for school sports. Hiring knowledgeable, experienced coaches who closely monitor the health and behavior of athletes in our athletic programs is the best way to minimize steroid use in school sports. (*BBC News*, June 11, 2009)

War on Drugs a Failure

President Nixon declared a war on drugs in 1979. We lost! Since then, we've spent trillions of dollars on the war and imprisoned more of our people than any country on earth (five times the world average). Yet, drugs are more

readily available, cost less, and are more potent than they were 40 years ago.

More than 50 percent of people in prison were convicted of drug crimes—most for possession. The drug war has enriched terrorists and criminals, which seriously threatens our national security and destabilizes countries such as Colombia, Mexico, Brazil, and Afghanistan.

Federal, state, and local governments spend more than \$44 billion a year enforcing drug laws. This money would be better spent on education, health care, infrastructure, and national defense.

While it's true that drugs destroy lives, the war on drugs has destroyed even more lives and compromised the American standard of living. It's time the politicians re-examine the mess they created. (*New York Times*, June 14, 2009)

Myostatin Blockers + Exercise Increases Physical Fitness

Muscle mass decreases with age, a condition called sarcopenia. Muscle loss decreases strength, mobility, quality of life, and metabolic health, which increases the risk of disease, falls, and loss of personal freedom. Myostatin decreases muscle mass and is critical for muscle turnover that occurs constantly in resting and exercising muscle.

Scientists from the Pfizer Global Research & Development Laboratory in Connecticut, in a study on aging mice, found that the combination of a myostatin blocker (PF-354) and exercise increased physical fitness, whole-body metabolic rate, and insulin sensitivity (a measure of blood sugar regulation). The treatment had no effect on muscle mass. Studies by John Faulkner from the University of Michigan showed that myostatin blockers increased muscle mass but decreased tendon strength, which could increase the injury rate in athletes. Myostatin blockers will undoubtedly be popular with bodybuilders and other weight-trained ath-

letes, but their effects on athletic performance and the risk of injury are unknown. (*Journal Gerontology: A Biol Sci Med Sci.*, in press; published online May 29, 2009)

Athletes Taking IGF-I to Beat Drug Tests

Drug-testing scientists are developing effective methods to detect growth hormone (GH) use in sports. As a result, athletes will take substitute drugs, such as IGF-I that will give them an edge over the competition but can't be detected. IGF hormones (IGF-I and IGF-II) promote cell repair and growth, protein synthesis, blood sugar regulation, strong bones and muscles, blood vessel health, and decrease body fat.

British scientists, led by Nishan Guha, discussed the use of IGF-I in sports and efforts by the World Anti-Doping Association (WADA) to develop effective tests. IGF-I has been available on the Internet from sources in China and India for more than five years, but is less popular than anabolic steroids and growth hormone, because it's expensive and relatively scarce.

We don't know its effects on athletic performance or its long-term safety. GH works mainly by increasing levels of IGF-I. Proposed doping tests for GH work by measuring markers of connective tissue growth, so it is likely that tests to detect IGF-I will work in a similar way. (*Growth Hormone & IGF Research*, in press; published online May 23, 2009)

Why Do Athletes Take Drugs?

People have a love-hate relationship regarding drugs and sport. They will pay big money to see pitchers throw 90-100 mph fastballs, batters hit long shots over the centerfield fence, sprinters set world records on the track, or 325-pound, lightning-fast linemen crunch their opponents on the football field. Yet, they are the first to condemn an Alex Rodriguez, Marion Jones, or

José Canseco if they took drugs.

Nobody seems to care if mountain climbers use oxygen to make record-breaking climbs; students take Provigil to increase college entrance test scores; or swimmers use speed suits to shatter world records.

Christer Ehrnborg and Thord Rosén from Göteborg, Sweden concluded that many athletes do not consider doping as cheating, so eliminating it from sport will be extremely difficult. Many athletes reason that they must take drugs because their opponents do. Others take drugs because they will do whatever it takes to win. Most see drug use as a tool to help them become the best athletes they can be.

The best ways to reduce drug use in sports is to change the athletic culture through reasoning and education and develop effective doping control tests that will increase the risk of getting caught. (*Growth Hormone & IGF Research*, in press; published online May 23, 2009)

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contest coverage, MD covered the Jr. Nationals this
weekend in Chicago, IL.

Watch, read and listen as Shawn Ray, Mike Liberatori,
Jill Comstock and the rest of Team MD covered the Jr.
Nationals. Check out the MD website for articles, stage
and paparazzi pictures and video interviews, previews
and post game updates from the Jr. Nationals this past
weekend.

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The Ups and Downs of Friends with Benefits

Are friendship and sex in men and women incompatible? A Wayne State University study showed that 60 percent of men and women enrolled in a university communications class had sex with a friend of the opposite gender (i.e., 'friends with benefits'; FWB). For most couples, FWB happened only occasionally, but was ongoing and frequent in 30 percent.

Like most relationships, things changed over time. Only 28 percent of couples continued having sex. Nearly 36 percent stayed friends but stopped having sex, while the relationship ended in 26 percent. Less than 10 percent became romantically involved. Most people who had FWB believed that men and women could have sex and remain friends, while most of those who hadn't had FWB thought that such relationships were impossible. Friends with benefits are common and accepted by most college students and seldom lead to long-term, committed relationships. (*Archives Sexual Behavior*, 38: 66-73, 2009)

Do Men Prefer Women Who Look Like Porn Stars?

Most men love porno videos, but do men want women who look like pornographic actresses? Eric Holland, in a letter to the editor, argued that women starring in porno films represent only a small portion of femininity. Most women would not appear nude on film and an even smaller proportion would agree to have sex. The most beautiful porno film actresses represent the best-looking of a minority of women. Extremely good-looking women usually have better opportunities for success in jobs that do not require having sex on film. Also, sex acts portrayed in porno films are relatively uncommon in the real world. Anal sex, oral consump-

tion of semen, and blow-jobs following anal sex are common in porno videos but less common among heterosexual couples. More promiscuous women tend to have higher testosterone levels, which give them a more masculine appearance. Porno film actresses do not represent the hallmark of feminine beauty, because they come from a small subset of the population. (*Archives Sexual Behavior*, 38: 458-459, 2009)

Alcohol Increases Sexual Risk-Taking

Many men and women use alcohol to reduce sexual inhibitions and boost sexual desire. Is this an urban legend? A study from the University of Washington led by William George

found that alcohol increased libido in men and women and promoted sexually-risky practices. They found that progressively increasing blood alcohol levels increased sexual arousal and the chances of risky sexual practices such as not wearing condoms.

Alcohol increased sexual arousal and risk-taking behaviors in men more than women. Alcohol increased sexual arousal in women but had no effect on risk-taking. Drinking contributes to more than 70,000 cases of sexual assault or date rape per year. More than 400,000 college students admitted to having unprotected sex while under the influence, so alcohol is a serious public health risk on college campuses. (*Archives Sexual Behavior*, 38: 498-513, 2009)

Are Women Getting Any?

Popular television shows such as *Desperate Housewives* and *Sex in the City* suggest that women spend most of their time in bed having sex with the pool boy. How accurate are these portrayals, and how much sex does the average woman get?

Karen Lutfey and colleagues from the New England Research Institutes in Watertown, Massachusetts found that most women don't have much sex. They examined sexuality in more than 3200 women aged 30-79 years living in the Boston area. Half of the women surveyed were not sexually active because of lack of interest (52 percent) or lack of a partner (61 percent). In sexually active women, 38 percent reported sexual problems and 35 percent were dissatisfied with their sex lives.

The incidence of sexual problems increased with age. Sex problems were strongly linked to depression, sexual and physical abuse in adulthood, alcohol, and poor mental health. Good sex is important for happiness. This study showed that sexual problems in women are serious public health issues. (*Archives Sexual Behavior*, 38: 514-527, 2009)



Illustrated by Jerry Beck/www.ironasylum.com

Why Non-Virgins Stop Having Sex

Abstinence was the favored method of birth control by the Bush administration. They reasoned that abstinence reduced the number of lifetime sex partners and prevented unwanted pregnancies and sexually-transmitted diseases. Catherine Rasberry and Patricia Goodson from Texas A&M University found that few college students embraced this method.

A survey of more than 1100 non-virgin college undergraduate men and women showed that only 13 percent practiced abstinence. Students subjected to abstinence education were less likely than other students to actually practice it. Students who successfully practice abstinence tended to be more religious and had previous negative sexual experiences. College students are going to have sex and abstinence education does not prevent high-risk sexual practices, unwanted pregnancies, or sexually-transmitted diseases. (*Archive Sexual Behavior*, 38: 74-86, 2009)

Exercise Promotes Erections In Young Men

Erectile dysfunction (ED) is an important risk factor of coronary artery disease and heart attack. ED is linked to poor metabolic health and blood vessel control. ED is most common in middle-aged and older men. However, the increased prevalence of obesity and type II diabetes in young men increases the risk of ED.

Researchers from Emory University in Atlanta found that sexual performance was better in physically active men aged 18 to 40 years. In these men, neither age nor body fat (body mass index) influences the quality of erections. Physical fitness is critical for good sex. Men can optimize sexual performance by remaining physically active throughout their lives. (*Journal Sexual Medicine*, 6(1): 17, 2009; meeting abstract)

Erectile Dysfunction Linked to Heart Disease

Thirty to 50 percent of American men suffer from erectile dysfunction (ED) and most of these have blood vessel disease that can lead to heart disease. That isn't surprising because obesity, physical inactivity, and excess weight impair blood flow control throughout the body and make it more difficult to get erections.

Researchers from the University of Texas Health Science Center at San Antonio, led by Dr. Ian Thompson, found that men with ED have a much higher risk of coronary artery disease than men with normal function. Also, they had a 45 percent greater risk of heart attack or stroke. ED had the same predictive value for heart attack as men who smoke currently and those with a family history of heart disease.

ED is not a trivial health issue, because it may be the tip of the iceberg for more serious health problems to come. In a study of more than 1000 men with ED, researchers from the Jacksonville Center for clinical research in Jacksonville, Florida, found that 82 percent did not know about the link between erection problems and heart disease. ED is an early warning sign of poor metabolic health and heart attack and should be treated aggressively. (*Journal Sexual Medicine*, 6(1): 19, 2009; meeting abstract)

Cialis Improves Sexual Confidence

Confidence is critical for peak sexual performance. Men who are unsure about their capacity for erections generally have poor sexual confidence, which causes anxiety and creates a vicious cycle that sends them into the sexual doldrums.

A study from the Case Medical Center in Cleveland showed that Cialis improved direction confidence by 73 percent in men with ED. Cialis increased erection frequency, firmness, and maintenance and gave them the confidence to have sex more frequently.

Erection-promoting drugs such as Cialis and Viagra improve sexual performance by boosting the capacity for action and increasing sexual confidence. These drugs have both physical and psychological benefits for men with ED.

(*Journal Sexual Medicine*, 6(1): 22, 2009; meeting abstract)

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THE BEST DIET FOR Drug-Free vs. Chemically-Enhanced Bodybuilding

What is the best diet for a bodybuilder? To answer that, one must understand what kind of bodybuilder is being referred to, and what goals that bodybuilder needs to reach.

Restricting the discussion to males, due to a number of gender-based differences, there are two basic distinctions in competitive bodybuilding—drug-free vs. chemically enhanced. Collectively, these men progress through a sequence of goal-oriented periods: gaining muscle mass, maintenance with moderate fat loss, pre-competition with pronounced fat loss, competition, and recovery.

It should be clear, even from this very general description, that there will never be a single diet plan that fits every bodybuilder. However, there are certain generalities that can be offered that may enlighten bodybuilders who did not achieve the results they expected previously. For the sake of clarity and brevity, this article will be restricted to the 'maintenance with moderate fat loss' period.

What do anabolic steroids and other performance-enhancing drugs do, and why is that important to consider for bodybuilders? These drugs bypass the normal regulatory mechanisms that control the metabolism and physiology of the user. All of these drugs mimic natural hormones or neurotransmitters that alter the rate of energy expenditure (calorie burning), as well as the balance between anabolic vs. catabolic processes. In a steady state (when the body is at rest

and well-fed), there is a balance between anabolic growth and catabolic breakdown. The scales are tipped toward growth when there is a relative excess of any or all of the primary anabolic hormones; breakdown and loss of mass occurs when the catabolic hormones achieve precedence.

There are any number of examples, but for the purpose of understanding, consider testosterone. A supraphysiologic concentration of testosterone (higher than naturally produced) stimulates muscle hypertrophy; hypogonadism (low testosterone such as experienced with aging) results in muscle atrophy (loss). A lifestyle of overeating and indulgence increases both insulin release and resistance, resulting in weight gain and obesity; prolonged starvation forces the body to release catabolic hormones, leading to the loss of fat and muscle. It is important to understand that nutrients do not increase muscle or fat; rather, it is the action of enzymes directed by hormones that are released in response to changes in available nutrients and energy stores.

Chemically-enhanced bodybuilders use pharmaceutical manipulation to adjust their metabolism—bypassing regulatory feedback that might limit growth, require a greater physical demand to trigger growth, or allow for fat deposition. Anabolic steroids drive an increase in muscle growth. Certain androgens reduce fat mass; growth hormone allows for quicker recovery, induces fat release, and promotes growth in non-contractile protein in

muscle. Insulin drives nutrients into muscle (and fat), and reduces catabolic breakdown following exercise. Beta-adrenergic stimulants and thyroid hormone analogs increase calorie burning and fatty acid oxidation (burning fat for energy). Aromatase inhibitors block the conversion of excess androgens to estrogens, promoting fat loss, etc.¹⁻⁶

These drugs are so effective that they allow a non-disciplined lifter to develop an impressive physique and intimidating power, offering success with a generous margin for error and sloth. In the hands of a dedicated bodybuilder, these drugs have helped to sculpt bodies that defy the imagination of comic book artists and action figure designers.

'Enhanced' Competitors Often Work Harder

What does this mean in terms of diet? First, by no means does it imply that top bodybuilders are lazy or 'cheated' to achieve the gains seen in the last 50 years. Anyone who has had the opportunity to observe or train with champion amateur or professional bodybuilders knows that chemically-enhanced competitors work just as hard as their drug-free counterparts. Chemically-enhanced competitors often work harder, as they are able to recover more quickly, endure higher-intensity resistance training, and higher-volume aerobic exercise. It means that the dietary needs and allowances of bodybuilders vary, depending on

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the degree of effort exerted, how extreme fat loss is sought while maintaining/building muscle, and what level of chemical enhancement is being used.

For the truly drug-free bodybuilder, the challenge is to prevent muscle loss (preferentially continuing with slight muscle growth) in a catabolic environment. It is essential to differentiate this from general weight loss that the general public seeks. If there is no desire to build or preserve muscle, a ketogenic diet can be followed. While there is a continuing academic drama over what diet is 'best,' there is little question that the quickest weight loss and fat loss occurs when following ketogenic or even Atkins-like diets.⁶

These diets are actually heart-healthy, having certain advantages over the traditional low-fat diet, though there is some concern over increases in LDL (bad) cholesterol. This is likely balanced by decreases in total cholesterol, increases in HDL (good) cholesterol, and reductions in triglycerides (fats).^{7,8} In fact, a modified Atkins diet using only plant-based proteins appears to alleviate the LDL cholesterol elevation.⁹ Though these diets provide ample amounts of protein, sufficient to promote muscle growth, there is often an accompanying loss of muscle mass and strength.

One of the pivotal effects of ketogenic diets is the suppression of fasting and postprandial (after eating) insulin. Insulin is often thought of as the 'storage hormone,' but it also plays a significant role in muscle growth, as demonstrated by its popularity with professional athletes and bodybuilders. Exercise and fasting cause muscle to break down to release amino acids to the rest of the body, to meet the energy demands by shuttling certain amino acids into fuel (ATP) production. Insulin stops this breakdown. Ketogenic dieters lose the anti-catabolic protection of insulin, but some protection is offered by the anti-proteolytic properties of ketones.¹⁰ Chemically-enhanced bodybuilders often inject a fast-acting insulin immediately after their workouts, along with a meal high in carbohydrates and quickly-absorbed protein.

To put the "meat" of the article in a

concise summary, a fairly straightforward set of recommendations are given for the drug-free and chemically-enhanced bodybuilder, respectively. For the purpose of this discussion, it will be assumed the bodybuilders are 200-220 pounds and approximately 10-16 percent body fat.

Drug-free bodybuilders need to focus on preserving muscle mass and making their metabolism as anabolic as possible, during a period of slight caloric deficiency to promote fat loss. This means placing the body in a protected, catabolic state. Fat loss in the absence of lipolytic or thermogenic drugs requires a hypocaloric diet, which means eating fewer calories than the body burns. If there are not enough calories to supply every tissue type (organs, muscle, fat, etc.), then the body will cannibalize muscle and fat to supply energy and amino acids to maintain critical functions.¹¹ It is essential during such a time that sufficient protein be ingested to provide the amino acids needed for vital functions, body maintenance and preferentially, muscle growth.

While plant-based proteins are wonderful for health and there are many studies supporting their use in athletes, comments by many drug-free bodybuilding men suggest that soy and other plant-based proteins do not support strength or mass well while dieting, as compared to whey, casein, egg- or meat-based protein.¹² It is important that protein intake be the focus of a drug-free diet. While the protein can be ingested throughout the day, it is critical that a quickly-absorbed protein is consumed immediately post-workout, and preferentially, pre-workout as well. A slow-releasing protein prior to sleep may offer additional benefit.

Carbs, Sleep and Fat Burning

Carbohydrates are the preferred energy source for most of the organs and tissues of the body. They have a potent effect on the metabolism, both in the short-term and long-term. Carbohydrates stimulate the release of insulin, which blocks stored fat release from fat cells; insulin also affects the muscle metabolism, switching the pre-

ferred fuel from fatty acids to sugar burning.^{13,14} For the drug-free bodybuilder, it is necessary to control insulin, keeping its concentration low throughout the day— with two exceptions. There are two metabolic 'windows' where a drug-free bodybuilder should take advantage of insulin's anti-catabolic effect— early morning and post-workout.

Sleep is the only time most bodybuilders fast for any significant amount of time. During the night, the body still burns calories and spends several hours relying on stored sugar (glycogen) and fat. After several hours, the body is primed for fat burning but also is at its most sensitive to insulin's signal. The best way to take advantage of this is to perform some low-intensity cardio before eating breakfast, then consuming a fair portion of the daily carbohydrates during breakfast. A mix of fast- and slow-releasing carbohydrates is best, such as oatmeal with berries. Restricting carbohydrates outside of breakfast and post-workout will prevent elevated insulin when the body is in a 'storage' state (sitting at a desk, watching television, etc.).

Post-workout, muscle cells are much more receptive to sugar (glucose) for a period of up to 2 hours, allowing any sugar intake to be shuttled preferentially to the muscle which has been worked.¹⁵ Fortunately, this tissue (working muscle) creates a demand for more oxygen— opening up arteries that supply oxygen, but also the nutrients absorbed from a meal. A high-glycemic post-workout drink is best at this time, and can be very generous in terms of the number of grams of carbohydrates.

Not only does a high-glycemic meal rapidly provide sugar to replenish the stored glycogen, but it also shuts down the release of stored fat. At first this may sound negative, but if the metabolic demand remains high and much of the incoming sugar is being diverted to glycogen storage post-exercise, the muscle cell is forced to rely on the small amount of stored fat contained within the muscle cell, as stored fat is no longer being released by fat cells.¹⁶ By reducing stored intramuscular fat, over time, the muscle cell becomes more sensitive to

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insulin—allowing it to respond to the anti-catabolic protection more vigorously.

Another recent study announced at the annual meeting of The Endocrine Society revealed findings that consuming a high-sugar load (75 grams of dextrose, similar to many sugar-laden drinks) reduced testosterone by 25 percent, and a negative effect on testosterone remained 2 hours later.¹⁷ This supports a 2005 study that found men who switched from a diet relatively high in fat to a low-fat diet experienced a significant reduction in total and free testosterone.¹⁸ Whether this represents a balance between anabolic processes (insulin vs. testosterone) or some yet-to-be-recognized regulatory pathway is unknown.

Fat is a dietary necessity, but it has suffered from too great a generality. Dietary fat is not pre-destined to become body fat; it is an excellent source of energy and certain fatty acids act as precursors to messenger signals. Fish oils may act to reduce inflammation, but for the drug-free bodybuilder, this is not necessarily a positive.¹⁹ Only recently has the role of muscle cell inflammation in hypertrophy (muscle growth) been appreciated.^{20,21}

A diet high in fish or fish oil may blunt the hypertrophic effect of exercise, making it more difficult to attain or maintain muscle size. It has been noted in Muscular Development several times that what is good for bodybuilding is often bad for health. This seems to be true with components relating to cardiovascular health and longevity, such as the examples of fish oil and resveratrol.

Animal fat is high in saturated fat and is an excellent source of arachidonic acid, which is a fatty acid that can be converted into pro-growth chemical messengers called prostaglandins.²² However, the arachidonic acid signal is suppressed with the use of non-steroidal anti-inflammatory drugs (NSAIDs) and fish oils.²³

Dr. Dan's Diets

The basic diet for a 200-pound drug-free bodybuilder looking to lose fat at a moderate pace while maintaining (or possibly building) muscle is as

follows:

Slightly hypocaloric: roughly 2,400 calories per day, assuming 30-45 minutes of low-intensity cardio and 45-60 minutes of resistance training. This will stimulate fat loss without being overly catabolic to lean mass.

Macronutrient ratio: 25/45/30 by calorie (carbohydrate/protein/fat). This will provide ample carbohydrates timed appropriately, without maintaining elevated insulin throughout the day. Forty-five percent of protein supplies slightly more than 1 gram of protein per pound of bodyweight. Fat should be sourced from animals (including egg yolk) or olive oil, with minimal fish oil exposure (one or two fish-containing meals per week).

The chemically-enhanced bodybuilder can utilize a greater ratio of carbohydrates, as he is manipulating the release of stored fat and maintaining a high metabolic rate—as well continuing anabolic growth via a combination of drugs. If fat loss is being accelerated (such as with growth hormone) in the presence of metabolic rate boosters (i.e., clenbuterol, thyroid hormones), then insulin concentration does not need to be modified through diet. In fact, there may be a greater demand for insulin, as growth hormone use can lead to a state of insulin resistance.²⁴

Chemically-enhanced bodybuilders may benefit from a higher carbohydrate load to promote the anabolic effect of higher volume and intensity training, along with a number of drugs. Of course, greater protein intake is also necessary, shifting the balance of calories away from fat and toward the other two macronutrients.

Assuming that a chemically-enhanced bodybuilder is promoting the *chemical* release and burning of stored fat, he can consume a maintenance number of calories or greater, promoting lean mass accumulation. As the anabolic 'signal' is created to an exaggerated degree by the drugs, there is more of a margin to allow for anti-inflammatory fish oils (and NSAIDs, if necessary). Thus, a chemically-enhanced bodybuilder's diet would differ as follows:

Maintenance or slightly hypercaloric diet: roughly 3,000-3,200

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calories per day, assuming lipolytic and thermogenic drugs are used. 30-60 minutes of low-intensity or interval cardio and 45-60 minutes of resistance training daily.

Macronutrient ratio: 35/50/15 by calorie (carbohydrates/protein/fat). This provides a greater amount of carbohydrates and protein to provide the nutrients necessary to respond to the anabolic environment, while allowing for a sufficient intake of fats, including anti-inflammatory fats.

Undoubtedly, many will argue the points here or raise the issue of supplements that are thermogenic/anabolic/hormone modifying. There are a number of issues that create individual variability (work-related energy expenditure, genetics, stress, level of drug use, etc). This article is intended only to offer a starting point for discussion and guidance. ■

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Nutrition Performance

By Robbie Durand, M.A.

DAG: Does It Really Burn Fat?

I hear people talking about which is the best fat for enhancing weight loss. I hear about olive oil, coconut oil, MCT oils, and macadamia nut oil— but the other day, I was in the grocery store, and next to the olive oil, I noticed a unique oil blend called ENOVA,[®] which is rich in diglycerides (DAG). DAG is a glyceride consisting of two fatty-acid chains covalently bonded to a glycerol molecule through ester linkages. Cooking and salad oils contain two types of fats, triglycerides (TAG) and DAG.

Common cooking oils, like vegetable and corn oil, are TAG-based, with small amounts of DAG. The bottle claims that by using this particular type of oil, which is rich in DAG, “metabolism of DAG can help you maintain healthy bodyweight and body fat.” Enova[®] brand oil, made from natural soy and canola oils, is the only DAG-rich oil on the market, and it’s supported by more than 20 years of scientific research. Studies show that consumption of DAG-rich oil results in lower serum triglyceride levels after a meal. And the metabolism of DAG can help you maintain healthy bodyweight and body fat.



The Science Behind DAG

DAG molecules follow a similar path as triglycerides; however, the majority of the DAG molecules can’t be efficiently reassembled into chylomicrons by enzymes in the small intestine. That’s because chylomicrons transport exogenous lipids to liver, adipose, cardiac and skeletal muscle tissue where their triglyceride components are unloaded by the activity of lipoprotein lipase. As a result, they travel through the portal system to the liver where they’re oxidized, and less is available to be stored as fat.

DAG oil affects both bodyweight and body fat in humans and animals.¹⁻⁴ The factors involved in controlling bodyweight and body fat include increased energy expenditure, fat oxidation, fat storage capacity, and appetite control.⁵ Increasing fat for use as energy is an evolving concept as a



way to maintain fat balance (fat intake minus fat oxidation) and energy balance (energy intake minus energy expenditure).⁶

Several recent studies have examined the effects of DAG oil on energy metabolism. It has been suggested that the position of the fatty acid on the glycerol skeleton is responsible for the metabolic differences of DAG oil. It is hypothesized that the DAG is less readily resynthesized as chylomicrons and is directly transported to the portal vein for oxidation. This increase in fat oxidation may lead to increased satiety. Specifically, DAG, in contrast to dietary TAG, has been associated with positive physiological outcomes in the area of weight control, fat deposition, and lipid metabolism. Thus, a new strategy proposed to prevent weight gain and fat deposition is the inclusion of DAG-enriched oil in the diet.

Human Studies With DAG

Several short-term human studies demonstrated greater fat oxidation with DAG oil consumption for a single meal,⁷ for one day,⁸ and four days,⁹ compared with TAG oil consumption. A previous study observed that DAG oil consumption increased fat oxidation levels in humans,

NutritionPerformance

although it did not affect energy expenditure over a 36-hour stay in a respiratory chamber.⁸ The magnitude of the increase in fat oxidation in this study was 4 grams per day, equivalent to approximately 1,460 grams per year.

The researchers suggested that an increase in fat oxidation may enhance weight loss over the long term. The enhanced fat utilization associated with DAG oil consumption may suppress body fat accumulation and body fat gain by altering the fat balance. The mechanism by which DAG oil increases fat oxidation remains speculative.

Insulin is the most potent regulator of postprandial fat metabolism through the mediation of lipoprotein lipase and hormone-sensitive lipase (a fat storage enzyme). Two studies have reported **lower postprandial insulin levels after loading with a diet containing DAG oil, compared with a diet containing TAG oil.**^{7,10} The lower postprandial insulin levels after DAG oil consumption compared with TAG oil consumption indicated a smaller stimulus in the direction of fat storage, and increased postprandial fat utilization may be associated with the findings of increased total fat utilization in DAG oil consumption.

The results from animal and human studies indicate that dietary DAG has a faster oxidation rate than dietary TAG, and that DAG oil consumption increases whole-body fat oxidation, compared with TAG oil. The mechanism of enhanced fat utilization following DAG oil consumption may be related to the lower postprandial insulin levels compared to those after TAG oil consumption. Enhanced energy metabolism may explain the greater loss of bodyweight

and body fat in overweight and obese individuals who consume a DAG oil diet. ■

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Supplement Performance

By Robbie Durand, M.A.

Casein Hydrosylates Increase Protein Synthesis More Than Casein

Many people have been talking about whey protein hydrosylates, but now there are casein protein hydrosylates. Casein has a long-term effect in suppressing protein breakdown, which your body needs to sustain for 6 to 8 hours during sleep without food. In fact, a total release of amino acids in the bloodstream can last as long as 7 hours after ingestion of casein protein! Casein hydrosylate is a preparation made from the milk protein casein, which is hydrolyzed to break it down into its constituent amino acids.

The ingestion of a protein hydrosylate, as opposed to its intact proteins, has been proposed to facilitate protein digestion and absorption, increase plasma amino acid availability, and thereby increase muscle protein synthesis. A more rapid increase in circulating amino acid concentrations has previously been reported after the ingestion of whey protein hydrosylate, compared to regular whey protein.¹ Whey protein hydrosylates have been shown to be superior to whey protein peptides for increasing protein synthesis, but what about casein hydrosylates?

Researchers from the Netherlands examined the effect of casein versus casein hydrosylates on protein synthesis. Subjects received a beverage

containing 35 grams of casein or casein hydrosylates. Researchers measured insulin, protein synthesis and protein breakdown in two groups of men.

At the end of the study, researchers reported that ingestion of casein hydrosylate— as opposed to casein— increases the rate of

This study shows that a hydrolyzed protein is more rapidly digested and absorbed, which results in a greater amino acid delivery. Thus, hydrolyzed casein provides a protein source that is more rapidly digested and absorbed in humans.

plasma amino acid availability, and tends to increase muscle protein synthesis in humans.⁸

Researchers also observed a greater increase in plasma amino acid concentrations after ingestion of hydrolyzed casein, compared to its intact protein casein hydrosylates. This study supports an earlier study showing higher peak plasma amino acid concentrations after administration of hydrolyzed casein, compared

to its intact protein (i.e., casein).² The exogenous amino acid phenylalanine's appearance rate increased to a greater extent after ingestion of the casein hydrosylate, compared to casein protein. During the 6-hour post-feeding period, 25 percent more dietary phenylalanine appeared in the circulation after ingestion of the hydrosylate, compared to the intact protein.

Consequently, this study shows that a hydrolyzed protein is more rapidly digested and absorbed, which results in a greater amino acid delivery. Thus, hydrolyzed casein provides a protein source that is more rapidly digested and absorbed in humans, which improves plasma amino acid availability.

Casein Hydrosylates Are Also More Anti-Catabolic

Another interesting finding was that protein breakdown rates tended to be further lowered after ingestion of protein hydrosylate, compared to casein protein, which may be due to the greater insulin release that was observed after protein hydrosylate ingestion.

Elevated insulin concentrations have been shown to inhibit protein breakdown.^{3,4,5} In contrast, it has



been suggested that increases in circulating insulin concentrations are instrumental in stimulating skeletal muscle blood flow—thereby augmenting amino acid delivery to the muscle.^{6,7} Consequently, both the increase in plasma amino acid availability and the greater plasma insulin response after hydrolyzed casein—compared to casein ingestion (during the initial 3-hour post-feeding period)—might enhance postprandial muscle protein anabolism.

This result indicates that the intake of a casein hydrosylate, as opposed to casein, further stimulates the anabolic response to food intake mainly by inhibiting whole-body protein breakdown. ■

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MuscleGrowth Update

By Robbie Durand, M.A.

Acute Increases in Testosterone Lead to Increases in Androgen Receptor

Hormones, such as human growth hormone (GH) and testosterone, have been shown to play a role in muscle hypertrophy and strength gains. Men suffering from GH or testosterone deficiency have increased fat mass, reduced muscle mass, and reduced muscle force production. The anabolic effects of testosterone on muscle mass are dose- and concentration-dependent.¹ An earlier study demonstrated that supraphysiological doses of testosterone can induce increases in muscle size and strength in younger men *without exercise*.² Testosterone-induced increase in muscle mass is associated with a dose-dependent increase in cross-sectional areas of both type I and type II muscle fibers.³ However, the mechanisms by which testosterone increases muscle mass are not well understood.

The prevalent dogma for the past 50 years has been that testosterone increases muscle mass by stimulating fractional muscle protein synthesis.^{4,5} Testosterone administration primes skeletal muscle for growth by increasing net protein synthesis, even in the fasted state.^{6,7} The logical extrapolation of a continued increase in net protein synthesis is that it results in increased lean body mass and strength. Additionally, testosterone stimulates many other pathways besides just increasing protein synthesis rates, to stimulate muscle hypertrophy.

Testosterone administration also results in increases in GH secretion, androgen receptor number, satellite

"If I trained high volume, I would have had a great physique because of my genetics, but I don't think I would have reached Mr. Olympia status without high intensity!"

—Dorian Yates

cell activity, and increased IGF-1 expression in skeletal muscle.⁸ It has also been demonstrated that the increase in muscle anabolism is associated with an increase in the expression of intramuscular mRNA IGF-1.⁹ High-intensity resistance exercise has been shown to increase anabolic hormones, but there is confusion as to how important the acute increases in anabolic hormones are.

Acute Increases in Anabolic Hormones for Muscle Hypertrophy?

There has been recent debate as to how effective the acute increases in testosterone concentrations are for increasing muscle mass. A couple of studies have suggested that acute increases in testosterone are not necessary for increases in muscle growth; this has led to confusion as to how to train.

Researchers at the Exercise Metabolism Group at McMaster University reported that muscle hypertrophy took place without acute increases in anabolic hormone concentrations.¹⁰ Ten healthy, young male subjects performed unilateral resistance training for eight weeks (three days per week). Unilateral

resistance exercise is where you train only one arm or in this case, leg (as opposed to both arms or legs), while the other arm or leg is used as a 'control' or untrained muscle. Exercises used in the study were knee extensions and leg presses, performed at 80-90 percent of the subject's single-repetition maximum (1-RM). Blood samples were collected before, immediately after, 30, 60, 90, and 120 minutes post-exercise.

Total testosterone, free testosterone, GH, and insulin-like growth factor-1, along with other hormones, were analyzed for the first training bout and following the last training bout. Thigh muscle cross-sectional area (CSA) and muscle fiber CSA by biopsy (vastus lateralis) were also measured pre- and post-training.

No acute changes in GH, testosterone, or IGF-1 concentrations were observed in the 90 minutes following exercise, and there was no influence of training on the anabolic hormones measured. GH did show a moderate increase 30 minutes post-exercise, but returned to baseline values by 90 minutes. Training-induced increases were observed in type IIb and IIa muscle fiber CSA. No changes were observed in fiber CSA in the untrained leg. Whole-muscle CSA increased by in the trained leg and remained unchanged in the untrained leg.

In conclusion, unilateral training induced local muscle hypertrophy in the exercised limb only, which occurred in the absence of testos-

MuscleGrowthUpdate

terone, GH, or IGF-1 circulating levels. So I guess acute increases in anabolic hormones are a waste of time... well, not so fast. A new study was published which really emphasizes the importance of acute anabolic hormones during resistance exercise.

The Study that Rocked the Exercise World!

Bill Kraemer, one of the pioneers in GH research, told the American College of Sports Medicine, "GH and testosterone responses to acute resistance exercise are essential and more importantly, the anabolic hormone response that occurs with resistance exercise is like a symphony and GH and testosterone are an important part of that symphony along with IGF-1, MGF, and other anabolic hormones."

High-intensity exercise has long been shown to increase testosterone and GH levels, but researchers recently published something in the *Journal of Steroid Biochemistry and Molecular Biology* that emphasizes the need for high-intensity exercise and backs up what Dr. Kramer has been saying for years.

There has been recent debate as to how effective the acute increases in testosterone concentrations are for increasing muscle mass. A couple of studies have suggested that acute increases in testosterone are not necessary for increases in muscle growth; this has led to confusion as to how to train.

Those who say that acute increases in testosterone are not necessary are missing an important point: acute increases in resistance exercise-induced elevations in circulating T potentiate gains in muscle strength following **long-term training**.¹¹ Researchers wanted to know if **acute increases** in exercise-induced testosterone had any effect on the androgen receptor, which has been shown to influence muscle hypertrophy.

Researchers designed this really cool study to investigate the situation:

• **Group A:** Young male subjects performed heavy leg extensions only, and immediately had a thigh muscle biopsy.

• **Group B:** Young men performed high-intensity heavy resistance exercise with **both upper- and lower-body work**. They performed bench presses, bent rows, and overhead presses. Afterward, the group performed heavy leg extensions followed by a muscle biopsy from the thigh. The researchers had the subjects perform an upper-body exercise with lower-body exercise to elicit a large increase in anabolic hormones.

While both groups had a muscle biopsy taken from the thigh after heavy leg extensions, the only difference was that one group did some upper-body work, which enhanced testosterone production.

Acute Increases in Testosterone Enhance Androgen Receptors

The group that performed high-intensity, upper-body exercise and lower-body exercises had larger increases in testosterone than the group that only performed a lower-body exercise (i.e., leg extensions), but here is the really cool part. The group that performed bench presses, bent

rows, and shoulder presses had a larger increase in androgen receptor function in their legs!

I am not advocating a whole-body workout, but what the study shows is that the greater the increases in testosterone, the greater the increases in androgen receptors... even in different body parts (i.e., legs).

So now you have a study showing that you can increase androgen receptors to a larger extent by the acute increases in testosterone.¹² This means you could possibly see some growth in your arms, chest, and back by sticking to exercises that generate large increases in testosterone.

I remember reading an article

where a bodybuilder swore that doing heavy squats increased his arm size. Based on the current study, this all makes sense. In the study, the acute increases in testosterone were enhanced in the legs by doing high-intensity, upper-body exercise. ■

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bodybuilding science

By Robbie Durand, M.A.

Bands and Chains Increase Bench Press Strength More Than Traditional Bench Press

After filming Rodney 'Raw Power' Roller blast out a 600-pound 'raw' bench press a few weeks ago, everyone wants to know, "How can I improve my bench press?" Rodney is an amazingly strong human being, and you can check out his bench press routine on MuscularDevelopment.com at <http://mdtv.musculardevelopment.com/content/view/2074/225/>. Interesting new research has been published that demonstrates you can get stronger in the bench press—faster—by including some training devices such as bands and chains in your routine.⁸

Constant Versus Variable-Resistance Training

Performing a regular bench press with free weights is considered a form of 'constant resistance exercise.' Constant resistance is a form of training where the resistance is directed against the target muscle, or the muscle group does not vary through the range of athletic movement. Lifting free weights is an example of constant resistance. In an exercise involving constant resistance, the muscular power generated and the effect of the resistance on the muscle is not constant.

An example of the effect of constant resistance is found in the simple curl of a free weight using a conventional dumbbell. At the start of the exercise, the muscles of the arm, primarily the biceps, pull the weight upward. There is a point, as the dumbbell is lifted, when the resistance on the muscle is greatest. At the movement before and after that maximal point, the resistance force is much less. At the conclusion of the exercise, there is little or no resistance being applied to the biceps.

Variable resistance such as bands and chains requires differing degrees of force to be applied to the target muscle to create constant resistance, compelling the muscle to work harder to meet the demands of the exercise. In a variable-resistance arm curl, forces applied to the biceps are variable at each stage of the curl—in order to maintain the same resistance throughout the trajectory of movement. Variable-resistance exercise is designed to achieve maximum muscular involvement.

Inherent in the effectiveness of variable-resistance exercise is the relationship between the intensity required of the athlete and the volume of resistance work involved. Resistance exercises are typically carried out through the use of specialized machines that are designed to permit control of the entire force-generating movement.

Machines may be designed for training any muscle group in the body. Machines that isolate the pectoral muscles through a seated bench press, deltoid machines, and shoulder-extension machines are three of a multitude of models commercially available. The common features of variable-resistance training machines are the presence of cables, pulleys, or other devices to create variability, coupled with the placement of the user in a fixed position to ensure that the user cannot recruit other muscle groups to assist in the completion of the prescribed movements.

Successful variable-resistance training is predicated on the principle of regulating the amount of work per unit of training time. One of the world's best-known variable-exercise machines is the Universal line, developed in the early 1970s by Dr. Gideon Ariel, a specialist in biomechanics. Universal machines are constructed on the basis of two principles that guide their application in muscular development:

1. Resistance exercise is most effective when a multiple number of joints are required to complete the exercise.
2. Explosive repetitions—achieving the maximum level of mental concentration and obtaining the maximum firing levels of muscle fiber for optimal performance.

The engagement of multiple joints in resistance training requires the body to develop the strength to counteract the forces applied by the machine throughout the entire range of motion in each repetition. When those repetitions must be performed as rapidly as possible, without sacrificing adherence to proper form or otherwise compromising the desired range of motion, the athlete will be compelled to react with greater speed. The faster the athlete must react to the resistance directed into the target muscle, the faster the individual muscles will fire. This approach mirrors other training methods used by athletes to develop the capabilities the fast-twitch fibers present in each muscle.

Is There Any Science to Using Bands and Chains?

The use of elastic bands and weighted chains has received widespread recognition and increased popularity in recent years among powerlifters, for increasing bench press and squat strength. In the past, elastic bands have been used primarily in rehabilitation settings. Recently, elastic bands have been found to induce greater strength gains than traditional weight training.^{1,2}

Because of the tendency of the elastic bands to pull a barbell down during early phases of a lift, an increased eccentric loading phase occurs, which supports higher eccentric velocities associated with this type of training. Considered a form of non-traditional training, the external resistance using these devices (bands and chains) may be altered to target specific neuromuscular recruitment patterns and enhance strength production. By changing the resistance training modalities, such as using traditional bench press movements, an attempt has been made to specifically match the strength curve of a particular exercise movement.

When hanging chains are added to the ends of a barbell, free-weight exercise models exhibit characteristics that are similar to variable-resistance training devices. Weighted chains alter the kinetics of the barbell during the entire range of movement, as well as increasing the mechanical advantage of the movement.^{3,4,5} This system accommodates a lifter by decreasing load at the weakest joint position, and increasing the load at the lifter's strongest joint position. It is hypothesized that weighted chain training would provide optimal resistance throughout the entire range of motion, through the accommodation of the changing length-tension relationship of the musculoskeletal system.

Weighted chain training has also been reported as a method for injury prevention, because decreased loads occur at the deep squat position, where shear forces on the knee are greatest.⁶ In addition, because of the progressive decrease in resistance at the end of the eccentric phase, a strength trainer will spend a longer period of time in the acceleration phase at the early stages of the concentric contraction because of lighter loads at this time frame. Furthermore, accommodating resistance techniques are purported to be more advantageous than traditional strength training because of decreased time in the deceleration phase that accompanies traditional free-weight training.⁷ Training methods that shorten the deceleration phase and increase the time the barbell is in peak velocity may increase one's rate of force development over time.

Bands and Chains Put to the Test—Do They Work?

Researchers took 36 healthy young men—Division 1-AA football players—and had them perform a seven-week off-season workout program. The test subjects were assigned to band training, chains training or traditional bench-press training.

•The 'chain' group used three chains (Westside Barbell, Columbus, Ohio) that were attached to each side of a bar-

bell, for a total of six chains on the bar. Four chains consisted of training chains (two on each side), and two were considered support chains (one on each side). A training chain was 5 feet long and weighed 20 pounds. Each 5-foot support chain weighed 4 pounds. The combined weight of all chains used was approximately 85-90 pounds. The two support chains attached the training chains to the barbell and were lowered to the ground during work sets.

•The 'elastic band' group used elastic bands (Iron Woody Fitness) to progressively increase overall resistance during the concentric portion of each repetition. Conversely, during the eccentric portion of each repetition, resistance progressively decreased. The elastic bands were anchored at the bottom of the bench press apparatus, creating maximum tension at the top of the lift with lowest tension at the bottom. All three groups performed 6 sets of 3 repetitions and were instructed to accelerate the barbell as fast as possible. A qualified strength and conditioning coach closely supervised and tracked training loads and volumes to ensure high-intensity levels, proper technique, motivation, and adherence to the program.

Band and Chain Training Beats Traditional Bench Press Training

The researchers observed a significant increase in maximum strength in the variable-resistance training group (bands and chains), compared to the traditional free-weight training group (bench press). All three groups increased bench press strength, but the weighted chains group increased their bench press by 9.6 kg (7 percent), the elastic bands group increased their strength by 10 kg (8 percent), and the traditional bench press group by 7.7 kg (5 percent). These results suggest that when weighted chains and elastic bands are incorporated into off-season and in-season training cycles, athletes are provided with a unique yet viable method to increase strength and power variables.⁸

These methods are particularly useful in exercises that mimic ballistic movements, such as the bench presses or squats performed explosively. So if you want to increase your bench press, consider adding some bands and chains to your routine to increase maximal strength. ■

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Sports Supplement Product Review

GNC's X-12 Fat Burner

X12 is the latest fat burner from GNC. **GNC X12™** is a clinically-proven, proprietary thermogenic blend that has been shown to help you burn more calories. It also helps increase your metabolism before, during and after exercise; helping burn more calories post-exercise. In addition, just one capsule of **GNC X12™** contains ingredients to support improved endurance and sports performance.

The ingredients in **GNC X12™** are Niacin (B3), a Proprietary Thermogenic Blend, Caffeine, Capsimax, Capsicum Fruit Extract, and Bioperine. It has been suggested that foods containing caffeine, capsaicin, bioperine, and certain B vitamins may be safer alternatives than ephedrine-containing supplements for weight loss.^{1,2}

Previous studies have found the active ingredients in GNC X12 to be potent stimulators of fat metabolism:

Caffeine: Studies have suggested that caffeine can increase resting energy expenditure and that this thermogenic effect may be dose-dependent.^{3,4}

Capsaicin, the pungent component of red pepper, has also been shown to increase resting energy expenditure by nearly 32 percent, when added to a standard breakfast.⁵ It has also been found that plasma epinephrine and norepinephrine levels to be greater 30 minutes after a hot red pepper meal when compared with a standard meal without hot red peppers.⁶ Like capsaicin, the thermogenic ingredient in black pepper (**piperine**) has also been reported to increase energy expenditure.⁷

Niacin may be a metabolically-active vitamin because niacin intake was found to be lower in adolescents who were overweight, when compared with those who were not overweight.¹¹

When all the ingredients are combined, a synergist effect occurs, which seems to be more effective for enhancing metabolism than single uses of each one. For example, caffeine may be a potent amplifier of thermogenesis in humans when given in conjunction with agents stimulating the sympathetic nervous system. It has been found that



PHOTO BY PER BERNAL



Sports Supplement— Product Review

adding caffeine and capsaicin to daily meals increased daily energy expenditure by approximately 3 percent.

Additional studies have examined the effects of a combination of thermogenic supplements (i.e., caffeine, capsaicin, catechins, L-tyrosine, and calcium) on acute (4-hour) and 24-hour energy expenditure. The study found that the supplement increased acute energy expenditure by 2.4 percent and daily energy expenditure by approximately 2 percent.^{8,9}

GNC's X-12 Fat Burner: Clinically Proven to Increase Metabolism

In this month's **Journal of Strength and Conditioning Research**, researchers examined the effect on **GNC X12™** Fat Burner on metabolism. Thirteen women and 15 men volunteered as subjects for the study. For the two experimental trials, subjects received either **GNC X12™** supplement, or the placebo in random order. The supplement was then administered, and the post-supplementation resting energy expenditure measurements were monitored continuously for 50 minutes.

Subjects then walked on a treadmill for 60 minutes at a self-selected, predetermined speed between 3.2 and 4.8 km·h⁻¹, which remained constant for both experimental trials. **The results of study found that GNC's X-12 increased resting energy expenditure (6 percent) greater at 50 minutes post-supplementation and 4-8 percent greater during the entire post-exercise period for the supplement, compared to the placebo.** The results from the present investigation showed that the supplement increased oxygen consumption during the post-supplementation, exercise, and post-exercise periods. There were also significant increases in fat oxidation 20 and 30 minutes after ingestion of the supplement, but not the placebo.¹⁰

GNC X12™, a clinically-proven, proprietary thermogenic blend, has been shown to help you burn 12

times more calories. It also helps increase your metabolism before, during and after exercise— helping burn up to 278 more calories cumulatively.

For more information about GNC products, please visit: www.gnc.com.

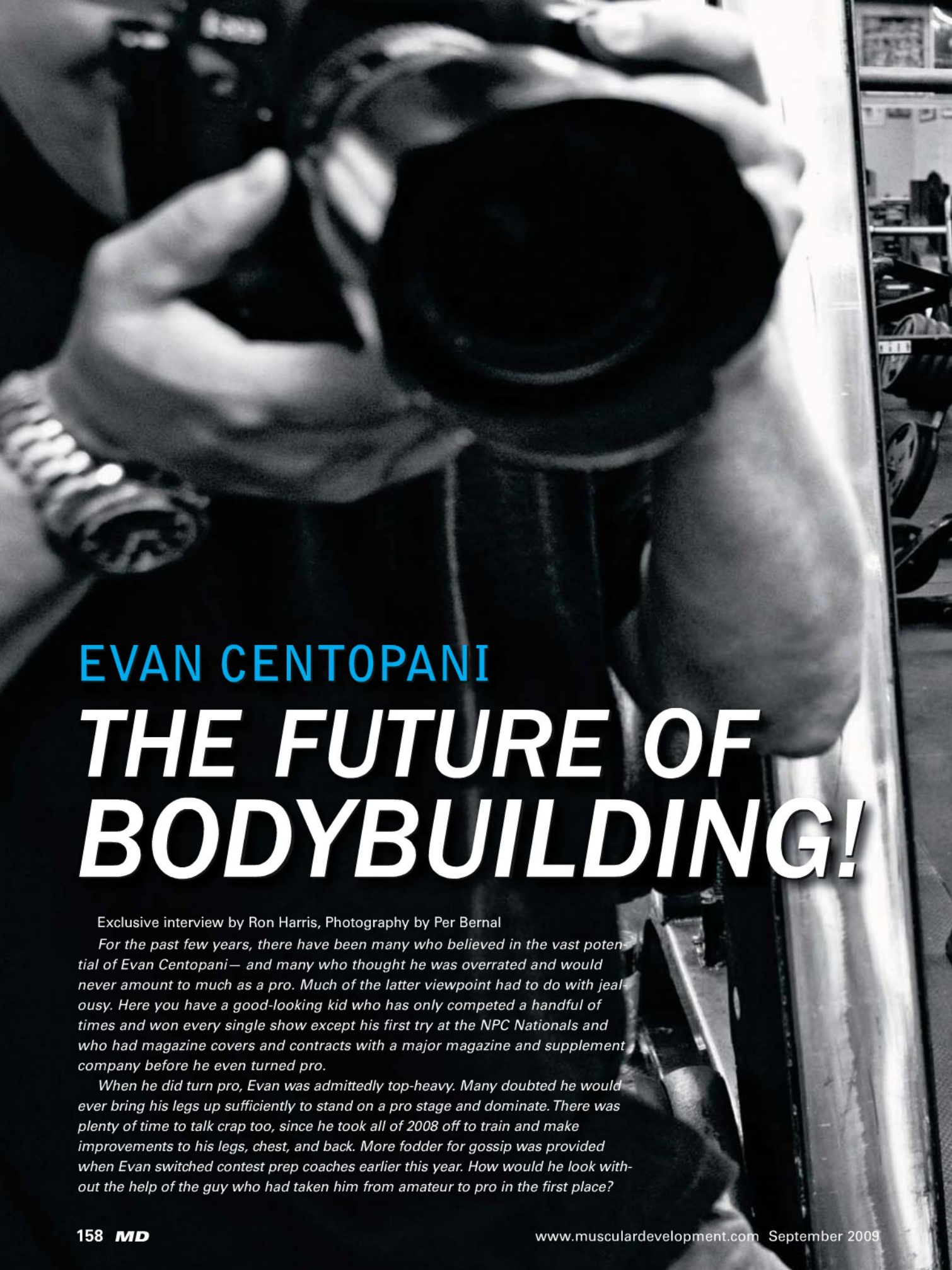
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EVAN CENTOPANI

THE FUTURE OF BODYBUILDING!

Exclusive interview by Ron Harris, Photography by Per Bernal

For the past few years, there have been many who believed in the vast potential of Evan Centopani— and many who thought he was overrated and would never amount to much as a pro. Much of the latter viewpoint had to do with jealousy. Here you have a good-looking kid who has only competed a handful of times and won every single show except his first try at the NPC Nationals and who had magazine covers and contracts with a major magazine and supplement company before he even turned pro.

When he did turn pro, Evan was admittedly top-heavy. Many doubted he would ever bring his legs up sufficiently to stand on a pro stage and dominate. There was plenty of time to talk crap too, since he took all of 2008 off to train and make improvements to his legs, chest, and back. More fodder for gossip was provided when Evan switched contest prep coaches earlier this year. How would he look without the help of the guy who had taken him from amateur to pro in the first place?





At the recent New York Pro, the 27-year-old finally unveiled the retooled version of his physique. The rookie was bigger and harder than ever, and stormed to a decisive victory in a field that included veterans like **Dennis James**, **Markus Ruhl**, **Silvio Samuel**, and **Darrem Charles**. Evan Centopani was not 'all hype' as some had alleged. Nope, he was the real deal, and he had just made one hell of an entrance into the pro ranks.

RH: Congratulations Evan, and I am so sorry I was not there to see you win! But tell me, did it feel like you were in a dream, winning your first pro show, on the same stage you won your very first contest, with a legion of family, friends, and fans out there in the audience? What thoughts and feelings went through you at the moment your name was called out as the winner?

EC: (sighs) It's pretty crazy, because from almost the minute I won the Nationals, I had it in my head that this was the show I would do first. And I told myself even then that I could win it. I must have pictured myself winning



the New York Pro thousands of times in my head. After prejudging was over I had a good feeling, but I knew that nothing was guaranteed. I've been to enough shows to know that things don't always go the way you think they will.

But then as they were calling out the places for **Hide, Silvio, and Markus**, I was thinking, holy shit! Maybe I really am gonna win! The only two left are me and **Dennis James**. Then, honestly, when I was announced as the winner, the main thing I felt was an overwhelming sense of relief. The reaction from the crowd was amazing, too. I had a lot of people out there. Just at my gym, Gold's in New Haven, they sold over 100 tickets to the show. Everybody was there: my attorney, my chiropractor, so many friends and acquaintances. It didn't really hit me that I'd won until I was walking back to the hotel with my girlfriend. At that moment I felt like the luckiest man in the world. I've been fortunate enough from the beginning to have great people behind me who sincerely wanted to help me and see me do well.

RH: Some people I talked to, who have been to that show every year for 10 years or more, said they hadn't heard a crowd reaction like that since Victor won.

EC: I am blessed with a lot of great fans, especially in the tri-state area. They really did make some noise and I appreciate each and every one who came out to support me.

RH: Was there a huge victory dinner after the show? Did you go to some restaurant and tell the hostess, table for 200, please?

EC: That would have been fun, but no. I actually wanted to get a group picture of my family and friends, so I went to the mike and called them up onstage. But the theater staff freaked out and kicked us all out before we could even get everybody together. I'm not sure if it





was a fire hazard, if they thought the stage would collapse, or what. But a lot of people scattered after that. A group of about 40 of us went across the street to a deli.

RH: Where you proceeded to eat everything on the menu?

EC: No, you know the weird thing was I wasn't very hungry. I just had some Gatorade, a lot of water, and for some reason I was craving a fruit salad. I ordered a burger to go for later that night when I got hungry, because I did need to replenish the sodium.

RH: Well that wasn't what I expected to hear. You also joined a very elite club of men who won their first pro show. Off the top of my head, the only ones I can think of are Flex Wheeler,





Vince Taylor, Gary Strydom, Phil Heath, Lee Labrada, and Porter Cottrell. That's less than 10 men out of hundreds of pros we've had over the last 20 years.

EC: I can't even process that right now. That's an incredible group of guys you just mentioned.

RH: The biggest change for this show was that you worked with Oscar Ardon for the first time. I know he has a unique approach. Can you outline it briefly, or at least how it's different from other contest prep coaches you have worked with or heard about?

EC: Let me start by saying that since I got into bodybuilding, I was always a fan of **Dorian Yates**. Oscar places so much emphasis on the mindset, and Dorian was the same way. To me he was the quintessential pro bodybuilder. He embraced everything a great pro should be. Going into this show, I knew a lot of people wanted me to do well, but I also knew there were quite a few out there who didn't think I could do it. I read that everybody Dorian knew in England told him that he wouldn't even place when he did this show (*note: then called Night of Champions*), and he ignored them and took second place to **Momo Benaziza**. He had been told it was impossible

because he was a 'nobody,' but he believed in himself. He was told the same thing next year when he went up against **Lee Haney**, that he had a snowball's chance in hell of beating him, but he didn't listen and pushed Haney hard before getting second.

RH: Dorian didn't win the New York show the first time he did it. Neither did Jay, Victor, or Kai. How does it make you feel that you were able to pull it off?

EC: Knowing that those men all got so much better after they first competed as pros gives me a feeling of accomplishment, and also a lot to live up to.

RH: For what it's worth, if you make the type of improvements that Dorian and Kai did after their first pro shows, I'm not sure anyone else in the pro ranks will be able to handle you. Fill in your chest and back, a little more legs, and you're good. I'd say you are maybe at 65-70 percent of your full potential right now. When you get to 95 or 100 percent, I can easily see you as Mr. Olympia.

EC: I do have a lot of work ahead of me. And I don't know if I will ever be Mr. Olympia or not, but I know I can be a lot better than I am right now.

RH: I understand that Oscar goes beyond the diet and insists on training you. Obviously, you know your way around the weights already, so what did Oscar have to offer that you weren't already doing?

EC: I'll try to sum up Oscar's philosophy. Bodybuilding is about knowing what to do, how much to do it, and when. It's not about following a specific diet or a specific workout routine. So many people have been asking me "Give me Oscar's diet!" (Note: *Evan's diet for the New York Pro is included in his column in this issue*). I hesitate, because it's irrelevant. So is the workout. The workout Oscar recommends for me is going to be different from what he has Kai do, or anybody else. Even the things that work for me today might not work for me in a week.

Aside from having a lot of close contact in person, on the phone, and texting, Oscar is huge on mental reassurance, the power of belief, and the power of suggestion. I'm not saying you can think your way to winning, but you do need to believe you can win for it to be possible. The mental aspect is such a big piece of the puzzle that a lot of

people don't even consider.

Getting back to Dorian again, if he had told people early on in his competitive days that he was going to be Mr. Olympia not once but six times, they all would have thought he was delusional. At that time you had so many guys with better genetic potential like **Flex**, **Shawn**, **Kevin**, and **Paul Dillett**. But Dorian was willing to work harder and be more critical of himself than any of them were. He had a strong sense of conviction and so much confidence. I know for me it's hard to be confident, even when people are telling you that you're going to do well. Can you imagine how tough it is when people are discouraging you at all turns?

RH: Yeah, Kai was another one who had to believe in himself, because nobody else did. Another question I had: what difference does the weight training make at that late stage in the game? I would think that all of that would be far more productive in the off-season, when you can eat more and actually grow.



EC: It's actually very important that you keep training as heavy and hard as possible, because the muscles have a different look when you do that. They start to lose that density and hardness once you start going too light and doing all kinds of giant sets of whatnot. The two biggest days Oscar always emphasized were legs and back. I've always found those to be the most physically demanding training days anyway. He arranged my split so that I always had a full day of rest before both of those workouts.

What we did for back wasn't too different from what I normally do, a variety of basic exercises like barbell rows and deadlifts. But for legs, all we did most of the time were squats and leg presses. Maybe we would do a few sets of leg curls, too. Oscar has you spend a long time warming up, which is great for safety purposes. For squats, I would usually do two very heavy sets of 6-8 reps, then two sets of 20. But those 20-rep sets weren't light. I would use a weight I could really only get 10 reps with, then pause and take a few breaths, get another couple, and so on until I hit 20. Those were brutal. One time Oscar was spotting me and I dumped the bar because my legs just gave out completely. Other times he was helping so much on the last few reps I don't know how much I was doing. I was always totally spent at the end of a leg workout with him.

RH: So you kept training heavy with the basics all the way until the end?

EC: Yeah, we did it all — bench presses, squats, deadlifts, barbell rows, military presses. I've always done that anyway, but Oscar reaffirmed it for me. One thing he did was push me a lot harder than I would have trained on my own. I have always tended to ease up the last couple weeks before a show. I know how most guys train during the last week, and we didn't do

any of that nonsense. It was fucking dreadful to be training so heavy at that point, but Oscar kept saying you have to give the body a reason to hold on to all that muscle.

RH: Will you be working with Oscar more or less all the time now, or not until you start getting ready for your next contest?

EC: We haven't really talked about it yet. Toward the end of the prep, Oscar said, "Evan, you know I like you, but once this show is over I look forward to not talking to you for a while." He took a lot of time away from his family to work with me. Soon he's going to be

working with Kai for the Mr. Olympia, and I wouldn't want to take away from that. I still plan on getting down to Brooklyn to train with him occasionally, and he's talked about coming up to New Haven with Kai to train, too. I'm leaving it all up to Oscar.

I also have to express my gratitude to Oscar's wife. I met her for the first time at the New York Pro and I thanked her and apologized for monopolizing her husband's time. I'm sure a lot of wives wouldn't put up with that.

RH: Let's talk about what specific improvements you made. Your chest did come up, but it's kind of





hard to notice when you have two of the thickest sets of pecs in bodybuilding, Dennis and Markus, standing next to you!

EC: I know! It reminded me of the first time I did the Nationals. I had worked so hard to bring up my legs since the Juniors and then I had to stand next to Desmond Miller! I do see a difference in my chest, looking at the photos from late 2007 to now. I think I can actually make both my chest and my legs good body parts. I know I said once that I didn't think my legs would ever be anything but good enough so that

my upper body didn't overpower them—

RH: That was only about six months ago, I think. It was one of the articles we did together.

EC: Now I really think it's possible. Oscar says the shape is there, and he's already shown me some things in my diet that were holding me back from growing a little.

RH: Your back was better, too.

EC: It's a work in progress. When **Victor** does a front double biceps, you can see his lats swoop out to the side. I don't have that yet. I need more width and more thickness, but I'm on the right track. Since the show, I





ence did you see in your physique in terms of fullness?

EC: I definitely saw more fullness. At one point about three weeks out, Oscar replaced my carbs with fats to see how I would do on them at that point. After a week I felt like shit, and I looked like shit. He saw me and agreed, and we put the carbs back. A couple days later I was fuller again, as well as crisper and drier. Things were really 'popping' when I hit poses. I will say that the keto diet is a very efficient way for the average person to get in shape. In terms of looking your best on a bodybuilding stage, I think you need to have all the macronutrients included and manipulate them as needed to get the best results.

RH: Did you feel any different eating carbs during your prep? Did you have any more or less energy than before: How were your moods?

EC: I wouldn't say I felt better. I always felt



have only been training three times a week, and the workouts are back, chest, and legs. Shoulders and arms get indirect work from back and chest exercises, and they are strong body parts for me, anyway.

The day of rest before every workout allows me to give my body more food and helps the nervous system recover more completely. I find I don't get as sore doing it this way, either. I'm going to give this a try for a while and see how it goes.

RH: Unlike your last few shows, you ate carbs during your diet for the New York Pro. What differ-

good on a keto diet and had a lot of energy. But if I can be honest about this prep, I never felt so miserable before. I think a lot of it had to do with all the driving. It usually took me two hours to get to Brooklyn and three hours to get home. When you're dieting and training hard, that takes an extra toll on you.

My day went pretty much like this. I would get up, do cardio, eat, shower, pack my meals and gym bag, then head to New York. I would meet with Oscar and go over anything we needed to, work out, get another meal, and drive home. By the time I got home it was usually around eight o'clock at

night. I had time for one last meal, another cardio session, a quick shower, and right to bed. There was no downtime, no free time.

My girlfriend Erica graduated from dental hygiene school two weeks out from my show, and it felt weird putting on jeans and a polo shirt. I think it was the first time I had worn anything but gym clothes since the Arnold! Basically, I didn't do anything during my prep that didn't pertain to the show.

RH: Luckily it all paid off! I know you started cardio pretty late this time in the prep. How much did you end up having to do, and how does that compare to previous shows?

EC: At the most, I was doing two hours a day, compared to up to three hours in the past. A lot of times toward the end, Oscar would tell me to only do one hour, or no cardio that day at all. The weight was just coming off because my metabolism was racing along.

There were a few days toward the end when I wouldn't do any cardio or weights. Oscar would tell me to eat whatever I wanted for the first three meals of the day. Anything! Cap'n Crunch cereal, maple frosted mini-wheats, French toast, steak and potatoes, eggs. It was necessary to keep my size on at that stage. And by that night, I would look fuller, drier, and harder.

RH: What cardio machines did you use?



EC: Oscar wanted me to do the StepMill, but I preferred to do my cardio at home most of the time. All I have is a treadmill. So I would challenge myself by putting the incline up more and walking as fast as I could without starting to run. In the past, the cardio I did was very easy 'la di da' type, because Dave was very much against getting your heart rate up too high.

RH: What did you weigh for this show versus the Nationals, and does the scale even tell the whole story?

EC: At the Nationals, I weighed in at night after a full day of eating and before any water depletion at 245½ pounds. A friend of mine had a scale in his room and I went up after prejudging the next day to see what I weighed before I ate anything — I was 237. This year, back at the hotel after prejudging, I was 249½, so it was about a 12-pound difference.

RH: A lot of people have commented that your win represented a 'changing of the guard' of sorts. Here you have this young guy making his pro debut, beating two grizzled veterans at the tail ends of their careers. Were you thinking that when you were up there with Dennis and Markus — that these two were competing on pro stages back when you were in high school?

EC: It was crazy. I told them both that I had been reading about them in magazines long before I had



even thought of ever competing myself, and that it was an honor for me to be onstage with them. I know that neither one of them is really in the prime of his career right now, but it was still really cool and wild to get to compete with them. The funny thing is that I had really expected to be intimidated backstage once I saw them, because they are both such huge guys. I didn't feel that way. After the show when I saw the photos on the MD site, I was like holy shit! They both looked really good!

RH: Do you also think this win validated you in some ways to those who doubted you? There was a lot of grumbling in the industry that you had magazine covers, and contracts with a magazine and a supplement company before you were even a pro. In particular, some seemed annoyed that you took a full year off after turning pro rather than start competing right away. Does your win effectively shut some of those people and their complaints up?

EC: People will always talk shit. They've done it at every show I have ever competed in. If I win, it's always the contest was weak, he didn't beat anybody good, or the good guys were off, blah, blah, blah. I'm not looking for anybody else's approval. I do this because I believe I can do it well. I feel I have a lot of potential to live up to.

You read stuff online about how this or that show is fixed, or you can't win the Olympia unless you're sponsored by MuscleTech. MD and Universal didn't sponsor the New York Pro. Then I hear the conspiracy theory that I won because I'm a young guy and they want fresh talent doing well. Well, you can't have it both ways. If I had lost, they would have said it was because I was a young guy and I

had to pay my dues! I'm not saying the judging is always perfect, but for the most part, the guy who looks the best wins.

Another thing to keep in mind is that things look different in online photos than they do at the actual event. Things even look different 10 or 20 rows back, as opposed to where the judges are sitting up front. I'm fortunate enough to have the support of a lot of people— a very solid group.

So now that I've won, I don't feel the need to say 'I told you so,' or 'Fuck you guys who said I would bomb.' I recognize that when I turned pro, I wasn't good enough to be a decent pro yet. I would have got my ass kicked if I had competed before I took the time and made improvements. All I can say is— don't ever doubt me again!

Make sure they know I'm kidding with that.

RH: OK— Evan was joking, everybody. Did you take any type of vacation after the show and the photo shoots were over?

EC: Not yet, but I booked a beach house in Hyannis on Cape Cod for a week, and I'm really looking forward to that. I'm not too far from beaches in Rhode Island or New Jersey,



so I want to do some day trips with my girlfriend, maybe a long weekend or two at the beach. Hanging out with friends, just all the normal stuff you take for granted. Dieting for a show is almost like being in prison. You sacrifice a lot for a few months, and it makes you appreciate your regular life so much more, once it's over.

RH: Kai went from 255 to 320 in less than a week after he won the Australia show. How bad was your rebound?

EC: I ate something on Memorial Day that gave me a little case of food poisoning, so I think that kept my weight down. Spending three days on the toilet will do that to you. I'm only 265 now three weeks after the show, and I really haven't eaten any shitty food. I have a pretty clean appetite. The only things I was really craving were fruit and grains, because I don't get much of either when I diet. I had a little ice cream.

But after my first show in 2005, I ate as much pizza and ice cream as I could, and went from 225 to 260 in three or four days. I felt physically ill, and almost went to the hospital because I thought something must be seriously wrong. I never went that crazy again because I never wanted to feel so bad like that.

RH: You are qualified for the Mr. Olympia. Are you going to do it?

EC: Definitely not.

RH: Next year you will definitely do the Arnold and the Olympia, right?

EC: Right now, that's the plan. I talked to some people, especially Steve Blechman, and he feels that with another solid off-season over the next seven months, I can do pretty well next year in both of those shows. He's been right about everything and given me great direction so far.

RH: There are a few young guys we talk about as being definite candidates for Mr. Olympia, like Phil Heath and Dennis Wolf. What do you think about your chances of getting the big title one day in the not-too-distant future?

EC: I keep my thoughts about that to myself. I think if you truly believe something, you dilute it by talking about it too much. Thoughts are most potent when you keep them to yourself and focus on them.

RH: Good strategy. Again Evan, congratulations on the win and enjoy life after contest prep!

EC: All right Ron, talk to you later. ■



202-CALIBER GUNS!

2X NY Pro 202 Champ
Kevin English Packs
Serious Firepower

By Ron Harris, Photography by Per Bernal

This is MY house!

Woe to the man who ventures to New York City with hopes of winning the 202 title there at the New York Pro. Recently, native New Yorker **Kevin English** won that event for the second year in a row, also managing to beat **David Henry**, widely considered to be the best 202-pound pro today and currently holding the premier 202 Showdown title from the event held at last year's Olympia weekend.

Unfortunately for David (who was admittedly off his best form both times), he ran into a tank of a bodybuilder named Kevin English, a man who, prior to 2008, had only competed twice in the 10 years he'd owned an IFBB card. Packed with thick, dense, grainy muscle from head to toe, Kevin's biggest weapons in his physique arsenal are his sensational biceps and triceps.

Out-gunning His Competition

Kevin's arms began their transformation into the mighty cannons you see before you back in seventh grade when his dad, an avid weightlifter nicknamed 'Superman' by friends, bought him a 20-pound— yes, you read that correctly— weight set.

"I didn't know what I was doing, but I would do sets of 100 reps on things like the bench press and curl, and I grew like a weed." After four months, he convinced dad to upgrade him to the standard 110-pound set of cement weights with the plastic covering that many of us got started on.

From that point on, English's body began growing— if not much vertically, definitely in terms of muscle mass. At 5'4", Kevin eventually would carry 270 pounds or more in the off-season. And those guns? Shit— how





about 22½ inches, and still well over 21 in contest shape? Not too shabby, huh? We tracked him down shortly after his second New York Pro 202 win, to talk about how he trains those bazookas.

***Alternate Dumbbell Curl
(not shown)***

Kevin used to alternate, starting off arm day with either biceps or triceps, but over the past year his elbow tendonitis has become more severe. He finds the elbows are

warmer and more elastic by the time he's done with bi's, which is a perfect preparation for his elbows so they are ready to work. For his mountain-peak biceps, English likes to start with a very basic power movement, either barbell curls or alternate dumbbell curls. Many times he will do them seated to avoid swinging the weights and leaning into the working arm, two common issues with the standing version. Still, he handles up to 90 pounds in each hand in the off-season. "That's a weight I can handle with a minimum of cheating," he points out.

Preacher Curl (Shown with Hammer Strength Machine)

Preacher curls are another low-rep power move Kevin has depended on for years, as they do a good job of taking his mighty shoulders out of the equation and force his biceps to do the work. He is shown here using a machine, but in 'real life' he prefers a barbell. On those he will stack as many as five quarters (25-pound plates) on each side of the EZ-bar. For those of you keeping score at home, that's 150 pounds plus the bar, which I have seen weigh as little as 15, or as much as 25 pounds. Lately he has upped his reps on biceps from 6-8 (or even lower at times) to an average of 8-10, as he now has all the size he needs on his biceps. At this point, detail means everything.

Hammer Curl

All top bodybuilders recognize the importance of developing the brachialis muscle, and Kevin is no exception. For hammer curls, he actually prefers to sit and brace the working arm on his inner thigh, which at first glance might have you mistaking these for concentration

curls. But they are in fact hammer curls, as evidenced by the bulging knot-shaped muscle between the long head of his biceps and the lateral head of his triceps.

Though Kevin has increased his rep range on other biceps movements, he has actually been going lower on hammers, just to switch things up recently. The rep range has come down from 12-15 to 6-8. For his seated 'hammer concentration curls,' Kevin will go up to a 60- or a 65-pound dumbbell. At other times, he will stand and curl with both arms simultaneously, which allows him to go up to a pair of 90s or 100s. "I'm pretty strong on those," he deadpans.

Cable Curl

Kevin's biceps have thrived on free weights for many years now, and he will only do some type of cable curl "once in a blue moon." But as I discussed with Kevin, cables do make for incredible photos, as they allow the photographer to catch the biceps in just the right position of contraction to make for stunning visuals. Only a truly 'No Bullshit' bodybuilding magazine would even let me write something like that. Kevin still thinks cables have value



Typical Arm Workout

BICEPS

Alternate dumbbell curls	3 x 8-10
Preacher or Spider curls	3 x 8-10
Hammer curls	3 x 6-8

TRICEPS

Rope pushdowns	3 x 12-15
Weighted dips	3 x 8-10
Close-grip bench press	2 x 8-10
Overhead rope or dumbbell extensions	3 x 8-10

Training Split

Sunday:	Chest and shoulders
Monday:	OFF
Tuesday:	Back
Wednesday:	Arms
Thursday:	OFF
Friday:	Legs
Saturday:	OFF

Oh, My Aching Elbow

Once Kevin mentioned that he had fairly severe tendonitis in both elbows, a bell went off in that foggy brain of mine. I too have struggled with the same affliction, and so have a good percentage of you who have been training heavy for more than a few years. I had to know how English was able to do things like 385-pound close-grip bench presses and 135-pound weighted dips under the circumstances. Here's what he credits:

Warming Up: "I always start off with biceps now, which brings a lot of blood to the area. Then I begin every triceps workout with a few sets of high-rep pushdowns using the rope attachment on the cable. By the time I'm done with those, there is plenty of heat and blood around the elbows."

Anti-inflammatory Meds: "If my elbows have been aching, I will take some Advil® or Motrin® the night before I train arms. I don't think it's good to take ibuprofen all the time, so I limit myself to only using it when I really need it."

Supplements: "I find that taking Omega 3-6-9 is just as effective, if not more so, than the typical joint complex supplements you see with glucosamine and other ingredients. The fish oil seems to have a strong anti-inflammatory action."

Treatment: "My training partner, Dr. Michael Camp, is also a physical therapist. He uses techniques like ART (Active Release Technique) and deep tissue massage to help with aches and pains. The deep-tissue work has also made a big difference in the growth of my lats and quads by permitting better blood flow."







for many trainers. "It's all about finding what works best for you. There are plenty of guys out there who get a great feeling in their biceps and respond well to them— I just happen to love free weights for mine."

Rope Pushdown

Kevin's M.O. on triceps for a very long time was to start with his heavy compound power movements like close-grip bench presses or weighted dips. Again, due to his aforementioned elbow inflammation problems, he has had to adjust his routine accordingly and begin with

an extension movement to warm up the elbows, as well as pre-fatigue the tri's, so they won't require quite as much resistance later on to get the job done.

Hooking up a rope attachment to the high cable pulley, he slowly squeezes out three sets of 12-15 reps with the entire stack of 150— which is actually not very heavy at all for him— until the third set. He feels the cable is a very valuable tool now for him, and a safer alternative than something like skull-crushers. "You can go fairly heavy without that rough spot where the rep turns around, because the resistance is more evenly distributed along the range of motion."





Arm Growth for the Rest of Us?

Kevin is essentially a genetic mutant when it comes to building big arms. That is to say, he has never had any trouble coaxing growth out of them. Come on, at 5'4" those guns are over 22 inches, for God's sake! But knowing that English is also a respected personal trainer at the Powerhouse Gym in Syosset, Long Island, I asked him what he has found to be most effective at stimulating arm growth for average chumps like the rest of us.

"You need to switch things up all the time," he advised. "The muscles adapt incredibly fast to anything you do for them repeatedly, so you have to change the angles you hit them from, the rep range, and rep speed. You have to do straight sets sometimes, supersets at other times, just constantly be exposing the muscles to something they haven't dealt with before, or at least not for a while."

The Rambod Factor

For both last year's New York Pro and 202 Showdown, Kevin worked with local New Yorker Oscar Ardon. "We did a keto diet, which worked very well for me earlier in the year at the New York Pro, but not so well in Las Vegas a few months later." He wanted to enlist Oscar's services once again for this year's New York Pro, but he wasn't available.

Proving once again that 'everything happens for a reason,' Kevin turned to MD's own Pro Creator, Hany Rambod, and the partnership was a huge success. "One of the first things that let me know Hany was a nutritional genius was after I got food poisoning at the Arnold Classic from some lobster and mayonnaise at Morton's. I dropped over 12 pounds in a few days and I was miserable. Even though I gained the weight back in a week, I still looked totally flat. I sent Hany some photos and asked him what I should do. He had me stop all cardio and eat 1,000 grams of carbs a day for a month. I thought I would get fat, but I just kept getting fuller and harder."

Kevin is also dabbling with Hany's FST-7 training system, but he is most excited about the changes he's seen in his physique with Rambod's nutritional guidance. "I was growing and getting stronger as the New York Pro was approaching," English reports. "Just to give you an idea, last year toward the end I was struggling with 315 on the barbell incline. This time I was doing 405 for reps. Last year I could hardly do the 120s on the flat dumbbell bench press— this year I was putting up 160s at two weeks out from the show. Who does that?"

Weighted Dips

Next up are a longtime favorite of Kevin's, the weighed dip. You may recall that this is also a frequently selected exercise by other triceps freaks like **Victor** and **Branch**. With no further warm-up aside from the rope pushdowns he just did, Kevin will loop a chained weight belt through three 45-pound plates, a total of 135 pounds, and perform three sets of 8-10 reps. I was shocked that anyone with problem elbows could even attempt this, but Kevin assured me that his elbows feel fine by this point in the workout.

For the next power movement, close-grip bench presses, he does wrap his elbows up so they are securely supported. In the past, he would go as heavy as 455 pounds on those and the reps would be as low as two or three. Now, he keeps the weight around 365-385 and the reps stay at a more moderate 8-10. English is adamant that consistent heavy work on the compound movements is a must for huge horseshoes.

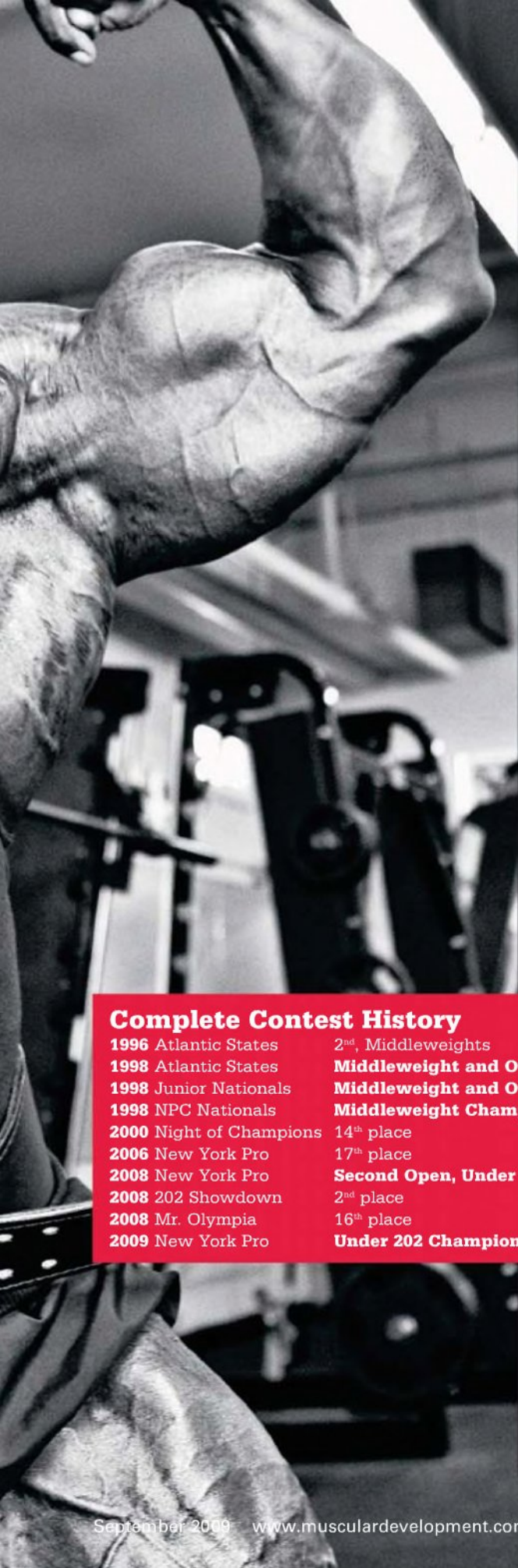
"You're only going to get so much development with the various extension movements," he says. "Power movements like dips and close-grips build the bulk of the muscle in a way that things like skull-crushers just can't."

Reverse-grip Cable Pushdown

Kevin will finish by working just one triceps at a time, and he often alternates between a single overhead dumbbell extension and the reverse-grip cable pushdown shown here. If he opts for the dumbbell, he keeps his elbows wrapped and will go up to a 75- or 80-pounder. "I actually prefer the dumbbell, because I feel a much better stretch in the long head of the triceps," he notes.







Next Up: One More Try for the 202 Showdown

At 36 years old and after having barely competed for the first 10 years of his pro career, Kevin knows the clock is ticking. "I realize the clock is ticking— I only have about six or seven years left to make my mark in this sport." His main goal now is to win the 202 Showdown in Las Vegas, which for all intents and purposes is the lightweight Mr. Olympia title. "I blew it last year at that show and I have no one to blame but myself," he admits. "I talked a good game, but I didn't deliver. I know I can be unbeatable in the 202s, as long as I put 100 percent into my training, my diet, my rest, and my presentation. I didn't do that last time, but you can bet I will now. It's not even about beating Dave Henry or anybody else. It's just about me finally putting it all together and being the bodybuilder I always wanted to be but never really believed I could be— until now."

Special Thanks

Kevin would like to thank his sponsor, Cytogenix, as well as his girlfriend Erika "for all her support and for putting up with all my nonsense." He would also like to thank Hany Rambod, Dr. Michael Camp, Bev Francis and Steve Weinberger, and his good friend Shannon Edgerton for all his help.

Kevin English is available for guest appearances and seminars, personal training in the New York area, and endorsements. Serious inquiries, please e-mail kevenglish@hotmail.com.

But Weight— There's More!

Even when I first spoke to Kevin a year ago after his first New York Pro 202 win, he had expressed how difficult it is for him to get down to 202 pounds. Even though he is only 5'4", he has weighed as much as 280. "That was too much, but I'm actually very comfortable in the high 260s or even 270," he says. "You know how guys say they can't breathe or they have trouble climbing more than a couple stairs? I don't have any of that around 265."

Theoretically, Kevin could probably compete in great condition at about 215-200 pounds. But leaving the 202s behind and competing in the Open class is a tough choice. "I've spoken with some judges and officials, and they all say pretty much the same thing," he begins. "I can be the King of the 202s and play the role of a big fish in a small pond. Or, I can

go into open shows and possibly win a smaller one here and there. But realistically, can I ever place high at the Mr. Olympia? I don't know. I definitely want that 202 Showdown title. I think if I win that this year, I might try doing Open in some shows next year and then just come down to 202 again for the Showdown to defend my title. We'll see how it goes." ■

Complete Contest History

1996 Atlantic States	2 nd , Middleweights
1998 Atlantic States	Middleweight and Overall Champion
1998 Junior Nationals	Middleweight and Overall Champion
1998 NPC Nationals	Middleweight Champion (Pro status)
2000 Night of Champions	14 th place
2006 New York Pro	17 th place
2008 New York Pro	Second Open, Under 202 Champion
2008 202 Showdown	2 nd place
2008 Mr. Olympia	16 th place
2009 New York Pro	Under 202 Champion

KAI GREENE ROAD TO THE MR. OLYMPIA

***THE PREDATOR IS READY
TO ROLL THESE MONSTER
WHEELS INTO VEGAS!***

By Ron Harris, Photography by Per Bernal

Legs Like No Other

I'm not going to say that **Kai Greene** has the best legs in pro bodybuilding today, though the argument could be made. A hell of a case could be made that **Branch Warren** deserves that distinction, too. What cannot be disputed is that Kai Greene's legs are quite unique. If you saw photos of 10 or even 20 pairs of lower bodies of various IFBB pros, you would be able to pick out Kai's in two seconds flat.

It's not so much the sheer bulk of the Predator's quads, hams, and glutes that sets them apart. What does make Kai's legs different is the astounding level of detail and separation. In his side poses, there literally seems to be a dark chasm splitting the vastus lateralis from the thigh biceps, a canyon that travels all the way up to the hip. And of course, the most notable quality of Kai's quads are those rows and rows of zipper-like cross striations. The only other bodybuilder I ever saw with anything like that type of deeply-etched detail was the late **Andreas Munzer**, and his legs were nowhere near the size of Kai's.

A Predisposition for Wicked Wheels

All the top pros are genetically gifted. Some of those gifts were dormant and unknown until they began training with weights, while others showed signs long before they ever did their first rep. When Kai was a pre-teen, and at the

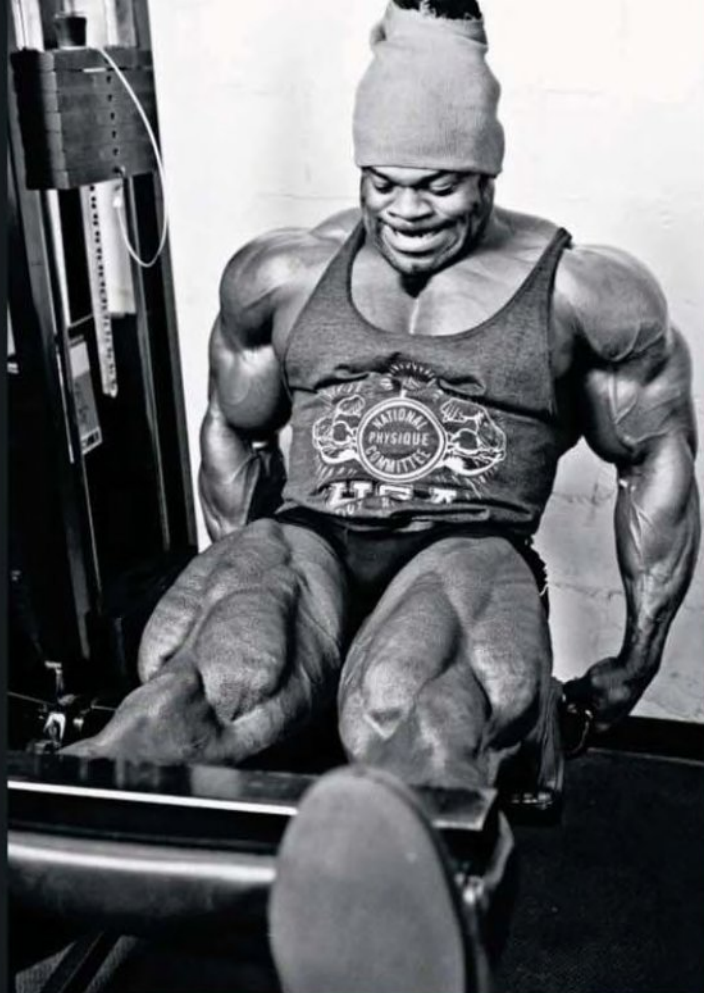
wardrobe mercy of various cheap-ass foster parents he lived with, he was forced to wear the super-short 'nut-hugger' shorts in the summer as opposed to the longer, baggier type that was coming into style.

"When I was about eight or nine, I remember adults asking me if I ran track," he recalls, "Because my legs were pretty muscular." It was a couple years later as a ward of the state of New York that he learned leg-training basics by watching Cory Everson do squats, lunges, and step-ups on her ESPN workout show. He also got his hands on a few dog-eared copies of old bodybuilding magazines and was in awe of the leg development of '80s stars like **Tom Platz** and **Tim Belknap**. It would still be a little while before Greene had access to weights, but the stage was set. Sooner or later, he was going to have some powerful wheels all his own.

Leg Blasting in the Early Years

Kai became immensely strong after just a few years of training. By the time he was 18, he could already bench press 500 pounds and squat with 800. It must be noted that his style of squatting was always that of a bodybuilder, with an erect torso and a shoulder-width stance. Even then he was constantly trying to improve his form, as building more mass was the real goal, and heavy weights were just a means to that end.





At that time, as is common with many younger bodybuilders and even the not so young, his quads were far better developed than his hamstrings. To remedy this glaring imbalance, Kai started working calves and hams first on leg day. Later, he would do calves first and then alternate quad and ham exercises throughout the workout so that each got equal treatment. Not long after turning pro, he began splitting up his leg training into different workouts for quads, and hams and calves.

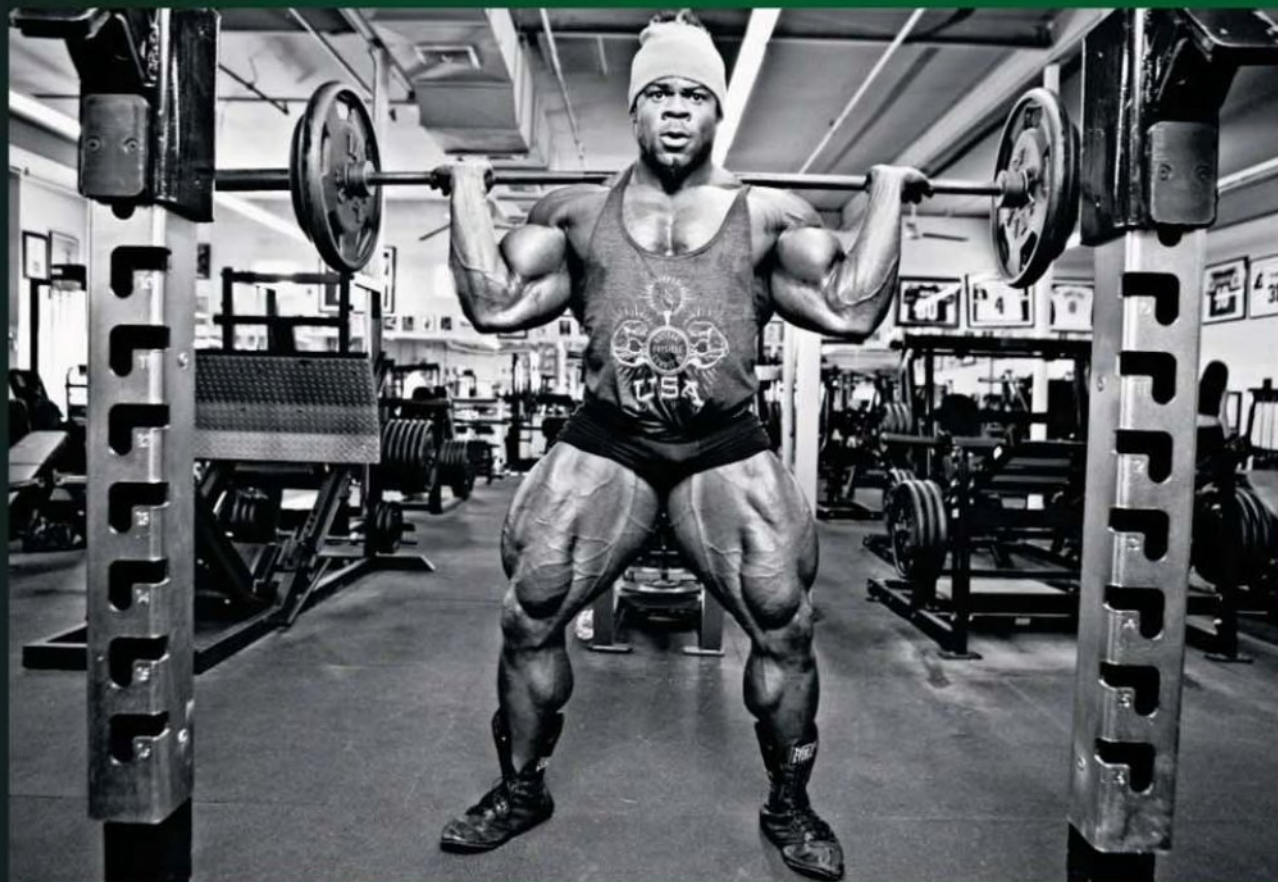
"I never really understood before why people did that," he says. "I always felt incomplete if I didn't hit the whole lower body at once. But I am learning more and more as the years go by, and now it makes sense. I am able to devote more energy and focus into each if I split them up." Kai's training will always continue to evolve, but here's a look at what he does these days for legs. It's a wide repertoire and there are some exercises in there that you don't see being done very often. But that makes perfect sense, because you don't see legs like Kai Greene's too often either. To be more accurate, nobody in the world has a lower body quite like his.

Leg Extensions

Kai kicks quad day off with four sets of leg extensions for 20 reps to warm everything up around the knees.

"Don't make the mistake of going super-heavy on these—at least not if you are doing them first," Kai cautions.

"Lately it's come to light that heavy leg extensions can be





hazardous to the knees, which is ironic when you consider that it's used so frequently in physical therapy for knee injuries." Even though Greene's quadriceps are quite powerful, he doesn't worry about using the whole stack for extensions. "It's all about blood flow and getting a light pump in the quads before I head over to the squat rack. Squats are the main event on leg day."

Squats

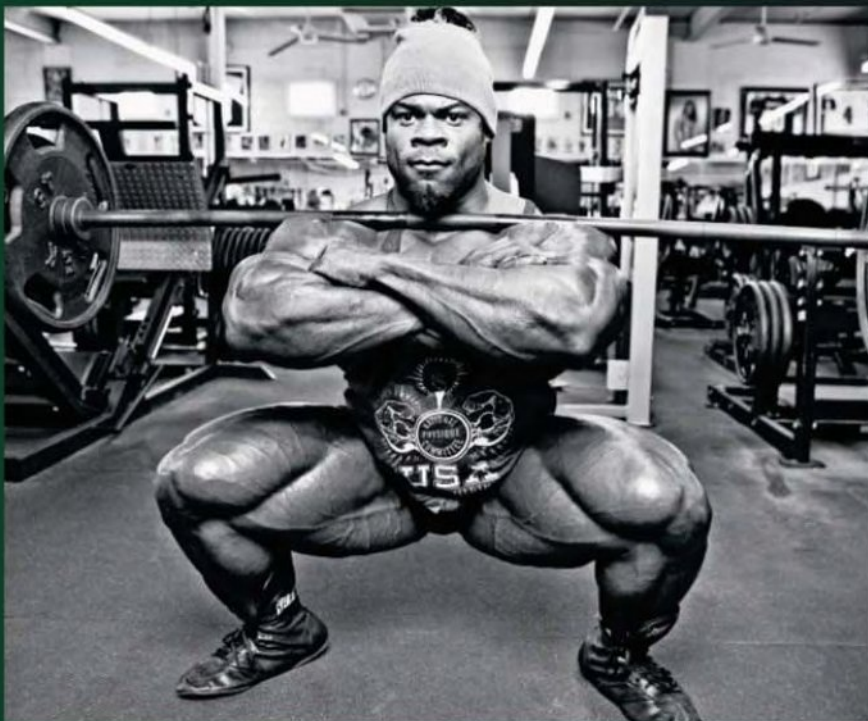
This is the big daddy of all leg exercises. Kai squats for higher reps, generally no less than 12, and more often around 20. He no longer uses 800 pounds, but still goes rock-bottom with over 600 with a fairly wide foot stance and toes turned out. "Full squats are how I learned to do the exercise from day one, and that's how I will always do them," he notes. "You got to go down in the bucket, ass to heels, or else you're not really squatting."

Greene squats out of a regular squat rack, and coach Oscar Ardon stands by only in case assistance is genuinely required. "We don't believe in any of that group effort, hugging each other stuff— all the reps we do are done on our own." Kai wears a belt and will also start wrapping his knees once he gets to 405. As far as whether he ever alternates the barbell with a Smith machine, Kai only laughed. "We

don't even have a Smith machine at our gym!" Truly great squat workouts are ones where Kai spends a lot of time on the floor catching his breath and waiting for the tightness in his lower back to diminish so he can do his next set.

Front Squats

Kai hasn't done front squats much in the past few years, but he certainly has done his share over the years. "I do like the movement," he clarifies, "but I got away from them for the opposite reason most bodybuilders





Ronnie Coleman in his prime and how nobody else on the Olympia stage could compare to him in that area.”

Kai does agree that front squats are an excellent option in certain cases. “If you happen to be someone who does heavy deadlifts for the back, you might run into issues where your lower back can’t handle both heavy squats and dead-



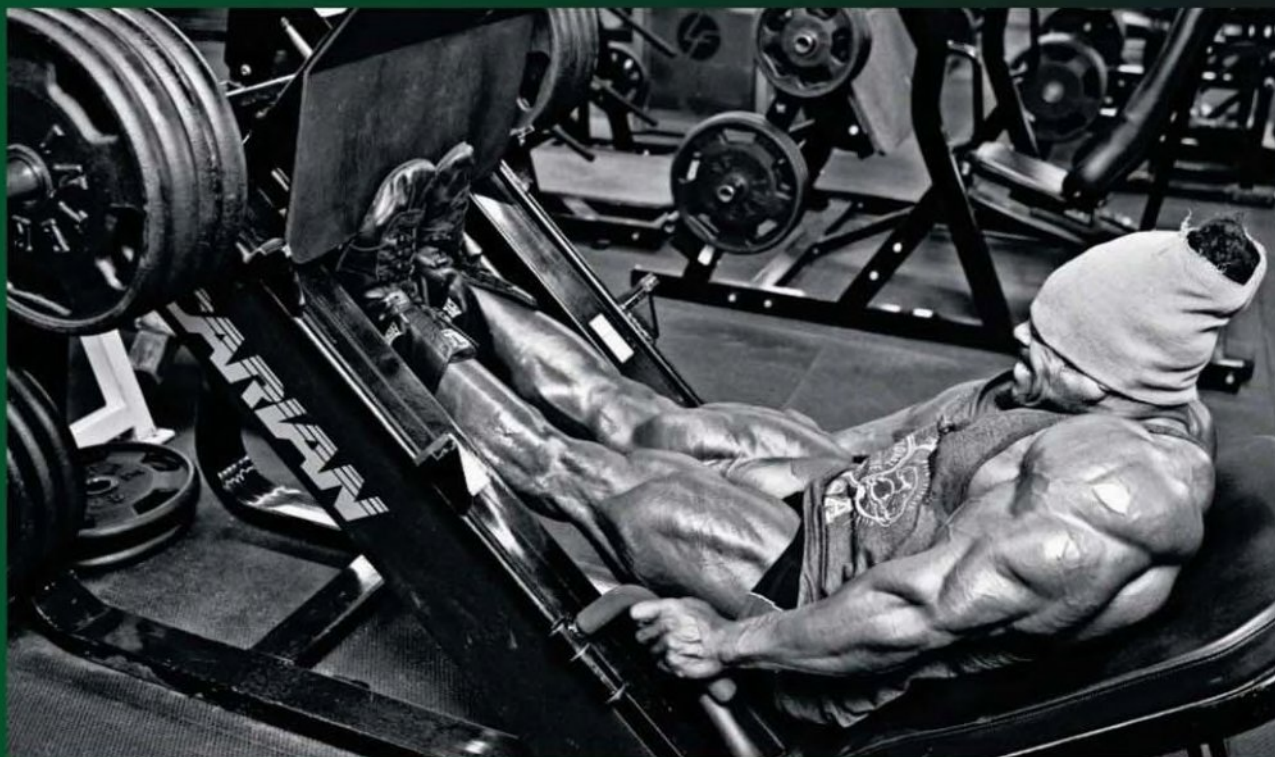
gravitate toward them.” He’s referring to the fact that front squats do a much better job of isolating the quads than regular squats, and take much of the involvement of the glutes and hams away.

“Bodybuilders are often afraid of overdeveloping the glutes,” he notes, “when in fact, the glutes are a powerful and impressive muscle when fully developed— think about

Kai's Pro Record

2005 New York Pro	14 th place
2006 Iron Man Pro	Did not place
2006 New York Pro	Did not place
2006 Colorado Pro	14 th place
2007 New York Pro	6 th place
2007 Keystone Classic	3 rd place
2007 Colorado Pro	Winner
2008 Arnold Classic	3 rd place
2008 New York Pro	Winner
2009 Arnold Classic	Winner
2009 Australian Pro	Winner





lifts in the same week of training — that's when front squats can be invaluable."

Leg Presses

The perfect follow-up to squats is the leg press, since squats effectively wipe out the lower back while supporting the heavy loads on the bar. Kai keeps the iron plate party going strong here. "The back is totally supported on leg presses, so I really load that thing up and knock out some tough sets of 20 reps with well over a thousand pounds," he explains. "Often I do these in rest-pause style, pausing to take a few breaths in between rounds until I get all the reps I want. I might also end with drop sets if I want to pump the quads up until they feel like giant balloons."

Jefferson Lifts

If you are wondering if what Kai is doing, straddling a barbell and pulling it up between his legs almost like a bizarre offshoot of deadlifts is a 'real' exercise, indeed it is. Jefferson Lifts, also known many decades ago as the 'straddle deadlift,' was a favorite of the elite weightlifters at the York Barbell Club in Pennsylvania, most notably Mr. America and Olympic weightlifting silver medallist **Steve Stanko**. "I actually saw it first in a training article some time around 1991 showing IFBB Pro **Guy Ducasse** doing it," Kai notes. "Later, a very good bodybuilder originally from Barbados named **Ian Mercer** used to do it at the Fifth Avenue Gym in Brooklyn where I trained." As with other leg movements Greene utilizes, the Jefferson Lift is more valuable as a method of getting more perfectly in touch with the glutes and hamstrings than it is for developing them. "Many of the unique leg poses that I do in my





chances are you have never once considered using it if you are a male. Again, this goes back to most men's misconception that the glutes are not a muscle group worth putting any time or effort into. Even if you're not a bodybuilding competitor, having firm, well-developed glutes is

routines, where I am lunging or even with both legs off the ground, are only possible because I have developed such a strong connection with those muscles."

Improvised 'Butt Blaster'

If your gym has one of those machines specifically used to develop the glutes, commonly called 'the Butt Blaster' after the most famous make and model,



something that most women find attractive on a man. And if you are a bodybuilder, you should realize how valuable it can be to have powerful glutes (preferably striated on contest day) to go along with your quads, hams, and calves.

Kai doesn't care for the machine version, as he feels it locks you into a restrictive path of motion. Instead, he improvises by kneeling on the ground facing away from a lying leg curl machine, as shown here, and kicking back at the pad one leg at a time. "This is also excellent for honing the ability to contract the glutes and hams simultaneously, which pays dividends onstage in all the back poses, as well as the relaxed stance from the rear."

Leg Abductor

Yes, here's another one that most men tend to leave to the ladies. And again, it's a machine that Kai finds quite useful for developing superior neurological pathways to his glutes. "Back around 1995, before Ronnie won his first Mr. Olympia, I saw him do something in his routine that was called 'The Butterfly' in the popular dance culture at the time. But he used it to show off his glutes and how well he could contract them at will." Since that probably won't be much an incentive to most of you, Greene added this to the



list of benefits. "Once you have mastered that connection, it will cross over to other aspects of your leg training. You'll be a more efficient squatter, and your hip flexibility will improve dramatically."

Step-ups

Though Kai had been aware of step-ups for many years, it wasn't until he was training out at Gold's Gym in Venice earlier this year and watched **Silvio Samuel** doing them that he decided to start incorporating them on a fairly regular basis in his own workouts. Often thought of as a quadriceps movement similar to lunges, Kai actually does them for his— you guessed it— glutes and hams.

"Quads are almost always the focus of everyone's leg training, but like the great Lee Haney said, that's only half the leg." Indeed, if anyone right now is raising the collective consciousness of bodybuilders as to just how impressive the glutes and hams are capable of becoming, it's Kai.

Walking Lunges

To finish off the quads, Kai opts for walking lunges. The beauty of lunges is that like squats, they bring not only the quads, but also the hams and glutes into the action. Once chuckled at as a 'girly' exercise until we saw Ronnie Coleman torturing his 34-inch thighs with them under the blazing Texas sun in the Metroflex park-





Lying Leg Curls

Kai's hamstrings have definitely caught up to his quads since his younger years, as you can see. Their size alone is stunning, but is made all the more impressive along with crevasse-like splits among the distinct muscles of the biceps femoris and semitendinosus.

He usually does four sets of both lying and standing single-leg curls each time he trains hams. One key point he makes is that keeping the hips pinned down to the bench is crucial for maximum hamstring recruitment. "You have to make it a very strict movement and really squeeze the hamstrings as you would the biceps in a preacher curl," he

ing lot, bodybuilders now understand the value of lunges. Yet many still don't do them, mainly because they are so taxing. It's also tough to get the form down right.

"The mechanics of the exercise aren't easy to master, compared to stuff like bench presses and curls," notes Greene. "And they can be very uncomfortable, especially at the end of a good quad workout. But anybody who doesn't do them is seriously missing out. Just make sure and save them for last, because after lunges you won't want to do anything else for legs."



tells us. "Too many guys try to use the whole stack and never get the quality contractions and stretches in the muscle that stimulate growth."

Standing Leg Curls

If you consider lying leg curls to be the basic movement for hamstrings just as barbell curls are for biceps, you could also think of standing single leg curls in the same manner as concentration curls. "Working one hamstring at a time allows a deeper level of isolation and mind-muscle connection," Kai says. "And it's also valuable because they are harder to cheat on, which is the number one factor holding back results on lying leg curls for a lot of guys."

Seated Leg Curls

A final option for leg curls is the seated version. Why bother with these at all? To the average trainer, they would seem redundant. But to advanced bodybuilders like Kai, they offer something the other varieties don't. "Seated leg curls are excellent for emphasizing the peak contraction portion of



the rep," he tells us. "You can certainly get a good contraction on lying or standing leg curls if you know what you're doing, but seated leg curls allow you to hold the contraction and really squeeze the hams more significantly."

Stiff-leg Deadlifts

Like lunges, stiff-legged deadlifts are another exercise that often falls by the wayside, due to its relative difficulty in mastering. And results aren't often immediately apparent. "Years ago a guy told me to just do the stiff-legs and think of them the same way as giving to the church," Kai says. "Keep doing them and don't expect to get anything back in this life. Then one day I looked back there and there were these huge bubbles of muscle from my glutes to the backs of my knees. You don't get those from leg curls alone." Greene used to do over 500 pounds on this movement, but nowadays he keeps the weight around 315 for his work sets, and always maintains a slight bend in his knees.

Seated Calf Raises

Kai will begin calves with standing calf raises, the first of three exercises he does for four sets of 12-20 reps twice a week for his calves. Far too many bodybuilders do only the standing calf raise in hopes of



Kai's Leg Routine (sample)

Quads

Leg extensions	3 x 20
Squats	4 x 20, 20, 15, 12
Leg presses	4 x 20-25
Hack squats	3-4 x 20-25
Walking lunges	3 rounds back and forth across gym floor

Hams and Calves

Lying leg curls	4 x 15-25
Standing leg curls	4 x 15-25 each leg
Stiff leg deadlifts	4 x 20
Seated calf raises	4 x 12-20
Standing calf raises	4 x 12-20
Toe presses on leg presses	4 x 12-20

Sample Training Split*

Day One:	Back and biceps, calves
Day Two:	Quads
Day Three:	Chest and triceps
Day Four:	Hamstrings and calves
Day Five:	OFF
Day Six:	Shoulders

*Kai rotates the order he trains body parts on a fairly regular basis.

having some cows to show off when warm weather calls for shorts, but they are truly missing the boat. There is a spade-shaped muscle underneath the gastrocnemius known as the soleus, and it can only be worked when the leg is bent at a 45° angle. This is where the seated calf raise comes into play. Greene works these for four sets too, mixing up the reps anywhere from 10 to 50 to shock the soleus into growth.

Donkey Calf Raises

Kai's third and final calf exercise is usually toe presses on the leg press machine, which is really another version of donkey calf raises as you see him using here on the machine specifically designed for them. Not all gyms have these, of course. The leg press is one way to simulate the same angle, with the torso and legs at

roughly a 45° angle. Another is the machine you see Kai using in other photos, the one that looks like a miniature hack squat. Kai informed me, since I never had a name for this device, that it's called a 'sloping toe press.' He knows because Oscar Ardon just bought a Cybex model for his private training gym.

Could Legs Be The Predator's Secret Weapon At The Mr. O?

We all know that the Mr. Olympia, or any IFBB show, is not a body part contest. That being said, Kai's legs were a big part of why he beat **Victor Martinez** out for the Arnold Classic title earlier this year, and they will be a major advantage once again in this year's lineup. Victor has never been known for having outstanding legs. **Dexter's** legs are good, but his quads don't have the sheer mass, outer sweep, or depth of muscle separation that Kai's do. **Heath's** legs are very good and so are **Wolf's**, but of the top men only returning two-time Mr. O **Jay Cutler** is really in Greene's league when it comes to the lower body (along with Branch, it goes without saying). But not one of these men is Kai's equal for the total package of size, shape, separation, and detail.

In a closely-fought contest that goes down to the wire as this Mr. Olympia is shaping up to be, it might just come down to something like legs if everyone brings his A game. And if that happens, Kai Greene will have the upper hand—thanks to his incredible lower body.

Kai Greene's MuscleMeds Supplement Stack

- **Arimatest:** Sublingual Anti-aromatase and Testosterone Booster. 1 tablet in the morning and 1 tablet in the afternoon.
- **eNOXIDE:** New Nitric Oxide Super Molecule. 2 sublingual tablets pre-workout to increase pumps and growth.
- **CARNIVOR:** Bio-engineered All Beef Isolate Protein Powder. 3 scoops (69g protein) 3 times per day.
- **HexaGHen:** IGF-1 and GH Optimizer containing sublingual GHRP-2. 2 tablets before bedtime.

What's Up with Those Crazy Cross-striations?

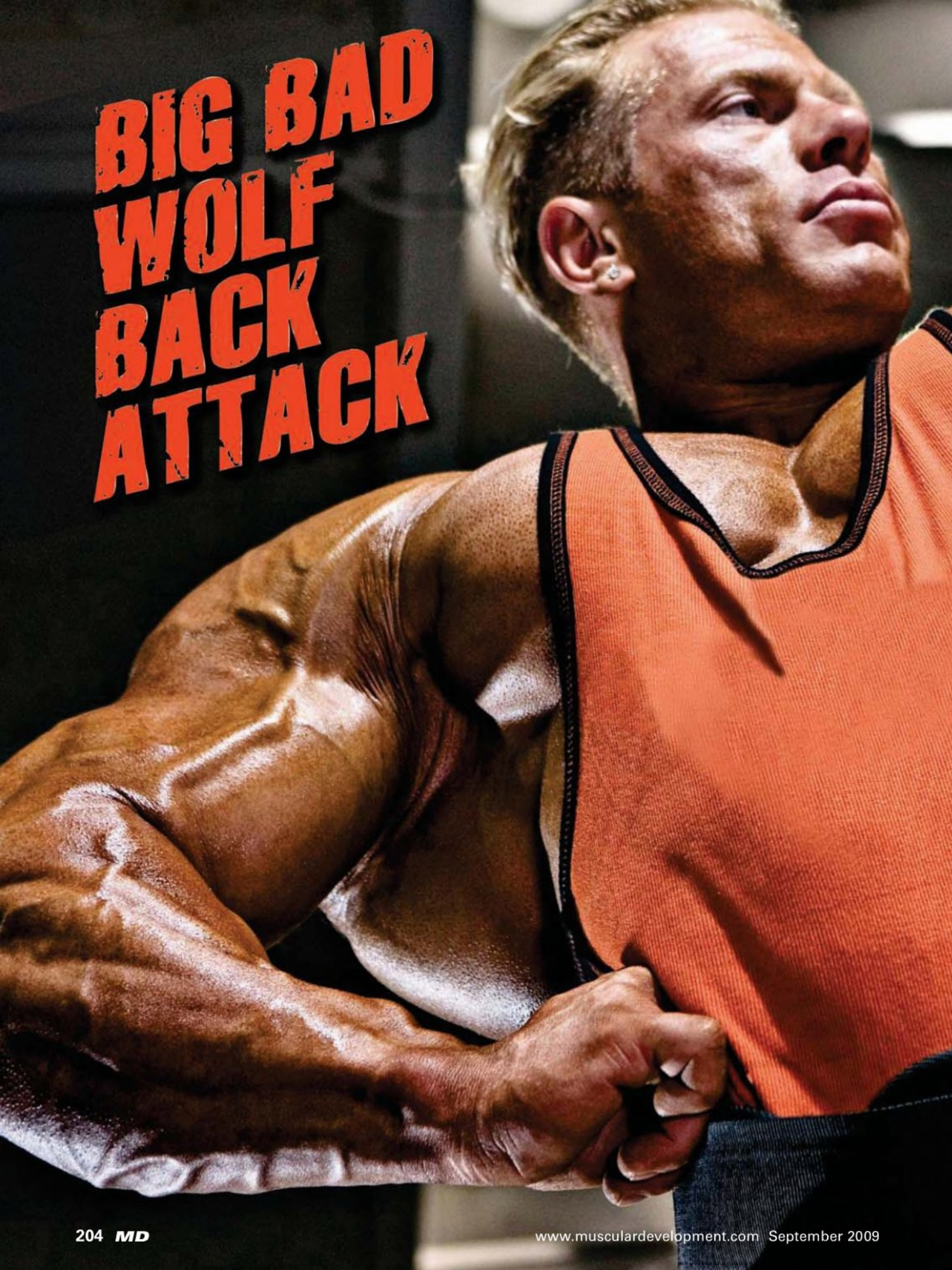
Kai frequently gets asked about his leg training, and a common query is, how did he get those insane cross-striations on his quads? Greene isn't exactly sure, though he knows it has to be some combination of genetics and the 20 years of intense leg training he's done. But while on that subject, Kai had something to say about how more years in the gym do not necessarily translate to a better physique.

"I have had people in the gym complaining that they have been training their legs for 10 or 15 years, and they don't look any better than they did after the first couple years," he stated. "Then I steal a glance at them training legs, and it's clear that they have no concept of proper body mechanics. They use other body parts and momentum to move the weight, doing things like rocking back and forth while doing lying leg curls. If you're not activating the muscles correctly, it doesn't matter whether you've been training for two years or 22 years, your results still won't be satisfactory."

One thing Kai does, and that echoes something the late Arthur Jones of Nautilus fame repeated often, is to constantly seek ways to make exercises harder rather than easier. "It really is all about how well you can isolate a muscle and how hard you can make it work," he notes. "The physique takes on a different look when you do that consistently over time— and I believe it plays a huge role in getting those fine details like cross-striations that are so elusive for most trainers who never grasp that idea." ■



BIG BAD WOLF BACK ATTACK





ROAD TO THE 2009 MR. OLYMPIA: PART 6

By Ron Harris, Photography By Per Bernal

Wolf Training Back? Are You Guys on Crack?

I bet some of you are puzzled as to why we are featuring a Dennis Wolf back workout, when this is the one muscle group he is criticized most frequently for. You are far more used to seeing articles showing someone known for having the best-developed arms (Lee Priest has had more than his share of these), legs (Branch and Kai), or chest (Branch, Victor). Dennis has indeed taken a lot of heat over his back, which some feel is his Achilles' heel when going up against guys like **Jay**, **Kai**, and **Victor**.

Truth be told, Wolf's lats do insert fairly high. And any muscle group is going to be tougher to develop when it has a higher insertion. Those of you out there with high calves know exactly what I mean. But this is the type of training article I like to write, because Dennis has been doing a magnificent job of 'filling out' his lower lats over the past couple years. The average bodybuilder can actually learn something from the strategies he's employed, as opposed to talking about a body part of his that grows no matter what he does for it (in Wolf's case, shoulders— I bet they grow a little more every time he wipes his ass).

For Dennis to achieve his goal of becoming Mr. Olympia, he knows all too well that his back can no longer be a weak link. Recent photos and videos of him guest posing this May in Pittsburgh and other U.S. locations show that it's well on its way and growing slowly but surely. It's only a matter of time before any discussions about Wolf's back being a lagging area on his physique will be in the past tense. So pay attention if your back isn't blocking the sun— you might learn something you can use.

Back in the Day, Not Much of a Back

When Dennis started competing in 1999, his overall shape and lines were already very good. That's typically what you see with all these guys who eventually rise to the top— they start out essentially as smaller versions of what you ultimately see on the Arnold and Olympia stages. But Dennis admits that his back was not a strong point then, either.

"It still needed some beef," he concedes. "A lot of that was because I did not know how to feel my lats when I trained them. I couldn't even hit the front and rear lat spread poses the right way." That's actually a common problem. Go to any local or regional bodybuilding contest, and those are the two poses you see screwed up the most. Another issue was that Dennis hadn't done a whole lot for his

back at first, so it was literally behind everything else by at least a year of hard training. "In my first year of training, I hardly did anything for my back," he tells us. "I started bodybuilding just to see how far I could go with it and I wasn't really training anything extra hard. My shoulders and my quads started to grow anyway."

Crucified for Not Having a 'Dorian' or 'Ronnie' Back?

As I said, Dennis takes a tremendous amount of shit for not having one of the best backs in the IFBB. But he sees this as a positive thing, because if he were some lower-tier guy hardly breaking the top 10 at a small-





"In my first year of training, I hardly did anything for my back. I started bodybuilding just to see how far I could go with it and I wasn't really training anything extra hard. My shoulders and my quads started to grow anyway."



Olympia is proof that you can improve on what you have, but you can't change your genetics. "Dexter has high lats, and they are still in the same position after many, many years. He has a good back with lots of thickness and detail, but the lats don't insert any lower now than they did when he turned pro 11 years ago."



er show, nobody would give a rat's ass. "I think when you are in the position of being a top five or six guy at the Olympia, people pay more attention to you and they are more critical. When people pick on a weak point, it's usually because there is some truth to it and a need for the area to be made better.

"But they also compare any body part to the guy who has the best. Like when Ronnie was Mr. Olympia, your back was not really good unless it was just like his— so nobody else could have a good back for all those years!" Genetics can be considered an excuse, or an explanation, depending on your point of view. Here's what Dennis had to say about his high-lat insertions and the possibility of him ever having a cobra hood type of back like Kai or former two-time Mr. Olympia **Franco Columbu**:

"You cannot build muscles in the area where you don't have any. My lats are really high and so you just can make them fuller and thicker than before. Guys like Kai have good genetics for this muscle group. You can see that his lats are going up almost from the glutes." Even the reigning Mr.

Wolf's Nutrex Supplement Stack

1. Nutrex LIPO-6 Black (Fat Burner)
 - One serving as soon as he wakes up.
 - One serving mid afternoon.
2. HEMO RAGE (Pre Workout Powder)
 - Two servings before training on an empty stomach.

What Has Worked for Wolf's Back

Before this article turns into a diatribe about why some guys have it easier when it comes to building a killer wingspan than others, let's switch gears and talk about how Dennis has managed to build a good back and continues to improve it. One successful tactic was nothing more than trial and error.

"It took me years to develop a very good mind-muscle connection with my back, and once I had that, I was able to try all the different exercises and stick with the ones that

felt the best for me," he says. "Just because some other guy loves a certain exercise and swears it's perfect, that only means it's perfect for him."

Wolf also tried splitting the back up into two different workouts, one for width and one for thickness. He discarded that practice after only a couple months. "You really can't separate the exercises so easily like that," he explains. "To say that this exercise will only make your back thicker and that exercise is only good for width is a bit silly. I went back to working the whole back at once and that's been



very good for me. It's a big body part and you do need to hit it from a few different angles, but that doesn't mean you can't do it all at once."

Another tactic Dennis experimented with briefly but didn't continue was training with giant sets, up to 10 exercises for the back in a row with no rest in between.

"I did it two times in my life in 2007 when I trained with **Milos Sarcev** for a week or two. It was good to try something different and it worked very well for two weeks, but after that I had no feeling in my back while I trained it. It was too much; the muscles were too tired." So Wolf trains with a handful of exercises that he has found to be the best for him, and he does each for three or four work sets.

His strength is now back to what it was before the hernia, and his back training is going very well lately. Here are some of the movements 'The Big Bad Wolf' uses to beef up his back en route to his date with destiny this September in Las Vegas.

Reverse-grip Lat Pulldowns

Dennis usually starts his back workout at the lat pulldown station. Here he will do a few sets of the standard wide-grip version, and then launch into a few more sets with a reverse, or underhand grip. He feels that between the two styles, you will effectively work the entirety of the lats.

"The wide grip you feel more in the upper back, but then when you flip your hands over you are able to reach those muscle fibers in the lower lat better." As an interesting side note, **Dorian Yates** discussed lat pulldowns as part of his seminar in New Jersey in May. Yates, who is legendary for having had one of the best backs the sport has ever seen, adamantly believed that the underhand shoulder-width grip was far superior, as it allows a more complete range of motion. Dorian did all his pulldowns this way, and I once saw him do a strict set of them with almost 400 pounds on the weight stack. One version of pulldowns that Dennis Wolf doesn't care for is the very close grip, hooking up the double D-ring attachment normally used for seated cable rows. "I have tried those a few times, pulling to the chest, but I just never felt any good pump or effects."



Training Split

Monday: Back
Tuesday: Chest & calves
2nd workout: Biceps
Wednesday: Quads
Thursday: Shoulders & calves
2nd workout: Triceps
Friday: Glutes and hams







Barbell Rows

You know how we often ask a pro, "What's the absolute most effective exercise for this or that body part?" Dennis didn't hesitate in naming the barbell row as the one exercise that has given his back the most mass. Though he doesn't use the underhand grip like Dorian, you'll notice that he does pull the bar to a very low point on his torso, lower than his navel.

"My upper back has good size now, so I focus everything I can on the middle and lower lats to get those areas thicker." Wolf is a stickler for strict form on his rows and won't normally use any more than 365 pounds. For a man who tips the scales at over 300 pounds most of the year, that's really not so heavy.

"I don't care about how heavy the weight is," Dennis states. "I only care about making the muscle grow, and I need to have good contractions and feeling in the lats for that. I could put 500 pounds on the bar and bounce it up and down, but that would be stupid."

Dumbbell Rows

Another bread and butter back exercise for Wolf is the dumbbell row. Again, tight form and meaningful contractions are par for the course. He gets a full stretch and a full contraction on every rep, striving to pull his elbow up as high as possible behind him. Even if he was tempted to go too heavy and compromise his form, the limitations of his particular gym prevent such folly.

"The heaviest dumbbell we have is 145 pounds, so that's what I use," he tells us. "When I go to the USA right before a show and train, sometimes the gym will have much heavier dumbbells than that. But I won't train super-heavy at that point so close to a show—it's very dangerous."

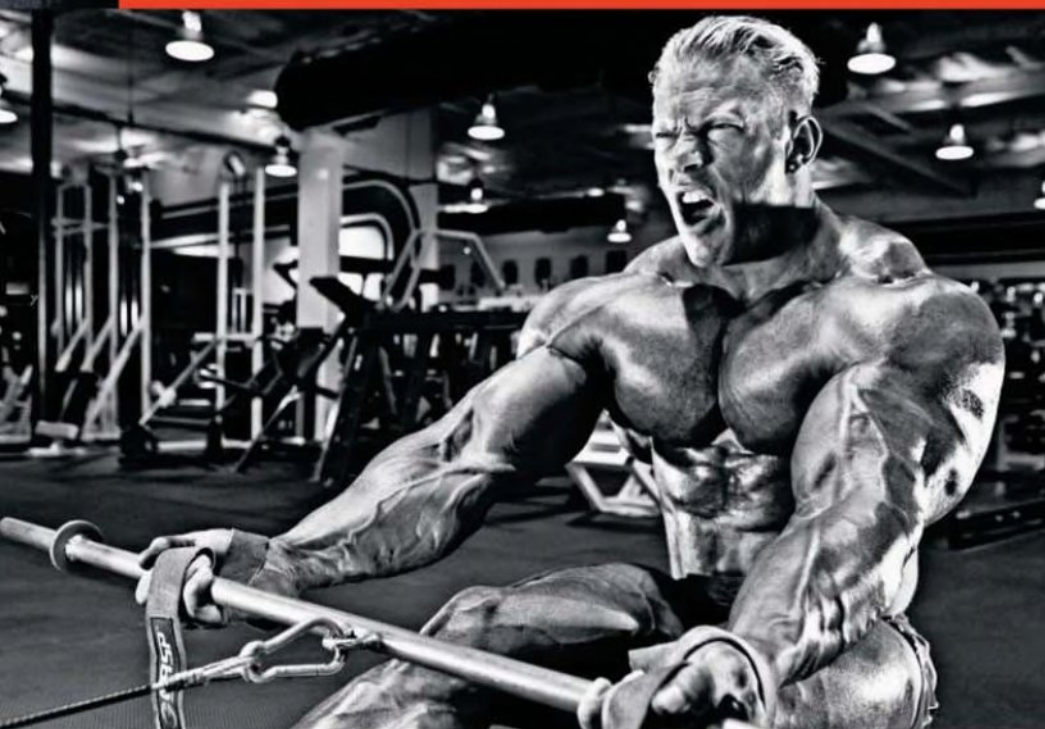
Cable Rows

A final type of rowing Dennis does regularly is with a cable or machine. If he chooses a cable, he will sometimes use the long bar and an underhand grip as seen here, but far more often he hooks up a single D-ring and does his cable rows one arm at a time for extra concentration. At other times he sits down at a machine row and does the same thing. "I really love some of the Hammer Strength rowing machines I have tried, but we don't have any of them in the gyms I train at in Germany," he says with regret. "But with a cable or a machine I can do a very good job of getting a perfect pump in the lat. I am able to hold the contraction for a couple seconds if I want to, which is a lot harder to do with free weight rows."

Back Workout— June 2009

Wide-grip pulldowns to chest	180 x 15, 180 x 15 (warm-ups) 220 x 10, 240 x 8, 250 x 8, 290 x 8
Underhand-grip pulldowns	240 x 10, 270 x 8, 290 x 8
One-arm machine rows	180 x 10, 190 x 8, 200 x 8
Barbell rows	225 x 8, 315 x 8, 365 x 8, 365 x 8
Partial deadlifts*	225 x 6, 315 x 6, 365 x 6

"I do these very slowly and hold the squeeze at the top. Also, if the weight looks light, it's because I am still being careful not to get another hernia."



Back to Vegas—With a Better Back!

The back Dennis Wolf brings to the Olympia stage in a couple months will be better than the one you saw last year. That's evident, because he stays so lean in the off-season that the improvements were apparent when he guest posed not long ago at 300 pounds (many times, pros guest pose with so much body fat that you have no idea what the hell is really lurking underneath the blubber).

This determined young German recognizes that he wasn't born with the same genetic gifts in the lat department as others, but he refuses to use that as a crutch. The Big Bad Wolf has some new beef to show off when he turns around this time, and I think even the haters will have to give him props for a job well done. Odds are that you, reading this now, weren't blessed with a manta ray back from your Creator, either. Apply the principles and tenacity of Wolf to your own back training, and watch your wings thicken and expand! ■





Victor Martinez: Road to the Mr. Olympia

DOMINICAN

DELTA

DESTRUCTION

By Ron Harris, Photography by Per Bernal

On the Shoulders of Giants

Arms, back, and legs seem to be the body parts we talk about the most, but it's hard to think of a Mr. Olympia winner who didn't have some great shoulders, too. Think about the deltoid development of men like **Larry Scott**, **Sergio Oliva**, **Lee Haney**, **Dorian Yates**, **Ronnie Coleman**, and **Jay Cutler**. Some of the best 'uncrowned' Mr. Olympias also had cannonballs for shoulders: **Rich Gaspari**, **Mike Christian**, **Flex Wheeler**, **Kevin Levrone**, and **Nasser El Sonbaty**.

Shoulders make the man, and they really make a Mr. Olympia. The blueprint for any world-champion physique competitor has to include wide, round delts that practically leap out and dominate the stage. Luckily for Victor Martinez, he has some of the best delts in the game today. Along with his wide, flaring lats and small waist, they give Vic an insane V-taper. He even posts on the MD Forums as 'Vshape.'

History of the Martinez Shoulders

I always feel that although it's interesting to see how a pro with a great body part trains that particular muscle group, it's always important to look back at what he did in his early career when he was building his base of size and strength. By the time a guy has won the Arnold Classic and is knocking hard on the door of a Mr. Olympia title like Vic is, he usually has all the size he needs and is working on more refinement and detail. His training will probably not be as basic anymore or geared toward size—which is what the typical reader of a bodybuilding magazine is still desperately seeking. So let's get in the time machine and investigate how Victor built up his mighty shoulders in the first place.



After being inspired mainly by the jacked physiques of pro wrestlers he saw on TV like Tony Atlas, the British Bulldogs, and The Ultimate Warrior (all former bodybuilders, I might add), Victor began his own quest to get huge at the age of 13. At first he did only bench presses, curls, and chin-ups, as he was unaware of any other exercises. He didn't even realize that there were specific exercises meant to work the shoulders until he happened upon a copy of *Arnold's Encyclopedia* at the library.

Many of you have read this classic book that's roughly the size and weight of a NYC phone book, packed with hundreds of training and posing photos of Arnold and other greats of his era. "I loved the book so much that I stole it,"





Martinez confesses. Even back then it would have cost at least \$30 at a bookstore— which was \$30 more than young Victor had.

With the routines laid out by Arnold and Bill Dobbins, he started incorporating overhead presses, side and rear dumbbell lateral raises, and upright rows. His form on laterals was far from textbook, however, but this wasn't really his fault. He had three pairs of dumbbells: 40s, 50s, and 60s. These days, he can handle those just fine, but back then it took quite a bit of heaving and jerking.

"I probably should have tried to get my hands on some lighter dumbbells," he says, looking back. "But I just figured I would get stronger eventually. I probably looked like I was having some kind of fit when I was doing side raises." Once he joined the local iron den Elmo's Gym, Victor quickly learned correct form from the various older lifters there, some of whom competed in local bodybuilding shows.

Soon, his form had improved dramatically. Victor could feel the muscles working as he trained them, and his results began to accelerate. To further his education in the world of muscles, Vic started reading bodybuilding magazines like MD. This was about 1993 or so, and as he began to understand the importance of great shoulder development, there were three champions with deltoids who stood head and shoulders (sorry, had to say it) above the rest.

"The three guys I thought had crazy shoulders back then were **Dorian Yates**, of course, **Flex Wheeler**, and

Kevin Levrone. To this day, I think Kevin may have the best combination of shoulders and traps ever. You have to put **Paul Dillett** and **Nasser** in there too, those were some sick delts those big suckers had."

Changes in Shoulder Training in Recent Years

In the past five years, Victor has taken his shoulders from very good to truly great. They pop up nice and high in both his front and rear double biceps shots, and they show an almost unreal roundness and fullness in poses like his side triceps and crab-most-muscular. He even managed to bring up his rear delts to match.

One change he felt helped make all that happen was to cut his overall volume from about 16 work sets to 12, giving the shoulders more opportunity to recover fully between workouts. Victor also decided to start using machines and cables to complement the free weight basics he had been doing for years, after seeing how well that combination worked for guys like Jay Cutler. He had also been doing 12-15 reps most of the time on shoulder movements, and he reduced that to 8-10 on many sets to help build more mass.

One strategy Martinez kept and still incorporates is to rotate the exercises he starts each shoulder workout with. Even though most bodybuilders are in the habit of doing presses first, Victor thinks this is a mistake. "Presses are important, but if you never do laterals or rear laterals first, chances are you'll have good front delts, but only average



side delts, and bad rear delts— like a lot of guys out there do.”

Here are some of the exercises that V-shape Vic uses these days to demolish his delts in preparation to claim the Mr. Olympia title.

Dumbbell Lateral Raises (not shown)

Victor still includes dumbbell side raises, alternating them with cables from workout to workout. He does one warm-up set for 15-20 reps, then pyramids up in 10-pound jumps over three or four work sets. A lot of guys do drop sets on their laterals, but I have never heard of anyone who finishes off the exercise the way Martinez does—and you may just want to try this yourself on your next shoulder day.

“After I max out with the 60s or 70s to failure, I grab a pair of 80s or 90s and do a few partial reps from the bottom to about one-third of the way up,” he says. “I keep my arms straight. Though I might have to cheat a little to get the dumbbells up there,

I always control the negative and do those slowly. Try it— your side delts won’t know what hit ‘em.” When I talked to Victor for this article, he had just done that technique for all three work sets of laterals in his most recent workout.

Cable Side Laterals

Since he began doing side laterals with cables a few years back, Martinez has learned to relish the more intense tension they put on the medial heads. “I notice it most at the start of the movement,” he tells us. “With dumbbells, you don’t feel a whole lot going on at the beginning of the rep, but the cables definitely pull on the delts from the second you start moving.” He also likes to pause at the very top of the movement and squeeze his shoulders, something that’s virtually impossible with dumbbells unless you go ridiculously light. Because dumbbells do require more balance, he usually does those first and performs the cable version later on in the delt-blasting session.



Cable Rear Laterals

"It's almost impossible to have rear delts that are too big," Victor declares. Only in about the last three or four years has he felt that his own posterior deltoids had the type of fullness when viewed from the side that they should. "It's not an easy muscle group to isolate, mainly because you have all those upper back muscles right around it that will do the work if you don't concentrate 100 percent."

Dumbbells used to be his tool of choice for this targeted isolation, but now he feels that cables or a rear delt

machine do a better job. "I actually feel the rear delts working best when I use the cable and do just one arm at a time," he says. "You can really squeeze the muscle and get a killer pump. I had always thought dumbbells were the best way to hit the rear delts, but it was only because I wasn't giving cables or machines a chance," he says

Dumbbell Front Raises (not shown)

Not everyone does specific work for his anterior or front delts, but Victor does about every other workout. His favorite

Shoulder Workout, mid-June 2009

Rotator cuff exercises with dumbbells

Barbell clean and presses

Dumbbell lateral raises*

Standing single dumbbell presses

Rear delt machine

Barbell upright rows (shoulder-width grip)

15 x 15-20, 4 sets

135 x 8, 185 x 8, 225 x 8

40/60 x 12, 50/75 x 12

60/80 x 12

60 x 12, 75 x 12, 90 x 10

4 sets of 12-15

135 x 12 for 3 sets

**Victor does full reps to failure, then immediately grabs a heavier pair of dumbbells and does partial reps from the bottom to about a third of the way up.*



movement is the front dumbbell raise, which he refers to as 'hammer front raises,' due to the thumbs-up grip he takes on the 'bells. Vic raises them in alternate fashion up to shoulder level, going as heavy as 75s for 10-12 reps. He is just as likely to do these on chest day as he is for shoulders, as the front delts work very hard in any pressing movement for the pecs.

Machine Press

Victor usually does more than one type of press in his shoulder workout. Sometimes free weights are used for both, but at other times he will opt for a machine. "If I am putting the second overhead pressing movement near the end of the workout, I use a machine because I'm too beat to balance any decent amount of free weights by then," he says. A machine lets him focus on simply

pushing the weight and feeling his shoulders contract and stretch. "I can really slow the movement down too, which is very hard to do with a barbell or dumbbell because you can start getting wobbly."

Clean and Press (not pictured)

Victor is definitely one of the few top guys today who is truly 'old-school,' meaning he does things in his training that most modern bodybuilders never even learned. From around 1940 to 1965, nearly all bodybuilders included the Olympic lifts in their training. They had to, because in the old AAU, you were required to demonstrate your strength in physique shows before they even let you hit a pose. Since then, those lifts of speed and technique have faded away from our collective meathead

consciousness. Now the only place we ever see them is when watching the Olympics, where it seems like some dwarf from Turkey or Belarus is always putting 400 pounds over his head, like some mutant hybrid of ant and man.

A few years ago, Victor's trainer Victor Munoz decided it was time to shake things up and include clean and presses in his shoulder training. Since this lift has clearly fallen into obscurity, I asked Victor to explain it in detail. "The bar is on the floor. You bend down to pick it up, with your legs basically bent in a deep squatting position and your back is arched. In one fast move, you pull it up off the ground and flip your wrists so that the bar is on your upper chest. Without any pause, you push it straight overhead."

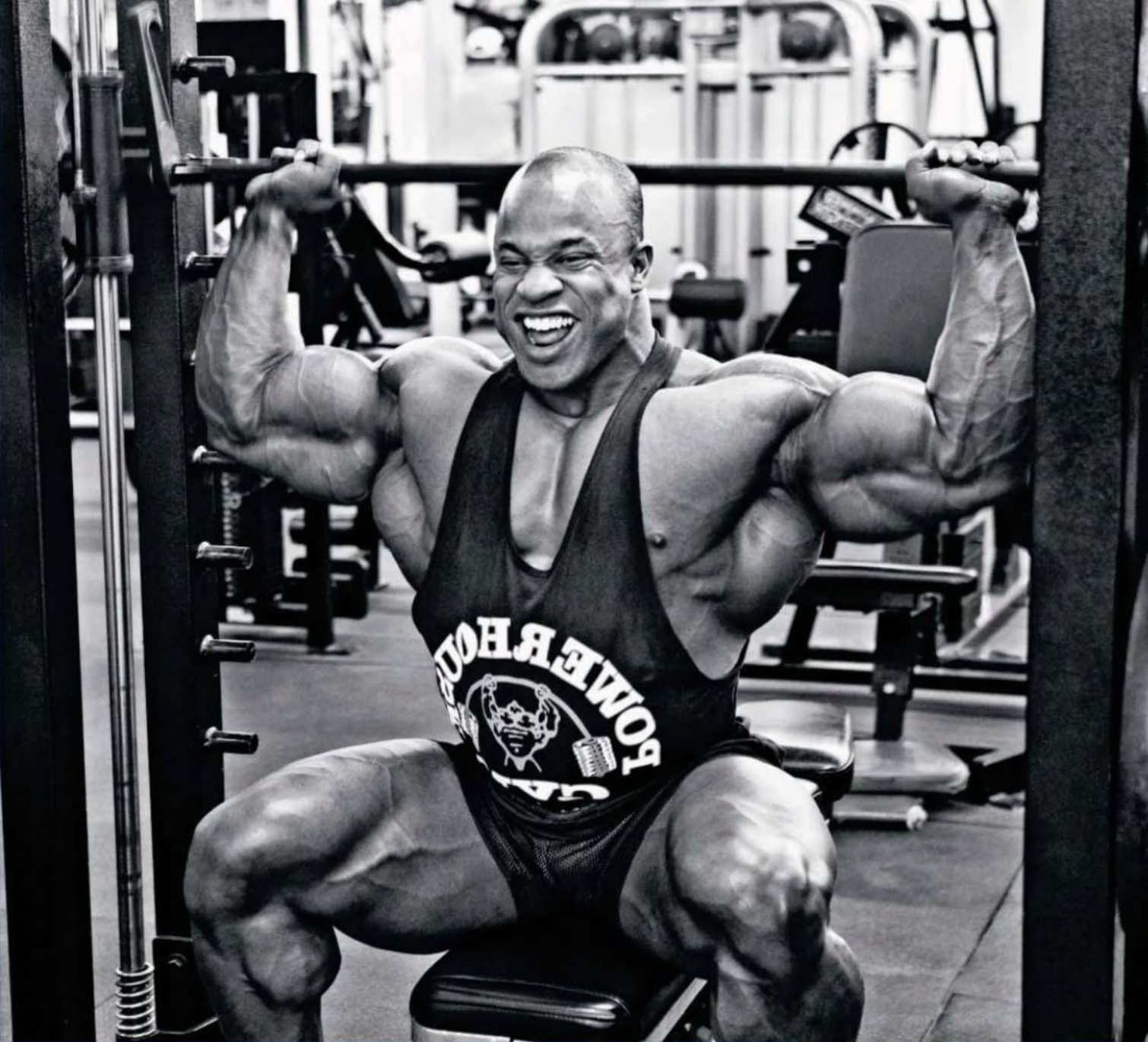
For his warm-ups and lighter sets,





Victor Martinez's MHP Supplement Stack

- Morning: **DREN**: 1 capsule; **Glutamine-SR**: 6 grams (1 scoop)
- Meal 1: **SARM-X**: 1 tablet; **T-Bomb II**: 3 tablets;
Probolic-SR: 3 scoops (60 grams of protein)
- Meal 2: **Activite**: 2 tablets
- Pre-Workout: **DARK RAGE**: 1 scoop; **A-Bomb**: 4 tablets
- Post-Workout: **Dark Matter**: 1 serving
- Meal 4: Post-Workout Meal (1 hour after)
Probolic-SR: 3 scoops; **SARM-X**: 1 tablet; **T-Bomb II**: 3 tablets
- Meal 5: **Activite**: 2 tablets
- Meal 6: **Probolic-SR**: 3 scoops; **Glutamine-SR**: 6 grams (1 scoop)
- Before Bed: **Cyclin-GF**: 4 capsules



his feet remain shoulder-width and next to each other. But when Victor gets into his heavy sets, he will set one foot forward and one back, just as he presses from his chest overhead, for added stability. The reps on this exercise are the only time he dips below 10-12 and only does sets of five. "It's not an exercise meant for high reps— you would just get exhausted long before your shoulders got enough work," he explains. "But it's a great overall shoulder exercise that more bodybuilders should try." Sometimes he does the lift only from a dead hang with the bar down in front of his thighs, and the reps climb to 8 per set. That's still 8 cleans from a

hang, then a press overhead. If you decide to try this one, start very light, as the correct technique is not easy to master.

Behind-neck Smith Machine Press

Victor confessed that this is probably the one type of press that he does the least often. "If I had to guess, I would say I do behind the neck presses about once every five or six weeks," he tells us. "I use the Smith machine so I don't have to worry about slipping out of the groove and hurting my rotator cuffs, and I do it either midway or at the end of the workout so I don't need a lot of weight."

Training Split*+

Day One Legs
Day Two Chest and biceps
Day Three Back and triceps
Day Four Shoulders

**Rest days are taken as needed. Sometimes this will be after three or four days of training, at other times Victor may go as long as seven days before taking a day off.*

+Every two weeks, leg day is only for quads, and hams are paired with back. Every third week, arms are done on a separate day, rather than with chest or back.





Dumbbell Shrugs

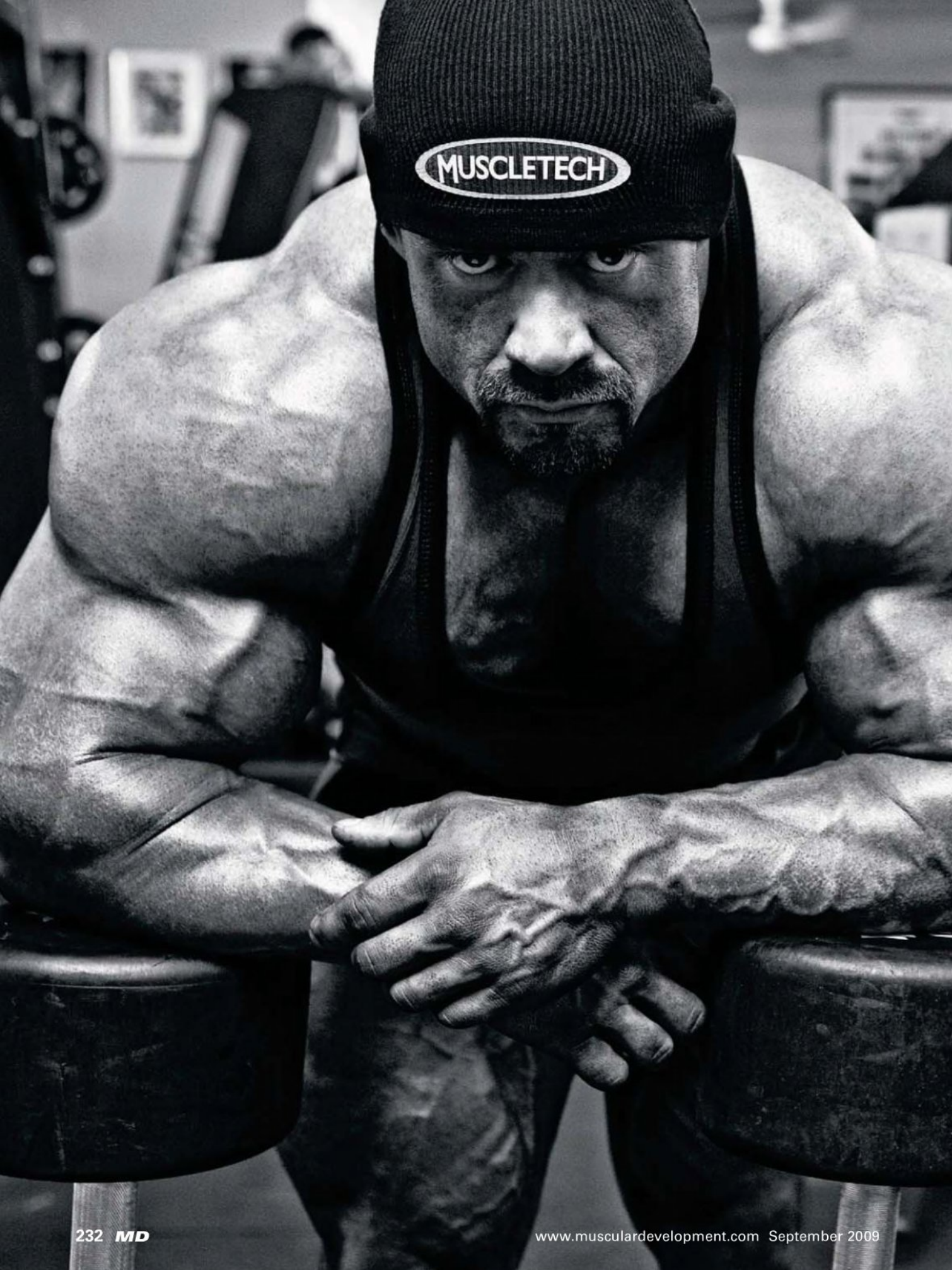
Victor has trained traps with both shoulders and back in the past, and currently he isn't doing much of anything for them. "It's a body part that grows pretty easily for me, and it's getting a lot of indirect work from so many other exercises I do for back and shoulders anyway." But if your traps aren't quite scraping your earlobes yet, Vic recommends either barbell or dumbbell shrugs plus close-grip upright rows. "Just make sure you go all the way up with any type of shrug," he notes, "those little bouncy reps don't do shit."

Shouldering on Toward Vegas

That's what the 'Dominican Dominator' is doing for his shoulders as he prepares for the Mr. Olympia in just a few weeks as you read this. If your shoulder workouts haven't been delivering lately, try a few of his methods, such as, rotating the exercises you start with, reducing overall volume and reps, and trying some new exercises like his 'one-and-a-third' dumbbell laterals with a lighter and heavier pair, and clean and presses.

Remember, every ounce of new deltoid mass you build will enhance your V-shape— and that's what a lot of us think a great physique is all about. In fact, it just might be one of the factors that puts Mr. Martinez over the top so he is the one holding the Sandow trophy at the end of the night on September 26 at the Orleans Arena in Las Vegas! ■

Got a question for Victor? You can ask him directly on the MD website and have Victor personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Staff and Pros, Q and A for Victor Martinez.



**Branch Warren:
Road to the 2009 Mr. Olympia**

BUILDING A 'BARN DOOR'

**BACK
AND CANNONBALL
DELTS**

By Ron Harris, Photography By Per Bernal

Unfinished Business Out in Vegas

Last year, Branch was more than halfway through his Mr. Olympia prep when a freak accident at home tore his triceps. His plans to kick ass at the 2008 Mr. O went up in smoke all at once. But we all saw how Branch rallied at the last Arnold Classic and showed that he is only getting better and better. People talk a lot about his sick legs and his chest, which is one of the thickest sets of pecs in pro bodybuilding. Last month we switched our focus to an area Branch has had to work even harder to build to impressive proportions— his massive arms. Now we turn to two other areas that the good ol' boy from Texas has poured untold gallons of blood, sweat, and tears into— his back and shoulders.

BACK: Branch Sums It Up

Did it respond easily in your early years?

"Usually you see a lot of guys with wide backs but not much thickness at all. I was the opposite of that. I had good thickness early on, but my back took a long time to look wide, just like my shoulders did. It just goes back to having narrow clavicles. My back needed a lot of mass before it started to pop out on the sides."

How would you rate it now?

"I'm very proud of my back today, because it took so much hard work over the last few years to bring it up to this level. I have been training my back harder than anything else on me for a very long time, and it paid off. The mass is where it needs to be, finally. All that's left is to carve in more and more detail. I've said this many times in MD, but I honestly feel that when my back has the

same degree of deep separations and striations that my legs do, a title like the Arnold Classic is well within my reach."

Most productive exercises?

"Deadlifts, barbell rows, dumbbell rows, and pull-ups. You could build a hell of a back just working your ass off on those four exercises."

Exercises that were a waste of time and effort?

"I don't know what you call 'em, but that one where you're in the cable crossover machine and pulling the cables down and into your sides. I still don't know what the point of that is." (Note: these are often called 'cable cobras')

Techniques that worked best?

"Heavy straight sets have been the ticket for me all around, no matter what body part you're talking



about. If someone wants to build more mass in the back, heavy weights with a good squeeze on every rep will do it."

Craziest strength feat?

"I've done barbell rows with 500 pounds for 8 reps a few times. I tell you though, the toughest thing I've ever done for back is the 3 sets of 20 with 315 I do at the end of my workouts now. My lower back gets so pumped and tight, and the oxygen debt on that third set is unreal— you are literally sucking air trying to get a breath."

Lat Pulldowns

Before you get all smug and think Branch Warren takes the easy way out by not doing chin-ups, you need to know that he did more than his share for many years. "Back in the day, my favorite thing to do was to pick a number of total reps, usually 50, and do as many sets of wide-grip chins as it took to hit that— I could do it in 3 sets most of the time." In the years Branch trained with **Johnnie Jackson**, he adopted Johnnie's favorite variation, the weighted chin-up. "I never did try and do 100 or 150 pounds like he did though— my bodyweight and a 50-pound dumbbell were plenty," he notes.

More recently, lat pulldowns have become his tool of choice for the chin-up movement. "I like the extra control you get with lat pulldowns, especially the fact that you can pull down and really hold the contraction," he says.

You may also note from the photos that Warren employs a 'thumbless' grip with his thumbs on the same side of the bar as his fingers. "I find that helps take the biceps out of the movement and makes the back do more of the work."

Though the wide grip shown here is what Branch most often chooses, he will also use an underhand shoulder-width grip at times, or even hook up the narrow-grip double D-ring attachment normally used for seated cable rows.

Barbell Rows

You gotta row to grow when it comes to back, and Branch has been faithfully pulling his barbell rows for



about 20 years now. But for much of that time, Branch admits he wasn't getting as much out of barbell rows as he should have been. "I was caught up in using as much weight as I could manage, and my form was very ballistic," he explains. "I was really just yanking the bar up and dropping it back down, and I would slap five plates on each side at times. It worked for **Ronnie**, but it didn't do a whole lot for me."

Since those days, Warren learned the value of holding the contraction and squeezing his lats, and his back took on a different look. "It's not hard to have a lot of bulk back there, but to have real quality muscle takes a lot of squeezing and flexing."

Even more recently, Branch has been doing his barbell rows with the underhand grip favored by MD's own six-time Mr. Olympia **Dorian Yates** during his reign in the '90s. "I feel them more in my lower lats, and that's an area I am working hard on now to both thicken up and add detail to—guys like Ronnie, Dorian, and now **Kai** have amazing development there, and I want that too."



Training Split

Sunday: Off
Monday: Back
Tuesday: Chest
Wednesday: OFF
Thursday: Arms
Friday: Legs
Saturday: Shoulders

Back Workout— June 2009

Wide-Grip Lat Pulldowns 150 x 15, 200 x 15 (warm-ups)
340 (stack) x 20, 340 x 15, 340 x 10

Incline T-Bar Rows 6 plates x 10, 4 x 10, 3 x 10
(drop set totaling 30 reps)
One-Arm Dumbbell Rows 120 x 8 (warm-up)
200 x 10, 200 x 9

Homemade Plate-Loaded Row Machine 6 sets of 10 reps
Seated Cable Rows 300 x 15, 250 x 15, 220 x 15
Cybex Seated Row Machine 3 sets of 20 reps
Rear Delt Flye Machine 3 sets of 15 reps
Deadlifts 315 x 20, 315 x 20, 315 x 20

Shoulder Workout— June 2009

Seated Barbell Military Presses 135 x 12, 225 x 12, 315 x 12, 315 x 12
Dumbbell Lateral Raises 35 x 15, 40 x 12, 50 x 12, 60 x 12
Drop set: 60 x 10, 45 x 10, 30 x 10
Seated Dumbbell Front Raises 20 x 20, 40 x 15, 60 x 8

Dumbbell Rows

Dumbbell rows are another rowing movement that Branch was doing far too heavy for a time. As you may know, Metroflex Gym's dumbbells go all the way up to 250 pounds, which was owner Brian Dobson's generous effort to make sure **King Ronnie** had all the weight he could ever need. And because the dumbbells went to 250, that's what Branch felt he had to go up to for rows.

"Looking back, I didn't get a whole lot of muscle stimulation out of the sets I did with those monsters," he says. "I certainly wasn't able to pause at the top and squeeze the lat."

Now, Branch has lightened up— though he still uses 200s, dumbbells so heavy that all most of us could do

would be to roll them across the floor with a good push of the foot. But those are 'light' enough for Branch do get a full range of motion and a quality contraction of the lats.

Incline T-Bar Rows

Branch calls these 'incline' T-bar rows, while I have been calling them 'supported' T-bar rows for a long time. Whatever you call them, they are basically nothing more than a regular T-bar row with your chest braced and supported on a pad so you can't cheat.

Old-timers I have spoken to did their own perilous version of this by standing behind an adjustable incline bench with their chest on top of it while they did their T-bar or barbell rows. I've tried it, and let me say that the version





you see Branch doing is a far better option. I may still have the dent in my chest from emulating the old-timers.

I had never seen photos of Branch using this machine before, so I thought it might have been something new. "Naw man, I've been doing these for years," he told me. Lately he likes to do one long set on it. He is already warmed up from heavy barbell and dumbbell rows, so he starts off with six plates, or 270 pounds, does 10 reps, then strips it to four for another 10, and takes off one last plate to do 135 pounds for 10 final reps to make 30. "Hell of a pump," he notes.

Cable Rows

If you examine Branch's current back routine (see sidebar), you'll see that he does an awful lot of rowing. Cable rows are a great complement to the rows he does with a barbell, a dumbbell, and machines. "The cable row gives you a different feel from all the others," he tells us. "I believe in high-volume training for the back, but I still wouldn't do any exercise if it worked the muscle exactly the same way as another one."

SHOULDERS: The Branch Warren Cheat Sheet

Did they respond easily in your early years?

"My shoulders were weak both to look at, and in actuality. I remember struggling to try and get just a couple reps with 95 pounds on the military press as a teenager. Pretty sad."

How would you rate them now?

"I would say shoulders are one of my better body parts now, and I'm really proud of that. When I was a teenage competitor they were a glaring weak point on my physique. My clavicles are actually on the narrow side, like **Phil Heath's**, and when you combine that with the size and sweep of my legs, it took a lot of meat on my shoulders for me to be







able to look as wide as I do now."

Most productive exercises?

"The same ones I do today: military presses, lateral raises, rear laterals, and upright rows. You don't need to get too fancy with shoulders."

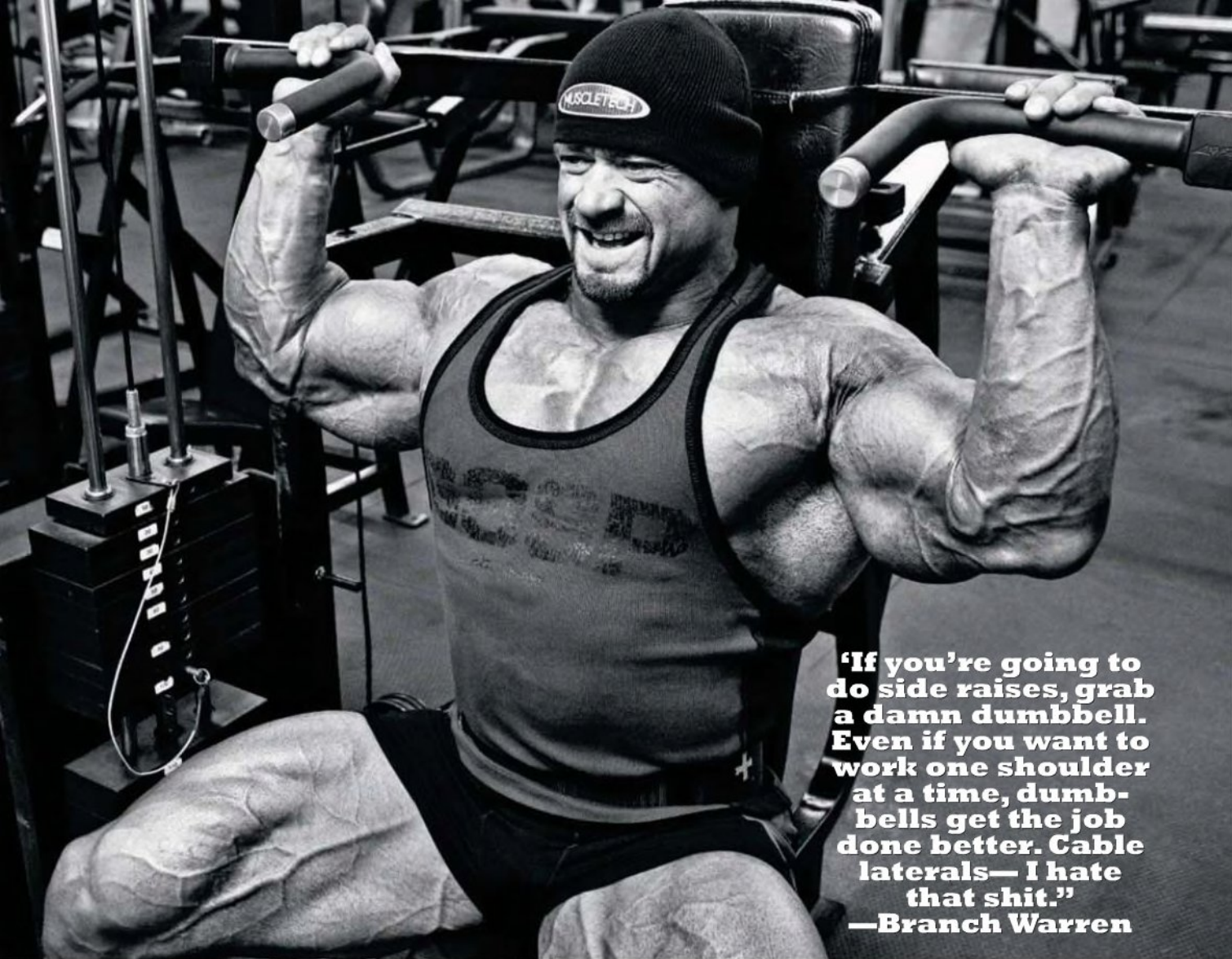
Exercises that were a waste of time and effort?

"Cable lateral raises. If you're going to do side raises, grab a damn dumbbell. Even if you want to work one shoulder at a time, dumbbells get the job done better. I lean to the side a little bit and isolate that one medial head. Cable laterals— I hate that shit."

Techniques that worked best?

"I had to get pretty creative to bring my shoulders up. For a long time, I would pick one shoulder exercise every day and do 5 or 6 sets of it. That was no matter what else I happened to be training that day. I also did my full shoulder workout once a week. Later, I did shoulders twice a week with a heavy and a





'If you're going to do side raises, grab a damn dumbbell. Even if you want to work one shoulder at a time, dumbbells get the job done better. Cable laterals—I hate that shit.'
—Branch Warren

lighter day for three years, and that also helped them grow. But I knew if I did that forever they would have just gotten overtrained."

Craziest strength feat?

"I did a lot of crazy shoulder workouts with **Johnnie Jackson**. I got 405 for a few reps on the military press. On laterals, we would go up to a pair of 100s all the time. I once did a pretty strict set of dumbbell alternating front raises with 120s, believe it or not. My chest and shoulders got incredibly strong training with that guy, as you might imagine."

Overhead Presses

Branch is pressing with a machine here, but that's something you will typically only find him doing at the end of a workout after he's already pushed a lot of cold iron overhead. His favorite shoulder exercise, and the one he feels has contributed the absolute most to his current shoulder development, is the military press.

Branch always warms his shoulders up thoroughly before he goes anywhere near the seated bench to start those. He systematically does a few really light sets of dumbbell press-

es and laterals, some rotator cuff work, and stretches it all out really well before he starts the 'real' workout.

Branch always pyramids up on his military presses, starting off with just 135 (it's all relative; I know that's far from a warm-up for many of you) and adds weight until he is up to 315 or 365. That's a lot of weight to press overhead, no matter who you are. "My old training partner and good friend **Johnnie Jackson** was always trying to outdo me on the militaries," he laughs. "It made for some incredibly intense shoulder workouts."

Dumbbell Lateral Raises

Branch is a firm believer in dumbbell laterals, and looks upon machine and cable versions of the movement as vastly inferior. "I've tried them all, and nothing gives me the feel of dumbbells for laterals," he pronounces. He has also done various loading schemes when it comes to his laterals. Often he will do the standard pyramiding up from lighter to heavier 'bells, but he may also warm up and go from heaviest to lighter. Or, there have been many times when he goes 'up and down the rack' like former Metroflex star **Ronnie Coleman**.



BIG BRANCH WITH THE WORLD ON HIS MASSIVE BACK AND SHOULDERS!

That's how Branch Warren took two body parts that were once lagging and transformed them into showstoppers. The blue-collar work ethic that has driven him all his life is what made it possible for him to put out so much effort for so many years. If you have that same type of drive, there's no reason why you too can't one day have slabs of thick and rugged muscle adorning your back and shoulders, too.

BRANCH WARREN'S MuscleTech Stack

naNO Vapor: *World's STRONGEST Vaso-Anabolic, Psychoactive experience.*

Absolute maximum of 3 scoops 15 minutes before hitting the weights, then grab something heavy.

IntraVOL: *World's most ADVANCED intra-workout muscle growth amplifier.*

Mix 2 scoops of IntraVol with 23 oz. of cold water immediately prior to your workout. IntraVol™ is designed to be sipped during short periods of rest between sets of your hardcore weight-training session.

Cell-Tech Hardcore: *World's #1 selling musclebuilding creatine formula.*

Take 2 scoops immediately after your workout. If you are not training that day, have your serving in the morning when you wake up.

Nitro-Tech Hardcore: *World's #1 selling musclebuilding creatine formula.*

Add 2 scoops of Nitro-Tech Hardcore to 8 oz. of cold water or skim milk and mix. For maximum results, consume 3 times daily, including 45 minutes after your workout.

"I would usually start with 20s for 30 reps, then 30s for 25, 40s for 20, 50s for 15, 60s for 8, 70s for 5, and then back down to the 20s," he says.

One thing that has changed in recent years is the weight. When Branch and Johnnie were workout partners, they typically would use 100 pounds or more. Since then, Branch has lightened the loads and tightened up his form considerably. "Honestly, I get a hell of a lot more now out of using a pair of 50s or at the most, 60s, than I used to with the 100s or 110s."



Dumbbell Front Raises

Magazine readers are often told not to bother training front delts directly, since they do get more than adequate stimulation from any type of pressing movement you do for the chest or shoulders. But when you're trying to be the very best bodybuilder on the planet, you can't avoid training anything. Branch has been doing front raises for years, and continues to rely on them to beef up his anterior delts to make poses like the crab most-muscular and the side chest and triceps real jaw-droppers. Note his hammer grip, which allows him to generate a more powerful contraction. You may prefer this grip, or the palms-down grip that many other bodybuilders employ.

Dumbbell Shrugs

MD keeps it real, so you should know that Branch doesn't train his traps anymore. They are just about as big as they would ever need to be, as you can see. "Plus, my shoulders aren't as wide as they could be, and bigger traps would only make me look more narrow."

When Branch was working traps, he would do 4 sets of 10 or 12 reps with up to 200 pounds in each hand, raising his traps as high as possible and squeezing them for a split-second before lowering them under control.

But it's not like his traps are going to wither away anytime soon because he stopped working them directly. "Traps are involved in anything you do for back, and almost everything you do for shoulders too," he states. ■

FLEX CRITIQUE

By Flex Wheeler, Photography by Per Bernal

TONY FREEMAN *vs.* MELVIN ANTHONY

A WHOLE LOT OF BODY AND SOUL!

Doing these critiques is never easy, but it gets exponentially tougher when I am asked to compare two men who are very evenly matched. This month I was asked to pit Marvelous **Melvin Anthony** against the X-Man, **Toney Freeman**. Right off the bat, I thought that if both of these dudes show up 100 percent on, there is no way I would want to be forced to judge one over the other. If you've followed the pro careers of both men,

you know that each one's main strength on contest day is the other one's weakness.

Melvin usually comes in full and round, but lacking the shredded, dry condition in the glutes and hams that would put him over the top if he ever displayed it. My man Toney has those gnarly, nasty striations going on all day back there— but he is usually somewhat flat overall.

I've known both of these guys for a long time, especial-





FLEX CRITIQUE



ly Melvin, and I've helped them with advice here and there over the years. I've also watched both guys come a very long way from their early days in the IFBB, and they have done a tremendous job. I'm proud to call both Melvin and Toney my friends, but for right now I have to take my bias out of the equation and do my best to be objective. Let's break 'em down!

Mass

Let's look at some stats. Melvin is 5'8" and competes at about 240 pounds. Toney is one tall brother at 6'2", and looks his best somewhere around 280. It's very tough for a guy of that height to build sufficient mass so he can compare with men of average height or shorter. Toney deserves mad props for filling out his long frame. Extra

credit for those wheels— it's never an easy task to build those when you shop at the Big and Tall store. The only guy I know who was able to get such freaky mass at over six feet is my old buddy **Paul Dillett**.

All that being said, when Toney and Melvin stand side by side, the impression of superior mass goes to Marvelous. Toney would probably need to put on something like another 20 pounds before he showed up Melvin on size.

Shape and Proportion

Muscle shape is a God-given thing, and Melvin just has those round, full muscle bellies that swell off small joints. That was my look, and you also saw it with **Ronnie** in his prime and **Lee Priest**. Sometimes I call it the 'muscle hanging off the bone' look. Toney has very good shape and his body is testimony to his many years of hard work. But he can't mess with Melvin on shape. He looks like one of those damn sculpture trophies.



Structure

I will give this one to Melvin, but only by a slim margin. Both men have wide clavicles and tiny waists and hips. Toney's only minor downfall here again is his height. He does have pretty long limbs. There have been several greats over the years who also had pretty long arms and legs relative to their torsos (Arnold is probably the best example), so it's not like it really hinders him. But if you ask me to pick the better structure out of these two great competitors, I have to go with Melvin.

Condition

Whew! Just in time— before Toney starts thinking I'm dogging him out here, I have a category he clearly dominates in. The X-Man is able to consistently bring a hard, grainy look to his physique that has eluded Melvin for the most part, and especially from the rear. Toney dials in his glutes and hams so the separations and striations are crystal clear. I remember watching the camera pan over those areas at the last Arnold Classic, as I glanced from the stage to the giant TV screens. The TV cameras really exaggerate muscle detail, and Toney's glutes and hams looked like someone carved them out of granite. It was just ridiculous. Melvin gets ripped, but not like that.

Presentation

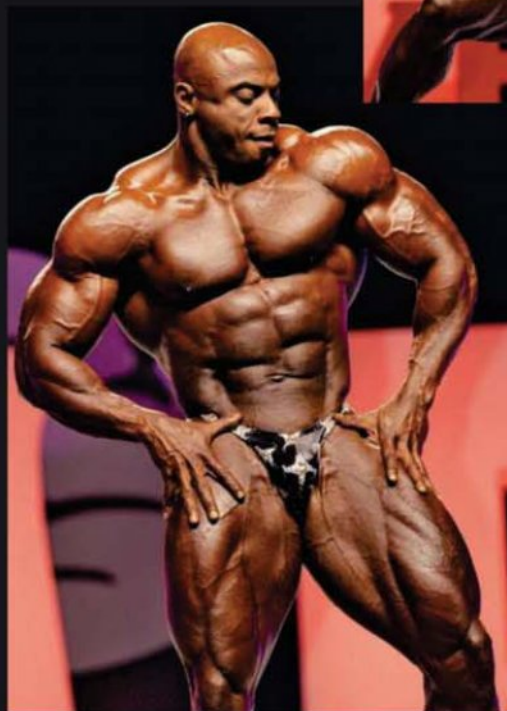
What do you think I'm gonna say? **Kai** may have been making a real name for himself over the past couple years, but Melvin Anthony has been the best poser in our sport for a full decade now. Nobody has won more 'Best Poser' or 'Best Presentation' awards than Melvin, and rightfully so. He is a master poser as well as a master entertainer, and his routines are almost always the highlight of any night show he appears in. He is often imitated, but never duplicated.

I also want to add that Melvin is a master at every aspect of posing: from the quarter turns, to his mandatory poses, and even the transitions between them. Everything just flows,

and he makes it look so easy. Toney is a good poser in his own right, though the quality of his routines is more up and down. I did enjoy what he did at the recent Arnold Classic. Being a former male exotic dancer, he put a routine together especially for the ladies, with plenty of his old moves worked in there. The guys may not have appreciated it (most of them, anyway), but the women were screaming their fool heads off. I thought some of them were actually going to rush the stage!

By the Body Parts

Now it's time for me to really dissect these cats. Bodybuilding is not a body part contest— at least it's not supposed to be. The



physique as a whole is the important thing, but it's still interesting to compare individual muscle groups.

Chest

If Toney didn't have that very noticeable pec tear, I could give this one to him. He has definitely built a thick-ass chest like two giant slabs of carved beef. But the tear continually distracts you and takes away from the overall impact of an otherwise good chest. This one is Melvin's.

FLEX CRITIQUE



ing out in the NPC many moons ago.

Arms

Once again, if we break arms down into biceps and triceps, each guy has an advantage over the other. Toney's biceps are bigger and have a better peak than Melvin's. But you talk about the tri's, and Toney's can tend to look a little flat in poses like the side relaxed quarter turn and the side triceps. Melvin has more of a round, sweeping ham hock type of triceps. So, this one is a draw.

Back

I will give Melvin points for detail and thickness, and Toney gets the nod for sheer width. Tough decision here, but I will give it to Marvelous.



Shoulders

Don't get mad Toney — here's one I see going your way! Melvin has very good shoulders, but they have a bit of a sloping appearance to them in the front relaxed pose. Toney has some nice, round caps popping off his clavicles. I will have to add that if we were getting even more specific and talking about rear delts, Melvin would get the nod there. He's always had the craziest rear delts, even when he was just start-

Quads

Both men have excellent quadriceps development, but Toney's have a slightly better outer sweep to them in the front shots. And condition-wise, we know Toney brings his lower body to a whole other level of hardness that Melvin hasn't shown so far in his career (never say never — he may just shock us all one of these days). And like I said before, Toney has built those great quads at a height of 6'2" — which had to be more of a

challenge than it was for the 5'8" Melvin.



Hams

Give it up for Melvin's hams — they have that crazy sweep and 'hang' that Toney's don't come close to. But then you have to factor in the definition. Toney has deep, sharply-defined chasms between the individual heads of

FLEX CRITIQUE

Pro Stats

	Melvin Anthony	Toney Freeman
Pro since:	1999	2001
Pro wins:	2	3
Arnold:	2001: 7 th place 2003: 8 th place 2005: 5 th place 2006: 5 th place 2008: 8 th place	2005: 10 th place 2006: 9 th place 2007: 3 rd place 2008: 7 th place 2009: 4 th place
Olympia:	2001: 11 th place 2003: 9 th place 2005: 7 th place 2006: 5 th place 2007: 6 th place 2008: 6 th place	2006: 7 th place 2007: 14 th place 2008: 5 th place

the hams in his back shots as well as between the quads and hams in all the side shots. Because each has what the other lacks, this is another draw.

Calves

Neither guy has great calves. So we can either call it even or just throw this one out altogether.

Who Wins the Poses?

Quarter turns: Melvin

Front double biceps: Tie

Front lat spread: Tie



Abdominals and thighs: Melvin. When a man is as tall as Toney, this pose tends to visually 'stretch out' that long frame and give it a bit of a lanky look, even when he has as much mass as Toney does.

Side chest: Melvin

Side triceps: Melvin

Rear double biceps: Melvin

Rear lat spread: Toney (due to his overall width, plus the condition of his glutes and hams that he shows off to his advantage in this pose).

Most muscular: Toney (due to his freaky conditioning—both his crab and hand-on-hips are eruptions of splintered muscle fibers across his shoulders and chest).

Who Wins?

These two have flip-flopped back and forth over each other a few times, and by now you should understand why. Each has strengths the other doesn't, and weaknesses that the other one can exploit. I love both these guys like brothers, and I am living vicariously through them now that my competing days are over. I also feel that both Melvin and Toney proudly carry on the traditions of great presentation and professionalism that I believed in so strongly.

Toney is at least as old as me if not older, so for him to still be doing this is amazing for me to watch. Melvin is getting up there too—I think he hits 40 pretty soon. At their best, I really can't say who would win. So far, no judge has had to make that call. I know I would hate to! Best of luck to both of these iron veterans at the Mr. Olympia!

All-American EFX Dodge Challenger Update

When we last spoke, I was debating whether or not to put the Supercharger in my EFX Dodge Charger. I have hooked up with a new sponsor, Techco, (<http://www.techcointl.com/>), and the engine is being worked on now. When it's finally done, the engine will be a 426 Stroker, 7 liters, with over 800 horses under the hood. That's a powerful ride! Just to give you an idea, the Lamborghini Gallardo only has a 6.2 liter engine. I have to thank my main sponsors, All-American EFX and MD.

Also, speaking of Lamborghini Gallardo's, lately I have been driving one that belongs to a good friend of mine. I actually want to surprise my wife Madeline on our 12th wedding anniversary, coming up in a couple weeks as I write this, on June 28 with a ride down the coast in that Lambo, to stay at the beautiful seaside city of Carmel. If you're reading this baby, I love you and want to thank you for all the wonderful years so far, and our three amazing children! ■

Cathy LeFrancois

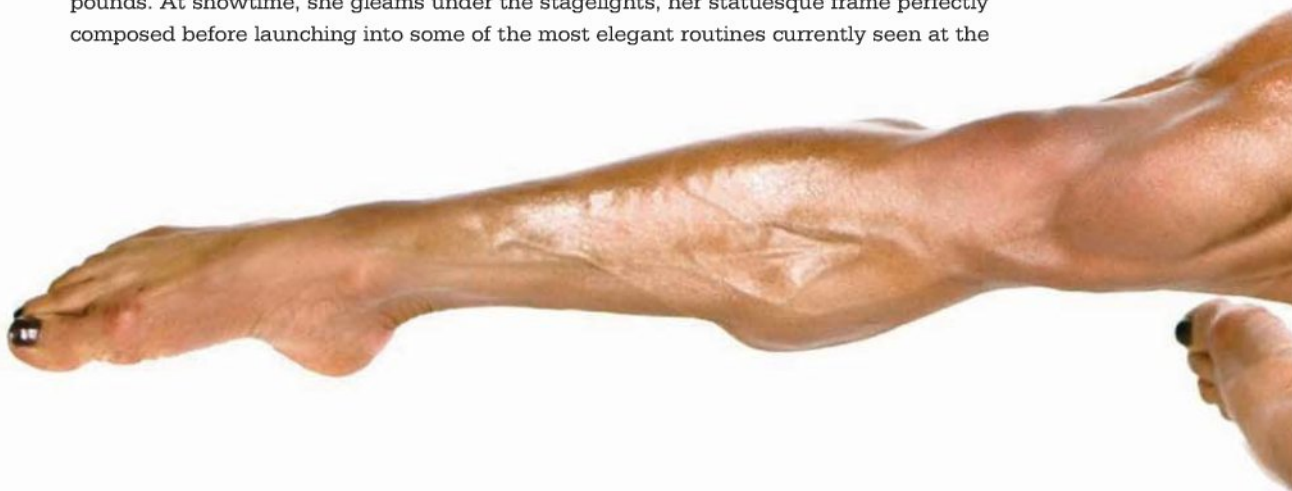
The Art of the Physique

By Cheri Owen, Photography by Per Bernal

Just like Michelangelo's marble sculptures of women, Cathy LeFrancois is destined to be great for eternity. One of his most-admired qualities was his *terribilità*, a sense of awe-inspiring grandeur, and while subsequent artists attempted to imitate his passionate and highly personal style, none came close.

The same can be said for Cathy. Also known as 'Power Cat,' her muscle power and graceful stage presence are peerless in the world of women's bodybuilding. Hailing from Quebec, Canada's most soulful province, Cathy was born February 12, 1971, in the small village of Amqui, outside of Quebec City. Though she relocated to California in 2000, and currently resides in Los Angeles County, Cathy's small-town roots have never left her. She is very close with her family and is devoted to maintaining a blissful domesticity that allows her to devote herself full-time to training.

Just as the sculptor was notoriously single-minded in his pursuit of excellence, Cathy also sculpts her 5'2" frame. Her chiseled physique and ice-blue eyes radiate a hard and blinding beauty. Weighing 160 pounds off-season, she competes at a striking 135-140 pounds. At showtime, she gleams under the stagelights, her statuesque frame perfectly composed before launching into some of the most elegant routines currently seen at the







pro level. Cathy's winning combination of symmetry, hardness, and femininity offer a total package of sensuality and seduction.

For the past five years, Cathy has been sponsored by Gaspari Nutrition, traveling and promoting their products. She won her first amateur show, the Quebec Metropolitan, in 1990, training for six months prior to competing. Cathy is no stranger to hard work: before turning pro in 1995, winning the Canada Cup III Amateur Bodybuilding Championships, she attended college, studying clothing design, and held a variety of jobs, including launching a clothing line, Kahuna Bay and Original Body Wear.

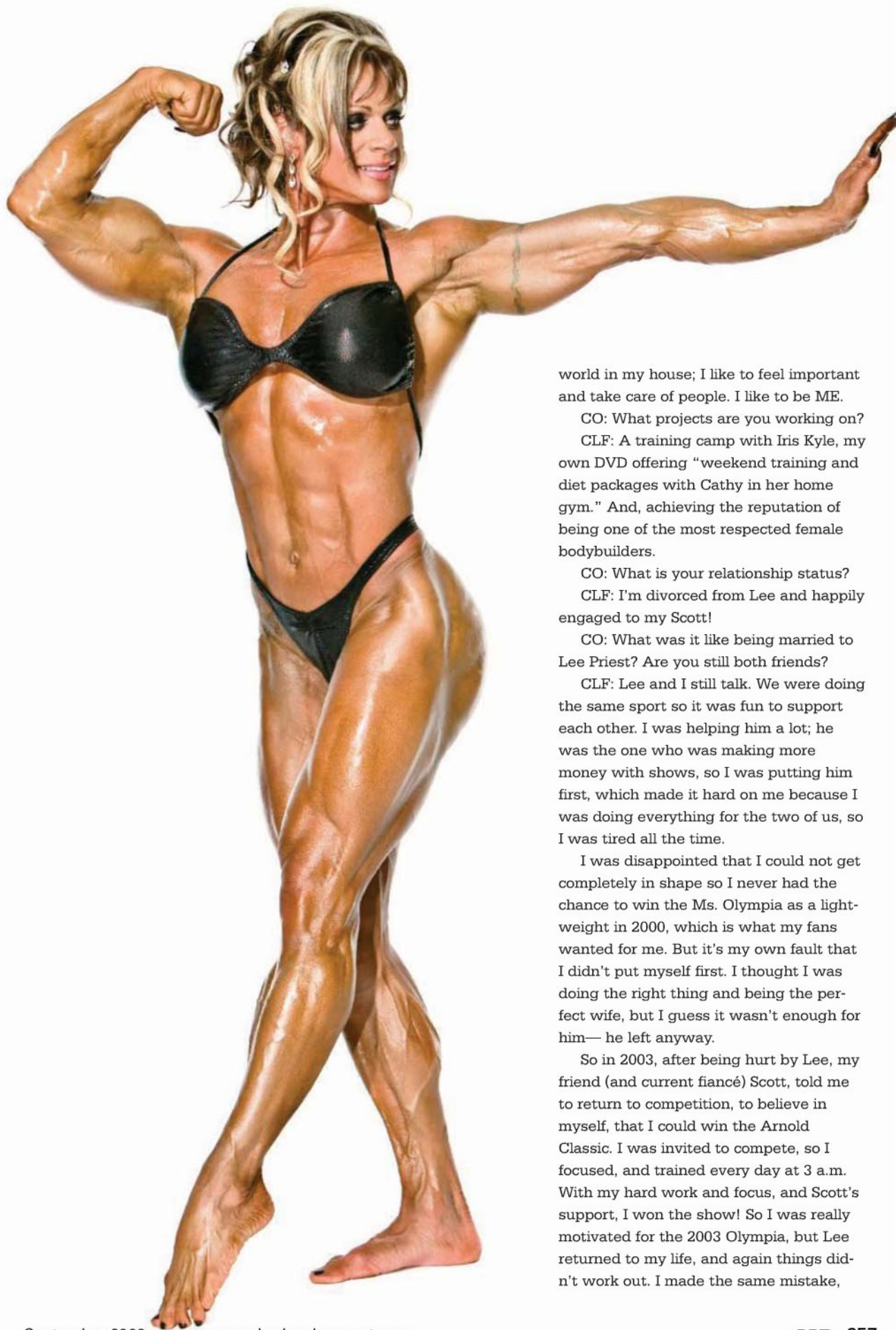
From 2004 to 2006, Cathy stopped bodybuilding, and dabbled in IFBB Figure competitions. But, just as Michelangelo would hit the knee of his statue with a hammer, shouting, *Why don't you speak to me?* Cathy heard to her own inner voice, and returned to her first love— bodybuilding.

With a long-held dream of driving in NASCAR—a sport filled with fast curves and risky turns, a professional Figure career didn't suit this strong, yet sensitive performer. Something like her favorite cartoon character, the sexy ingénue Miss Green M&M, Cathy is infinitely more three-dimensional, an effervescent personality, yet at the same time vulnerable—a product, perhaps, of having to grow up too soon and overcome adversity at a very young age. In a sport filled with arrogance and insecurity, her openness and honesty make her extremely likeable and popular. Beneath her outer core of muscle, Cathy perfects her inner beauty, a matter of chipping away all that is not necessary, to achieve the perfect sculptural form.

On the ceiling of the Sistine Chapel, Michelangelo created figures that were forceful and dynamic, electrifying the church with his depictions of God as, in the end, only human. Let's get to know the future of women's bodybuilding— Cathy LeFrancois—and touch a little piece of the divine!

CO: What's Cathy like?

CLF: I like to get things done and love mornings. I don't like to lose. I like a stage audience, but don't like to be in the crowd. I like attention and need a lot of affection. I like work, keeping myself busy and have a hard time to sit and relax. I'm proud, polite, big-hearted and honest. I like to be in my little



world in my house; I like to feel important and take care of people. I like to be ME.

CO: What projects are you working on?

CLF: A training camp with Iris Kyle, my own DVD offering "weekend training and diet packages with Cathy in her home gym." And, achieving the reputation of being one of the most respected female bodybuilders.

CO: What is your relationship status?

CLF: I'm divorced from Lee and happily engaged to my Scott!

CO: What was it like being married to Lee Priest? Are you still both friends?

CLF: Lee and I still talk. We were doing the same sport so it was fun to support each other. I was helping him a lot; he was the one who was making more money with shows, so I was putting him first, which made it hard on me because I was doing everything for the two of us, so I was tired all the time.

I was disappointed that I could not get completely in shape so I never had the chance to win the Ms. Olympia as a lightweight in 2000, which is what my fans wanted for me. But it's my own fault that I didn't put myself first. I thought I was doing the right thing and being the perfect wife, but I guess it wasn't enough for him—he left anyway.

So in 2003, after being hurt by Lee, my friend (and current fiancé) Scott, told me to return to competition, to believe in myself, that I could win the Arnold Classic. I was invited to compete, so I focused, and trained every day at 3 a.m. With my hard work and focus, and Scott's support, I won the show! So I was really motivated for the 2003 Olympia, but Lee returned to my life, and again things didn't work out. I made the same mistake,



and lost at the Olympia. Something I will never do again, which is putting someone else before myself and my career.

CO: Is there a particular kind of guy that you are attracted to?

CLF: My Scotty! He loves what I do and supports me. He doesn't care if I go to the gym anytime I want and with whomever I want. If I am stressed, and I get crazy and go off on him for no reason he just looks at me and I can see it in his eyes— *Whatever*, Cathy— and he goes back to his television and ignores me. People in the industry know him, but he likes to stay in the background and just help myself and others to do well.

CO: How do your friends and family react to your physique?

CLF: My brother says to his friends: "My sister's cool, she has muscles!" Both of my sisters are so proud of me, and are a part of my success. But for my parents, it took a while to accept this new career. They wanted me to go far in school and have a great profession. But now they visit me in California and they see my training, and they realize the sport takes a lot of effort and that I get a lot back in a positive way. It's funny when my dad says, "Everybody looks at you— do they all *know* you?" I ask him, "How often do you see a muscle girl, Dad?" And he smiles. I am like the 'Arnold Star' in the city where I was born.

CO: How did it feel to win the NY Pro two times in a row?

CLF: Cool— but let me tell you how it feels next year, after number three!

CO: Did you do anything differently last year for your legs and your body in general, to prepare for the 2009 New York Pro?

CLF: Leg workouts have always been my favorite one. I press 10-12 plates both sides for over 20-25 reps and squat 3 plates for 15 reps. After the 2008 Arnold, I broke some mini bones in my left foot while moving into my new home. I wasn't able to do leg presses, calves, and step cardio for my 2008 New York Pro preparation. My legs looked the best they had been onstage and I realized that I had been overtraining them for years! Now I train hard but smarter and work on my weaknesses.

CO: What's your contest and off-season workout schedule?

CLF: I train one body part a day and I train





how I feel. I do a variety of exercises every time. Off-season I don't do cardio, I prefer to put my energy toward an intense workout. For contest preparation, I do cardio. I start with 20 to 45 minutes and if needed, I do a second session of cardio at night.

CO: What is your best feature?

CLF: Ask Chris Cormier, he makes fun of me all the time. He said that I am family!!! I am sure you know what he means! Not my fault, I'm born with it, and my calves!

CO: What are your favorite foods?

CLF: Everything that is CRUNCH CRUNCH CRUNCH!!

CO: What motivates you?

CLF: When I feel appreciated, and when I can pay my bills with no need to check if I still have money in my bank account.

CO: Is there a female or male bodybuilder who motivated you to get started?

CLF: Cory Everson, Lenda Murray, Iris Kyle, Rich Gaspari, Jay Cutler, and Hidetada Yamagishi.

CO: Iris Kyle gave you a great compliment. How did that make you feel, coming from the reigning Ms. Olympia?

CLF: Iris was the second Ms. Olympia to compliment me. In 2002, while coming off stage at the GNC Show of Strength, Lenda Murray told me "WOW", that I was the only female body builder she had ever said that to. And recently Iris told me that I will be the only one that she will accept to take our title as Ms. Olympia. Those compliments, coming from the two best female bodybuilders ever, mean a lot.

CO: What got you started in bodybuilding?

CLF: My best friend Steve Beaulieu, who helped me discover my dream







shape. It was his dream to be a bodybuilder, so I feel his influence. He was killed by a drunk driver the weekend of my first speed skating competition. He wanted me to bring him a gold medal, but when I got to school Monday with not just one, but three gold medals, I got the news. Steve never had the chance to see them. When I step onstage, I think about him and try to make both our dreams come true as one.

CO: What are your goals?

CLF: To become the future Ambassador of Women's Bodybuilding— to represent the sport as a role-model for future female bodybuilders and those who strive and work hard to be their very best.

CO: What are you most proud of?

CLF: Considering all the difficulties I grew up with, everything I have accomplished so far in life. I am proud of the day I won my pro card in 1995, my 2003 win at the Arnold Classic, and most recently, my wins at the 2008 and 2009 NY Pro. I am proud to be working for Gaspari Nutrition. I am proud to be the most popular female bodybuilder and proud that I have a lot of good friends. I am proud to be the Cathy LeFrancois I am today.



CO: What is your competition history?

- 1990** Quebec Metropolitan Regional Amateur Bodybuilding: 2nd place, LW
- 1991** CBBF Eastern Canadian Amateur Bodybuilding Championships: 1st place, LW
- 1993** CBBF Canadian Amateur Bodybuilding Championships: 2nd place, LW
- 1994** CBBF Canadian Amateur Bodybuilding Championships: 2nd place, MW
- 1995** CBBF Canada Cup III Amateur Bodybuilding Championships: 1st place, MW
- Overall Winner— WON PRO CARD**
- 1995** IFBB Jan Tana Classic: 12th place
- 1996** IFBB Arnold Classic/Miss International: 14th place
- 1999** IFBB Jan Tana Classic: 8th place
- 1999** IFBB Women's Extravaganza: 5th place
- 2000** IFBB Arnold Classic/Miss International: 3rd place
- 2000** IFBB Miss Olympia: 4th place, LW
- 2001** IFBB Arnold Classic/Miss International: 4th place, LW
- 2002** IFBB Arnold Classic/Miss International: 4th place, LW
- 2002** IFBB GNC Pro Classic: 2nd place, LW
- 2003** IFBB Arnold's Classic/Miss International: 1st place, LW
- 2003** IFBB Miss Olympia: 4th place, LW
- 2004-2006** IFBB Figure-Culver City twice, Europa, Sacramento, Pittsburgh
- 2006** IFBB Atlantic City Pro: 6th place
- 2007** IFBB Sacramento Pro: 2nd place, LW
- 2007** IFBB Arnold Classic/Miss International: 10th place
- 2008** IFBB Arnold Classic/Miss International: 6th place
- 2008** IFBB New York Pro: 1st place
- 2008** IFBB Miss Olympia: 6th place
- 2009** IFBB Arnold Classic/Miss International: 8th place
- 2009** IFBB New York Pro: 1st place

And, of course, watch for **Cathy LeFrancois** at the 2009 Ms. Olympia in Las Vegas in September! ■

DORIAN YATES **BLOOD & GUTS**

By Dorian Yates



*MD is immensely proud to welcome one of bodybuilding's true icons to our family. In addition to winning the Mr. Olympia six times, Dorian Yates is respected as one of the hardest-training bodybuilders who has ever lived. Equally feared for his keen intellect and unwavering discipline as he was for his incredible physique during his Olympia reign, Dorian is widely considered to be one of the most knowledgeable men in the industry when it comes to areas such as training, nutrition, the psychology of bodybuilding and more. It's been a long time coming, but at last we are able to bring you the man once known as 'The Shadow'— the one and only **Dorian Yates!***

The Perfect Workout

During my six-year reign as Mr. Olympia, the one aspect of my program that garnered the most interest was my training. It was widely recognized as being more intense, meticulous, and purposeful than that of my peers at the time. Last month we went over the principles for building mass. This month I wanted to zero in on the workout aspect specifically. Millions of people go to the gym and work out every day. What makes their workouts any different from that of a champion, or a future champion? You'll soon see that there is indeed a world of difference between simply going through the motions of a group of exercises versus the type of workout that stimulates muscle growth each and every time.

A Perfect Workout is No Accident!

To listen to most bodybuilders, you would think that great workouts are some random phenomenon that just happens once in a while when the stars are aligned just so. At the same time, they are often at a loss to explain a bad workout. They may be able to point to job or relationship troubles, lack of sleep, oncoming illness, or other reasons why their training was unproductive on a given day, but they still have difficulty making any meaningful connections between their better workouts and what led to those.

I am here to tell you that great workouts are no accident, and the secret lies in having a clear plan to follow. I often liken it to a long journey and a map. With a clear course plotted and a time in which to arrive



at your destination, you stand an excellent chance of getting there. If instead you wander around aimlessly with no real path set to where you want to go and no set timeframe in which to get there, good luck reaching your destination, or in our case, your physique goals. Forget about being 'instinctive' when it comes to your training. If you really followed your instincts, you wouldn't be working out at all!

Goal Setting

The real key to improving your workouts is to have goals, both short- and long-term. If you're not really working on achieving anything specific, why would you bother to train terribly hard in the first place? It's critical

that you have both types of goals. A long-term goal like turning pro or weighing 250 pounds when you're just 170 now is too daunting. It can seem like making those things happen is going to take far too long, and you can easily get discouraged. Instead, break all long-term goals down into smaller ones, and set realistic time limits for each one.

If you've only been training a year and your ultimate goal is to turn pro, set a goal to enter and win a novice competition first. For bodyweight goals or increases in strength, always take them in manageable increments at a time, like five pounds of muscle or 10 pounds on your bench press in six weeks. I used to include measurements in my own goals, especially when my goal involved bringing up a certain body part. Whatever your goals may be, you need to clearly define them in your mind. The next important step in this process is to *write them down*. Once something is down on paper or in a computer file for you to see, it instantly becomes stronger and more imprinted in your mind.

Training Journal

That leads us to what I feel is one of the most valuable tools in creating perfect workouts, the training log. I used my journal to write down goals and workouts every day from when I began bodybuilding in 1984 to the day I retired after the 1997 Mr. Olympia. Every month in the off-season, I would choose about 10 key exercises like the incline barbell press, barbell row, leg press and so on and set a goal for how much stronger I wanted to be in a month's time.

In addition to writing down all my



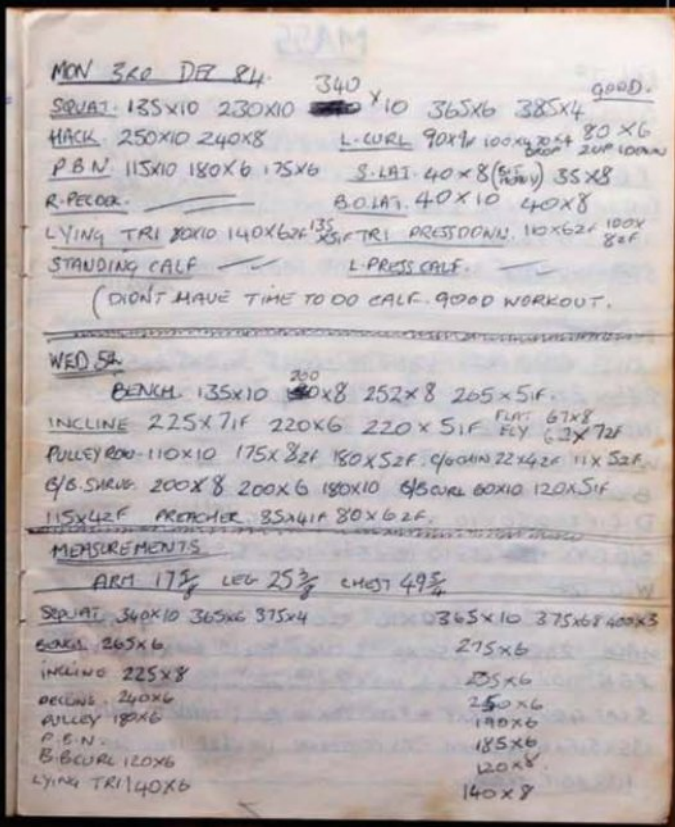
DORIAN YATES-BLOOD&GUTS

workouts, I entered my meals and even my energy levels and moods. Every so often I would go back and study these pages, looking for trends. If I noticed that something was producing results, I kept it. If something else didn't seem to be effective, I discarded it. This allowed me to gain a much better understanding of the various foods, exercises, techniques and so on that my particular body responded best to, so I could fine-tune my entire program.

Visualization and Mental Rehearsal

Another time I would always consult my training journal was immediately before leaving my home to go train. I would retreat into my office where it was quiet, and review my last few workouts and my goals. I noted the exercises I had done last time for the body part I was about to go train, how much weight I had used, and how many reps I'd gotten. I would then write out the workout I was about to perform, with all the same details.

Many people have found success recently with a training system called DC, which emphasizes 'beating the log-book.' That's essentially what I was doing many years before this system was around. As soon as it was all down on paper, I would close my eyes and visualize the entire workout. I could see all the exercises I was about to do, down to each set, and the weights I would use, what I was wearing, how my muscles would feel, everything. This way, the workout was already done before I had even



Trained by a Legend: Dorian Puts Me Through A Perfect Biceps Workout

By Ron Harris

A 10-minute period on the afternoon of Saturday, May 23 will go down as one of my life's top "How cool was that?" moments. I was trained by one of the men I look up to most in the sport of bodybuilding: six-time Mr. Olympia **Dorian Yates**. Dorian, who lives in Birmingham, England, was at the Apollon Gym in Edison, New Jersey, to host his "Blood and Guts" seminar. I made the drive down from Boston to check it out. Considering it was Memorial Day weekend, there was a pretty good turnout of about 75 people who came to gain some wisdom from Mr. Yates. MD's Robbie Durand caught it all on video and posted it up on the website for your edification.

Once the seminar was over and people were filtering out, I confirmed with Dorian that he was still available to put me through a workout. I chose biceps for a few reasons.

1) My biceps have never been very good. There would be no point in having Dorian help me work on something that's



always responded easily, like my chest or quads. I certainly wasn't trying to 'show off' for Dorian— not that he would be impressed by anything I would have done anyway!

2) It was about time to train bi's anyway. Normally I would have trained them the day before with shoulders, but I saved them for this.

3) I knew the workout would be brief, and I didn't want to take up too much of Dorian's time. Something like back or legs

would have taken much longer, and while in New Jersey Dorian certainly had other places to go and people to see.

Normally I don't even like to train when I'm out of town, unless I can do everything exactly the way I do it at home— eat a good meal about an hour or 90 minutes beforehand, take my pre-workout nitric oxide and caffeine product, and be sure I am adequately hydrated by drinking plenty of water. None of those 'conditions' had been met for this particular workout, but that's the way the cookie crumbles. I was so psyched to train with Dorian that I shouted down those whining voices in my head. I let Dorian pick the exercises, of course. He wanted me to start with dumbbell concentration curls, an exercise I have done maybe a dozen times in the past few years. After warming up, he asked me what weight I could use, and I really didn't know. I picked up a 40.

"You should be able to do more than that," he remarked. I told him maybe I

stepped inside the gym. I simply had to follow through and follow the script in my head.

I thought of bodybuilding as my mission in life. I was a warrior, and each workout represented a battle I had to win. It's simply not possible for every workout to be better than the last, but I can honestly say I never had a bad workout in all my years of competing. If I ever felt myself feeling run-down or getting sick, I would not train that day. Why bother working out if you can't give your best effort? That's a mistake I see a lot of bodybuilders make.

Making progress became harder and harder the bigger and stronger I got, but I knew I had to keep pushing through my previous limits. Your mind and body always want to quit when a set becomes painful or difficult, but if your goals are powerful enough, that's not an option.

Motivation: Do You Need a Training Partner?

Many of you who saw my "Blood and Guts" training video know that I did tend to train with a partner. Back then it was a good mate of mine named Leroy. People assumed that because Leroy was very vocal during our workouts, I depended on him for motivation and encouragement. That wasn't the case. I was always self-motivated by my goals, and therefore never needed any outside sources.

But a good training partner or at least a good spotter is essential if you are going to train to true momentary muscular failure, and not just for safety reasons. Think about it for a moment— true failure in an exercise like the bench

SUN - MAY - 24TH CREST BI
 DECKLINE 135 - 220 - 310 - 425x5if R/Px2
 SM-INS 80x8 140x8 6if + NEG
 FLUTTER - 80x8 120x7if - 90x4 - 70x4
 BI V-PRISM - DB 45x8 75x5if + IN
 BB-CURL - 145x4if R/Px2if
 MEN - MAY - 25TH LEG - Calf
 EXT - 130 - 180 - 230 - 283x8if + IN
 SM-SQUAT 355x8 540x9
 WALK 266x8 400x8if - 300x2
 CURL - 100x2 160x10 - REEDED NEBS
 SLD 310x9
 SCALE 700 - 1000x18 No SHG
 SCHE 176x8if
 WED - 27TH DULT - TRI -
 DB PRESS 70x20 100x10 150x6if
 ST-WAY 45x10 65x11if + B
 CABLE 50x9if + NEG
 NEUTRAL 184x9if + NEG
 TENSION 190x7if + ABS
 I.R.C. 2 - SUPER - REV-CRUNCH (CRUNCH)
 THUR - 28TH BACK
 CG-PULL 225, 300 - 412x6if + N
 CHIN 8Wx6 60x42if - 80x4if
 R-ROD 310x8 405x7if
 BENCH-RO 260x7if + B
 PULLY 300x6if - NEG - UNMABLE
 R-ROD 173x10if + IN
 TRX-SQUAT 2 100x10 300x8
 WALK 35x8 - 80x4if

could. After doing a couple reps with each arm, he told me to put it back and get a 45. He had me do just one set for each arm in rest-pause fashion, which I was used to doing for the two years I trained in DC style. Don't ask me how many reps I got, because I can only guess. It might have been something like 5, 2, and 1. Not too amazing, but then again my biceps have never been very strong relative to the rest of me. On this day, I called up every last ounce of their strength.

Next up were barbell curls, and Dorian gave me the option of a straight or EZ-curl bar. The EZ bar is much less of a strain on my wrists. I was going to play it safe and just put a 25 on each side, but Dorian scowled at that. "At least put a 35 on, mate," he said. "Even that might be a warm-up." I kind of doubted that, but did as I was told. After a few reps, he said. "That's good, set it down and put 10s on."

Again it was just one set, but the effort he demanded of me was sig-

nificant. It would be easy for me to say that one set was the most intense I have ever done for biceps, but it probably wouldn't be the truth. Though not every single one of my workouts is legendary, I have always trained very hard on a consistent basis. But I will say this: Dorian coaxed a few more reps out of me than I ever would have done if I didn't have this icon in front of me telling me to keep going. I was not going to 'pump out' and give Dorian Yates anything less than 100 percent of what I was capable of. What he made me re-evaluate on this day was how I had deluded myself into believing I was always giving 100 percent. Not by a long shot!



To say I am motivated now would be an understatement. The last time I felt this way was after the **Ronnie Coleman** workout weekend in February of 2005. I got to go through a full leg workout with Ronnie at Metroflex Gym that day. That, too, was an

experience I will never forget and that I will always be grateful for. Both Ronnie and Dorian have an aura about them of both greatness and quiet confidence. Being in the presence of someone who was the absolute best in the world at what they did for a period of years is both humbling and vastly inspirational.

Dorian has an extra special significance to me because he dominated his chosen sport both through incredibly hard work and determination as well as a superior intellect. He challenged the accepted philosophies about training and even nutrition, and forged his own path. Until Dorian came along with his 'Blood and Guts' style of training, which he admittedly borrowed principles of from both **Arthur Jones** and **Mike Mentzer**, most bodybuilders were still training six days a week and doing as many as 20-30 work sets per body part. Dorian was living proof that harder work in less time with more time allowed for rest was a viable alternative and could actually deliver superior results for many. As for me, I am very grateful to have had the opportunity to 'study under a true master' of the art of bodybuilding! ■

DORIAN YATES-BLOOD&GUTS

press is when you are in the bottom position and simply cannot budge that weight another millimeter. You can't do that on your own, or else in the leg press you would be stuck, pinned to the pad quite effectively, with a half-ton of iron bearing down on you! Having a good spotter gives you the confidence to take your sets all the way to failure. You know that you won't get stuck under a weight, so you don't have to hold back any effort.



It should be said that good spotting is almost an art form. A proficient spotter knows exactly how much to help toward the end so you can eke out that final rep, the one that takes you past where you've been before and into a new zone where you can grow.

Concentration During the Workout

It's very important to maintain total concentration during your workout. Some people are able to talk and joke around between sets and switch right back to serious mode once it's time for their set (Arnold, obviously as we saw in "Pumping Iron," had that ability). For me, I never wanted any distractions. The only conversations I had with my training partner during the workout were regarding what was next, or how much weight to put on, things of that nature.

I stared at the floor between sets as I never wanted to catch the eye of anyone else in the gym, which would invite conversation. Luckily, I owned the gym and everyone knew that when Dorian was training, you let him be. They all respected my workouts and what I was trying to accomplish in my sport. If you have difficulty staying out of conversations, I

recommend the same thing—avoiding eye contact. You may also consider wearing headphones or ear buds to further discourage any unwanted interruptions.

Of course, once my workout was over I would be perfectly friendly and talk to the other members at Temple Gym. The workout was when I was literally 'at work,' and once it was over I was 'off-duty' and available again.

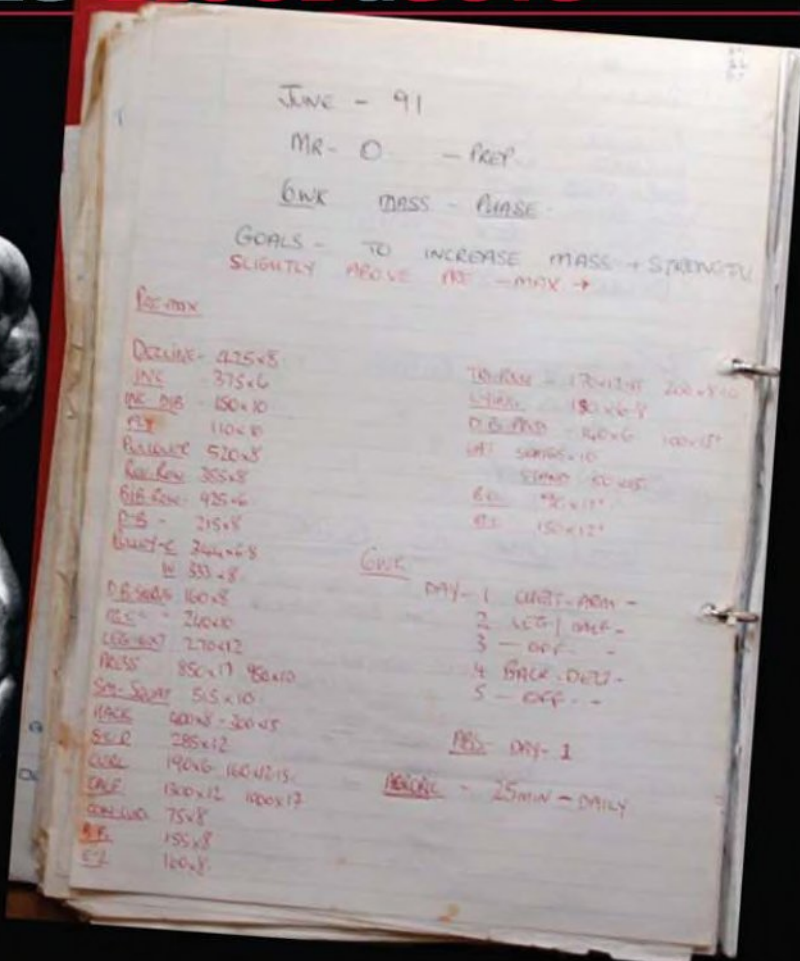
Music

It's worth mentioning that you can definitely use music to enhance the quality of your workouts. Music has long been known to be capable of changing moods. Some music can help you relax, and other music can put you in a state of excitement and aggression. You know the old cliché, "Music can soothe the savage beast?" It can also *bring out* the savage beast, so to speak. For about five years, every time it was time to train legs I would put in the Guns 'N Roses CD

"Appetite for Destruction." As soon as the first track, "Welcome to the Jungle," started, I always felt a mix of nervous energy and trepidation. Leg day was the toughest workout of all, and I knew it was time to really challenge myself. We all have some type of music that gets us hyped up. Whether it's hard rock, rap, or house/techno, use it to your advantage to stoke the fires of your perfect workout.

Sleep and The Pre-workout Meal

It also goes without saying that one must be well-rested and well-nourished to put forth his or her best effort in the gym. I always slept a solid eight hours a night plus an hour's nap each afternoon, which took care of my rest. I usually trained in the late morning, so early upon rising I would have a large breakfast of egg whites and oatmeal with some fruit. That would be about three hours



DORIAN YATES-BLOOD&GUTS

MASS + POWER	
OCT 16 th 1984.	
MAX WIEGHTS.	GOALS. 24 12 84
SQUAT 355X8	375X8 400X4
BENCH 265X6	285X8 310X2-3
INCLINE 215X8	240X6
B/B CURL 115X6-8	125X6
TRI EX 135X6-8	145X6-8
P.B.N. 175X8	185X8
D/LIFT 365X6	385X6-8
B/B ROW 220X6	240X6
C/G PULL 190X8	210X6
ST Calf RAISE 170X10-12	200X10-12
ARM. 17 1/2	17 3/4
LEG 25 1/2	25 1/2
CHEST 49 1/2	50
WAIST 33	
CALF 17 1/2	
HIP 38 1/2	17 1/2
ARM 14 1/2	15

WED OCT 17 th	
CHEST. BENCH 135X10 185X8 250X7 1/2 265X4 1/2	
INCLINE B/B. 220X7 1/2 215X5 1/2 205X5 1/2	
D/B FLY 67X8 62X8. D/B PULLOVER 85X10 X8 190	
B.O. ROW 135X10 220X8 280X6 C/G PULL 200 X4 1/2 242 1/2	
D/LIFT 230X10 320X8 365X6 P/B CURL 115X6 1/2 242 1/2	
10X4 1/2 INCLINE D/B 40X5 40X5 DROP 31X2	
FRI 19 th	
* LIGHT WORKOUT DUE TO TIREDNESS NO RECORD OF POUNDAGES	
MON 22 nd BENCH 130X10 185X8 242X8 275X5 1/2	
285X3 1/2 INCLINE 225X6 1/2 215X5 1/2 205X5 1/2	
D/B FLY 67X6 62X10	
B.O. ROW (180) 230X6 220X6 200X8.	
C/G PULL 200X7 1/2 200X4 1/2 D/B SHRG 92X8 X7 X7	
ALT D/B CURL 48X7 48X5 48X4 DROP 40X2	
PREACHER BB CURL 75X8 1/2 80X4 1/2 Calf RAISE 170X8	
160X8	
WED 24 th	
SQUAT 135X10 220X10 330X10 355X7 375X2	
HACK 185X8 (WIDE STANCE) 230X8 1/2 220X8 1/2 140X7	
FEET TOGETHER 90X10 STADI 90X7	
P.B.N. (115) 175X6 165X7 5 LAT 35X10 35X6 DROP 25X3	
TRI EX (60) 132X5 1/2 125X7 1/2 46 C/G BENCHES	
PRESSDOWN 100X8 1/2 90X8 1/2 + HEAVENS	
REAR DELTS. B.O. LAT. 35X10 X8 REVERSE PEE DEK 60X8 X8	

before my workout commenced. An hour before the workout, I would have a protein shake with no carbs, along with a strong cup of coffee and perhaps an ephedrine tablet (these were legal and widely-used at the time).

My feeling on having only a light liquid meal of protein before training was that I didn't want any big fluctuations in my energy levels as you would see with insulin responses to a meal containing carbs. Of course, this was all back in the early to mid-'90s, when we didn't have any of the pre-workout supplements that enhance the pump and provide extra energy and mental clarity. Had they been available, I probably would have used them.

Can You Make Your Workouts Perfect?

If you've read and apply all the guidelines I've set out for you this month, you should never again ask yourself, "I wonder if I'll have a great workout today or not?" It's not up to fate. It's all up to you, and it requires motivation, organization, and some prior preparation. Great physiques are built, one perfect workout at a time. The more perfect workouts you can string together, the closer you will be to that physique you dream of.

Next Month

For the first time, I'll do a preview of the Mr. Olympia, giving my opinions on all the qualified competitors and a couple scenarios based on what is likely to happen based on past performances. Be warned ahead of time that personalities will not factor into my commentary. The physiques will be put under my microscope, and I call 'em like I see 'em. ■



Testosterone

By Dan Gwartney, M.D.

Testosterone and Heart Disease in Men

Testosterone and anabolic steroids have an extremely jaded history—replete with associations with sports doping, violent crime, and even Nazism. For decades, no public disclosure of any benefit conferred by these drugs was published in professional journals or the media. Instead, public awareness of androgens (testosterone and anabolic steroids) has been colored by laminated posters showing ‘side effects,’ and reports of individuals harmed by anabolic steroid use.

These warnings, well-intentioned as they are, appear to have been premature. In fact, some of the most concerning warnings are inaccurate; some are overstated, while others may be outright false. This does not mean that androgens are harmless and perfectly safe. It simply means that like everything else in life, there is not an absolute answer.

Most college students learn that any test question asking if something is always (or never) ‘true’ is usually ‘false.’ Sadly, that lesson is easily forgotten whenever it serves to influence public opinion.

In part, public officials chose to take a hard line against androgens because the allure of their effect on the male physique (and the accompanying social status) is so powerful and near universal. It is important to realize that the perception of most physicians and politicians is that anabolic steroid users are pursuing vain goals, foreign to the desires of these white-collar professionals. Anabolic steroids are so closely identified with

bodybuilding and sports doping that their use is considered pathologic. In fact, there is a movement to more fully define ‘anabolic steroid dependence.’ Dependence is a critical argument in justifying the placement of anabolic steroids in the list of controlled substances.¹

When a small number of case reports was published regarding anabolic steroid users suffering heart attacks or sudden death, the medical profession took notice. This led researchers to look for an explanation.

Testosterone’s role in causing prostate cancer has been called to question, and many physicians are grudgingly accepting the arguments countering the classic belief that was elegantly presented by a urologist, Dr. Abraham Morgentaler.² Androgens have long been blamed for episodes of violence and mental instability. In contrast, studies are showing that low testosterone is associated with depression, impaired cognitive function, and other mental health conditions.^{3,9}

One of the less disputed and more seriously-alleged side effects of androgens is acceleration of atherosclerotic cardiovascular disease (ASCVD).^{6,7} This condition is often called ‘plaque buildup.’ Readers old enough to pay attention to advertisements about cho-

lesterol and heart disease will be familiar with pictures showing the inside of an artery (the ‘pipes’ that carry blood from the heart to other tissue). In normal arteries, the pipes are clean and wide open; when atherosclerosis is present, the lumen (the opening, or cross-sectional area) is compromised by LDL (bad) cholesterol building up and blocking the passage of blood. When blood cannot reach an area, oxygen cannot be delivered and the tissue that is supplied by the blocked artery dies. For the affected cells, it’s like being choked to death. When ASCVD affects the arteries that supply the heart, the result is a heart attack.

ASCVD is the leading cause of death in the United States.⁸ Despite its prevalence, it is rare among young and middle-aged adults. Thus, when a small number of case reports was published regarding anabolic steroid users suffering heart attacks or sudden death, the medical profession took notice.⁹ This led researchers to look for an explanation, and they discovered that some anabolic steroid users experienced changes in blood concentrations of cholesterol—a reduction in HDL (good) cholesterol and elevations in LDL (bad) cholesterol and triglycerides (fats)¹⁰—that increased the risk of atherosclerosis.

There is a phenomenon in professional literature that once something is published, it is ‘gospel’ until proven otherwise. Thus, public service announcements and health clinic posters include warnings about heart attacks.

Testosterone

Testosterone's Role in Good Health

During the last 20 years, a realization has dawned on clinical science that testosterone has a role in health as well as disease. Life does not occur in a test tube. There are no 'absolutes,' and the human body is designed to exist in a continuum. In other words, we live in ranges. At certain points we thrive, but outside of the 'human range,' we suffer and eventually die.

A readily-understood example of human range is temperature. People enjoy environmental temperatures between 40°F and 90°F, pursuing outdoor recreation and growing bountiful crops. However, when temperatures exceed this range—colder or hotter—humans experience discomfort, injury and eventually death. Even within the human range, there is a smaller range that represents the optimal temperature. While individual opinions may vary, people are most active, productive, and happy when the environmental temperature is near 75°F. If temperature-related deaths were plotted on a graph, one would see a U-shaped curve, with a significant number of deaths occurring at the extremes (like the cold of outer space or inside a house fire). In the 'comfort' zone, temperature-related deaths would be very rare.

Similar ranges exist for physiologic functions. A resting heart rate of 60-80 beats per minute is healthy, as is 6½-8½ hours of sleep, or fasting blood glucose of 60-100 mg per dL.

It should be no surprise that the same holds true for testosterone. There is a strong body of evidence supporting the claim that low serum (blood) testosterone concentration in men predisposes one to a higher risk of numerous conditions of poor physical and/or mental health, as well as premature death.^{11,12} Though it is less clear due to ethical and safety considerations, the suggestion that supraphysiologic testosterone use may increase the risk of harm or premature death in a dose-related manner is not without merit (i.e., more is not better). Unfortunately, a lack of research, as well as the number of different drugs generically classified as anabolic steroids, the diversity

in dosing patterns, use of adjunct drugs, and failure to account for pre-existing disease will delay the emergence of a clinical understanding of optimal testosterone therapy.

Thus, the general understanding among physicians and policymakers is that testosterone negatively affects cardiovascular health by promoting ASCVD. Fortunately, there are a number of physicians and clinical scientists who continue to explore the relationship. Among them are Drs. T. Hugh Jones and Farid Saad, who recently reviewed the effects of testosterone on ASCVD risk factors and mediators in the journal *Atherosclerosis*.¹³

Jones and Saad looked at the association of low testosterone with markers of ASCVD, conditions associated with ASCVD, and the effect of testosterone replacement therapy. It is important to note that they did not look at the effect of supraphysiologic testosterone—concentrations most athletes and bodybuilders use to promote muscle growth and strength. So, what did they discover?

Low testosterone concentration in males is unhealthy—there is little question of that. Men with low testosterone concentration are at greater risk of CHD (coronary heart disease, plugging of the arteries that supply the heart muscle), confirmed by a special type of X-ray called coronary angiography, and episodes of heart attacks or angina (chest pain). When hypogonadal (low testosterone) men are treated with testosterone, positive changes are noted that are associated with a lower risk of future CHD. These include reductions in visceral obesity and insulin resistance, improved lipid (cholesterol and fat) and inflammation labs, and better exercise tolerance.¹³

An increased risk of a heart attack is related to a number of conditions—smoking, hypertension, high LDL cholesterol, unhealthy diet/exercise, abdominal obesity, and diabetes.¹⁴ Several of these conditions are lifestyle-based. In 1981, a constellation of health problems was described as the 'Metabolic Syndrome.' The syndrome includes abdominal obesity, high triglycerides (blood fat) and cholesterol, low HDL cholesterol, hyperten-

sion (high blood pressure), and high fasting glucose (blood sugar taken prior to breakfast).¹⁵ Not all of these conditions need to be present for a person to be classified as having the Metabolic Syndrome. Due in part to the changing lifestyle noted from the 1970s to now, these conditions—both individually and as part of the Metabolic Syndrome—are increasingly common. Coincidentally, the average testosterone concentration in men has been falling over the same period.¹⁶

Shrinking Testosterone, Bigger Stomachs

Is falling testosterone a coincidence?^{17,18} Consider that the highest rate of heart attack occurs in men who are at greatest risk of having a low testosterone concentration due to age-related decline. Taking a closer look at the conditions that predispose a person to an increased risk of heart disease, it becomes clear that testosterone has a protective role in preventing ASCVD—at least within the normal physiologic range.

Obesity adversely affects one's health, but this is particularly true with regard to cardiovascular health. Studies that analyzed the relationship between testosterone and obesity discovered that there is an inverse (opposite) relationship.^{19,20} This means that generally speaking, the higher one's testosterone, the less likely he will be obese. Conversely, the more obese a man is, the lower his testosterone would be. Even more convincing is the data showing that a low testosterone concentration correlates with elevated abdominal obesity, percentage of body fat, and insulin levels. High insulin levels promote fat storage and inhibit fat loss.

Body fat and testosterone have a 'chicken and the egg' relationship. Sometimes, it is impossible to determine which came first—and therefore, which causes the other. Testosterone stimulates receptors on and within the fat cell that reduce fat storage, increase the breakdown and release of stored fat, and divert fat cell precursors (stem cell-like cells) to become muscle cells

Testosterone

rather than fat cells.²¹

When the results of a study are reported by the media, conflicting conclusions can be made. By focusing on a single effect, especially when discussing a globally-acting hormone like testosterone, the net effect is often clouded. It brings to mind the adage of not being able to see the forest for the trees— a folksy way of reminding people to keep looking at the ‘big picture.’

Fat cells do not just store and release fat— they also communicate with the body by releasing unique messenger molecules. After all, it is important for the body to know if stored energy is too low to survive a long winter— or too high, making it difficult to be able to forage, labor, fight or flee. Two of these messengers, called adipocytokines, are resistin and adiponectin. Resistin increases insulin resistance and inflammation (two traits leading to type 2 diabetes, ASCVD, etc). Testosterone therapy on hypogonadal men with type 2 diabetes had no effect on resistin levels.²² Adiponectin appears to play a protective role, and its concentration rises as fat is lost. Oddly, adiponectin levels were higher in hypogonadal men than men with normal testosterone of the same weight. Testosterone treatment reduced visceral obesity (the fat around the organs in the gut, which is believed to be particularly harmful), but also reduced adiponectin. One would have expected the opposite; researchers thought that testosterone reduced the number of fat cells, reducing the production of adiponectin. It is just as important to acknowledge studies that show no effect or even negative effects associated with testosterone, to gain a full understanding of the hormone’s effects.

Insulin resistance and type 2 diabetes are important factors to consider in determining one’s risk for a heart attack. Again, when looking at groups of people, it is clear that testosterone has an inverse relationship with insulin resistance and type 2 diabetes.²³ In fact, low testosterone is often a precursor to the development of type 2 diabetes.²⁴ As testosterone decreases, insulin resistance increases, forcing the body to maintain a higher insulin

concentration to shuttle nutrients into muscle and other tissue. As insulin levels remain elevated long term, fat loss is inhibited and fat gain results. Treating type 2 diabetics with testosterone reduces blood sugar and insulin resistance, demonstrating a beneficial effect in a condition affecting many men— and potentially reducing the risk of heart attack in those suffering from the condition.^{25,26}

Another marker, hemoglobin A1C (HA1C), was reduced during testosterone therapy. Recently, a collaboration of professional agencies jointly changed how diabetes is diagnosed. From the onset, diagnosing diabetes was dependent upon fasting blood sugar and a more specific test called the oral glucose tolerance test. These tests looked at how the body handled sugar in the short term. Now, clinicians are being urged to look at long-term blood sugar control measuring HA1C.²⁷

Testosterone Therapy Has Many Benefits

There does not appear to be just *one* effect leading to the improvements seen with testosterone therapy— rather, a multitude of effects. Testosterone appears to reduce insulin resistance by reducing visceral fat, which decreases inflammation and fatty acid delivery to the liver—reducing body fat, and improving mitochondrial function (the powerhouse of the cell).¹³ As testosterone concentration drops, its inhibitory effect of fat cells also drops, allowing body fat to increase. Unfortunately, this leads into a vicious cycle as fat cells contain an enzyme called aromatase, which converts testosterone to estrogen.²⁸ Not only does estrogen increase fat storage, but along with two adipocytokines (chemical messengers released by fat cells) and the hormone leptin, it reduces the sensitivity of the body to low testosterone— causing the body to fail to increase testosterone production from the testicles, as levels fall. This results in yet lower testosterone status, feeding the cycle toward greater obesity and insulin resistance.¹³

The strongest argument against

testosterone has been its effect on cholesterol, raising the total amount of cholesterol while lowering the amount of HDL (good) cholesterol. However, there is more to the story than appears on the surface. Within the physiologic range, total cholesterol and LDL (bad) cholesterol both are *reduced* as testosterone concentration goes up.^{29,30}

The relationship between testosterone and HDL cholesterol is less clear. HDL has been shown to be highest in those whose testosterone is in the top 25 percent of the physiologic range. However, other studies have shown the opposite. The confusion seems to rise from the variability of the people studied and the dose of testosterone used, if given as therapy.¹³ It appears that supraphysiologic dosing (using amounts greater than the body would naturally produce) produces changes that are unhealthy in a dose-dependent manner.³¹ Once again, the health benefits of testosterone appear to reside within the ‘human range.’ Exactly where the best benefits are located in that range is a topic that should be of great interest to the health professions.

Individuals with high blood pressure (hypertension) are also at greater risk of a heart attack. Given the direction of this article, it should be of no surprise that once again, low testosterone is associated with hypertension, which resolves with treatment in many subjects.³² In keeping with the theme of the human range, supraphysiologic testosterone (or other anabolic steroids) may also increase blood pressure dangerously.³³

Inflammation is a major component of ASCVD. As LDL cholesterol embeds itself into an artery wall, it attracts inflammatory cells which cause it to form a crusty plaque— think of a pimple. This plaque can grow until it blocks all blood flow, or it can burst like John Belushi’s re-enactment of a zit explosion in the movie “Animal House.” If the plaque bursts, platelets and clotting agents rush to shut down blood flow, causing an immediate blockage. The inflammation is dependent upon chemical messengers to create the ‘crustiness’ and damage the artery wall. In a setting of low testos-

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Testosterone

terone, the conditions are pro-inflammation; treatment with testosterone reduces the inflammatory signal.¹³ In fact, testosterone has even been provided prior to coronary stenting (placing a tube in the arteries of the heart to re-open an area of blockage).³⁴

A general marker of inflammation is a protein called CRP. Ideally, CRP concentration would be inverse to testosterone (high CRP when testosterone is low, and vice versa). Unfortunately, published studies are not in agreement.¹³ However, in men with prostate cancer who are chemically castrated (their testosterone production is blocked with drugs), CRP levels increase.³⁵

The size of an artery's opening not only depends on how 'clean' the insides are, but also on how much the artery can expand or dilate. Most readers will be familiar with the claims of supplements that increase nitric oxide (NO). NO causes the arteries to open up, increasing blood flow. The ability of arteries to open is called 'vasoreactivity.' As the heart works harder or suffers from a lack of oxygen due to ASCVD, the arteries need to open up to provide oxygen to the working heart muscle. When this need is not met, the heart suffers damage and people feel chest pain called angina. Testosterone was originally used to treat angina over 60 years ago.¹³ Low testosterone is also associated with low vasoreactivity in other arteries, such as those feeding the penis during an erection. Testosterone therapy has been shown to be an effective treatment of erectile dysfunction, even in some men who do not respond to Viagra-like drugs.³⁶

Not only does the artery need to function, it also needs to repair itself. The artery repairs itself when healing precursor cells attach to damaged areas. These cells decrease in number as a person ages and as testosterone concentration decreases.^{13,37} Test tube studies show that these healing cells generate under the influence of testosterone; a clinical study in healthy men with normal testosterone showed that testosterone treatment increased the activity and growth of these cells.³⁸

Contrary to the evidence in this

review, there are also unforeseen concerns relating to androgen use, especially in excess, as well as in addition to other anabolic hormone (i.e. GH, IGF-1, insulin, etc). In addition to injury to the blood vessels, the heart may also be directly injured by hormonal imbalance/excess, resulting in a condition known generally as cardiomyopathy.³⁹

The failure to search for the benefits of testosterone has delayed the advent of an inexpensive and relatively safe therapy for a number of ills facing the male members of mankind. As has been shown in this review by Jones and Saad, low testosterone, even low-normal testosterone, may predispose adult men to a greater risk of ASCVD or other cardiovascular events. Where a man's testosterone concentration should be to confer the greatest health benefit is still undetermined, but it appears that the top 25 percent of the 'normal' range is healthier than the lower third.

Is it reasonable to assume that men should target a testosterone concentration near the top of the 'human range?' Not from a clinical or scientific point of view, as that question has not been fully explored. However, is it proper for the medical profession to restrict testosterone therapy only to men who are dramatically below the normal range? What about restricting treatment to 'barely correcting' within the physiologic range?³⁹

In the reactive culture of American policy, physicians and state boards are choosing to err on the side of caution, restricting testosterone replacement to the bare minimum. If the spirit of the Hippocratic oath is to be adhered to, that being to do no harm, the cautionary guidelines relating to testosterone therapy may be violating this most basic edict.

What does this mean to bodybuilders and athletes who use testosterone to provide a supraphysiologic concentration to enhance muscle growth? The failure to study this, despite decades on awareness of the use of these agents, reflects poorly on U.S. policymakers. It is reasonable to assume that a similar increase in adverse effects would be present in a dose-related manner. What is the

Testosterone

optimal concentration of testosterone for a man with regard to health? It is unknown at this time, but early suggestions support investigating the range of 700-1,000 ng/dL; as opposed to the 300-400 ng/dL that is

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NO JUICE

With Eric Broser &
Layne Norton



Bodybuilding

MUSCLE SHAPING: Myth or Possibility? (Part I)

By Eric Broser

In the world of chemically-enhanced bodybuilding, there exist several types of 'supplements' that can directly alter the actual shape of a muscle belly. Certain chemicals can be 'spot-injected,' in order to either induce localized growth, or to simply 'fill in' the lagging area... sort of like adding air (or oil in this case) to a balloon. However, this is a practice that is definitely not part of the arsenal of the natural athlete. When a *drug-free* bodybuilder wants to improve upon a weakness in his/her physique, the only tools available are barbells, dumbbells, machines and cables... along with buckets of blood, sweat and tears.

Sometimes a weakness can be as simple as a slowly responding body part that needs additional and/or more intense work in order to catch up to the rest of the physique. This is relatively easy to fix... work *harder*... work *smarter*. However, at other times, weaknesses come in the form of poor 'muscle shape,' which then of course brings us to the often-asked question: "Can you change the shape of a muscle?"

This is a difficult query, and depending on which 'expert' you ask, you are bound to get a plethora of different answers. There are some who say you cannot do a damned thing about the shape of your muscles, as

this is genetically 100 percent determined. Others believe that by 'targeting' certain areas of a muscle, you can in fact, change its shape. Well, I personally fall somewhere in between. While I do not believe we can change the actual genetic 'map' we have for each of our muscles, I *do* believe that we can utilize certain exercise, angle, and grip variations to bring out the *full potential* of each muscle.

In other words, when someone is lacking upper pectoral development, I do not necessarily feel that it's simply because genetics is 'dictating' that the lower portion of the chest dominate the upper, but rather that the upper pectoral is not receiving the proper (or adequate) stimulation in order for it to grow to its maximum potential. While some believe that an incline press does not *target* (notice I did not say 'isolate') the upper chest, but rather the entire chest, this is where I disagree.

Yes, it is true that you cannot *completely* isolate one area of a muscle from another no matter what exercise you use. However, you *can* affect certain groups of motor units more than others in a single muscle by using specific grips and/or planes of motion. This can then lead to accelerated growth in a particular 'head' or section of a complex muscle.

It is interesting to note that there

are certain common 'flaws' that seem to appear over and over again amongst so many trainees. I do not feel this is always a result of a genetic limitation, but more commonly a function of unbalanced training. I have altered the basic shape of several muscle groups on my own physique greatly over the years, and have also done so with countless clients. The take-home message here is: before you take the easy way out and blame faulty genetics for your disproportionate physique or poor muscle shape, make sure you are doing everything possible *training-wise* to address the problem. In other words, the genetics might be there ('in waiting'), but you are failing to actualize the potential of each individual muscle group through *fault of your own*.

Next month, and for several thereafter, I will discuss some of the exercises and techniques I have used over the years with myself and my clients to help improve the 'shape' and maximize the potential of body parts that commonly lag behind or throw off the balance of the physique. Stay tuned!

Q&A Naturally

I am a natural competitive bodybuilder who needs your help. I seem to be able to dial myself down very well for a show until the final week when water/carb

manipulation comes into play. I have tried several methods of carb depletion/loading— some of them with radical changes in carb/water amounts and other times with only conservative adjustments. However, I just can't seem to get it right, as I have missed my 'peak' each time by either spilling over or arriving too flat at prejudge. My body responds very well to carbs in that they give my muscles a very round/dense/powerful look— but at the same time, I seem to blur the crisp definition I work so hard for. Do you have any suggestions?

Ahhh, the mystical peaking process... *what a pain in the ass!* I have seen more physiques (including my own) go backward in the final week of prep than I care to remember. Thus, I am well aware of just how frustrating it is to work your butt off for 8-16 weeks, only to end up looking better the week *before* the show, than on *the day* of the show!

What you have to remember is that the body is in a very delicate state once you reach this point in your prep, and any changes you introduce at this time can have almost unpredictable

effects on your physique. This is why I never allow my clients to stray too far from what they were doing in the weeks leading up to the show. If you all of a sudden introduce new foods, new eating patterns, or radically alter macronutrients, water and/or sodium, you can easily throw your whole system out of whack, the result often being a less-than-stellar physique on show day.

That said, of course there are certain adjustments that can be made in the final week that can put the finishing touches on an already 'in shape' physique. The key lies in finding a peaking protocol that will rather predictably bring about positive changes in your body, while minimizing the risk of ruining your condition.

In your case, I think you would benefit from a new peaking method that I have been using with great success of late... something I call the carb/de-carb technique. This method kind of 'flips the script' in that you will deplete earlier, load earlier, and then back off on carbs a couple of days before the show. When combined with a proper training protocol, this allows you to refill your muscles with glycogen, but at the same time, keep 'sub-Q' depart-

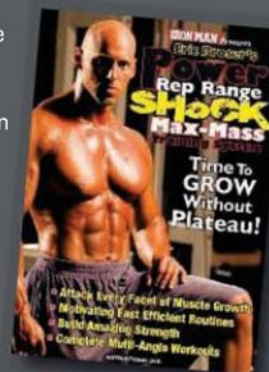
ments free of fluid, so that you look both full and hard the day of the show. Actually, with how you mention your body reacts to carbs, this peaking protocol is tailor-made for you!

Unfortunately, I have run out of space for this month's column and I would like to properly lay out exactly what this protocol looks like so that perhaps you can utilize it properly for your next contest outing. So, come back next month and there it shall be!

On A Personal Note

The POWER-REP RANGE-SHOCK DVD and E-Book are now complete and can be purchased at www.prsdvd.com and www.x-traordinaryworkouts.com. Thank you to all who have used and supported the program for the last seven years!

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BLOOD OCCLUSION TRAINING: The Next Generation of Anabolic Exercise

By Layne Norton, BS Biochemistry, Ph.D. Candidate Nutritional Science

"God gave men both a penis and a brain— but unfortunately, not enough blood supply to run both at the same time."

~Robin Williams

We all know that blood is vital to support life and various other 'systems' as so eloquently stated by Mr. Williams. Blood is responsible for the transport of oxygen, nutrients, and many other molecules crucial for sustained life. Most bodybuilders will also tell you that blood is important for gaining muscle— blood flow, to be more specific. Not surprisingly, an entire category of supplements has emerged in the past decade, focused on increasing blood flow and thus purporting to enhance anabolism.

What if I told you that the opposite may be true? What would you say if I told you that occluding blood flow to muscles can have an anabolic effect? You would probably tell me I'm not getting enough blood flow to my brain— but you would be wrong. Blood occlusion training has years of



research to support its effectiveness and in this article I will explain what it is and how to use it to augment your training.

What is blood occlusion training?

Quite simply, occlusion training involves restricting blood flow to muscles in the arms or legs. This is accomplished by use of a blood pressure cuff, or perhaps more practically, by using knee wraps tightly secured around the limb(s). For example, to occlude arm muscles, you would tightly secure a cuff or cloth knee wraps as close to the shoulder as possible. This will occlude blood flow to the arms and cause the blood to pool.

What is so great about it?

When performed properly, occlusion training allows one to use much lower weights than normal training protocols and still achieve sizable anabolic training responses. In fact, occlu-

NO JUICE BODYBUILDING

sion training can increase muscle size and strength, using training loads as light as 20 percent of a 1 rep max!¹ This is especially useful for individuals who are injured and can only use very light weights or for trainers who are undergoing a deload phase in their training cycle.

Occlusion training allows you to still make gains using light weights, while giving your joints, ligaments, and tendons a break from heavy lifting.

How does it work?

Occlusion training induces an anabolic response through various pathways, perhaps the most important of which is by preferentially targeting the large fast-twitch muscle fibers. Fast-twitch fibers are the biggest muscle fibers and have the most potential for growth. These fibers are recruited last during contractions and are mostly anaerobic (don't use oxygen), whereas the smaller slow-twitch fibers are recruited first during contractions and are aerobic (use oxygen).

Slow-twitch fibers have a much smaller potential for growth compared to fast-twitch fibers. Occlusion training restricts blood flow to muscles, pre-fatiguing the slow-twitch fibers and forcing the anaerobic fast-twitch fibers to handle the load— even at low intensities!² Metabolically, your muscle is getting a similar effect to lifting heavy loads, but using much lighter weights. Not only does occlusion training preferentially activate fast-twitch muscle fibers; it has been shown to cause a fiber-type shift from slow to fast, thus increasing the potential for muscular growth and size!³

Metabolic by-product accumulation is a primary mechanism by which occlusion training produces hypertrophy. These metabolic by-products would normally be 'washed out' by normal blood flow, but occlusion allows them to accumulate near the muscle. Lactate accumulation in particular seems to have an effect, presumably by increasing growth hormone (GH) concentrations.⁴⁻⁶ In fact, one study found that occlusion training caused a GH increase 290 times above baseline!⁴ This is a twofold greater increase in GH than what is produced by normal heavy resistance training.⁶

If those reasons weren't convincing enough to try occlusion training, consider that it has also been shown to increase muscle protein synthesis, mTOR signaling, and the expression of NOS-1, which has been shown to increase muscle growth through increased satellite cell activation.⁷⁻⁹

Perhaps even more impressive, occlusion training has been demonstrated to reduce myostatin concentrations!⁹ For those of you who have been living under a rock for the better part of the last decade, myostatin is a big-time inhibitor of muscle growth and is thought to limit the muscle potential of muscle gain. Perhaps occlusion training may be able to increase the overall potential of muscle gain through slow- to fast-fiber shifts and reductions in myostatin!

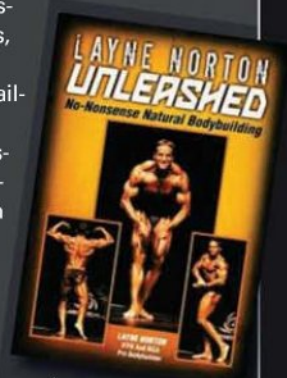
So are you saying we should train occlusion instead of normal heavy training?

Occlusion isn't a replacement for heavy training; it is supplementary. It is also very useful for people who can't train heavy, due to injury or deloading. However, occlusion provides several long-term benefits that regular heavy training doesn't, including slow- to fast-fiber transitions and a greater GH response.

Practical application?

Before proceeding further, please keep in mind that occlusion training is very difficult, even though the loads are very light. It is easily the most painful form of training I have ever performed. As always, before starting any kind of new training protocol, you should talk with a medical professional. Occlusion can be performed for the thighs, calves, upper arms, and forearms, using a blood pressure cuff or tightly-wrapped knee wraps (more practical).

To occlude the thighs and upper arms, wrap tightly around the uppermost part of the muscles. To occlude the calves or forearms, wrap tightly just below the knee or elbow. Perform 3-5 sets to muscular failure with 20-50 percent of your 1 rep max on a given exercise with the muscle occluded the entire time. Rest periods should be 30-60 seconds between sets. After the final set, remove the wraps and restore blood flow to the muscle. A word of advice: be prepared for a lot of pain and if you do not find yourself in excruciating pain, the odds are the wraps are not tight enough. Try blood occlusion and take your training to another hypertrophic dimension! ■



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MuscleTech

RESEARCH REPORT

By Team MuscleTech Research and Development

BODYBUILDING Q&A

Q: There's a lot of industry talk about amino acids, but give me the straight goods! Why are they important for a bodybuilder? Will they get me jacked?

A: Amino acids are essential for bodybuilders because they aid in the repair, growth and development of muscle tissue. The truth is, many physiological processes relating to bodybuilding (i.e., energy, recovery, muscle hypertrophy, fat loss and strength gains) are all linked to amino acids. So, without adequate consumption of amino acids, you're essentially limiting your muscle-building potential and your gains.

An easy and reliable way to deliver specific amino acids is to administer the particular amino acids themselves through free-form supplementation. This will allow for rapid absorption of these amino acids, particularly before the post-workout window of opportunity, when the muscle is receptive to nutrients—and will undoubtedly increase recovery and skyrocket muscle gains.

Q: What types of amino acids should I be taking and what time of day should I be taking them to get the best results?

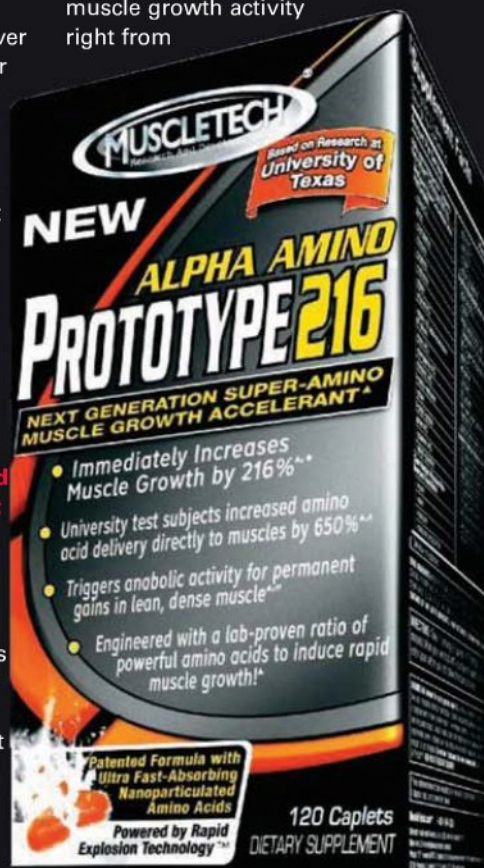
A: In order for protein synthesis to work efficiently, an adequate supply of both essential and non-essential amino acids is vital. Let's face it; they're absolutely critical to the muscle-building process. That's why one supplement company devoted the time and research to engineering a super-amino with a clinically-proven amino acid matrix!

Team MuscleTech™ — the industry leader in scientifically-engineered supplements — has created an advanced amino acid supplement that delivers a never-before-seen blend of over 8 grams of all essential, non-essential, conditionally essential, branched-chain and even a precise portion of nanoparticulated amino acids! This supplement is called Alpha Amino Prototype 216™ and its university-tested key ingredients are proven to deliver dramatic results, fast. Through its exclusive blend of multiple forms of amino acids and proper supplement timing, Alpha Amino Prototype 216 has the ability to triple muscle growth activity right from

the very first dose! The proof is in the science.

A revolutionary study was conducted at the Medical Branch of the University of Texas to find out how the timing of amino acid ingestion can alter the anabolic response of muscle to resistance exercise, and what was discovered was truly groundbreaking. In fact, the results were published in the prestigious medical journal, *American Journal of Physiology, Endocrinology and Metabolism*. The study showed that the administration of the precise dose of amino acids found in Alpha Amino Prototype 216 right before training, as opposed to after, actually increased muscle uptake by a shocking 216 percent¹ in what clinical research indicates is a key marker of protein synthesis (phenylalanine) — which of course is muscle growth occurring at the cellular level. It was also discovered, by looking at plasma amino acid concentration and blood flow, that blood amino acid delivery was increased by an incredible 650 percent directly to the muscle.²

For this reason, it's important for bodybuilders of all levels to supplement with a scientifically-advanced pre-workout amino acid supplement. By doing so, you're able to spike plasma amino acid levels and activate anabolic pathways for incredible gains in muscle size and strength. So if you're looking for maximum results, get your hands on Alpha Amino Prototype 216, the new super-amino by Team MuscleTech, today! ■

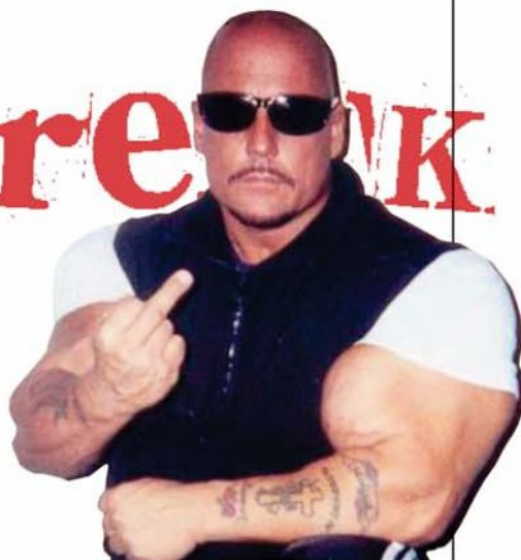


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RamBLin' freewiK

By Gregg Valentino



DISCLAIMER:

The following is uncensored/ unedited and in no way reflects the opinions of the staff of Muscular Development. Who the hell knows what this guy might say... he's a mental freak. This article is for entertainment purposes only.

THIS JUST IN... BREAKING NEWS: Kermit the Frog just died of Swine Flu. His last words: *"That Fucking Pig told me she was clean!"... I TOLD YA "PORK FAT" RULES!!!!...* HEY SPEAKING OF SWINE FLU >> 90 people get the Swine Flu and everybody wants to wear a mask... A million people have AIDS and no one wants to wear a condom!!!!... OH YEAH BABE... **THE KING OF NEW YORK CITY** BIDS YOU ALL A GREAT **TOILET READ** THIS MONTH!!!!... UMMM, WHAT!!!!... WHAT-YA MEAN- WHO AM I TALKING ABOUT >> **ME YA FRIGGIN PINHEADS!!!!...** GEEZ WHO ELSE WERE YOU EXPECTING????... YO', I WAS BORN IN **MID-TOWN MANHATTAN** AND RAISED IN **THE BRONX & WESTCHESTER...** YES, **NEW YORK CITY IS MY HOME FOR LIFE... BUT THERE IS A NEW 'PRINCE' OF NEW YORK CITY, HEY MORE ON THAT IN A MOMENT!!!!...** YO', BEING **THE RAMBLIN' FREAK** HAS IT PERKS, FOR INSTANCE, I HAVE THE GIFT OF **TACT**>> **Tact** is the ability to tell someone to go to Hell, and still have them look forward to the trip!!!!... YA SEE, I CAN TELL YOU TO **"FUCK OFF"** AND **YOU LOVE IT**, MOST OF YOU **MOMO'S** ACTUALLY LOOK FORWARD TO IT << THAT'S **TACT...** UMM, YOUR **PROCTOLOGIST CALLED**, HE SAID HE **FOUND YOUR HEAD!!!!...** OH SHUT UP!!!!... NOW THAT'S **NOT TACT...** ANYWAY, YOU ALL LOVE IT WHEN I START GOING OFF, THAT'S WHY YOU READ THIS **BULLSHIT** EVERY

MONTH... YO', YOU FUCKERS LOVE IT WHEN **I'M COCKY, FOUL-MOUTHED AND OUTSPOKEN**, YOU LOVE **MY STORIES** AND YOU LOVE **MY HONESTY...** Hey, I Never Lie, sometimes I just Create the Truth!!!!... YA HEARD????... wink wink.

WELL IN ALL TRUTH I JUST GOT BACK FROM **THE NY PRO SHOW** WHERE **MY BOY EVAN CENTAPONI** WON... I WAS SITTING IN THE **ORCHESTRA PIT** WITH MY **MD BROS (YEAH RIGHT) SHAWN RAY, FLEX WHEELER, ROBBIE DURAND AND DORIAN YATES...** AND I MUST TELL YA, IT WAS HOT IN **THE PIT**, I was sweating like a pedophile in a nursery, YO, IT FELT LIKE **100 DEGREES** IN THERE... BUT HEY, MY BOY **EVAN** WENT UP AGAINST SOME **GREAT BODYBUILDERS, MARKUS RUHL, DENNIS JAMES, SILVIO SAMUEL** etc., etc. YET **EVAN** WENT THROUGH THEM ALL **"Just like Mexican water flushes through an American Tourist"** MEANING WITH **NO PROBLEM!!!!...** OH YEAH BABE!!!!... **EVAN CENTAPONI RULES!!!!...** SO NOW I WANNA CONGRATULATE **EVAN** ON HIS **BIG WIN...** WAY TO GO **EVAN... YOU ROCK, MY BROTHER!!!!...** YO' MY BOY **EVAN** DIETED REALLY HARD FOR THIS SHOW AND HE DESERVED TO WIN WITH A **"RIPPED SCULPTED OLD-SCHOOL"** LOOK... WOW, **EVAN** IS A BETTER MAN THAN ME, I HATE DIETING **"I have a Weight Problem: >>> I Can't Wait to Eat!!!!!"**... OH YEAH BABE, IT'S TRUE, IF I CAN'T EAT **ITALIAN FOOD** I GO FUCKING

CRAZY >> MACARONI (aka PASTA TO US ITALIANS), GRAVY (aka SAUCE TO YOU NON-ITALIANS) AND HOMEMADE MEATBALLS (NOT THE SHIT YOU GET IN A PIZZA PLACE MADE BY A SPANISH GUY, I'M TALKING "MOM'S MEATBALLS"... HEY IT'S AN ITALIAN THING, BUBBA), YUM !!!... IT'S A **"FOOD OF LOVE THING"** BABE!!!!... **OOOOOPS**, THERE I GO AGAIN, I'M **OFF TRACK** RAMBLING ON AGAIN... I MEAN REALLY YO, WHAT THE FUCK **ITALIAN FOOD** HAS TO DO WITH **EVAN CENTAPONI WINNING THE NY PRO**, HEY BEATS ME!!!!

OH BUT WAIT, ONE MORE THING, I just started an exercise program, I do **20 sit-ups every morning**, now I know that may not sound like a lot for some of you readers, but I can only hit that snooze button so many times!!!!... **BOO-YA...** OK, I BET A FEW OF YOU **MOMO'S** DON'T GET THAT LITTLE JOKE!!!!... BUT IN ALL SERIOUSNESS I'M VERY PROUD OF MY BOY **EVAN CENTAPONI**— HE LOOKED GREAT AND HE BROUGHT BACK THAT **"OLD-SCHOOL" BODYBUILDING** LOOK... AS ALWAYS, DURING **THE INTERMISSION**, I WENT TO TAKE A PISS AND OF COURSE A **FEW FANS FOLLOWED ME INTO THE RESTROOM...** YO I SWEAR TO GOD THEY EVEN FOLLOW ME RIGHT OVER TO **THE URINAL** JUST TO TALK TO ME!!!!... **NO**, I DON'T TELL THEM TO GET LOST, INSTEAD I **PURPOSELY DO NOT WASH MY HANDS**, I FIGURE THAT'S WHAT YOU GET WHEN YOU'RE ON **MY DICK...** BY THE

WAY, *I feel more comfortable farting in a public restroom, especially where Protein Bar-eating Bodybuilders dwell, people just assume the foul smell is indigenous!!!!... Smile and the world smiles with you. Fart and you stand alone!... BUT HEY, ALL IN ALL IT WAS A GREAT SHOW AND WHAT REALLY MADE MY NIGHT WAS WHEN SHAWN RAY AND I WERE CATCHING A YELLOW TAXI CAB TOGETHER AFTER THE SHOW... YO', THIS KID RUNS UP TO SHAWN AND SAYS, "OH MY GOD, FLEX WHEELER CAN I GET MY PICTURE TAKEN WITH YOU"... OUCH!!!!!!... MY BOY SHAWN RAY WASN'T TOO HAPPY ABOUT THAT, BUT WE DID BOTH LAUGH ABOUT IT IN THE CAB... THE FUNNY THING IS FLEX WHEELER WAS WITH US, SO WAS STEVE BLECHMAN AND ROBBIE DURAND, BUT THE KID THOUGHT SHAWN WAS FLEX... ALSO AT THE SHOW I INTERVIEWED ONE OF MY BOY LEE PRIEST'S MANY EX-GIRL PALS—I WON'T SAY HER NAME cough cough "KAREN" ...YO' I GOTTA TELL YA, HER TITS WERE SO BIG I ACTUALLY INTERVIEWED HER "GAZONGA-CHESTICLES" (HER BIG TITTIES, YA FRIGGIN DUMBASS... GEEZ!!!!)... HEY DON'T TAKE MY WORD FOR IT, JUST GO ONLINE TO MuscularDevelopment.com AND WATCH THE VIDEO INTERVIEW FOR YOURSELF, IT'S FUCKING GREAT!!... THE FUNNY THING IS THAT I ASKED HER TITS IF THEY REMEMBER LEE PRIEST AND I SWEAR HER NIPPLES ACTUALLY PERKED UP A LITTLE!!!!... BOY THAT LEE PREIST, HE IS THE MAN!!!!!!... OOOOPS, SORRY LEE, AT LEAST I DIDN'T TELL MY READERS THAT HER MuscularDevelopment.com SCREEN NAME IS "TIGHT BOOTY", YA SEE LEE, I CAN DEFINITELY KEEP A SECRET, WHO LOVES YA, BRO???... wink wink... ANYWAY, AFTER THE SHOW AS ALWAYS, I WENT OUT TO DINNER WITH STEVE & ELYSE BLECHMAN, ROBBIE DURAND, SHAWN RAY, FLEX WHEELER, BRANCH WARREN & HIS BEAUTI-*

FUL WIFE, BETTY PARISO & HER HUSBAND... WE ALL HAD A GREAT TIME, WE ALL ATE A LOT OF FOOD AND WE ALL LAUGHED A LOT!!!!... TEAM MD RULES BABY!!!!... THEY SAY> "The Best Diet in the world is Scratching Your Ass and then Smelling Your Fingers"... BUT NOT ME... WHEN STEVE BLECHMAN TAKES ME OUT, I EAT GOOD, EVEN IF I SCRATCH MY ASS...

THEN AFTER DINNER I WENT OUT TO A CLUB WITH BOB BONHAM, HIS GIRLFRIEND MICHELLE AND MY GIRL MERCEDES... THOSE 2 BABES (MICHELLE & MERCEDES) ARE 2 CRAZY BITCHES!!!!... WE HAD A BLAST, I CAN'T REMEMBER THE NAME OF THE CLUB WE WERE AT, BUT MY GIRL DANCED ALL NIGHT WITH MICHELLE... NO NO NO, DON'T GO THERE, NO LESBO STUFF!!!!... YES, MERCEDES IS A LITTLE PIGGY AT TIMES, BUT NOT WITH OTHER GIRLS... HEY, IT'S BETTER SHE DANCE WITH MICHELLE & NOT ME >> "Yo' It's not that I can't dance, it's just that she is a Latina and I'm overly Caucasian & move like one, too."... OH SIMMER DOWN IT'S A JOKE!!!!... GEEZ... LIGHTEN UP... I took one of those Viagra tablets this morning and it got stuck in my damn throat... YO', I had a Stiff Neck for about eight hours!"... ANYWAY, IT WAS A GREAT NIGHT... I HAD A GREAT TIME, BUT ON THIS NIGHT, EVAN CENTAPONI RULED THE NIGHT AS HE WAS CROWNED THE PRINCE OF NEW YORK CITY!!!

THE MD BARBECUE PARTY...

HEY "You know what I Hate?... Indian Givers... No Wait, I take that back."... YO AT THE MD BARBECUE BLOCK PARTY, WE GAVE OUT SO MUCH FREE SHIT I CAN'T EVEN BEGIN TO TELL YOU THE STUFF GIVEN AWAY FOR FREE... YO', EVERYONE GOT FREE SHIT!!!!!!... OOOOPS BUT WAIT, IT WAS THE MD/GASPARI BLOCK PARTY BECAUSE RICH GASPARI

SPONSORED THE FUN & FESTIVITIES... LEAVE IT TO MY OLD PAL RICH GASPARI TO TAKE SHIT TO THE NEXT LEVEL WITH STEVE BLECHMAN & MD... THINK ABOUT IT, THE BEST DAMN SUPPLEMENT COMPANY TEAMING UP WITH THE BEST DAMN MAGAZINE!!!!!!... NEED I SAY MORE... BUT WAIT, LET'S NOT FORGET THE LOCATION, MY BOY BOB BONHAM WHO HAS THE BEST DAMN HARDCORE BODY-BUILDING GYM ON THE EAST COAST... IT RIVALS THE OLD GOLD'S GYM IN VENICE... LEE PRIEST POSTED ON THE MD WEBSITE MuscularDevelopment.com THAT IN HIS OPINION, "STRONG & SHAPELY GYM IS THE BEST GYM HE HAS EVER BEEN IN AND IT'S BETTER THAN GOLD'S GYM IN VENICE"... YEAH, YOU READ THAT RIGHT, FRIGGIN' RUTHERFORD, NJ HAS STRONG & SHAPELY GYM AND IT IS THE MOTHER FUCKIN' MECCA... EVERYONE AT THE MD PARTY LOVED THE GYM... LOVED THE FREE STUFF... LOVED MEETING THE PROS AND THEY ALL HAD A VERY FUN TIME... OK NOW I MUST GREASE YOUR ASSES AND TELL YOU ALL THAT MD HAS THE GREAT-EST FANS IN THE WORLD!!... YOU ALL MADE THIS PARTY A HUGE SMASH HIT, I THANK YOU FOR THIS.

BUT BEFORE I TELL YA ALL ABOUT THE DAY, LET ME SAY THIS ABOUT MY FRIEND LEE PRIEST... LEE PRIEST SHOWED ME MORE GUTS, BALLS AND DOWN-TO-EARTH REALNESS THAN I'VE EVER SEEN BY

A PRO BODYBUILDER...

LEE PRIEST'S LOYALTY TO MD AND HIS FANS IS

UNMATCHED!!!!!!...

EVERY FAN OF LEE'S WAS TREATED TO A REAL GREAT TIME BECAUSE LEE GAVE HIMSELF TO EVERYONE, HE REALLY WAS UNBELIEVABLE AND SUPER FUN TO BE WITH,

TO HIS FANS HE IS ONE OF THE BOYZ... HE TALKED AND ATE HAMBURGERS (TURKEY BURGERS) WITH



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EVERYONE... I HAD MORE PEOPLE COMING TO ME TELLING ME HOW **LEE** IS SO DOWN-TO-EARTH... OF COURSE I KNEW THIS ALREADY, BUT HE REALLY HUNG OUT WITH HIS FANS... **THANK YOU LEE...** YOU FUCKING ROCK!!!

OH WAIT, ONE MORE THING!!!... A QUICK STORY >> ON THAT DAY **ROBBIE DURAND** WAS **THE DESIGNATED DRIVER** FOR **LEE PRIEST** & **STEVE BLECHMAN**...SO NOW ON THE WAY HOME **STEVE BLECHMAN** WAS DRINKING A **CHOCOLATE PROTEIN DRINK** THAT I HAD GIVEN HIM **AS HE WAS LEAVING THE PARTY** AND HE ALMOST THREW IT UP WHEN **LEE PRIEST** WENT INTO A RANT....**OK HERE'S THE DEAL, LEE PRIEST** TOLD A STORY ABOUT HOW HE WAS HAVING A **THREESOME** WITH SOME GIRL & HIS **EX-ROOMMATE** AND IN THE MIDDLE OF A HEATED **SEXUAL FRENZY** THE GIRL **ORGASAMED VIOLENTLY** AND **TOOK A DUMP** (A SHIT) **ALL OVER LEE'S CHEST**..... BUT, YO, HOLD UP, I KNOW WHAT

YOU'RE THINKING, BUT I GOT ONE BETTER.....I WAS WITH THIS GIRL **10 YEARS AGO** AND I WAS EATING HER **MUSH POT PIE** (HER BOX...HER CLAM HUT) WHEN ALL OF A SUDDEN SHE **ORGASAMED VIOLENTLY** AND AT THE SAME TIME SHE THREW A **MONSTROUS FART** THAT **SHOT A "MILK DUD"** (A TURD) INTO MY MOUTH, IT WAS ONE OF THOSE **LITTLE SOLID ROUND POOP-PEBBLES**....YO I JUMPED UP, GRABBED HER, AND KISSED IT RIGHT INTO HER MOUTH... **OH YEAH BABE**, THAT'S DEFINITELY NOT A FOOD OF LOVE THING...HEY, **TRY & BEAT THAT SHIT LEE!!!!!!!!!!**...YO', THATS WHY **LEE PRIEST** & I GET ALONG SO WELL...JUST REMEMBER THIS >> **"I AM GODZILLA AND YOU'RE JAPAN."**

Life is like a jar of jalapenos. It doesn't matter what you take, it's still gonna blow up your ass in the end...YO, MY BOY **JOE VOGLEY** FROM **GASPARI NUTRITION** TOLD ME HE & **RICH GASPARI** WERE GOING TO HELP ME GET **MY**

PATHETIC LIMP DEAD DICK WORKING AGAIN, **JOE SAID, "GREGG, I'M SENDING OVER YOUR FAVORITE NATURAL TESTOSTERONE BOOSTER"....**SO I FIGURED, OK COOL, THEY'RE GONNA SEND ME A **GOODIE BOX** WITH A FEW BOTTLES OF **GAS-PARI NOVEDEX XT**...YUM YUM!!!!....OK YES I ADMIT, THAT'S ALSO A PLUG FOR MY FAVORITE **TESTOTSERONE BOOSTER (NOVEDEX XT)**... BUT WAIT, IT'S **100% TRUE**, BUT THAT WASN'T WHAT **JOE** & **RICH** MENT BY TELLING ME THEY WERE SENDING OVER A **NATURAL TESTOTERONE BOOSTER**...HE MEANT A HOT BABE TO TEASE WITH HER HOT ASS.

YO', CHECK IT OUT, SO JUST AS I ARRIVED AT **STRONG & SHAPELY GYM** (EARLY, WHICH SHOCKED EVERYONE) AND I'M BENDING OVER GETTING SOMETHING IN MY **2009 BMW M6** (WELL TO ME IT'S A **2009 BMW M6**, TO YOU ALL IT'S REALLY JUST A FRIGGIN **2003 HYUNDAI ELANTRA** WITH A **150,000 MILES** ON IT, BUT HEY, A GUY COULD

new! TEAM MD RADIO SHOW

with FLEX WHEELER AND SHAWN RAY

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DREAM CAN'T HE...GEEZ CUT ME SOME SLACK) AND AS I WAS REACHING INTO MY CAR WHEN I HEARD A **SWEET VOICE** WITH A **CUTE LITTLE ACCENT** SAY TO ME, "**HI GREGG, RICH GASPARI WANTED ME TO GIVE YOU SOMETHING**" ...I LOOKED UP AND IT WAS LIKE A **VISION FROM GOD**, ASIDE FROM THE **GIANT GAZONGAS** (**BIG TITTIES**), I SAW THE "**FACE OF AN ANGEL**," IT WAS **GASPARI'S FIGURE MODEL IFBB PRO ZIVILE RAUDONIENE**...WOW!!!!...I WAS LIKE "**DA, DA, DA, DA**".... **ZIVILE inspired me to think less about life and more about thongs!!!!**...SHE JUST SMILED AND HANDED ME **A BOX** ...INSTANTLY I FELT A **PULSE OF TESTOSTERONE** HIT ME AS MY **DEAD DICK** PERKED UP!!!!... **THANK YOU RICH GASPARI**..... SO I CLOSED MY EYES AND WITH THE BOX STILL IN MY ARMS I JUST SNIFFED IN **ZIVILE'S SWEET SCENT**, OH MAN SHE SMELLED SO DAMN GOOD & YUMMY.....KEEP IN MIND I'M USED TO **MY LATINA GHETTO GIRL-FRIEND** SMELLING LIKE **FRIED FOOD** AND **DOLLAR STORE PERFUME**.....BUT **ZIVILE** ON THE OTHER HAND SMELLED JUST LIKE

FRESH CUT FLOWERS, OH YEAH BABE.... UNFORTUNATELY WHEN I FINALLY OPENED MY EYES **ZIVILE** WAS **GONE** AND NOW A **BIG BODY-BUILDER NAMED NICK** FROM **GASPARI NUTRITION** WAS STANDING IN FRONT OF ME HANDING ME A WHITE **GASPARI T-SHIRT**...YO I AIN'T PLAYIN, I WAS KINDA PISSED OFF BECAUSE **MY DEAD DICK** FINALLY FELT A **PULSE OF LIFE** AND **RUSH OF BLOOD**, TILL **BIG NICK RUINED IT**...I KNEW I HAD TO SEE **ZIVILE** LATER ON IN THE GYM...ONCE AGAIN **RICH GASPARI** CAME THROUGH FOR ME ..."**SHEEET, I must have spent a fortune on deodorant & breath mints before I finally realized that girls don't like me anyway, so why fucking bother.**"

IT WAS A CRAZY, WILD DAY FOR ME, KEEP IN MIND **MD'S UNDER-BOSS ROBBIE DURAND** & I WERE DOING **VIDEO TAPINGS** ALL DAY LONG....I INTERVIEWED A LOT OF FRIGGIN **BIG MOTHER FUCKERS** THAT DAY.....ASIDE FROM **MY BOY LEE PRIEST**, WHO BY THE WAY LOOKED TO BE ABOUT **5'7"** THAT DAY...SSSHHHH, DON'T TELL ANYBODY BUT **LEE** WAS

WEARING **BOOTS**, HE THINKS I DIDN'T NOTICE THAT BUT **SHAWN RAY TEXT MESSAGED ME** AND TOLD ME TO LOOK AT **LEE'S BOOTS**...I GUESS **SHAWN** SAW IT ON THE **MD STREAMING LIVE VIDEO FEED!!!!**.....YO', JUST TO CLEAR THINGS UP A LITTLE, I WAS WEARING SNEAKERS!!!!... OOPS, SORRY MY BROTHER **LEE**, BUT **GEEZ** YA THINK I DIDN'T NOTICE THAT SHIT, I MEAN I'M AROUND **5'6"** TALL AND YOU WERE ABOUT **5'7"** ON THAT DAY...HELL I NOTICED IT WHEN **YOU & I KISSED EACH OTHER**, OUR LIPS WERE KINDA.... UMMM- **NEVER MIND!!!!**...OH PLEASE, YOU READERS NEED TO JUST **SIMMER-THE FUCK-DOWN** >> **NO LEE & I DID NOT** HAVE A **GAY MOMENT**, **NOT** TOTALLY ANYWAY...YO', IT WASN'T THAT KIND OF A KISS.....WE HAD AN **MD BROTHER MOMENT FOR THE CAMERA** SO **SIMMER DOWN**..MY BOY **LEE PRIEST** IS A **LADIES' MAN** AND I'M SURE THAT EVEN IF HE WANTED TO **GO GAY** HE COULD HAVE FOUND A MUCH **BETTER LOOKING GUY** THAN **ME TO KISS**...ALTHOUGH I WOULD HAVE BEEN A LITTLE HURT, BUT I WOULD HAVE UNDER-



STOOD!!!!...**HEY WAIT**, WHAT THE HELL AM I SAYING HERE??, YO', THIS IS GETTING **VERY WEIRD**, LET ME TALK ABOUT SOMETHING ELSE, I FEEL A VERY **GRIMY** RIGHT NOW.

SO ANYWAY **SHAWN RAY TEXT MESSAGED ME** & REQUESTED THAT I CHECK OUT **LEE PRIEST'S BOOTS**...BETWEEN YOU READERS AND ME, PERSONALLY I THINK **SHAWN RAY** WAS JEALOUS OVER THE KISS...(SHAWN LIKES LEE A LOT!!! ...BUT LET'S JUST KEEP THAT BETWEEN US..wink)...**LEE** I STILL LOVE YA BRO, JUST **IGNORE SHAWN** ;) ..MOVING ON HERE, THE **2 BIGGEST GUYS** AT THE PARTY WERE **SEAN ALLAN & EUGENE MISHIN**... **HOLY SHIT** THOSE GUYS ARE HUGE!!!...**SEAN ALLAN** HAD A **TINY WAIST** AND WEIGHED **295** AT ABOUT **6'5"**.. **EUGENE MISHIN** IS **6'1"** AND HE WEIGHED A SHREDDED **285**...BOTH THESE GIANTS WERE HARD AND FUCKING **HUMONGOUS!!!**...BUT HEY, MY LONGTIME **OLD FRIEND VICTOR MARTINEZ** LOOKED **VERY LEAN** AND BIG AS HELL, TOO!!...**ALSO MASTERS NATIONALS CHAMP** (ALTHOUGH AT THE TIME I'M WRITING THIS, **RODNEY** IS STILL 6 WEEKS OUT BUT I KNOW HE IS GOING TO WIN)

NJ BODY-BUILDER RODNEY ROLLER WAS LOOKING PRETTY FUCKING **LARGE AND IN CHARGE**....AND LET'S NOT FORGET, MY OLD PAL **ROBBIE**

LOPEZ WHO WAS LOOKING PRETTY GOD DAMN BIG TOO.. MY BOY **ROBBIE** WAS **SPINNING MUSIC** FOR **THE MD PARTY** (DJ-ing THE EVENT YA RETARDOS) ...YO I THINK **ROBBIE LOPEZ** JUST MIGHT MAKE A COMEBACK, HE DEFINITELY HAS THE BODY STILL.

THE LEGENDS WHERE THERE AS WELL aka **THE ARNOLD-ERA CHAMPS** >> **MY BOY LEON BROWN, BILL GRANT** AND **CHARLIE**

THOMAS....AS WELL AS **2** VERY HUGE **INDUSTRY LEGENDS WAYNE DEMILIA, DENIE WALTER** aka **DENIE** ...OH YEAH BABE, **STRONG & SHAPELY GYM** WAS JAMMED WITH MD LEGENDARY PARTY GOERS... EVEN **EX-CRUISER WEIGHT BOXING WORLD CHAMP AND 1988 OLYMPIAN AL "ICE" COLE** SHOWED UP....YO THIS GUY WAS ONE BIG MOTHER-FUCKER AND HE CAME THERE WITH **MIKE TYSON'S BEST FRIEND MARIO** WHO IS A **LONG-TIME MEMBER OF STRONG & SHAPELY GYM**.....**BIG AL** WAS CLOWNING

AROUND WITH **EUGENE MISHIN** AND **BIG SEAN ALLAN**, **BIG AL** SAID HE LIKES TO **SPAR** WITH BIG DUDES LIKE THAT...YO BETTER THEM THAN ME, MY BOY **AL COLE** WAS A BIG TALL SCARY DUDE!!!!

AND ONE OF MY FAVORITE PEOPLE IN THIS SPORT CAME FROM FAR AWAY TO BE WITH HIS **MD FAMILY**...I'M TALKIN ABOUT **SUPER**



MELE MEL and LEE PRIEST AT MD BBQ!

WRITER AND IN MY OPINION ONE OF **MD's MVPs**, MY BOY **RON HARRIS** TRAVELED ALL THE WAY FROM **BOSTON RED SOX TERRITORY** (PERSONALLY I THINK HE IS A **CLOSET YANKEE FAN**) WITH HIS

FAMILY > WIFE **JANET** aka **THE CUBAN MISSILE** AND HIS **2 KIDS** WHO WANTED **NO** PART OF ALL THE BODYBUILDING STUFF GOING ON THAT DAY...OH YEAH BABE, INSTEAD **RON'S KIDS** WANTED TO HIT **TIMES SQUARE NYC** AND **GO SHOPPING** (THAT HAD TO BE A DAUGHTER THING, **GIRLS LOVE SHOPPING IN MIDTOWN NYC**)...GEE, I WONDER IF **RON** TOOK **HIS SON** TO **THE YANKEE STORE** ON **42nd**

STREET... **HHHHMM**, NOW THAT I THINK OF IT, MAYBE IT WASN'T THE KIDS WHO WANTED TO GO SHOPPING, MAYBE IT WAS **RON!!!!!!**

OH SHIT, SPEAKING OF THE **BOSTON RED SOX**, MY LITTLE SWEETHEART **CARLA SALOTTI** DROVE ALL THE WAY FROM **MASSACHUSETTS** TO BE PART OF THE **MD FAMILY**....I GOT NOTHIN BUT

RESPECT FOR **CARLA** AND MAYBE A FEW OTHER FEELINGS THAT I WILL KEEP TO MYSELF..wink... **YUM!!!!**...AND SPEAKING OF **YUMMY BABES**, MY **LONGTIME OLD GIRL PAL**

ALTI BAUTISTA (**RONNIE COLEMAN'S EX-GIRLFRIEND**)....I HAVEN'T SEEN **ALTI** IN ABOUT A YEAR, BUT **GOD DAMN** SHE WAS LOOKING **DELICIOUS** AS HELL....THAT'S ONE **FIREY LATINA** (**DOMINICAN PRINCESS**) WHO HAS **MAD FLAVOR** AND AN AWSOME PERSONALITY, NOT TO MENTION AN **ASS-CAN FROM GOD!!!!!!** << YO' JUST ASK **RONNIE COLEMAN!!!!**... **OOOOOPS**, DID I JUST SAY THAT???... **YIKES!!!** **ALTI** IS GONNA **KILL ME**, BUT I BET **BIG RONNIE** IS GRINNING...**LATINA ASS, IT'S A FOOD OF LOVE THING** BABE....OTHER **IFBB PROS** WHO I WOULD LIKE TO THANK FOR HANGIN OUT AT THE MD BARBECUE **Valentine Jabes, Heather Darling, Jason Arntz, Heather Foster, Ivana Veselova, Guy Cristermino**.... HEY LISTEN, I REALLY DON'T WANT TO MAKE THIS TOO MUCH OF A THANK YOU SPEECH...AS IT IS, I AM SURE I AM FORGETTING A FEW PEOPLE... "**No matter what happens in life, somebody will always find a way to take it all too damn seriously.**" ☺

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THE FREAK WITH BIG SEAN ALLAN

PATRICK ARNOLD *The "Clear"* Chemist

By Patrick Arnold



Welcome to this month's edition of "The Clear Chemist." In this issue, I go over how to make your own steroids in your kitchen, using nothing more than flour, rat poison, a car battery, and Play-Doh. Then I tell you where you can buy weapons-grade uranium at a surprisingly reasonable price— quality controversial craziness that you all have come to expect from the 'Clear Chemist'.

Obviously I am kidding! (You reading this, Mr. Homeland Security man?) This month is interesting, but nothing I would classify as controversial. It's probably a good idea for me to step away from the controversy for at least a bit, as I seem to have been getting way too much undeserved attention lately— and I don't need to provoke any more. So go ahead and read on and I hope you enjoy 'Clear Chemist Lite.'

Estrogen In Your Milk

You have probably heard all the buzz around about the possible dangers of environmental estrogens. The discussion usually revolves around stuff like phthalates and bisphenol A found in plastics and the dangers they pose when they get inadvertently absorbed or ingested. But while estrogens from plastics may very well represent a concern (to infants especially), I think there is a much larger endocrinological threat out there that unfortunately is not discussed nearly as often.

Man has been drinking cow's milk for thousands of years, and history has taught us that this consumption has pretty much been a healthy practice. However, this situation may recently have changed. The milk we are drinking today is quite a bit different than the milk we drank 100 or 500 years ago. In times past, cows were pasture-fed and the milk they generated was usually gathered after

the cows gave birth. Today, however, cows live on feedlots where they are fed fattening corn and given hormones to increase milk yield. But more important to the issue at hand is the fact that they are kept pregnant most of the time, since that increases farmers' productivity and cost-efficiency. As a result, much of the milk today originates from pregnant cows.

Cows continue to lactate throughout their pregnancy and during the second half of their pregnancy, in particular the levels of female hormones (estrogens and progesterone) in their milk rises considerably. The levels of these hormones and their biological potencies far exceed that of the weak xenobiotic estrogens in plastics and so pose a far greater risk to our health. In fact, many studies have been done, showing a strong correlation between milk intake and hormone-related diseases such as ovarian cancer, uterine cancer, breast cancer, testicular cancer, and prostate cancer.

Now you may be asking yourself, "Just how much female hormone is present in milk? Is it enough to provoke any significant adverse physiological effects in regular people?"

A study in the journal *Pediatrics International* actually looked into this— and what they found should raise some concern. The study had men and children drink a moderate amount of milk (600 mL). They then examined the change in hormone levels over the course of the next two hours. What they found in the men was a significant increase in estradiol and progesterone, coupled by a simultaneous drop in LH, FSH, and testosterone. The children showed increases in female hormones as well, as indicated by the observed urinary excretion of substantial quantities of estrogen and progesterone metabolites.

The study then went on to examine the effects of longer-term ingestion of milk in women. The women ingested 500 ml of milk every night for 21 days, starting on the first day of menstruation. What they found was that the timing of their ovulation was altered by the milk intake.

So apparently, drinking moderate amounts of milk may suppress testosterone in men, alter women's menstrual cycles and fertility, and possibly even affect the sexual maturation of children. But what does this mean to us? Well, some factors have to be considered. Number one is that these female steroid hormones are primarily present in the fat portion of milk. That means whole milk, cream products, and cheese (many cheeses are high in fat) comprise the worst potential culprits. However, skim milk and low-fat cheese products might not be nearly so bad. So I guess the bottom line is that you may want to limit the amount of dairy you consume in your diet and/or opt for low-fat or fat-free varieties of dairy products.

Organic Nitrates as 'NO supplements.' Good Idea?

So-called 'NO supplements' have been the rage for quite a few years. Now, while I believe much of this popularity has more to do with a bunch of BS marketing and less to do with legitimate science, the fact remains that nitric oxide (NO) is known to be involved in many of the physiological responses to exercise, including stuff such as muscular vasorelaxation response and satellite cell activation.

Traditional approaches to enhancing nitric oxide responses mostly involved optimizing precursor availability through the administration of amino acids such as arginine, ornithine, citrulline, and histidine. Certain other compounds and herbs have also been purported to enhance

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PATRICK ARNOLD —the “clear” chemist

NO response through manipulating the activity of the activity of NO synthase, which is the enzyme through which NO is generated from amino acid precursors.

All these approaches basically are meant to make your body's natural NO response more efficient. As such, they (allegedly) help increase NO levels at the parts of the body where your body feels it is needed, such as in muscles during strenuous exercise. But what if we could just give ‘straight NO’ to people as a supplement or drug? Well, you really can't do this, since nitric oxide is a gas and a very reactive free radical. It's not something you would ever want to smell, taste, ingest, or touch directly (trust me).

However, it *is* possible to deliver nitric oxide throughout the body through the use of NO pro-drugs called “organic nitrates.” Examples of organic nitrate drugs are nitroglycerin and isosorbide dinitrate. These are exploited in medicine because of their potent vasodilatory activities and so are useful for conditions involving poor circulation to the heart, such as in the treatment and prevention of angina pectoris. Nitroglycerin, for instance, is widely-used as a sublingual and when elderly people with weak hearts start getting chest pains, they pop one of these.

But would organic nitrates such as nitroglycerin offer any benefits to a bodybuilder or athlete? Well, before we answer that, let's consider how they act in the body. These drugs pretty much raise NO levels indiscriminately throughout the body, and as such they cause some pretty nasty side effects, such as severe headache (due to cerebral vasodilation), as well as rapid heart rate, as your body tries to compensate to a rapid decrease in blood pressure. Nausea and diarrhea are not uncommon either.

The goal for a bodybuilder should be maximizing NO generation in peripheral muscle tissues, and so these systemic NO drugs don't seem like they make a whole lot of sense. Still, at least one company has decid-

ed to release a NO pro-drug as a supplement. This supplement, according to the label, contains 10 mg of a compound they refer to as “2-(nitrooxy)ethyl 2-amino-3-methylbutanoate,” in the form of a sublingual tablet. According to the structure on the box of this supplement, the compound appears to be an ester of the amino acid leucine and a compound known as ethylene glycol mononitrate (EGMN).

So what would happen in the body if you ingested this stuff? Well, one thing that would happen very quickly would be the hydrolysis of the compound to free leucine and EGMN. Now a few milligrams of leucine is physiologically inconsequential— but what about this EGMN stuff? Well, it is an organic nitrate— so it does have the potential to cause systemic NO levels to rise, with the consequent hypotension and tachycardia etc., etc., that is known to happen.

Would an effective amount of this organic nitrate also be able to do much in the way of promoting a great pump? I don't see it happening— but hey, anything is possible. Still, one concern is the end product that appears once EGMN breaks down in the body. That end product is ethylene glycol, otherwise known as radiator coolant. It is quite poisonous; however, the amounts that would show up in your body from taking this supplement probably would not exceed more than a few milligrams, so it's probably below any acute toxic threshold. Even so, I really can't imagine why on earth anyone would be so stupid as to design a supplement around ethylene glycol! At the very least, they could have made it a propylene glycol (a very closely-related, yet non-toxic compound) derivative or something. Oh well.

Anyway, the stuff some companies come up with to get a marketing edge in this industry gets crazier and crazier lately. It's not a good trend at all in my opinion. It's sort of like Sodom and Gomorrah— and we all know how *that* turned out. ■

Shred of Evidence

Show Me The Proof!

NEW
COLUMN!

Creatine Commandments I



There's no doubt that you have tried creatine at least once in your life. I'll place my bet that for most of you it was creatine monohydrate— that 'ancient, prehistoric' form that we sprang onto the sports-nutrition scene over 16 years ago (thanks to some brilliant European exercise scientists, yours truly and Ed Byrd, in the first months of our previous company called EAS).

Being a student of creatine for two decades— in both university research labs and in the trenches of nutrition stores, bodybuilding and trade shows, and magazines— I have been both excited and forced to restrain explosive vomiting. Trying to control the kooky creatine evangelists is like trying to control religion or herding hummingbirds. For those readers who rely on common sense and critical thinking, I offer two of my several Creatine Commandments:

1. Creatine monohydrate easily survives transit through the stomach and is very well absorbed.

Think about it: if creatine monohydrate did not survive through the 'treacherous' environment of the stomach and its bubbling acid, how do you explain:

a) The rapid rise of creatine in the blood after oral dosing (if the amount in the blood increases, it has 'survived' the 'acid cauldron' of the stomach, intact).

b) The significant amount of creatine (not creatinine) that appears in the urine after daily dosing with 10's of

grams (if creatine appears in the urine in far greater amounts than before creatine monohydrate supplementation started, then the only place it came from was your supplement, not through a transdermal creatine body wash or from your body making its own creatine).

c) The impressive rise in muscle creatine (not creatinine) content after only a few days of oral creatine monohydrate supplementation.

And, the most obvious one:

d) The dozens of university studies showing oral creatine monohydrate supplementation increases muscular strength and power, muscle fiber size, and even arm muscle thickness in several days to a few weeks.¹⁻³ That sure as heck isn't coming from creatinine!

Two studies offer elegant, undeniable proof of creatine monohydrate heroically surviving the apparent hell-fire conditions of the stomach, and entering the warm, spa-like luxury of the blood, in humans. In the first study, 5 grams of 'tagged' creatine monohydrate (CrM) was given to a 32-year-old resistance-trained male.⁴ The non-radioactive tag enabled the researchers to unambiguously determine the fate of creatine, as seen in the blood and urine.

Ten minutes after the 5-gram dose, the tagged creatine appeared in the blood— as creatine (must be magic). Twenty minutes later, blood creatine spiked up over eight times higher than before the CrM dose. The authors found that only about 10 percent of the tagged CrM was converted to creatinine, and that creatine uptake was 78

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Shred of Evidence—Show Me The Proof!



percent of the dose. Within about 2 hours after the CrM dose, all of the creatine and creatinine had been excreted in the urine.

In the second study, Herculean doses of 'normal,' untagged CrM were given— 20 grams at a single slug.⁵ Uniquely, pure creatinine was also dosed, at a separate time, in an amount that few Cajun-style buffet carnivores have ever encountered— 5 grams. This was one of the very few studies where the perhaps 'ideal' liquid delivery system was used to mix in the creatine— hot water.

About 3 hours after a 20-gram dose, blood creatine concentration jumped about 50-fold (for you percent junkies, that is a 5,000 percent increase). And how much did blood creatinine rise by? Get out your calculators: about 0.13-fold, or a leprechaunish 13 percent. How high did the blood creatinine rise after a 5-gram dose of creatinine? About fivefold, or 500 percent. This showed that creatinine is indeed absorbed when taken orally. If creatine formed creatinine in the stomach— in any significant amount— then it would be expected to 'spike' blood creatinine.

Do the math. Zero published studies in humans showed otherwise. Case closed. Move on to evidence and off of fairy tales.

2. Creatine drinks could contain creatine... for a certain time.

A few years after we introduced creatine monohydrate to North America and beyond, a friend called me, frothing with excitement, "A guy I know has made a creatine liquid that is stable! He's done the lab testing and

it really is stable!" For several years, this creatine liquid soared to new heights, capturing the emotions (and gullibility) of many— only 10's of millions of dollars later to be 'excused' from at least one country (for false claims) and to all but evaporate from the U.S. market. Finally, in a study I collaborated on with some 'creative gods,' we showed that this hallowed creatine liquid to raise blood creatine (after oral dosing) to the same degree as... water⁶ (read *flatline*).

A few years later, an Asian company that had a patented creatine drink contacted me. They claimed that it was 'stable' and it tasted just like water. Multiple lab tests using sophisticated equipment, and sampling to a bunch of my friends, proved it to indeed have about 5 grams of creatine monohydrate-equivalent, and taste almost like water. Six months later, we had it analyzed again and... poof! The creatine

content had dropped by half, assuming a 50:50 mix with creatinine.

With the next generation of creatine-containing RTDs, the same questions apply: is it 'shelf stable' six months after it was made and transported in a hot truck halfway across country, or is it 'freshness dated' like a yogurt drink or even some beers? It's easy to make a creatine RTD stable for a short while. The challenge is making it stable for the long haul. And if such a beverage was proven to be 'shelf stable' and to deliver creatine to the blood like CrM powder in water, is it worth the far greater cost?

Anthony L. Almada, MSc is trained as a nutritional/exercise biochemist (UC Berkeley) and is the co-founder of EAS, the company that introduced creatine to North America. He also introduced the terms 'thermogenic' and 'cell volumizing' into the nutrition industry. Starting in 1975, he has worked within all facets of the nutrition industry. He has been a research co-investigator on over 75 university studies and is the CEO of GENr8. ■

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STERIOD OF THE MONTH

Anabolic Pharmacology

By Seth Roberts, M.A.

Pharmacology is the study of drugs and their effects. Anabolic pharmacology is the study of drugs that have growth-promoting effects on muscle. This column will explore anabolic pharmacology by profiling a different anabolic drug and its effects each month. The focus of discussion this month will be the anabolic androgenic steroid, Trenbolone.

TRENBOLONE



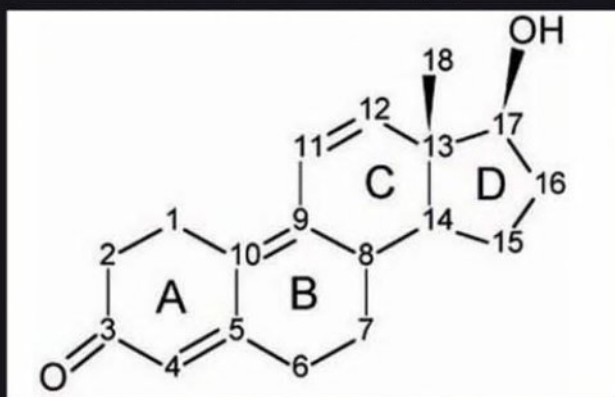
Trenbolone is a derivative of nandrolone, in that it lacks the methyl group at position 19. Trenbolone binds strongly to both the androgen receptor and the progesterone receptor.¹ This strong binding likely makes trenbolone an agonist of the progesterone receptor. Though people generally believe progesterone agonists cause gynecomastia, progesterone agonists actually result in the downregulation of estrogen receptors. This strong progesterone receptor binding is also believed to be the source of the severe shutdown and loss of libido in a good portion of trenbolone users. As mentioned, trenbolone binds strongly to the androgen receptor (stronger than any commercially available androgen) and is not

metabolized to 3-alpha metabolites in skeletal muscle delivering rapid strength and size gains.²

Trenbolone appears to have an antiglucocorticoid effect in animals, but there is no reason to believe that this does not occur in humans as well.^{3,4} Trenbolone cannot be converted to estrogens and although it is commonly believed that trenbolone is not 5-alpha reduced, there is a paper in the literature that shows trenbolone to be less potent in tissues with high levels of 5-alpha reductase.⁴

This is exactly the same thing that is seen with nandrolone, and since trenbolone is also a 19-nor steroid, it is reasonable to assume, based on this evidence, that trenbolone is in fact 5-alpha reduced to less potent metabolites. This would also partly explain the reports of gynecomastia, as well as the shutdowns that are seen with trenbolone, even though it does not convert to estrogen. The decreased androgenic stimulation as a result of the production of less potent 5-alpha reduced androgens upsets the androgen-to-estrogen balance that results in greater net estrogenic signaling in the breast and hypothalamus.

The main problem with trenbolone is that it is very difficult (if not impossible) to find in a preparation that is made for human consumption. Trenbolone used to be available as Parabolan, but if it is made anymore (which no one seems to be in agreement about) it is not readily available. Most of the tren that is currently available on the black market is made from cattle implants called



PHOTOGRAPHY BY PER BERNAL

Finaplix®. Several underground labs have created injectable versions of this drug by dissolving the pellets in a solvent and bottling the solution. Kits are also available through many sources that allow a person to make their own injectable at home from the pellets.

The problem with these underground versions and homemade concoctions is that they are not produced in a sterile fashion. This can lead to abscess, sepsis, and even anaphylactic shock, followed by death. Also, the solvents used to dissolve the pellets are not meant to be injected and can cause the same problems with the additional possibility of poisoning.

Trenbolone is available with acetate, enanthate or occasionally the hexahydrobenzylcarbonate esters. The acetate ester is injected daily or every other day and was previously available in a veterinary product called Finaject that is no longer produced. The enanthate ester is produced by underground labs and could be injected every 7-10 days but is probably injected more frequently by AAS users. The hexahydrobenzylcarbonate ester was originally produced as a pharmaceutical grade human-use product with the name Parabolan but hasn't been made in a long time. It seems to pop up in underground preparations from time to time and has a similar half-life as the enanthate ester and therefore is injected weekly or biweekly.

Trenbolone is a very potent anabolic that can produce dramatic increases in weight and strength, especially when combined with other anabolics. Along with this potency comes the likelihood for androgenic side effects such as

high blood pressure, acne and hair loss among others. This steroid also has a reputation for being toxic to the kidneys. There is no direct evidence for this side effect in the scientific literature but since the kidneys do respond to androgenic stimulation and trenbolone can cause hypertension, which can also damage the kidneys, care should be taken. ■



Got a question for Seth Roberts? You can ask him directly on the MD website and have Seth personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Staff and Pros, Q and A for Seth Roberts.

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Seth Roberts is a former pharmaceutical research scientist with over 10 years of pharmacological research in the discovery and development of novel therapeutics. Seth's new book **ANABOLIC PHARMACOLOGY** is available now at www.BodyBuilding.com, www.Ergogens.com, www.LGSciences.com, www.NutraPlanet.com, and www.PrimordialPerformance.com. [©Seth Roberts, 2009. All rights reserved. For informational purposes only, not to be considered as medical advice or an endorsement of the use of illegal substances.]

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KNOWLEDGE IS POWER

Anabolic Research Update

By William Llewellyn



Warning: Opinions expressed in this column do not necessarily reflect the views of this magazine's publisher or its editorial staff. MD does not condone any form of illegal drug use for bodybuilding or for any recreational purpose. MD also does not condone abuse of legal drugs for any purpose.

Are Anabolic Steroids Addicting?

Are anabolic/androgenic steroids addicting? This might seem like a ridiculous question to even ask. I must say, in my many years researching and studying these drugs, I've never personally met someone who discussed a serious problem of steroid dependency with me. And believe me, I've heard some pretty crazy things in confidence over the years. But nobody ever told me they lost control of their life because of these drugs. Nevertheless, this is a question some people are beginning to ask again.

Many psychiatrists today believe steroid dependency is real, and want to define it. In fact, a paper published this month by the American Psychiatric Association proposes new guidelines for making an official diagnosis of anabolic steroid dependency with patients. But before we get into these guidelines, let's get some background information on steroids and addiction first, to see if we can get a better handle on what is happening.

Drugs of Abuse

To begin with, we need to concede that anabolic steroids are drugs of abuse. This simply means that people will often continue to use these substances, in spite of adverse consequences (be they health, financial, or social). We all know that steroids help build muscle, but with some potential health risk to the user. Steroid use can raise total cholesterol levels, suppress HDL (good) cholesterol, and produce other changes in the cardiovascular system that



can, over time, increase the risk of heart disease. Many oral steroids also present significant liver toxicity, and in extremely rare cases, have resulted in organ damage.

While steroids are generally very safe when not abused for long periods, these health risks still remain in theory. This means that social and financial issues aside, classifying steroids as drugs of abuse seems to make sense. They are indeed often taken, even though these risks cannot ever be completely eliminated.

Drugs of Dependency?

But we are not talking simply about abuse. We are talking about steroid dependency, which is very different. Or to put it more sensationally, we're talking about a dreaded 'anabolic steroid addiction.' This means not only that these drugs are abused, but also that steroid abuse directly impairs the ability of the user to control the consumption of the drug(s). In other words, the drugs drive a compulsion to keep using (abusing) them. According to this theory, you can actually get 'hooked' on using steroids, and have a difficult time stopping. For a long time, people have been debating about whether or not anabolic steroids fit the definition of drugs of dependency. And even beyond that, there is much disagreement among supporters about the nature of this dependency (psychological, physical, or both).

So is there actually any evidence that steroids can be habit-forming? The answer is "Yes, some." But it is little—and far from compelling. For example, mice and hamsters

PHOTO BY PER BERNAL

have been shown to repeatedly self-administer testosterone and other anabolic/androgenic steroids. This, clearly, is not due to a perception of physical change. These animals cannot distinguish if the drugs are causing later improvements in musculature. This suggests something internally is driving the continued use.

Testosterone has also been known to interact with the mesolimbic dopamine system, which is common with other drugs of abuse.^{2,3} At least according to some studies, they may (at some level) even influence the sensitivity of the brain reward system.⁴ Steroid abusers commonly report an increased sense of wellness, vitality, and confidence when taking AAS drugs. Is this due to some inherent low-level psychoactive effect? We really do not know for sure.

We do know that anabolic/androgenic steroids are not drugs of intoxication.⁵ This alone makes them very different from all other drugs of dependency. Unlike narcotics, which are used for a subjective feeling of 'high,' the main motivation behind the use of steroids is their positive effect on muscle and performance.

Indeed, many people abuse these drugs, sometimes heavily. But why do they abuse them? Are the drugs themselves instilling some strong craving for the continued use? Or is it more simply that the physique-, strength-, and performance-improving qualities of anabolic/androgenic steroids drives the abuse? Psychological issues concerning feelings of inadequate size and body image ('muscle dysmorphia') are known to sometimes be involved with steroid abuse.⁶ But are steroids ever responsible for causing this, or is steroid abuse a symptom?

Diagnosing Dependency (Current)

So this is where we are now. We know that anabolic steroids are widely abused. It is a fact that we just cannot dispute. We also know they are commonly abused by people suffering from muscle dysmorphia. But we do not know the nature of this association, or steroid abuse itself. We do not even know if steroids are mild psychoactive substances at all. What we do have is a little bit of evidence that animals will self-administer these drugs, which suggests some type of reinforcement taking place. But this is about as far as it goes.

If we try to put steroids into the official definition of 'drugs of dependency' according to the American Psychiatric Association, they do not fit. Going by the current *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)*, three or more of the following criteria must be met for a diagnosis of psychoactive drug dependency. Note that these criteria have been paraphrased so as to avoid duplication later in this article.

1. Substance is taken in higher doses or for longer periods than intended.
2. Desire or unsuccessful efforts to cut down or control substance use.
3. Excessive time spent obtaining, using, or recovering from the substance.
4. Important activities are given up because of substance abuse.
5. Continued substance use, despite negative

psychological or physical consequences.

6. Tolerance, or the need for higher amounts of the substance, to achieve desired effect.

7. Withdrawal symptoms.

We could try to make anabolic/androgenic steroid abuse fit with some of the DSM-IV criteria. For instance, it is not uncommon for someone to take the drugs in higher doses or for longer periods of time than they had initially planned (criterion 1). Many abusers also have a desire to cut down on their use of these drugs, but concerns over lost muscle size, strength, or performance may prevent this decision (criterion 2). Individuals often continue to abuse steroids, in spite of negative health consequences (criterion 5).

Steroid abuse is also associated with a diminishing level of effect, and escalating dosages (criterion 6). Lastly, steroid discontinuance has been associated with symptoms one might call 'withdrawal' (criterion 7), including reduced sex drive, fatigue, depression, insomnia, dissatisfaction with body image, and a desire to take more steroids.⁷ But at the same time, many of these conscious decisions would still be image/performance driven, not made due to loss of impulse control. It feels like we are making concessions trying to link steroids to many of these criteria.

Steroid Addiction (Proposed)

The DSM-IV officially does not recognize anabolic steroid dependency. Knowing that the current guidelines simply do not work for anabolic steroids, and faced with a problem of diagnosing and treating what some in the medical community believe is a true problem, a new set of criteria has been proposed for the next *Diagnostic and Statistical Manual of Mental Disorders (DSM-V)* that would officially allow for a steroid dependency diagnosis. The same seven criteria that have been used to diagnose psychoactive drug dependencies for so many years are still in place.

When it comes to steroids, however, a number of additional caveats have been added to help explain their relation to each criterion. If adopted, steroid dependency would be identified if three or more of the following occurred during the same 12-month period.

(1) Tolerance, as defined by either of the following:

(a) A need for markedly increased amounts of the substance to achieve intoxication or desired effect; for AAS, this progression to markedly larger doses may be related to dissatisfaction with the previous level of desired effect (i.e., level of muscle mass).

(b) Markedly diminished effect with continued use of the same amount of the substance (i.e., failure to maintain the same level of lean muscle mass on a given dose of AAS).

(2) Withdrawal, as manifested by either of the following:

(a) The characteristic withdrawal syndrome, characterized for AAS by two or more of the following features: depressed mood, prominent fatigue, insomnia or hypersomnia, decreased appetite, and loss of libido.

(b) AAS are used to relieve or avoid withdrawal symptoms.

(3) The substance is often taken in larger amounts or over a longer period than was intended; for AAS, this may be manifested by repeatedly resuming courses of AAS use

after a shorter 'off' period than the individual had originally planned, or by eliminating 'off' periods entirely.

(4) There is a persistent desire or unsuccessful efforts to cut down or control substance use; for AAS, this may be manifested by unsuccessful attempts to reduce or stop AAS use because of prominent anxiety about losing perceived muscular size.

(5) A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects; for AAS, this may be manifested by extensive time spent participating in muscle-related activities surrounding AAS use (i.e., time spent in weight training, attending to diet and supplement use, and associating with other AAS users) in addition to actual time spent obtaining and administering AAS.

(6) Important social, occupational, or recreational activities are given up or reduced because of substance use; for AAS, this may be manifested by giving up important outside activities because of an extreme preoccupation with maintaining a supraphysiologic AAS-induced level of muscularity (i.e., the individual relinquishes outside activities for fear that these activities will cause him to miss workouts, violate dietary restrictions, or compromise his ability to use AAS).

(7) The substance use is continued, despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance; for AAS, this includes medical problems such as gynecomastia, sexual dysfunction, hypertension, dyslipidemia, and cardiomyopathy; or psychological problems such as dysphoric mood swings, severe irritability, or increased aggressiveness.

Examining The Proposal

I am a bit troubled by the way the DSM-V would describe this steroid dependency. If you look at these new additions, it seems as if they are attaching many non-drug behaviors to steroid use, in an effort to make them 'fit.' For example, steroid users do not spend inordinate amounts of time finding and using steroids. So the DSM would add excessive exercise as a part of these criteria, as it supports steroid use. While many steroid abusers spend a lot of time eating, training, and thinking about their physiques, so do many people who don't take steroids. Again, we cannot say that the drugs have caused this. The new guidelines also continue to make the association of post-cycle hormonal imbalance with withdrawal symptoms. Many people (including me) contest this idea. It also incorrectly suggests that escalating doses are needed to maintain the same muscle mass. The reality is that escalating doses are required for continued growth, not maintenance.

In the APA article "Issues for DSM-V: Clarifying the Diagnostic Criteria for Anabolic-Androgenic Steroid Dependence," which outlines the proposed new criteria, they also make a troubling leap about the supposed steroid dependency. The authors suggest that it may be associated with "...progression to other forms of substance abuse and dependence, especially opioid dependence." They are blatantly suggesting steroid use may

cause you to become addicted to narcotic (heroin-like) painkillers, or maybe heroin. This is, of course, the infamous 'gateway' drug theory—the same heavily-contested concept that has been used to continually support the prohibition of marijuana (a drug that is inherently less dependency-forming than caffeine). Apparently, steroids are the new 'gateway drug.' I don't even know where to begin to address this (I hope for most readers it does not need addressing).

Summary

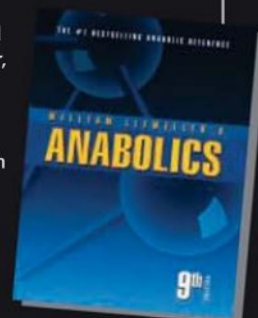
The proposed new DSM guidelines acknowledge that steroids are very different from traditional drugs of dependency, which in the past have always been psychoactive substances that produce a 'high.' This idea may now change. The proposed criteria would expand traditional dependency guidelines so broadly that they can include drugs with a primarily physical effect. And there appears to be little new medical information to support such a decision—only an apparent earnest effort to address a problem.

While I applaud any effort to better understand AAS abuse, we are far from determining that steroids cause dependency. Perhaps even more concerning is that instead of acknowledging that muscle dysmorphia could be mistaken as a steroid dependency, the APA seeks to merge this disorder with steroid abuse under the umbrella of dependency. Muscle dysmorphia is a serious image disorder that should be addressed directly. Based on these new guidelines, many psychiatrists may now, unfortunately, end up misdiagnosing these patients as drug addicts. ■

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ASK THE EXPERT ANABOLICS Q&A

By William Llewellyn

ANABOLICS Q&A is a monthly session with William Llewellyn, author of the bestselling anabolic steroid reference guide, William Llewellyn's ANABOLICS, 9th edition. William is widely regarded as one of the world's foremost authorities on the use of performance-enhancing substances by athletes and bodybuilders. If you have a drug or supplement-related question that you would like to direct to William, don't hold back. Please e-mail it to QandA@AnabolicsBook.com. William will answer the most interesting and pertinent questions right here each month.

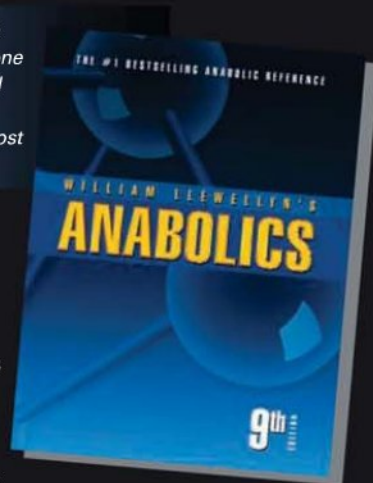
Equipoise Pain

Q: I've used Equipoise in the past with no problem. This time I am experiencing a lot of pain, pretty much as bad as when I use testosterone propionate. I can barely move my leg. The dosage is 200 mg/mL. I know most EQ comes in dosages of 50 mg/mL. I've used both dosages before, though. Is it possible the concentration is too high and I am reacting to it this time? What is going on?

A: The pain could be caused by any number of things. To begin with, you mention the dosage is 200 mg/mL. This immediately tells me the product is most likely made by an underground lab. Up until a year or two ago, there was not a licensed facility anywhere in the world creating boldenone undecylenate beyond a dosage of 50 mg/mL. Presently, this dosage may be available by a limited number of international exporters and regional drug companies— a very limited number. A dosage of 200 mg/mL on the underground market, however, is highly common. So I am going to make this leap, which increases the possibilities greatly.

So what could be causing it? It could be so many things. Given that you've used EQ before at this dosage with no problem, I am inclined to think it is not a reaction to the drug itself, but something else in the product. The vial could be contaminated with something, such as heavy metals, dirty oil, free fatty acids, or even another steroid (maybe testosterone propionate, which is very cheap). It could have too much alcohol in it, which can be very irritating to muscle tissue. There could be bacteria in the vial, which might be causing infection at the site of application. There are many questions, and

unfortunately no one simple answer. My advice to you would be to stop using the product. High pain already is a sign your body doesn't like what it is using. Since there are so many other steroids out there, I'd suggest you find one you are comfortable with.



Transdermal Orals?

Q: What do you think about transdermal orals? Does this method remove the liver-toxicity of drugs like Dianabol and Anadrol?

A: Unfortunately, no. Transdermal application doesn't eliminate the toxicity. Ultimately, all of the drug you administer to the body will need to be processed by the liver before it can be excreted. So there is no way to completely avoid toxicity. In theory, however, and I must emphasize the *theory* part, transdermal application might reduce the level of liver-toxicity by a small amount. It might do this by slowly and steadily delivering the drug to the liver for processing.

Normally, when an oral drug is taken, it is shuttled directly to the liver in one lump dose. Whatever gets through the liver the first time will slowly be processed on subsequent passes. Transdermal application avoids this first 'bolus' dose to the liver. But I am hesitant to even ascribe an advantage to this type of use. Remember, injectable versions of oral steroids do the exact same thing— avoid the first pass. But we have plenty of documented evidence that a drug like injectable Winstrol can produce the same issues of high liver-toxicity as the oral. So while it may be a little better, I definitely warn against any false sense of health security.

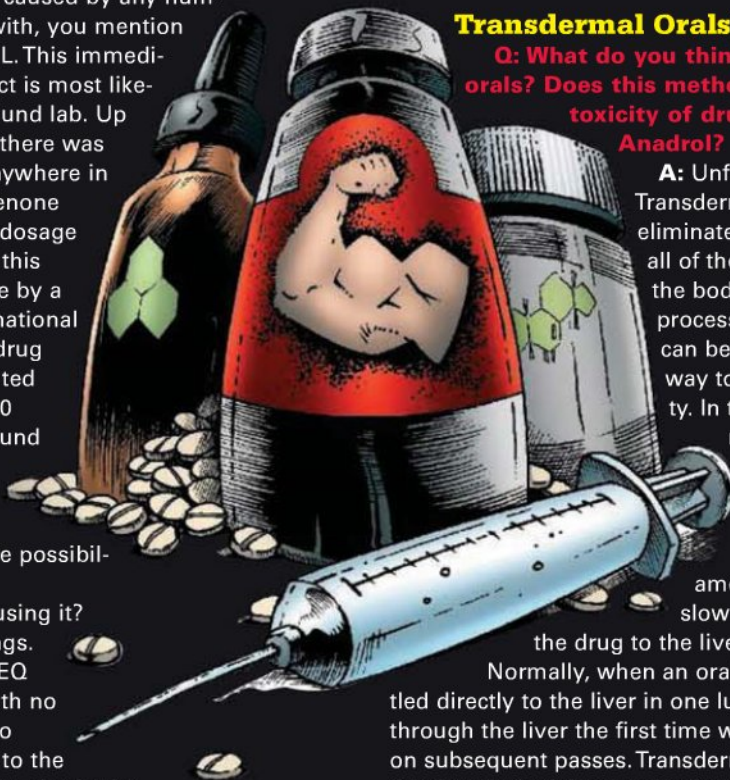


ILLUSTRATION BY JERRY BECK

Winstrol Enanthate/Esterified Orals?

Q: I heard that an underground lab is working on stanozolol enanthate. This sounds crazy. I want to try it. But then I heard from another guy that it was impossible to put an ester on a methylated steroid, and even if you could, it would never come off—making the drug worthless. Is this true? I thought you would have a good answer for me.

A: No, this isn't exactly true. While I've never seen stanozolol enanthate, I can tell you a little about esterification (the process of adding an ester to a steroid) and methylation (adding a methyl group). I trust you will find these are two very distinct technologies, applied for two very different purposes. Still, that doesn't necessarily mean you cannot combine them. Let me explain.

Oral steroids are typically methylated (a methyl group has been added) at a position known as C-17-alpha. This addition accomplishes a number of things. Most basically, it prevents the 17-hydroxyl group (the active point of steroid attachment) from breaking down into a ketone by occupying one of the bonds needed to do this. This single reaction creates a steroid of extremely high oral bioavailability and resistance to metabolism. It also induces 'steric hindrance' toward the 17-beta hydroxyl group, which is a fancy way of saying that the methyl group interferes with metabolism of the 17-beta group by enzymes. This is another way the methyl modification intensifies steroid action.

Esterification, of course, is very different. Here, we are basically adding a long-chain fatty acid to the steroid molecule instead. It is added to the end of the active hydroxyl group at C-17 (beta). This is the same carbon atom, but in a different position. Esterification makes the drug more 'fat like.' Esterified steroids are more readily dissolved in oils than their base steroids, and leave the site of injection much more slowly because the environment of the body (blood) is water-based. With an enanthate steroid, it can take two to three weeks before the full

dose hits the bloodstream. Once free in the blood, however, enzymes (esterase) will cleave off the fatty acid and leave the free active steroid to do its job.

So one modification makes an oral steroid more potent, while the other makes an injectable work longer. Can they be combined? Yes. From a chemistry standpoint, it is possible to have a methylated steroid that also has an ester on it. In fact, there is already an example of this called methandriol dipropionate. This steroid is methylated and esterified at the same time, and continues to work just fine. Some people have mistakenly assumed 'steric hindrance' means the ester cannot ever be broken off at all. This is not the case. It may slow this reaction slightly, but the ester bond will still break, and the free steroid will still make its way into the cells.

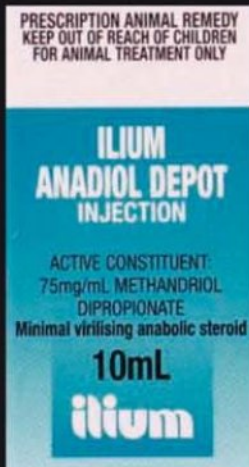
So why don't we see more 'dual' steroids like methandriol? The answer is that the mixing of technologies



serves no real function, and if anything, may create issues with the steroid. You see, methylated steroids can be liver toxic. This is a dose-dependent phenomenon, so you want to limit the dose to the point necessary for therapy, but not above—in a clinical setting, which all of these drugs are usually designed for. Esterified steroids like enanthate are very unbalanced in their delivery. You get a sharp spike in dosage for the first several days, which slowly declines. It does not distribute the drug steadily and evenly. This isn't a big deal if the drug is not liver toxic. But if you did use stanozolol enanthate, your liver would have to process a high dose for a few days, then taper down. This variance in toxicity is not desirable at all. In fact, ester aside, you very rarely ever see Winstrol injections for use in humans for the same reason—only in animals.

Stanozolol enanthate has never been created and studied in a lab before, that I know of. So there is only so much I can tell you about its physical properties that isn't speculation. I feel confident saying that it should work in an almost identical manner to the way injectable Winstrol does now (as the base steroid hasn't changed), but would last longer. The dose will fluctuate a lot between applications though, and may cause elevated liver strain. I would guess one might be slightly more inclined to notice jaundice or other signs of toxicity, as you'd probably use higher total dosages to balance out the fluctuations. In short, I don't see much advantage to creating this drug. But I would say that certainly, it is possible to create it. ■

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INJURY & REHABILITATION

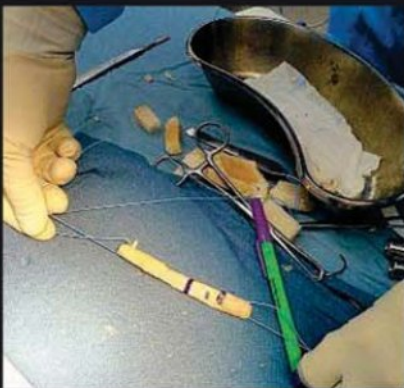
AskTheDoc

By Victor Prisk, M.D.



I am having surgery on my knee, and the doctor said he is using 'allograft' tissue to rebuild my torn ligament. What is that? Is it safe?

This is not a new 'space age' material or synthetic piece of machinery. As much as we all want to be 'bionic,' nothing is as good as natural human tissue to reconstruct ligaments (as of yet). Allograft tissue is cadaver/donor tissue that is used to reconstruct ligaments, tendons, or other structures that are damaged and not repairable. Tendon allografts are tendons harvested from a recently-deceased donor, and may be used to reconstruct ligaments or other tendons. Bone and other structures may also be harvested and used to reconstruct damaged joints or limbs. Ligaments are not usually used to reconstruct ligaments, because by the time they are processed and used for your surgery, they are not as strong as the original ligament.



Tendon allografts play an important role in tendon and ligament reconstruction, particularly where there is a shortage of available local tissue. Although currently used predominantly for ligament reconstruction around the knee, tendon allografts have indications in the upper limb and elsewhere. The main advantage of using allograft tissue is a lack of 'donor site morbidity.' That means that the surgeon doesn't need to harvest your own tissue to use

as graft. Without allograft, for example, the surgeon would have to take bone and the middle one-third of your patellar tendon to reconstruct the anterior cruciate ligament (ACL). Similarly, the doctor could take your hamstring tendons on the same leg to reconstruct that ACL. Taking these structures makes those areas weaker and/or deformed, or painful. Other advantages to allografts include decreased surgical time, smaller or less surgical incisions, and less chance of stiffness.

The disadvantages to using allograft tissue include limited availability, high cost, susceptibility to rejection, and risk of bacterial, viral, or prion disease transmission. In the United States, commercial tissue banks accredited by the American Association of Tissue Banks (AATB) predominate. Adequate screening of donors is a vital component of allograft procurement. All biological tissue carries some risk of bacterial, viral or prion disease transmission. Although cases of transmission of HIV and Hepatitis C have been reported in patients receiving musculoskeletal allografts, most reported cases have involved bone rather than tendon. The estimated risk of transmission of viral disease from an adequately-screened donor is approximately one in 1,500,000, which compares favorably with the estimated risk from blood transfusion of between one in 400,000 and one in 600,000.

Graft processing requires sterile lab conditions, and aims to ensure that maximum use is made of donor tissue by trimming, sizing and splitting, if required. It also seeks to minimize antigenicity within the tissue, meaning it has less chance of rejection. Processing is also done to ensure that the graft material is free from bacterial and viral contamination, while minimizing damage to its structural integrity. The grafts may be washed in bacterial solutions, screened by cultures and PCR analysis, gamma irradiated, or

treated with ethylene oxide. With that being said, it is a complicated process that involves numerous steps and precautions. For example, if a tissue is overtreated with irradiation, the tissue loses its structural integrity and may not make a strong ligament.

When it comes to deciding on graft choice, this is an important discussion to have with your surgeon. Make sure he/she is familiar with the source of the grafts and that they trust their processing and procurement process. The FDA oversees the tissue banks and has the power to close them when bad practices are noted. The AATB has standards and an accreditation process for its members, and they require much better testing than the FDA. However, the AATB does not have the power to close a violating facility, which is power the FDA does have. Will the FDA become stricter? I believe that recent media attention may encourage them.

My doc plans to perform arthroscopic surgery. What is this?

Most people have heard of 'having the knee scoped.' This is what is meant by arthroscopy. 'Arthro' refers to the joint, and 'scopic' means to use an instrument such as video to assist in visualization. Many different joints can be 'scoped.' The knee and shoulder are most common. But the hip, ankle,



AskTheDoc—Injury & Rehabilitation

wrist, and elbow are becoming more common. Joints as small as the big toe joint can also be treated arthroscopically. A scope can also be used in non-joint locations like the plantar fascia, the carpal tunnel, or the hindfoot... but this is referred to as 'endoscopy.' In the abdomen, this is called 'laparoscopy.'

Surgery involves making incisions that are approximately 1cm long, which are strategically placed to maximize visualization of the joint. Once the skin incision is made, blunt dissection is performed to provide access to the joint. Making these incisions in small joints, like the wrist and ankle, must be done very carefully because there are many superficial nerves that can potentially be stretched or damaged. Once the scope is placed in the joint, saline solutions under pressure are pumped into the joint. This improves visualization by clearing debris, washing out or compressing bleeding, and distending the joint space.

Through visualization with the scope, structures in the joints such as ligaments, meniscus, labrum, cartilage and tendons can be repaired with specialized instruments. Fluid flowing through the joint constantly clears debris and is essentially 'washing the joint out' during the entire case. Thus, rates of infection with arthroscopic techniques are very low. Also, pain is minimized, recovery times are faster, and patients often have much less stiffness.



PHOTOS COURTESY OF DR. VICTOR PRISK

What's Up With Dr. Prisk?

We are all looking forward to this year's Mr. Olympia contest. Will Victor bring his physique to the top? Will Phil conquer his mentor, Jay? Will Kai transform once again? The top 10 at this year's Mr. Olympia contest promises to be the best in history.

I am getting the competition bug myself. Will 'The Doc' step back onstage this year? If so, when? North Americans? Nationals? Will he continue to be a welterweight or move up to the middles? The answers may not be known, but one thing is for certain... he's going hard in the gym! Check out the arm-training video on MuscularDevelopment.com, which was filmed in May 2009. ■

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In the Trench with Ed Nunn

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ExtremeMuscle Enhancement

By Carlon M. Colker, M.D. FACN



MYO-T12™

There has been a litany of drama and deception that has surrounded my attempts to come to market with Folstaxan™, the first legitimate natural myostatin inhibitor in the form of a dietary supplement. It is also the story of MYO-T12™, which is the amazing product that came out of my continued perseverance on the project. This is my accounting as best and as honestly as I can write about it.

As far as a background understanding, in only the last approximate decade of scientific study has research finally unlocked the true key to muscle growth. It's not testosterone. It's not growth hormone. It's something much, much more powerful. The essence of massive muscle growth is not about hormonally stimulating the most muscle production. In fact, we've been wrong all along. It's about countering the force that gets in the way of uninhibited extreme muscle growth. The presence of myostatin (then called 'growth and differentiation factor 8' or 'GDF-8') has been identified as the force responsible for inhibiting the growth of extreme amounts of muscle. In other words, it is the primary cause responsible for limiting muscle growth—despite slaving away in the gym for years.

Myostatin is a protein produced by a specific gene sequence in the DNA of nearly every vertebrate animal. It works very early in the embryo and during later development to modulate muscle growth by inhibition. Animals and people who naturally lack the gene needed to produce myostatin are otherwise healthy yet are well-muscled. Those same individuals, with a little bit of training, gain slabs of

muscle. It has been theorized that this vestigial control over muscle gains was needed to prevent an organism from being overly-muscled and thus fall more easily to predation—because they were too bulky to speed away or because they just looked more delicious.

So through Darwinian selection, having little or no myostatin has become exceedingly rare among animals and humans. Nevertheless those rare survivors live normal, happy, albeit well-muscled lives. As

In only the last approximate decade of scientific study has research finally unlocked the true key to muscle growth. It's not testosterone. It's not growth hormone. It's something much, much more powerful.

an example, one need look no further than the Belgian Blue bull and the Piedmontese breeds which are born without the gene to produce myostatin. These animals do not seem adversely effected by the absence of myostatin. The same is true for humans.

The pharmaceutical industry is hard at work developing vaccines to knock out natural production of myostatin. While vaccines have been developed and preliminarily tested, a shroud of secrecy surrounds their progress. All we know for sure is that everything seems to have stalled. Preliminary research looks sketchy from a safety standpoint, so already some early initiatives have been abandoned. Rumors are circulating

regarding the safety of these vaccines linked to the possibility that, by completely blocking myostatin rather than just lowering it, they may pose health dangers. These drugs operate immunologically by having an actual antibody attack the body's own myostatin. Sound scary? Well, you may not be alone. If it didn't give those companies and the FDA pauses for thought, we might have seen one on the market by now.

So where does that leave us? Are there other myostatin inhibitors that don't operate like vaccines? The answer is: yes.

In 2005, I discovered a natural substance known to inhibit myostatin found in significant levels in standard store-bought fertilized chicken eggs (*Journal of the American College of Nutrition*, Volume 25, No. 5; Abstract 65; October 2006). This was astounding to me because it is right there in our food supply. Farmers eat fertile eggs all the time. In fact, I've been going to the organic market and buying them for years without fully realizing their hidden power. The beauty of these eggs is that they are 100 percent natural and believed by the USDA to be no better or worse for you than standard store-bought eggs! But what truly separates regular eggs from fertile eggs are about 20,000 cells barely visible to the naked eye. These cells produce at least one myostatin inhibitor that we know about. These inhibitors are released in steps from the membrane into the yolk to promote early embryo development and growth. These substances are consumed and disappear in a matter of days after incubation.

So while there was no question

ExtremeMuscle Enhancement

that the fertilized egg has within it a dietary source of natural myostatin inhibitors, the problem then became one of trying to figure out how to get enough. In other words, how many eggs can you stuff in without going to the poorhouse, living in the bathroom, and gaining too much fat from the calories? Trying to eat all those fertile eggs is not practical either— physiologically, economically, or gastronomically!

Shortly thereafter, I contracted a biopharma company out of San Antonio, Texas called Celldyne Biopharma, LLC, to help me develop the process and move closer to a commercially-viable product. The joining of forces seemed logical because of their representations that they had relationships with hatcheries and extensive knowledge in their affiliate fields of vaccine production and FDA compliance. At the time, they also told me that they specialized in antibodies and recombinant proteins for metabolic diseases. With their assistance, I was able to generate a desiccated fertile egg powder that maintained active myostatin inhibition (not an easy task by any measure).

So in the next step furthering this research, in 2006, I demonstrated that myostatin inhibition from fertile eggs is biologically active (*Journal of the American College of Nutrition*, Volume 25, No. 5; Abstract 66; October 2006). I undertook the study in an effort to identify whether this orally-ingested source was actually absorbed and pharmacokinetically active in the human model. I set out to prove that, not only does one of the orally-ingested active ingredients increase, but it also significantly reduces serum myostatin levels. Celldyne produced a first generation of fertile egg yolk powder properly processed to preserve activity. This first-generation version was called Folstaxan™. After initial blood draw and subsequent oral Folstaxan™ dosing, serum levels were qualitatively and quantitatively measured as an indicator of absorption and hormonal influence.

The results showed a baseline myostatin level of 46pg/ml. In the 2 hours after Folstaxan™ administration, myostatin declined with a 24-hour

level of 31pg/ml. These results clearly indicate that Folstaxan™, when orally ingested, significantly downregulates myostatin. These results were peer-reviewed and published (Colker C, Absorption profile and hormonal influences of fertile egg yolk ingestion in the human. 2006 Annual Meeting of the American College of Nutrition and abstract publication in *Journal of the American College of Nutrition*, Volume 25, No. 5, Abstract 66; October 2006).

To be objective, the product intake was far too bulky and we did not have a precise measurement of the initial bolus. Add to that, it was only in one subject. So we needed to further refine the product and test it more precisely in a larger sample population. In August of 2008, we performed a study on a more refined and

How many eggs can you stuff in without going to the poorhouse, living in the bathroom, and gaining too much fat from the calories?

debulked version of the product. Using this product, at a significantly lower serving size of only 20 grams in a one-time serving, the study was undertaken in seven male subjects. In this case I was strictly interested in myostatin levels as an indicator of true pharmacokinetic activity. Serum myostatin levels were tested at baseline, 12 hours, and 24 hours. Results showed an average baseline myostatin level of 27pg/ml; 12 hours after ingestion, average serum myostatin declined to 24.43pg/ml; average serum myostatin continued to decline with a 24-hour level of 23.86pg/ml.

Though two out of the seven tested were nonresponders, the mean change overall in myostatin among the subjects went down by -11.32 percent in 24 hours. These results were peer-reviewed and published (Colker C, "Effect of Debulked Fertile Egg Yolk Ingestion On Serum Myostatin Levels." Reviewed and accepted for poster presentation at the 2008 Conference on Post-Translational

Modification: Detection and Physiological Evaluation for the *American Society for Biochemistry and Molecular Biology*; Category: Unusual Modifications; Abstract 10; October 2008).

The results were very exciting, because it represented a major reduction in myostatin. In a 2001 published study from Johns Hopkins University, as little as a 20 percent reduction in serum myostatin results in a very significant increase in muscle mass. So while we were hoping for at least a 20 percent decrease in this larger group, we at least knew we were on the right track.

Saying that what came next took me by surprise is an understatement. My involvement with Celldyne would be a mistake I would live to regret. In dealing with Celldyne, I counted on their representations that they were not a dietary supplement company and instead were purely pharmaceutical. I actually took solace in this. Their President and CEO, Rick Green III, said they were a subdivision of 'big-pharma' companies named TEKSA and INCELL. He said they were experienced in immune-hormonal medicine and had relationships with large hatcheries in Mexico. Looking back at the time, I thought, since I have been criticized by some for having worked so closely with dietary supplement companies, which was an industry that, according to some, was sketchy and untrustworthy, this new pharma relationship was supposed to be a step up.

All this could not have been further from the truth. The fact is, I never had a dietary supplement company try to steal one of my ideas, file a fraudulent patent application on my invention, and then try and squeeze me out completely!

Getting back to the story, while things were moving along beautifully with research and development, Celldyne started pulling back on the project, crying poverty and being increasingly more difficult to communicate with. At one point they were completely non-responsive. It was total radio silence. This came as a shock at the time since research and development had been progressing. So what was their problem? Had

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they really given up on me and my invention? Hardly— it turned out they were actually quite busy secretly filing a bogus patent on my project with the USPTO, claiming that Rick Green and his grandfather were the sole inventors and not me! In addition, Celldyne put up a Folstaxan™ website and attempted to sell their product to the public with no permission whatsoever from me.

Again, all this was going on without my direct knowledge or consent. The fact is that although we had a good product for research purposes, we simply were not even near having a product ready for public consumption. The product they finally decided to shove in a canister and hawk to the public was vastly inferior in terms of quality and content. In fact, I had verified the concentration by analysis and it came out worse than our data for whole yolk controls! Also it was clumpy and insoluble, smelled terrible, and tasted even worse (something Rick alluded to in a company e-mail later brought out in discovery). Add to that this company, again without my knowledge or consent, put the product out into the marketplace with no expiration date on the label and no bacterial testing that I ever saw! As far as I know it could have been a jar full of salmonella! To add insult to injury, they did this all while putting my name on the label!

So basically I had no choice but to file suit against them in Connecticut federal court. I think it took them by surprise because my guess is they were counting on me just disappearing. After two days of intense arguments in front of United States District Court Judge Alvin W. Thompson, in a huge decision that granted me a preliminary injunction against them, he ruled completely in my favor. They were forced to stop selling the product they were holding out as Folstaxan™ and shut down their website. In fact, the testimony was so convincing that the judge, without my team even asking, actually broadened the preliminary injunction to further protect my interests and further restrain Celldyne and the Greens. Eventually, we settled the lawsuit before it went to trial, where I would have creamed them.

They ended up making me a lump-sum cash payment, along with handing back over the patent control, Folstaxan™ name and trademark, all notes and files, and a few other stipulations. All in all, truth prevailed in the end— but it was not an experience I would care to relive.

In the meantime, I was determined to not waste anymore time, so I was already busy on my own, independently developing and producing a desiccated fertile egg yolk product that preserved the yolk membrane and accompanying blastodisc. Although this time I was focused, other factors in the blastodisc were working to reduce myostatin in a far greater way than the active component originally thought to be the target. The idea was to preserve as much biologic activity as possible as I set out to create an even better product.

This company, again without my knowledge or consent, put the product out into the marketplace with no expiration date on the label and no bacterial testing that I ever saw! As far as I know it could have been a jar full of salmonella!

Equipped with the prerequisite knowledge that at least one biologically-active factor hated heat and was inactivated by it, I found out that Celldyne's method of irradiating the eggs was a very poor idea for a number of reasons. It turned out that this method first and foremost was and is not accepted by the FDA as an adequate way of pasteurizing a dietary supplement. In particular, salmonella is a major concern among experts because irradiation may not eradicate it at all! Add to that, in our own experiments we found out that irradiation destabilizes the yolk membrane (the location of the blastodisc), thus creating a messy, slurry of egg white and yolk. As a result, a consistently clean separation between yolk and white was not possible, thus reducing the potential concentration of actives. This explained why the Folstaxan™ product was yellow-white in color and not the bright yellow color of a yolk, which it

should be, if properly handled. Finally, irradiation is still heat-producing and may have inactivated much of the remaining active factors. Then there was the issue of centrifuging (another method chosen by Celldyne to debulk). This simply added more harshness to the handling of the product and thus created more of a mess, serving only to reduce the active levels even further.

After establishing a carefully-selected group of procedures and proprietary sequence of steps, including a new way of pasteurizing not previously available to us, my new 'high-grade handling' method was set to be tested. Using one active as a barometer to measure the concentration of available cofactors, in February of 2009 our sample was third-party-tested and found to have a potency 6.45 times Celldyne's version of Folstaxan™! Also we tested everything for pathogens including salmonella and it all checked out perfectly.

After some solubility work and light flavoring, it was time to put the product to the test and see if it really was inhibiting myostatin better than the old Folstaxan™ product. The study took place in April of 2009. Recall that the results of a prior study on Folstaxan™ produced an average reduction of serum myostatin at 24 hours of 11.32 percent in seven subjects ingesting 20 grams of product, with two non-responders. In contrast, my latest generation of product would be tested in 10 healthy, adult male human subjects, while administering only a single 10-gram serving size (half the amount given to subjects in the last study).

This study was undertaken to test the hypothesis of whether my high-grade handling method eliminated the need for irradiation and centrifuging, thus creating a more highly-effective product at a much lower serving size. After baseline myostatin testing, subjects received a single serving bolus of only 10 grams. Results showed an average baseline myostatin level of 27.5pg/ml, which was consistent with the last study, since it seems that generally speaking, men ages 20-55 have serum myostatin levels at or around 30pg/ml. But then in dramatic fashion, something extraordinary happened at

Extreme Muscle Enhancement

between 12-18 hours after dosing. The average serum myostatin declined to 12.6pg/ml, with every subject responding positively! This was a staggering 46 percent drop in myostatin from baseline across all 10 subjects! Add to that, unlike the previous study done on the old Folstaxan™ where two out of the seven subjects were nonresponders, here all 10 subjects responded. Finally, at the 24-30 hour time point, with a mean value of 28.1pg/ml, the average myostatin level completely normalized.

As a result of this study, I finally had the results that proved once and for all that my new method of high-grade handling was more effective than anything seen to date. It was so far beyond anything I ever did with Celldyne that I could not have been happier. Upon careful study of the data, it was the dramatic drop in myostatin at 12 hours that just bowled me over, and so was born the name MYO-T12™ (a name I chose to underscore the effectiveness at the 12-hour point).

Of course, I should point out that I was equally pleased with the com-

plete normalization of myostatin levels in test subjects after 24 hours. In this way it's nice to know that, should you decide to not take a subsequent serving of the product, you can expect your levels to return to what they were within a matter of hours. Keep in mind that this was in sharp contrast to the pharmacokinetic drug action of the vaccines that were developed and abandoned by the pharmaceutical industry in part because of the effect of the drugs on completely and irreversibly shutting down myostatin production.

This study was and is a landmark. Because it proved that naturally-occurring follistatin not only occurs in our food supply, but when properly handled in the form of MYO-T12™, can in fact reduce myostatin levels. This is achieved without blocking it completely with potentially harmful vaccine antibodies that the drug companies are trying to develop. The most recent research also proved that levels in the subjects not having taken any subsequent servings of product completely normalized their myostatin levels with-

in a maximum of 30 hours.

All this taken together, my hope is that MYO-T12™ emerges as the single most powerful approach to building massive muscles in otherwise healthy male subjects. In fact, I feel it's a more powerful approach than testosterone, growth hormone, or anything else I have seen. I hope to have MYO-T12™ available to bodybuilders through ProSource by September of 2009.

So that's my story. It's the truth as best as I can tell it. It's been about a decade of hard work, research, pain, disappointments, lawyers, lawsuits, lamenting, and ultimately success with vindication. In closing, my deepest appreciation to those readers and consumers who have followed the story, shared in my aggravation and disappointments, waited patiently for product, and never stopped believing in me and my work. I love you all. ■

Dr. Colker's book, **Extreme Muscle Enhancement: Bodybuilding's Most Powerful Techniques** is available by calling **1-800-310-1555** or ordering the book online at **www.prosource.net**.

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MD Walk-In Clinic

Walk-in clinics offer convenience and occasionally good medical advice, assuming you survive the aerosolized spray of contagions saturating the waiting room. What walk-in clinics do not offer is a substitute for preventative health or primary care.

This "Walk-In Clinic" column is a collection of questions and experiences encountered by a number of physicians who have treated bodybuilders, athletes and gym rats using performance-enhancing drugs (PED).

Any identifying information has been deleted and details generalized to maintain the confidential nature of the relationship.

The "Walk-In Clinic" is not designed to provide medical advice or guidance to its readers. It is a representation of problems and questions that PED users ask doctors, physician's assistants, clinic nurses, athletic trainers, coaches and pharmacists. The responses do not come from the perspective of hardcore drug users, but health professionals who attempt to understand the drive to excel that causes people to take risks.

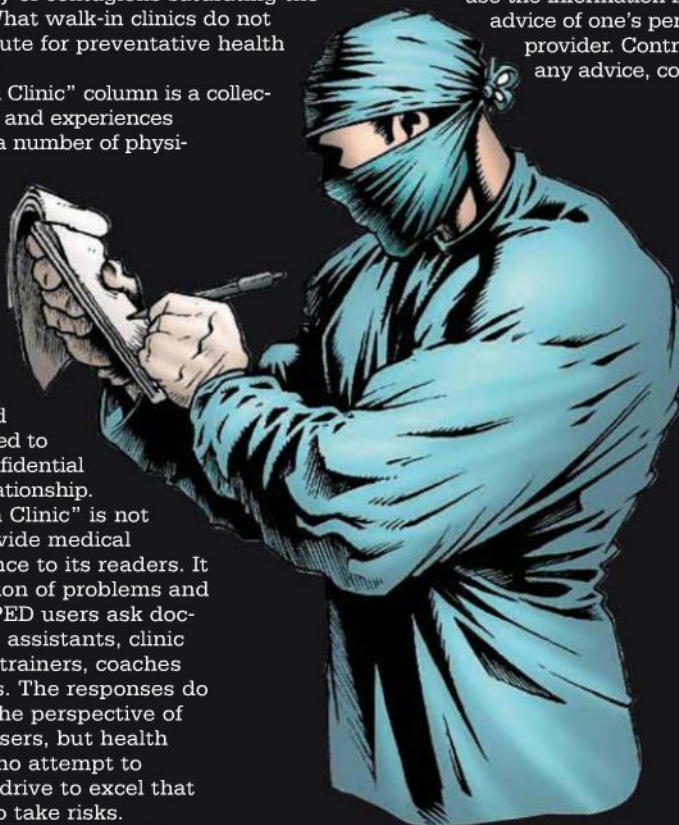
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Does natural testosterone affect your skin differently than [testosterone] cypionate? I started getting acne in the last couple of months. I have been on a moderate stack of 100 mg [testosterone] cypionate and 100 mg of Deca [nandrolone decanoate] a week for the last year. I am turning 50 soon and use this for replacement therapy (prescribed). My doctor prescribed an additional 250 IU of hCG once a week when I commented that my wife noticed my testicles seemed smaller. Since then, I have broken out with pimples on my chest and back.

There is a push among some physicians to promote bio-identical hormone therapy. In essence, this would limit hormone replacement to non-esterified testosterone, estradiol, estrone, DHEA, pregnenolone, etc. Topical formulations aside, most forms of androgen replacement involve modified forms of testosterone, such as the injectable esters, 17alpha-alkylated oral forms, the oral ester Andriol®, etc. There are several factors to consider in evaluating the equivalence of the various androgen therapies. Experiences with female hormone replacement and oral contraceptives have shown that non-bioidentical hormones have unintended health consequences in certain populations. However, these female hormone replacements involve changes to the estrogen or progesterone to make them orally bioavailable.

Nandrolone (Deca) is an altered androgen, so it is slightly different from testosterone in how it affects the body, especially non-muscle tissue, such as the brain, prostate, etc. The dose you have been prescribed, 100 mg/week, is relatively moderate and should balance well with the testosterone cypionate. Your total weekly androgen load of 200 mg/week of the esters is higher than many would prescribe, as treatment guidelines are quite conservative; however, it may very well remain within the physiologic range, albeit on the higher end. Some individuals are particularly sensitive to anabolic steroids, so it is possible that the testosterone/nandrolone combination you are being treated with is responsible for the outbreak.

The biggest differences between testosterone as an



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injectable ester and natural (endogenous) testosterone are the 'pattern' and the balance with the related molecule epitestosterone. Let's deal with pattern first. Natural testosterone production and release is pulsatile, meaning it is released in 'spurts.' If you drew a graph of circulating (blood) testosterone concentration throughout the day, it would have around 6 to 10 peaks that drop off fairly quickly, bouncing back up with the next peak or 'spurt.'

Long-acting esters like cypionate have one slow peak that goes up over a day or two and slowly drops, taking 7 to 10 days to reach the starting point or trough. It is unclear as to whether the pulsatile pattern offers any benefit to muscle growth or other androgen-dependent organs/tissues. Obviously, the injectable esters work well for bodybuilders and athletes for building muscle, though the onset of side effects is frequent among users. A short-acting nasal spray (Nasobol®) is in development that would more closely mimic the natural pulsatile pattern, but the amount of testosterone that can be delivered by that route is limited. Clinical trials suggest that Nasobol® may be effective for supplementing or replacing testosterone in hypogonadal men (men with low testosterone).

Epitestosterone is widely considered to be an inactive form of testosterone. It has been referred to as a failed product of the natural testosterone-producing pathway, but it is very short-sighted to think of epitestosterone in that regard. The body produces nearly as much epitestosterone as it does testosterone. If epitestosterone was just a waste product, that would be very inefficient and the body did not develop with such a high degree of waste.

Half of the circulating epitestosterone concentration is produced by the testes, but other sites of production account for the remaining 50 percent. When the testes are suppressed (stop functioning) due to age, testosterone replacement therapy, anabolic steroid use, or other reasons, roughly half of the epitestosterone production drops as well. If testosterone (or anabolic steroid) concentrations are then replaced by the drugs which do not

include an epitestosterone component (with the exception of doping formulas such as 'the cream'), then there is an imbalance between the androgen-stimulation and the anti-androgen effect of epitestosterone. The results of this imbalance may include hair loss, acne, and possibly mood changes.

As with most drug therapies, the degree of sophistication has not yet been reached to perfectly mimic the natural events.

You mentioned noticing the acne after starting hCG. The use of hCG in conjunction with (at the same time) testosterone or other anabolic steroids is fairly recent. Prior to the mid-'80s, most bodybuilders (the most obvious 'test' group) did not use hCG until they had completed an anabolic steroid cycle. The purpose of hCG was to stimulate natural testosterone production after a prolonged period of testes suppression and atrophy (shrinkage). Bodybuilders believe the use of hCG accelerates natural testosterone recovery, minimizing the risk of muscle loss, depression, etc. Anabolic steroid cycles have become more aggressive and prolonged to meet the demands of black market consumers.

It is not uncommon for many anabolic steroid users to find that 'standard' hCG treatment does not adequately stimulate the testes to recover from cycles that may extend over a year or longer, with weekly exposure surpassing 2,000 mg testosterone equivalent per week. To avoid complete or irreversible testes atrophy, many extreme anabolic steroid users are using hCG during a cycle. The result is not long-term recovery, but maintaining limited testes function during a long-term cycle so that it can respond more vigorously to post-cycle recovery.

Most look at hCG as a benign drug, but it carries the risk of side effects, just like every drug. Among the more commonly experienced by males is acne. Given that your outbreak occurred after you started hCG and did not arise earlier when you were using the testosterone cypionate and nandrolone decanoate, the logical conclusion is that the hCG tipped the scales. Remember, acne occurs in many anabolic steroid users, even at replacement dosing. You should discuss this

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with the physician who prescribed the hCG to you and let him/her know of your concerns. It would seem prudent to discontinue the hCG and continue to treat the areas affected by the acne

with a benzoyl peroxide-containing soap or cleanser. If the condition does not clear in a matter of two to three weeks, notify your physician or request a consult with a dermatologist.

I managed to get some insulin to add to my stack. I know a couple guys who used it and they put on 20 pounds in about six weeks. They weren't real clear about how to use it and my girlfriend who is in nursing school said people can go into a coma if they don't use insulin right. How do I use this stuff?

The right answer is: you don't. There is not a single physician who can ethically offer to prescribe insulin in any form for the purpose of performance-enhancement or building muscle. Your girlfriend is correct, but does not fully state the dangers involved with the misuse or abuse of insulin. Incorrectly dosed, insulin can drop blood sugar (glucose) levels so low that the brain is unable to compete with the rest of the body for the sugar it needs to supply its energy needs.

The condition of hypoglycemia (low blood sugar) is similar to the problems 'normal' people have when they experience 'low blood sugar' either after a heavy meal or a long period without food; irritability, confusion, impaired ability to perform calculations or make decisions, etc. However, in the case of an insulin 'overdose,' the brain can shut down until only the most basic life support functions are maintained (breathing, heartbeat). In the most severe cases, even these most basic and vital functions fail and death can occur.

Every year, diabetics are admitted through the emergency room, due to insulin dosing errors. Deaths have been thankfully rare. Insulin has even been used as a murder weapon or as a means of committing suicide.

You do not want to mess around with insulin. Why then do some people use insulin? Insulin is an incredibly potent anabolic, though it is not [*relatively*] specific to muscle as anabolic steroids. Though its net effect is anabolic, in muscle, it functions more as an anti-catabolic. Athletes, especially endurance athletes, consume a considerable portion of carbohydrates after training. This serves two functions: it replenishes glycogen (a stored source of sugar in the muscle), and stimulates an insulin spike, which also stops the breakdown of contractile proteins in

muscle, as well as any remaining glycogen.

Power athletes, including sprinters, began using insulin to maximize the anabolic effect of training by blocking the breakdown of contractile protein in muscle. Power training does utilize muscle and liver glycogen, but rarely depletes it in an athlete who is not on a carbohydrate-deficient diet. So, the sole purpose of using insulin in this setting, which closely resembles hypertrophy-based weight training, is to promote muscle anabolism by minimizing the exercise-induced catabolism.

Athletes have learned that insulin has to be carefully dosed and timed with the ingestion of carbohydrates. Also, the form of insulin chosen needs to be selected judiciously as some are slow-releasing, which does not provide the profile desired by athlete-users; others are very rapid, some are blends. Anecdotal reports suggest that even athletes willing to embrace high-risk behavior are very cautious when beginning insulin use. William Llewellyn reports that 10 IU of short-acting insulin is the most common dose used immediately post-workout; many start at 2 IU and work up slowly.

Those looking to use insulin to improve the physique need to be aware that insulin also promotes fat storage. A hypoglycemic episode can come on quickly; automobile accidents have occurred in diabetics following their usual prescribed dose. Another risk comes from the method of administration. Even though insulin is injected just under the skin, it can still introduce bacteria and establish an abscess. In short, those who do not have training or a significant experience base must not use insulin. The risks are high and may be life-threatening. ■

Busted!

Legal Q&A

By Rick Collins, JD

Stop Me Before I Jump!



Q: I heard you on Rehan Jalali's radio show talking about skydiving. How does the government decide which dangerous or unhealthy things are allowed and which are banned or criminalized?

A: I was on Rehan's show with Chris Bell, David Dearth and Millard Baker (at <http://www.kfwb.com/pages/3909928.php>; you can listen to the 5-10-09 podcast) and we discussed the comparative risks of taking steroids versus other potentially unsafe activities. You're allowed to pickle your liver with gallons of Scotch and can puff away on cigarettes until your lungs are full of cancer, but you will get slapped with a felony in many states for unlawfully possessing even a single tablet of an anabolic steroid.

The underlying theory of modern controlled substance policy is that the harms associated with abuse are so extreme that they outweigh your right as an adult to choose what to do with your own body. The harms are both societal (such as violent crimes by junkies) and individual (such as the risk of physical and psychological dependency). The theory seems reasonable as to narcotics like crack and heroin, but is more questionable when it comes to substance use that isn't linked to widespread patterns of violent crime or social decay.

When applied to dietary supplements, prohibition seems an even more shaky policy. And yet, for exam-

ple, the government prevents you from buying ephedra as a dietary supplement under the theory that it presents a significant or unreasonable risk of illness or injury. Supplement prohibition, like all prohibition laws, is essentially founded on the 'risk-control' premise that 'Big Brother' knows what's best and will protect you from your own reckless choices. More popular sports nutrition supplement products will likely be pulled from the shelves in the coming months.

In any event, regarding skydiving, I recently celebrated a big birthday and was seeking a test to challenge myself in order to develop greater courage— a self-improvement technique featured in my soon-to-be-released fitness book, *Alpha Male Challenge* (Rodale, www.alphamalechallenge.com). I decided that on August 23, 2009 at high noon, I'm going to climb to 13,500 feet in an airplane and jump, betting that the parachute opens and that I land safely in the target area and not in a tree, power lines or the middle of a highway.

Hmmm, I can't help but wonder: will anyone try to save me from my folly? If the government's objective is to shield people from the risk of hurting themselves, what will the police do about this, or the legislators? Will Congress convene emergency hearings on the subject? Or call an immediate vote to enact a law to stop me and others from doing it? By what reasoning does the law permit me to do this if I am prohibited from assuming

what appear to be *lesser* risks? Isn't there a puzzling arbitrariness as to which risks are forbidden?

Anyway, having committed myself to the jump, I also saw an opportunity to do something truly good for a whole lot of people far braver than I am. I've had two amazing friends stricken with cancer; one lost his battle with it and the other appears at this very moment to have beaten it. Just like me, sooner or later, many of you will have a loved one who is battling cancer of some type. I am certain that facing and fighting a cancer diagnosis takes far more courage than skydiving. So, here's my thinking: if I'm going to jump anyway, why not call attention to the free exercise of personal liberties AND support a cause I believe in? I'm calling my jump 'Leap for Life' and every tax-deductible dollar raised will go directly to the American Cancer Society through a special web page they have created for me. You can access it through www.rickcollins.com (just click on the 'Leap for Life' link). Please— even a small contribution will help! Then, check out an upcoming MD column where I'll tell you all about it, or friend me up on MySpace or Facebook to see just how safe— or unsafe— skydiving is. Hope to see you soon! ■

Rick Collins, JD, CSCS

[www.rickcollins.com] is the lawyer who members of the bodybuilding community and nutritional supplement industry turn to when they need legal help or representation. [©Rick Collins, 2009. All rights reserved. For informational purposes only, not to be construed as legal or medical advice.]

ILLUSTRATION BY LYMAN DALLY

FEMALE MUSCLE COMMUNITY WOMEN'S BODYBUILDING

By Cheri Owen, B.S., J.D.



COMING OF AGE: The Ms. Olympia Past, Present, and Future



Now that it is 25+ years ago, people are often nostalgic for the 1980s as a golden era for women's sports. Olympic long-distance swimmer Janet Evans and tennis greats Chris Evert, Steffi Graf, and Martina Navratilova were the stuff of legend—women who made little girls want to play sports rather than Barbies, women who captured the public's imagination, offering a vision of strength and athleticism, rather than cuteness and dimples, if given an equal opportunity to succeed. Though Title IX was passed in 1972, which offered equality to women in high school and college athletics, it took until the 1980s to really get women's sports going. The first NCAA Women's College Basketball tournament didn't happen until 1982, and Mary Lou Retton was the first woman athlete to land on the Wheaties box for her 1984 gold medal in gymnastics. Luckily, the IFBB was a bit ahead of the curve, crowning its first-ever Ms. Olympia, **Rachel McLish**, in 1980.

From 1980 through 1999, Ms. Olympia had its own

forum, with its own distinct contest—separate from the men. McLish ushered in a new feminine ideal; with long, lean muscle, women bodybuilders looked more like ultra-fit, Hollywood celebrities, rather than Gladiator-style athletes with bulk and pizzazz. In 1984, **Cory Everson**, a hot 24-year-old blonde, came along and beat out Ms. Olympia **Carla Dunlap**, the only competitor to compete during the 1970s, 1980s, and 1990s. Captivating the public, Everson went on to win Ms. Olympia six years in a row, and was even crowned fittest woman in Hollywood, beating out the likes of then-fitness-gurus Jane Fonda and Raquel Welch.

Also helping the women's game was the popularity of "Pumping Iron II: The Women," sequel to Arnold Schwarzenegger's film—a documentary that followed the training of champions McLish and newcomer **Bev Francis**, as she transitioned from powerhouse powerlifter into a sublime bodybuilder, before her retirement in 1991 as the runner-up Ms. Olympia. But if the 1980s were the initial

PHOTOS BY PER BERNAL

FEMALE MUSCLE COMMUNITY

glory years, how could the sport adapt in the 1990s, with an eye toward longevity?

In 1990, **Lenda Murray** inaugurated a new era of competition. She was a competitor of a different caliber; a cheerleader-turned-bodybuilder, who gave an extraordinary performance and whose physique set a new standard with her beautiful symmetry, clean lines, and chiseled, yet feminine look.

Genetically gifted, she brought much more muscle to the Olympia stage than either Everson or McLish, who dominated the 1980s with their celebrity status, and then retired from bodybuilding very young (30 and 26, respectively).

As the 'winningest' woman in the sport, from 1990-1995, and again from 2002-2003, Murray was an eight-time Ms. Olympia—tying Mr. Olympians' Ronnie Coleman and Lee Haney—until her retirement in 2004. A celebrity in her own right, Murray appeared in multiple mass-mar-



Iris Kyle

ket magazines such as *Sports Illustrated*, *Ebony* and *Vanity Fair*, and offered commentary on "ESPN." She and **Kim Chizevsky** (four-time Ms. Olympia, 1996-1999) made the '90s the era of big muscle. That is, until Chizevsky felt pressured into retirement, derided as 'ultra-masculine.' Although other competitors, such as **Shelley Beattie**, **Laura Creavalle**, **Sue Price**

and **Sandy Riddell**, among others, tried their hand onstage, Murray and Chizevsky dominated the '90s, with the complete possibilities of ultra-female muscle—completely unlike the '80s era. Lenda Murray's physique became the gold standard that everyone is judged against—a symmetrical V-taper with chiseled, defined muscularity on the surface, and an aura of strident, Amazonian womanliness—an ultra-woman at peak form.

But, what about the women of this decade who sought the Ms. Olympia crown? Hitting her stride in her early 40s, **Juliette Bergmann** won the 2001 Ms. Olympia, followed by Murray's comeback in 2002 and 2003. Then, in 2004 **Iris Kyle** took over the title. Other than **Yaxeni Oriquen's** 2005 win, Kyle has not been beaten since. There seem to be several athletes the past nine years at the top, chasing the title: **Lisa Aukland**, **Dayana Cadeau**, **Cathy LeFrancois**, **Betty Pariso**, **Bonnie Priest**, and **Betty**



Yaxeni

Viana-Adkins. The show is right around the corner and Iris Kyle will be looking for her fifth title. This past Arnold Classic, Kyle came in with a streamlined, more classic look, as did Cathy LeFrancois at the New York Pro. Both women came into their shows with beautiful symmetry, good conditioning, and a very feminine stage appearance. We shall see what the 2009 Ms. Olympia will bring in September.

Women bodybuilders are a work of art. As Lenda Murray states in her 12-step show preparation—it's really you, having the ability to pose as if you were a statue, without looking like one. Men can be labeled 'freaks,' 'freaky' and 'monsters' and that's cool, a compliment, really, as bodybuilding expects men to be crazy-masculine, ultra-muscular, ultra-vascular and just downright monstrous.



Cathy LeFrancois

But not so with the women. In women's bodybuilding, those words are taboo—to be labeled a 'freak' is an insult. But to say 'she's huge' or that a woman is 'chiseled like a piece of marble' is a compliment and meant as such. Women are like boulders of granite and they shape their physiques—not only bringing out the muscularity, but being able to sing a song with their bodies onstage. For women, their outer shell

still needs to convey their feminine inner beauty.

They say women are the stronger sex, and like a beautiful hymn, a woman onstage, flexing at the Ms. Olympia, should move you beyond mere entertainment. Her body is a masterwork of seduction, beauty, and feminine strength. Onstage, she should be able to mystify you, and make it seem that she is the only competitor in the auditorium. In bodybuilding today, there is nostalgia for the '80s and

'90s—and rightfully so! Female bodybuilding was fresh and new and had mainstream popularity. The world was *mesmerized*.

It has now been 29 years since the first Ms. Olympia and in September, another set of competitors will take the stage. Will professional female bodybuilding ever return to that earlier moment? The answer remains in the physiques of future Ms. Olympia competitors. ■



Dayana Cadeau

KAI GREENE *The Predator*

By Kai Greene

I just read an article that said you could put an inch on your arms in one day. They even took a national-level NPC guy through the workout, which was actually a series of workouts going from the morning into the afternoon, and he supposedly kept about a half-inch of the size he put on that day. Have you ever tried anything like this? Do you think it could work? I sure could use another inch on my arms!

don't train anything the day before, get a good night's sleep and plenty of food the night before, and also take a full day off of training the day after. This would give your arms the best chance to actually recover and grow. I would also give your arms at least a full week after that, before working them directly. I'd be curious to know if this works for you, so please write back a couple weeks afterward and let me know what type of results you got.

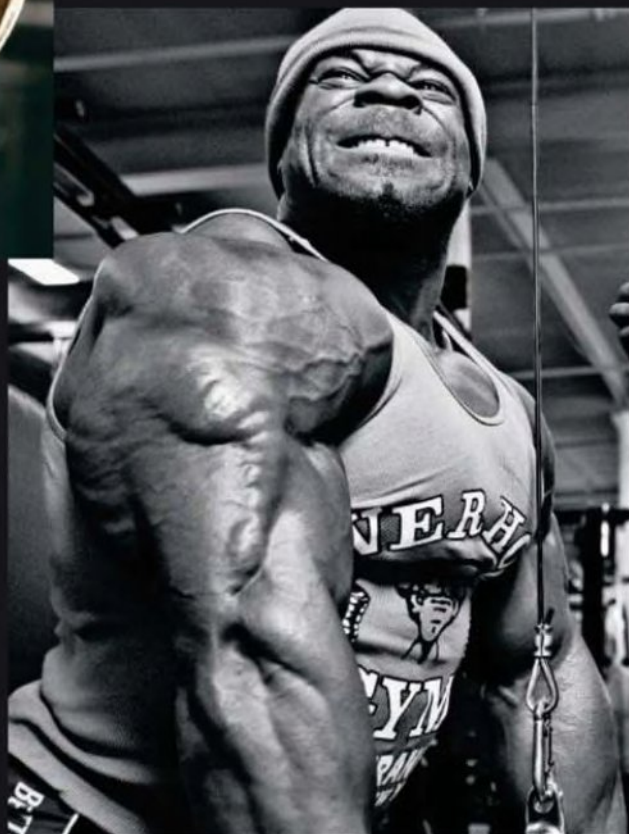
You eat a lot more than the average bodybuilder, and I know that played a big part in the gains you have made. So I wonder, do you sleep a lot more than the rest of us, on average? I once read that Flex Wheeler would sleep up to 16 hours a day in his later amateur years when he grew into a heavyweight. Do you sleep that much?

There was a time when I slept 10 or 12 hours a day, including a couple naps, but these days I average six to eight hours a night. I don't take naps anymore because eventually I realized they were seriously disrupting my sleep patterns. I would have trouble falling asleep at night, and that would cause me to wake up later than I should have the

I have never tried anything like that. Luckily, my arms have never been a lagging area, so I never had to contemplate anything so extreme. I do understand your interest, of course. Without being an exercise physiologist, I can at least say that a daylong blitz of arm training as you read about would definitely induce a great deal of swelling and inflammation. Whether or not any actual growth would occur is questionable.

If that article you read was factual and the bodybuilder kept a permanent half-inch from that day, I would have to say it appears to be effective, at least in his case. The issue I would be most concerned with is recovery. I'm sure even the article was responsible enough to say that you couldn't do something so demanding on any type of regular basis and continue to make progress. If that were true, all it would take is a couple months of these marathon arm sessions and every guy out there could have 30-inch pythons!

If you decide to try that program, I would be sure you



PHOTOGRAPHY BY PER BERNAL

next morning. That threw my whole schedule of meals and training off, so I stopped taking naps.

I have done well with the amount of sleep I have been getting. It's really an individual thing. Some people genuinely need nine or 10 hours of sleep a day to recover from workouts and have normal brain function. Others that I have heard of can get by on as little as three to four hours. I've heard that **Ronnie Coleman** has only been getting about six hours of sleep a night since before he even won his first Mr. Olympia, and it clearly didn't impede his muscle recovery and growth!

I train at a very 'mainstream' gym— I actually hesitate to even call it a gym. I won't say the name of the chain, but it rhymes with Janet Kittress. To say that they are not supportive of my goals to have a bodybuilder's physique and eventually do well at a local show would be an understatement. Most of the staff and members make fun of me for even wanting to be a bodybuilder.

I have been thinking about looking into training somewhere else, but I know I would have to spend more money and travel further to train at a decent gym where I might actually get some encouragement. Money is tight right now, but if I cut back on some other things, I could swing it. What would you do in my situation? Would you keep training at P.F. and ignore all the haters, or go somewhere else?

Ultimately, what gives the haters any power they have? The answer is, your reaction to them and your letting them get to you. Not many people know this, but for almost four years before I turned pro at the 2004 NPC Team Universe, I lived in Florida and trained at a very similar type of gym or rather, 'fitness center,' like the one you describe. They had plenty of shiny, state-of-the-art equipment, plush showers and saunas, and you were given a nice clean towel both before your workout to wipe your brow, and a big fluffy one at the end to use for your shower.

The members wore designer workout gear and had colorful water bottle holders to match. This was hardly the type of environment you would expect to see a guy aspiring to be a pro bodybuilder training at. At the time— and my coach Oscar still pokes fun at me for this— my workouts included a lot of very unconventional calisthenics, such as upside-down push-ups.

The trainers, in their Dockers and Polo shirts, would huddle in the corner and snicker as they stole glances at the 'crazy bodybuilder dude.' They never had the nerve to say anything to my face, but it was clear they found me quite amusing. I knew that, but I didn't care. I believed in myself and my goal, and I was committed to making it happen.

Finally, after I won my pro card, I heard from a lot of people offering congratulations. A couple of the trainers from that club in Florida were among them, and wouldn't you know? At least one that I recall asked me for some training advice! The point I'm trying to make is that a champion masters himself and his own thoughts,



and doesn't allow himself to become preoccupied with what others think about him.

Your belief in yourself is all that matters, and you must let that belief guide you. The people at your gym may be mocking you now, but chances are that eventually if you keep working hard toward your goals, they will come to respect you and possibly even start being somewhat supportive. And if they don't, sooner or later you will attract people who are. Trust me— I've been exactly where you are right now.

I have heard conflicting opinions about whether or not it's OK to eat fruit when you are dieting. Some people say no way, others say that there are a couple like apples and strawberries that are OK in moderation. Do you cut fruit completely out of your diet once you start your prep? Do you cut it out at some point closer to the

KAI GREENE—The Predator

show? Or do you keep some in? I hate to stop eating fruit completely because there are so many vitamins, minerals, and antioxidants in them and I'm not sure that getting those things in supplemental form would be as good.

In my amateur days, I ate quite a bit of fruit year-round. I simply considered it as a carbohydrate source like rice, oatmeal, or potatoes. What I didn't know was that fructose, the natural sugar found in fruit, is a simple sugar that the body treats pretty much the same way as candy. It raises insulin levels and makes fat loss far more difficult.

Jay Cutler, Welcome To My World!

Jay Cutler said the following about me on the "Pro Bodybuilding Weekly" radio show, regarding his belief that I represented his biggest threat in regaining his Mr. Olympia title this year:

"Who seriously can beat me at my own game? Last year, I didn't have anyone I could stand next to with that kind of muscle. Kai is the answer to my prayers pretty much. We all know that Phil Heath is not going to outmuscle me... Someone like Kai Greene stands next to me, and pound for pound, we have the most muscle out there in a shorter frame."

First of all, I have to say that it's wonderful to hear such a positive comment from a great champion like Jay, especially since I don't think he thought very much of me until probably the last year. More importantly, I want to say to Jay—Welcome To My World—and I'm glad you could join me! What I mean by that is that I learned long ago that I had to believe in my own abilities and that it was in the cards for me to be the best. You can't rely on outside encouragement, just as you can't allow negative comments or opinions to creep into your unconscious mind and sabotage your efforts toward achieving your goals. So while I appreciate any and all praise, I don't need it to do what I need to do.

New York Pro—As Always, A Great Show

I was grateful to be able to witness firsthand the amazing result that **Evan Centopani** and Oscar Ardon were able to achieve in the relatively short time they worked together. I saw them

One of the very first things that Oscar Ardon asked me years ago when we started working together and he reviewed my notes on my diet was, "How did you ever get in shape eating like this?" I cut way back on it, and my condition improved right away. Whether or not you need to completely eliminate all fruit to lose fat really depends on your metabolism. Some guys with very fast metabolisms can still eat moderate amounts of fruit and get into contest condition, but most people can't. If you want the various nutrients and so on that you feel you are missing out on, definitely look into getting those from supplemental sources.

back. His tribute to New York City, posing to the Frank Sinatra song of the same name, was a joy to behold.

Dennis James, Silvio, and Fakhri all looked very good. And also, my prophecy from a couple years back that **Kevin English** would soon be a

force to be reckoned with has come true. He's determined to be the best 202-pound bodybuilder in the world, and he's well on his way.

Special Thanks

As always, I like to end my column by giving thanks to the various people who have helped and supported me in so many different ways.

Thanks to Gerard Dente of MuscleMeds for his wonderful products.

Thanks to Steve Blechman and Steve Weinberger, and to the IFBB. Being a professional bodybuilder has given me the opportunity to travel to places I only dreamed of before, most recently England and Trinidad.

Thanks to Colette Nelson, Tony Doherty in Australia, the BodyPower group in England, and Mr. Lawrence in Trinidad.

I also want to extend my gratitude to Dean Tornabene for being so helpful, positive, and encouraging during my time out in Los Angeles. He was very generous with his time and energy and never once expected anything back. ■

Got a question for Kai Greene? You can ask him directly on the MD website and have Kai personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Spotlight, for Kai's Journal, Kick Ass Inc.



training on several occasions and I could see Evan change day by day, and I'm not just referring to his physique. Evan's win proved that Oscar's principles and his emphasis on the mental aspect of bodybuilding don't just work for me! Anyone who is able to humble himself and listen to what Oscar has to say can benefit.

Another high point of the show was watching the return of **Markus Ruhl**. I still remember being a teenager in the audience at this show years ago when this mountain of muscle from Germany we had never heard of caused such a sensation. And true to form, he didn't disappoint this time. The 'old' Markus, the Freakazoid, was

VICTOR MARTINEZ— **The True Victor**

By Victor Martinez



I'm 33, 6', weigh about 215 and want to compete in 2010 for the first time. I know at my size I need to put on a lot of mass and will be doing this naturally. I am looking to really hit the weights and eat clean. How basic should my workouts be and how often do I really need to mix it up? I will be doing all the compound movements and rep range from 12-6 upper body and 15-10 lower body. When it comes to changing a workout, what can I do which will not hinder my whole objective of gaining weight? I will only be doing cardio three times a week for 30 minutes and eating six times a day with only a pre-and post-shake. Any information will be helpful. Thank you very much and God bless you, brother.

People will tell you stuff like, 'Change your workouts every six weeks,' or even 'No two workouts should ever be the same.' You can't listen to any of those, because they

may or may not be true for you. It all comes down to how long a workout routine is still producing results for you.

Look at someone like **Ronnie Coleman**. Ronnie did pretty much the same exact workouts the whole time he was a pro, and he kept growing. The real key is to always keep the basics in there, because those are your best mass builders. For legs, you have to squat. Your chest will always need some type of barbell or dumbbell press, the back needs chins, barbell or dumbbell rows, and deadlifts—you get the point.

You can shift your routine around when you feel physically or mentally stale, but don't ever lose the basics as your core movements. If you do that, you won't be making anywhere near the type of gains you could be. Another reason to avoid changing all your exercises around real often is that you would never get a chance to really master any exercise. Something like the squat or deadlift takes a lot of

consistent practice to get down perfectly. Also, how would you know if you were getting stronger if you only do an exercise every few weeks? So change things around when you feel you need to, but keep the big basic lifts in there if you want to put on a ton of muscle mass.

I have been having knee pains the past 2 months. My form is perfect during legs, and my weights keep going up, but my knees are killing me lately. It's the worst if I have to sit for a long time and can't straighten out my legs. Would you recommend knee wraps?

I guess I am the resident athlete authority on knee problems, huh? I do think knee wraps are a good idea in general, but let me say a few other things.

First, you really need to devote enough time to warming up the knees on leg day. Ride the bike for at least five or six minutes to get the blood moving and the body temperature up, then do three or four sets of light leg extensions for 15-20 reps. Stretch out your quads (slowly!) between each set, because a lot of the tendons and ligaments around your knees are also attached to the quads. Then once you get into your heavy movements like the squat, always pyramid up in weight as the sets go on. You never want to start off heavy right away. Then you can use your knee wraps.

As soon as you get home, throw an ice pack on your knees for 15-20 minutes, and repeat that a few hours later. If you are still experiencing pain, you need to go get an MRI. There is always the chance that something is partially torn in there already and hanging by a thread. That's how my knee was for years before it finally went. Luckily for me it didn't happen in the middle of a set with 500 pounds on my back, but you might not be so lucky.

PHOTOGRAPHY BY PER BERNAL

Don't do what a lot of guys do and just keep taking ibuprofen or other things that will only mask the pain. That's the worst thing you can do, because you could be doing more damage to your knees during the workout and not even know it. Good luck!

I need your help. First, I'd like to say that you are one, if not the best, in the biz right now and I hold great respect for you. I'm 30, 5'2" and 185 pounds. I work a security job that requires me to sit on my butt for 40 hours a week. I work out four to five days a week. I do 20 minutes of cardio/abs each workout day and I break up body parts. Arms on day one, chest on day two, back and shoulders on days three and four, and then legs on the fifth day. I take Saturday and Sunday off and sometimes Wednesday if I feel tired.

I eat a basic diet with protein before and after training. I cannot lose any weight. Now since I work the midnight shift, I get only 4 hours of sleep when I get home at 8 a.m., then a nap later in the day for 2-3 hours before work. Is my sleeping pattern stopping my progress?

Lucky for you, I do have some personal experience with the late shift. Back in my younger days, I worked some odd jobs like security and bouncing at nightclubs— which stay open a lot later in New York than in most places. My typical shift back then was 11 p.m. to 7 a.m., and I adapted my meal schedule around that. I would eat my last meal of the 'day' at 5 or 6 in the morning, leave work at 7, and be in bed by 7:30. I would wake up at 2 p.m. and have breakfast, and then I ate every two to three hours.

I found that working a job like security actually made it easier to get all my meals in on time. There was nobody around and not much to do most of the time. I think it's tougher with other kind of jobs where you're running around all day and things can keep popping up to screw with your



eating when you're supposed to. I actually got ready for the first two shows I ever won Overalls at, the 1997 NPC Metropolitan and the Suburban Classic, working that graveyard shift.

But enough about me, right? Here's what you need to do. I don't really know what you mean by a 'basic' diet. You need a strict diet to take off the fat you can't seem to lose. Go to the MD website and you will find tons of info in the part of the Supplementation and Nutrition forums called 'Fat Loss Fanatics.'

You probably need more cardio, too. Twenty minutes (and I'm not even sure you're doing that much, or if that includes your ab routine too?) isn't gonna cut it. You probably need at least 45 minutes a day, 5-6 days a week, to see real fat loss. And finally, yes, I do think your sleep pattern has something to do with all this. You are averaging six or seven hours a day, and that's not enough. When you don't get enough rest, your body produces more of the catabolic hormone cortisol. That hormone causes your body to lose muscle and store fat. Bad news!

My chest has always been pretty flat compared to my shoulders and arms. What about doing chest twice a week? Could that be what I need? What types of workouts and sets should I be doing?

Working chest twice a week could help you bring it up, but not if you just do the same routine twice. First of all, not many people would be able to recover and grow from two heavy chest workouts in one week. You should do one heavy workout and one that's lighter and more focused on squeezing the pecs and getting a good pump. Here's an example of something you can try:

Workout One: Heavy

Barbell bench presses	3 x 8-10
Incline dumbbell flies	3 x 10
Incline barbell presses	3 x 8-10

Workout Two: Moderate

Flat machine presses	3 x 12
Incline dumbbell presses	3 x 12
Pec flye machine	3 x 12

Note: use a more explosive rep speed on the heavy day, but still control the negative. On the moderate day, do your reps more slowly and work on perfect form and muscle contractions.

You'll also notice that the volume isn't too high (the sets listed don't include any warm-ups). You can't go doing 20 sets for chest twice a week and expect any growth. That's just going to over-train your pecs.

Victor Martinez—The True Victor



I think you are a great poser. How you hit the poses and the way you move from one pose to the other is just amazing. I loved your posing at the Arnold. But I think you could do the front lat spread much better. I think you should bring your shoulders back more and not flex the pecs so much. This way you would look even wider. What do you think? I'm sure you are gonna rock at the Olympia. I just can't wait for it.

I appreciate your support very much, as well as your concern about my front lat spread. I have worked hard over the years to tweak all the mandatories to best suit my physique. It might look to you like I'm flexing my pecs too much, but that's just the way they look because they are pretty thick. If you can go back and find any pictures of Arnold doing the same pose, you'll notice the same thing. That wasn't a very

good pose for him, so you won't see too many photos of his front lat spread.

If I did what you suggest and bring my shoulders back, basically pinching my shoulder blades together a little bit, I would actually look more narrow and my lats would not be as visible from the front as they are. I've tried it that way, trust me. But again, thanks for being a fan and I will do my best at the Olympia!

The MD Block Party— Look What I Get For Showing Up Late!

I headed down to the MD Block Party at Strong and Shapely Gym and got there at about 3:30 in the afternoon. There were tons of people there, most of whom I know from the local New York City and New Jersey bodybuilding scene. It looked like everyone was having a great time—and they all looked full! That's because they had been chowing down on turkey burgers and turkey hot dogs for the past couple hours. In fact, by the time I got there, the



food was all gone. It's pretty tough to have a cookout and make sure you have enough grub for bodybuilders, because a lot of guys will eat 'til they're ready to give birth— especially if it's their off-season or if they don't compete. But it was still cool to see Steve Blechman, **Lee Priest**, and everybody else there including my number one fans from the MD site,

JuicyGlamGirl and FitAdina. I couldn't stay too long because I was doing a seminar at 4:30 at Star Fitness in the Bronx with my trainer, Victor Munoz.

Next year, I better show up a little earlier before all the hungry meatheads inhale all the damn food!

Great Job, Evan!

Congratulations to **Evan** on winning his first pro show.

That's a pretty big deal— wish I could say I had! But on the other hand, when you don't do as well your first time out, it also lights a fire under your ass and makes you that much hungrier for next time. I wish I had seen more of the night show, but I was out in the lobby with fans, talking and taking pictures. By the time I got inside, they were giving out the awards. That's the trade-off you have when you get a little notoriety in this business. But without your fans, you don't have a career. So I'm not crying over missing the show.

Congrats to Jon Delarosa

A couple months back I mentioned that I was helping a young Dominican guy named Jon DeLarosa a little bit with his contest prep. If you read the MD site, you know he won the Overall at Bev and Steve's Atlantic States show. I want to congratulate him and also to let everybody know that he trained and dieted his butt off. I was very hesitant in the first place to even say anything about helping him, because a lot of times ignorant people think that's why he won. "Oh no wonder he won, he had Victor Martinez helping him."

Jon did all the work. I just gave him my input and advice when he asked for it. I like helping hungry young guys with good potential, and Jon could be very good. He's a work in progress and he gets better all the time. Depending on how long it takes him to get to the pros and how long I keep doing this, we may even compete against each other someday. You never know! ■

Got a question for Victor Martinez? You can ask him directly on the MD website and have Victor personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Spotlight, for Victor's Journal.

BRANCH WARREN—THE TEXAS TITAN MASS *with* CLASS

By Branch Warren

I am trying to gain weight, but have been stuck at a plateau for about six months. No matter how much more I eat, how much more I train (even training *less* so I am not overtraining), I cannot gain weight. I am taking in about 250 grams of protein per day (if not more) from whole food sources and about 300 grams of carbs. Should I up my carbs, and if so, with what and by how much?

You didn't say how much you weigh. If you weigh about 170, then 250 grams of protein represents 1.5 grams per pound of bodyweight, which is about ideal for most bodybuilders. If you are much heavier than that, you aren't getting enough. There are no rules for amounts of carbs, but generally when you are trying to gain, you want twice as many carbs as protein, or in your case, 500 grams. You also need healthy fats to grow, and you should be getting those from red meat, whole eggs, salmon, nuts, and flaxseed oil. Don't be afraid to eat fattier meat sources like chicken thighs, and lean cuts of pork like chops. Add some more carbs from whole-wheat pasta, oatmeal, rice, and sweet potatoes. Needless to say, you should be trying to eat every 2-3 hours.

You didn't tell me anything about your training. Are you focusing on big, multi-joint movements like squats, bench presses, deadlifts, barbell rows, dips and military presses? You have to move heavy free weights and really challenge yourself to keep getting stronger, training in the 6-10 rep range for upper body, and 10-20 rep range for the lower body.

If you aren't busting your ass in the gym with the toughest exercises and feeding your body as much quality food as it needs, you can't grow.



What changes did you make in your training or nutrition that allowed you to keep cardio to a minimum and carbs still fairly high? I mean, you were a 'shredder' and you did way less cardio and ate more carbs than usual? How did you manage that?

I worked with George Farah, and it really boiled down to me going back to doing things the way I used to back in my amateur days. I kept my carbs high, my protein high of course, and my fats low. It's all about doing what works for you. I got in such good shape following my 'old-school' diet that in the last



PHOTOGRAPHY BY PER BERNAL

BRANCH WARREN—THE TEXAS TITAN

month I was never doing more than 30 minutes of cardio a day. There have been several contest preps in recent years when I was doing upward of 2 freaking hours of cardio a day. Never again!

When you first started weightlifting/bodybuilding, when did you see results of your hard work in the gym and your nutrition?

I began to see results almost immediately. I was very fortunate to start out with the right program from day one. There were older lifters around me who saw how hard I was trying, and wanted me to get the best results possible. Also, I have to give some credit to my genetics. When someone has above-average genetics for bodybuilding, as I and all the other pros do, it doesn't take more than a year of hard training before you start to see some fairly noticeable changes.

Don't let that discourage you, though. Just because it may take you longer, that doesn't mean you can't build an impressive physique, too. Keep working hard in the gym, get plenty of good food and rest, and you will grow slowly but surely.



Where the Buffalo Roam—I Hunt!

I just got back from a week in Wyoming, hunting buffalo for the first episode of my as-of-yet-untitled hunting show that will be airing on the Pursuit Channel on DISH Network. We went out to a 575,000-acre cattle ranch where the owner also allows hunting with special permission. This was the most beautiful place I've ever seen. In addition to buffalo I saw plenty of elk, mule deer, white-tailed deer, and coyotes. You really felt like you were in the 'old West.'



This ranch was right where the prairie meets the mountains, so it had quite a bit of both types of terrain. I was thinking it would be cool to hunt buffalo with a spear or a bow and arrow like the Indians used to, but our guide said that was a myth. These beasts are so big and ornery that a spear or an arrow would just piss them off—unless you lucked out and hit just the right spot, the first time.

The Indians used to run buffalo off cliffs. The guide said a man he brought out the week before had to shoot this one buffalo a total of nine times and chase it for four miles before it finally laid down and died. I used a Winchester Magnum rifle and shot a big old one that was a little shy of a ton, at 1,900 pounds. I didn't dare shoot more than one, because we had to haul the damn thing all the way back to the truck. Even after skinning, gutting, and dressing the carcass, it was still a lot. I wound up with 800 pounds of meat, which is now sitting in a giant meat locker I have in my garage. That ought to be enough to last me until the Olympia!

The only part of the hunt that sucked was that the weather changed on us overnight. One day it was 65 and sunny, the next day it went down to 38 degrees of wind and freezing rain. All I brought was a light jacket. Then, on the way back to the cabin with the buffalo meat, the truck blew out a tire. The road was so muddy that every time we tried to jack up the truck, the jack would just sink deep into the mud. We fixed that by putting a flat rock under it, but then the wind was howling so hard, it literally kept blowing the truck off the jack before we could change the tire. My buddy Butch and me wound up holding the bumper up while the guide put the spare on. We didn't get any of that on camera, which is probably for the best. I was cussing quite a bit!

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BRANCH WARREN— THE TEXAS TITAN

Since you're the 'Texas Titan,' I was wondering if I could get some insight on your great state. I may be moving to Lubbock and I'd like to know if those Texas stereotypes— hunting, conservative, hell-raiser—are true. If so, that sounds like my state.

I grew up not far from there, and I can confirm that all those stereotypes are accurate. We love to hunt in Texas, our political views tend to lean toward being pretty conservative, and we believe in strong Christian values. As for hell-raising, young people anywhere you go in the USA would probably fit that bill. I don't think there is any particular part of the country that has a monopoly on partying. If that's your scene, you will be able to find it just about anywhere.

I was thinking about doing deadlifts on their own day. What other body part I should train them with?

I was doing them for a long time with shoulders, until I tore my triceps and couldn't go so heavy anymore. Now I just do them with back. If you do them on another day, that could be with chest or shoulders. I would advise against deadlifting on leg day. You're already squatting (at least you should be!), and that's a hell of a beating to put on your lower back in one workout.

I also don't think you should do deadlifts after biceps. You need the bi's to be fresh for deads or else they will definitely turn into a 'weak link' in the chain and severely screw up your deadlifts. If you really want to specialize on deadlifts, you could do them on their own day for about 8-10 work sets. A split like this could work:

Sunday:	OFF
Monday:	Deadlifts and calves
Tuesday:	Shoulders and triceps
Wednesday:	OFF
Thursday:	Back
Friday:	Legs
Saturday:	Chest and biceps

Great Job, Evan!

As one New York Pro winner to another, congratulations to **Evan Centopani**. Winning your first pro show is huge, and I wish I could say I was in that club. But not doing so well my first time out (eighth place) was just what I needed to force me to work even harder and redeem myself soon after. The following year, I won two shows and placed eighth at my first Mr. Olympia.



This year's New York Pro was a good show, but aside from Evan, nobody in the open class really brought the condition 100 percent. I would have loved to see the 202 winner, **Kevin English**, go up against Evan the way he was allowed to compete last year against **Kai**, as well as winning the 202s. I'm not saying Kevin would have beaten him, I just love to see a good battle and I think English would have given him one. I was a little disappointed to see **Dave Henry** blow an opportunity by taking third in New York. In my mind, he's the best 202-pound bodybuilder in the world today. For him to come in a little 'off' and get beaten by both Kevin and **Mark Dugdale** didn't look very good. Fans are fickle in this sport, and you're only as good as your last show. ■

Got a question for Branch Warren? You can ask him directly on the MD website and have Branch personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Staff and Pros, Q and A for Branch Warren.

DENNIS WOLF— THE PEOPLE'S CHOICE

TheBigBadWOLF

By Dennis Wolf



I Really Don't KNEED This Right Now!

You probably didn't know that I got hurt again, because I kept it a secret. The only people who knew about my recent injury were **Dorian Yates, Dennis James**, and my training partner. It happened to me the first Saturday in May while I was guest posing along with just about every other top pro in the IFBB at Jim Manion's contest in Pittsburgh. With all those guys, there was a lot of posing oil dripping all over the place! I was going down from the stage to go out in the crowd, and I slipped and fell down three or four steps. I didn't feel pain then, but by the time I got back to Germany my knee was swollen and hurting.

You can imagine how I panicked. After the hernia, now this? I saw my doctor and at first he couldn't tell what was wrong. Two weeks later I went again and he was able to see that I had a big inflammation on the back of my patella. For about three more weeks, I couldn't train legs very hard, but now I am fine. My only regret is that I had to miss a guest posing appearance at a contest and expo in Birmingham, England that Dorian was helping to promote. Sorry to him and my fans in England, but I promise I will get over there soon!

Ruuuuuhl! Does Markus Have Something Against Me?

I was happy to see that **Markus Ruhl** did pretty well at the New York Pro. He was not at his best, though. I think he was amazing in 2004 when he took fifth place at the Mr. Olympia. This was still much better than the last couple times he competed though, for sure. Someone told me they read that Markus said something not very nice about me— that I would never amount to much and would never be Mr. Olympia. I don't know if he really did say those things or not. If he did, it makes me a little sad because I have always looked up to Markus and have never said anything mean about him. If Markus really has something against me, which I hope he doesn't, I don't know why he feels that way.

PHOTOGRAPHY BY PER BERNAL

I have very small joints, which people tell me is a great thing for bodybuilding. For example, my arms are only 16 inches, but people always guess they are at least 18, because of my small elbows and wrists. The bad thing is that any time I train chest or shoulders heavily, my elbows and sometimes my wrists also really hurt, and they stay hurt for a couple days. You also seem to have pretty small joints, so I am wondering if you have to deal with this, too? What do you suggest?

I think smaller joints always look good for a bodybuilder because like you say, they make the muscles look a lot bigger. Think about someone like **Flex Wheeler** and the way his muscles looked so full and round coming off his tiny joints. But you are correct—the trouble is that heavy weights take a tougher toll on small joints. We can build muscles that are big and strong enough to handle a lot of weight, but our joints are never really able to cope the same way.

You can try supplementing with a good joint-support product that has things like glucosamine, chondroitin, MSM, and shark cartilage. That's what I do when I start feeling pain in the joints. You can also use wraps and supports for the wrists, elbows and knees. Tight neoprene sleeves are very good for the elbows. They give them support and also keep heat in the area. But try to look on the good side. A guy with huge joints will never be able to make a very impressive physique, but you can!

I was reading over your training split in the newest MD magazine. It looks like you train twice a day most of the time. I was wondering, do you use that split pre-contest? I was thinking of training twice a day but I wasn't sure if that is too much for pre-contest, since I usually have less energy when I am dieting.



Yes, that is the split I follow for most of my contest preparation. I like to concentrate on just one muscle group in a workout so I can put all my energy into it. I always feel that when you do two muscle groups, the second one never gets done as well as it could have been. This is especially true when you train heavy and very intensely, like I

do. Training twice a day works very well for me, but I am a professional athlete with sponsors and I can do things like take naps in between if I am tired. I know most people can't do that.

If you are able to train on a double-split workout routine, I highly recommend it. If you can't, just do the best you can with one longer workout. One thing I can suggest is that if you have less energy because of your contest diet, you should cut down the overall training volume by about 20-30 percent. You are really just trying to maintain your muscle mass at that point anyway, so it makes sense to conserve your energy so you don't get overtrained and lose muscle tissue.



DENNIS WOLF—The People's Choice

What tanning products, other than the Pro Tan onstage, do you use for photo shoots and stuff like that? Or if you are filming in black and white, do you not even bother to put any color on?

I always use Pro Tan products (and they don't sponsor me, by the way). I don't need to put any color on most of the time for photo shoots because it's right after the show and I still have the tanning stuff in my skin. But they also make a bronzer you can use for something like this. And just to make it clear, you still need to have good color even when you shoot the pictures in black and white. It does make a difference and helps bring out many more details. Very light skin like mine, without artificial tanning products, reflects the light too much.

Was your hernia a standard hernia or inguinal hernia? I just had double-hernia surgery last week and was wondering how long you waited till you started lifting again and how you went about it?

I had two hernias: one that everybody could see and one that was higher up in the abdominal wall. During my operation, they put a net inside to close all the hernias for good. After six weeks, I started lifting again but I was scared to do anything heavy. It took me another four weeks before I felt the confidence again to do the heavy weights. But that was probably a very good thing, because you should always get back into training very gradually and be careful after any type of injury or surgery.

Do you use fat-burners like Lipo 6 year-round, and do you think it's OK to do that? I do, and the reason I use them in the off-season is so that I can get away with eating more junk and doing less cardio yet still keep my body fat under control. Then, when it's time to diet down, I use them to help me get shredded. What do you think of that strategy?

Lipo 6 is a very good product, but I don't think it would be good for you to use it for a very long time with no breaks. I think you should try to get your body fat under

control without a fat burner, and then use it to get you to the next level of being very lean. I know it's not easy for you because it sounds like you really enjoy junk food, but you need to try and have some discipline.

If you can have the discipline and willpower to go to the gym every day and train hard, you should be able to get your bad eating under control, too. As for cardio, it's good for your heart and lungs, so you should be doing some all the time. I would suggest cycling on and off the Lipo 6 or any fat-burner, like maybe four weeks on and four weeks off. But even

then, you shouldn't be trying to have the fat-burner taking the place of a clean diet and cardio. I don't know of anything you can take that will allow you to get ripped if you are still eating lots of junk and avoiding cardio!

Have you tried training in the FST-7 style yet? If not, do you think it makes sense to do normal heavy sets but always end with something that gives you a super pump? Many Rambod believes that the pump is necessary to stretch out the muscle fascia and allow it to grow—do you share this belief?

I have never tried FST-7, but I sure have been hearing a lot about it lately. I think the idea makes sense and obviously a lot of bodybuilders are seeing good results using it. If you are looking for

something to help you grow, you should try it. For me, I still get very good results from my normal training program, so I don't want to try anything else. Like you Americans say, "If it ain't broke, don't fix it." But if I ever hit a sticking point and I am trying to find something new to maybe help me get past it, I might do FST-7. I keep an open mind with these things because that's the only way you can ever find new methods that can work great for you. ■

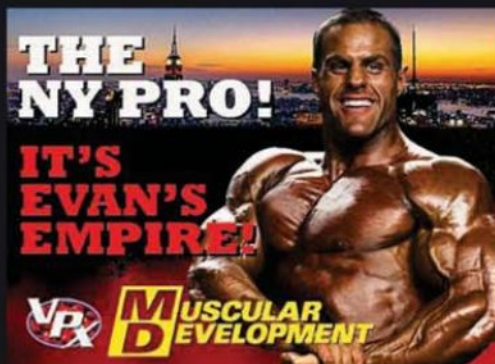
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MARK ALVISI

MARK of a CHAMPION

By Mark Alvise



Evan's Win: Couldn't Have Happened To A Nicer Guy

Congratulations to **Evan Centopani** on winning his pro debut and also for making the cover of MD again! Evan is just a humble, nice dude who doesn't bad-mouth anyone or brag about how great he'll be at this or that show. He just lets his physique do the talking, which is what I prefer to do, too. After the Nationals, he knew exactly what he needed to do before he competed as a pro—and he did it. Evan's legs were not great, which you see fairly often with taller guys, but he busted his ass and filled out his quads and hams a lot. And in New York, he earned his win up against some real veterans like **Dennis James**, **Markus Ruhl**, **Silvio Samuel**, and



Darrem Charles. It must have been weird standing up there with guys he was reading about in the magazines years ago. I know it will freak me out when I get there someday soon. I give the guy props for winning his first time out. Only guys like **Flex Wheeler** and **Phil Heath** have done that—so props to Evan!

Can't Leave Out Kevin!

I also want to congratulate **Kevin English** for handling the 202s once again in NYC. He had to get past the reigning 202 Olympia champ **Dave Henry** once again to do that, which is not easy. Kevin and I are both coached by Hany Rambod, so I know exactly what he went through to get in shape—suffering! It will be interesting to see if Kevin can beat Henry again in Las Vegas. I wouldn't bet against it.

6 Weeks To Go Until The USA

I think the USA may already be over by the time you read this, but as I write this it's still six weeks away. I am in so much better condition now than I was at this point last year. The great thing about that is that it gives Hany more time to fill me out so I can come into the show a lot bigger and fuller than ever. I made some good gains in my quads and hams in the off-season, and now that I am in shape, I can see them a lot more clearly.

It's always tougher to tell in the off-season when you have that layer of fat and water over everything. My arms were always good, so for a long time I was taking it easy on them. But at the USA last year, I was standing next to some real gunslingers, and that made me decide to start hitting them hard again. They came up, and my biceps peak is now higher than ever before. I even managed to bring my calves up some so they match the gains in my quads and hams.

Another reason I am excited about the USA is that it will be the first time my grandfather and my sister see me compete. They are coming down from Pennsylvania along with my mom, who hasn't seen me since back when I was competing in Musclemania shows. I have to thank all the fans who have been showing me so much support and encouragement in the past few months. It really means a lot, and if I win, you can know that you helped make it happen with all your positive thoughts and words.



PHOTOGRAPHY BY PER BERNAL

MARK of a CHAMPION



There is a young kid at my gym who is in there every day but Sunday and as far as I know has never taken any time off. I have tried to explain to him that he needs to take a week off and let his muscles recover, but he just laughs and says he is doing just fine. How can I make this kid understand that he is overtraining? I know if I spent as much time in the gym as he does, I would be in the hospital soon!

There are a couple things I wish you had told me. For one thing, is this kid doing one body part a day, or working the whole body? If he's only doing chest one day, back another, etc., then he's probably fine. My biggest question of all is: has this kid kept making progress? Just because you would be overtrained doing what he does doesn't necessarily mean he is. Younger guys tend to recover a lot faster than men in their late 20s and beyond. That's just how the human body is set up to work. Also, some guys can simply handle a lot more exercise than others can.

Nutrition plays a huge role in recovery, too. You can train longer and more frequently when you are on top of your nutrition and eating quality meals every 2-3 hours, every day. A lot of guys who are overtrained probably would not be if they were fueling their bodies better. But my final bit of advice isn't for him—it's for you. If this kid doesn't want your

help, don't waste your time trying to offer him so much unsolicited advice. It sounds like he's perfectly happy doing what he's doing. Maybe if he finds himself at a plateau or overtrained, he will seek you out. Otherwise, just worry about your own workouts.

I have heard conflicting advice about occasionally doing very heavy lifting, like 1-3 reps. Some people say it's pointless and dangerous for bodybuilders; others say it can help you get stronger in your normal sets of 8-10 reps. I don't have any joint problems or injuries, so do you think I should be incorporating some very heavy sets every once in a while?

I agree with the first group that says going that heavy is too risky. If you were competing in powerlifting or Strongman, doing very low reps would make sense. I don't see the point for bodybuilders. You can keep the reps higher and continue adding weight, and you will still continue to build size and strength. I know that you see a few pros like **Ronnie** and **Johnnie Jackson** who train crazy heavy, but I still think the risks far outweigh the benefits. Stick to 8-10 reps for upper body, occasionally going as low as 5-6, or as high as 12-15, and for legs anywhere from 10-20. It's a lot safer and more productive in terms of building mass, anyway.



MARK of a CHAMPION

With summer fast approaching, I have switched my diet from mass building to cutting up and I am confused about post-workout carb consumption. How many grams of simple carbs do I need to take, following a workout, and do I need to gradually decrease them as time goes by? I currently weigh in at 190 and would like to get down to 170 with as little body fat as possible. My post-workout shake contains 30 grams of protein, 30 carbs (from orange juice) and 5 grams of glutamine. Thank you for taking the time to answer this and I wish you the best of luck at the USA!

Thanks for the support! For most of my USA prep I haven't been having carbs at all in my post-workout meal. Last month I told you what that meal is— I drink a carton of liquid egg whites, per the instructions of my nutritionist Hany. Yum! If you are really trying to lose the maximum amount of fat, you shouldn't have simple carbs even in that post-workout shake, unless you have a very fast metabolism and are naturally lean.

In the off-season, I drink Size-On while I train, which has a special patented carb called Outlast.[®] I also take BCAAs and L-Glutamine. Shortly after training, I have a whey protein shake, IntraPro from Gaspari. If you do decide to keep carbs in your shake, I wouldn't go with the O.J. Fructose isn't the best choice here. Vitargo, waxy maize, or even dextrose (table sugar) would be better.

I have a nagging tennis elbow; I've received three shots in the past year. While the first one kept me going for about 8 months, the second shot missed the mark and therefore had no impact, the third one did hit the intended inflamed tendon, but the effect only lasted a few months.

Do you have any advice on how I can continue training? I can't do any curls or overhead lifting exercises. Right now I am focusing on squats, dips, push-ups, and rack lifts— just basic compound movements. Lifting a teacup puts a strain on my right



elbow— so it is pretty bad. The old RICE approach doesn't seem to be working— any rehab exercises you can recommend for the area would be helpful. In fact, anything you can recommend would be greatly appreciated at this point.

You can't really 'rehab' an inflamed tendon, unfortunately. Rehabilitation involves strengthening an injured area, and you can't do that with a tendon. I have some experience with this myself. What I do first of all is to avoid any exercises that I know are just going to aggravate the inflamed area. It sounds like you've already done that. Just work hard on the exercises that you are able to. If you do a few good basic compound movements, you should be hitting

every major muscle group.

You won't be able to do anything else until you resolve the issue with your elbow. I have found supplementation to be very useful, but it's also dose-dependent. I take 3,600 mg of MSM and 4,000 mg of glucosamine, divided among three doses a day when I have inflammation. I also bump up my vitamin C and my Omega 3-6-9 fish oils.

A treatment method you may want to look into is called Active Release Technique (ART). I've never tried it myself, but I have talked to people who swear by it in cases like yours. You can find a practitioner near you on their website: <http://www.activerelease.com/>.

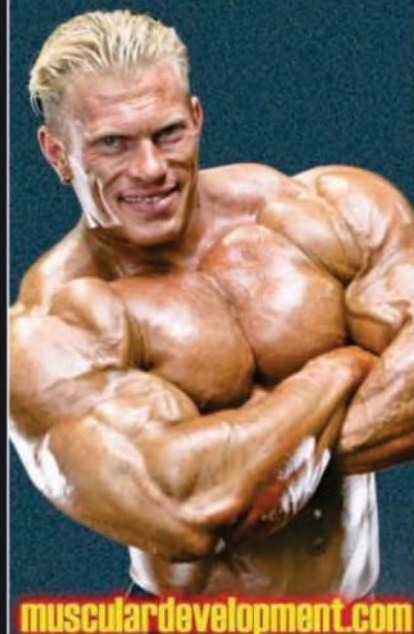
Good luck and hope your elbow feels better!

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MARK of a CHAMPION

BEST THINGS ABOUT LIVING IN FLORIDA

Sunshine and Water

If you love warm weather and the beach like I do, Florida is paradise. Del Ray Beach is only a mile away from where I live and I go there all the time. I grew up in Pennsylvania and hated every single winter, so this is awesome.

Plenty To Do

I'm about two and a half hours from Orlando and all those big theme parks, and only an hour away from Miami. There is always something to do here in South Florida.

WORST THINGS ABOUT LIVING IN FLORIDA

The Humidity

For a few months out of the year, you need to spend most of your time indoors in air conditioning, or else you'll be sweating bullets. Unless you have spent a full summer in the deep south, you don't know what I mean.

Elderly Drivers/Traffic

I don't want to put seniors down, but sometimes the way they drive can be nerve-wracking. You know what I mean if you've ever been stuck behind a giant Oldsmobile or Buick with a driver who can barely see over the steering wheel, or barely see in general, doing 25 mph. We're all gonna get old someday, so I shouldn't complain. As far as traffic, Miami can be gridlocked at certain times and I do a lot of business down there as a distributor for Gaspari.

Hurricane Season

I think it was around 2004 or 2005 that my area got whacked pretty bad by hurricanes. We had just had a couple hit us, then Fran came and that was the one that did the most damage. My whole region was without electricity for 10 days. This was in the middle of summer with most places having the windows boarded up, so you can imagine what it was like with no A/C or even so much as a fan. It felt like being in a broiler inside any house or apartment. Gas stations ran out of gas, and grocery stores ran out of food. If you didn't stock up ahead of time you were out of luck!

The tough part about that is that you never really know how bad any hurricane is, until it's too late. When they're bad, life basically stops until it's all cleaned up. We even had a curfew and the police and National Guard were arresting anybody who was outside after a certain time. The season is just starting up again now, so I have my fingers crossed. If anything happens, PLEASE let it happen after the USA! ■



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MIKE LIBERATORE—THE LIBERATOR

IRONMike

By Mike Liberatore

How important do you think diet is when it comes to gaining muscle? I was reading Shawn Ray's forum and he made a comment that threw me off. He said anyone who is keeping track of the ounces of meat they are eating with each meal should have a psychiatric evaluation. Personally I think nutrition is at least 50 percent of it, especially being that I am a natty. I just thought it was kind of crazy hearing him say that. Until I started eating like it was my job, I did not grow.

Shawn is saying that you don't have to be so perfect with the amounts you eat in the off-season food. That doesn't mean eat whatever you want, it just means to eat a large portion of protein, and moderate amounts of healthy carbs and fats with each meal. I remember Shawn saying something in a magazine back when he was competing that he was never more than 6-7 weeks out from a show. Meaning, if he absolutely had to be ready for a contest, he could do it in 6-7 weeks. He did this by eating clean most of the time, even when he wasn't planning on competing again for many months.

So enjoy your off-season, eat, train and grow. You should have a rough idea of how much protein you are taking in every day, and that amount should be around 1.5 grams per pound of bodyweight, divided more or less equally among all your meals and shakes. But you really don't need to be too precise about it, as long as you are eating plenty of good food.

Next Diet: Carbs!

Even though I won't be starting my next contest diet for quite some time, I have been talking with my nutritionist about switching from a keto diet to a low-carb approach— somewhere around 150-200 grams a day. I feel that with the extra size I am putting on, the carbs will be processed better and I can keep my fullness. Regarding the 'Carb Wars,' I have always been on the fence because I know that both ways work. Guys get ripped with or without carbs. For my pro debut, I just want to try something different from the keto diet I did for my last three amateur shows.



I used to deadlift heavy, but I thought all it was doing was getting me stronger and not adding any size, so I switched to higher reps. I've been doing 315 x 8-10 at the end of my workout. Do you think for mass it's better to do higher reps, or should I go back to doing sets of 5 reps with heavy weight?

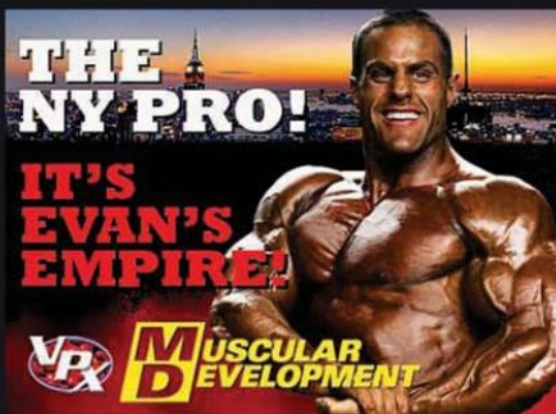
I think the 8-12 reps will work better for building size. Just make sure you are lifting heavy enough where 8-12 reps are hard. I have seen some guys who are capable of doing 405 for 10 reps use only 315 for a couple sets of 8-10. They try to justify it by saying they are trying to squeeze the muscles more, but the bottom line is that you need to use enough weight to really challenge the muscles or else they won't grow.

PHOTOGRAPHY BY PERI BERNAL

Great Job, Evan!

I have to say congratulations to **Evan Centopani** on winning the New York Pro. I think it's great for the sport that he won. It shows that we do have some great up-and-coming talent in the IFBB, and I think it represents a sort of changing of the guard, too. You had Evan just starting his pro career, beating a couple guys who are at or near the end of very long, distinguished careers. Evan deserved the win, as he clearly did his homework. He was noticeably bigger than when he won the Nationals, and his condition was outstanding.

I never understood how guys could come into shows without having striations in the glutes, hams, and lower back when we all know those are the standards we are judged by today. I've always said that conditioning will put you in the running for just about any show—except the Arnold and the Olympia, where you are usually up against guys who are huge and in great shape. My best guess is that most guys worry too much about staying big and full and are afraid to get down to where they really need to be.



The Rest of the Top 5 in NYC

Dennis James

I liked the package he brought to this show. He has managed to bring his midsection in, though it's not as tight as it was back when he turned pro (I guess it would be tough, since he's added so much more mass since then). DJ's size and shape are amazing. The only thing that holds him back is that he lacks that extra 2-3 percent more dryness. If he were as dry as Evan, I don't think Evan would have been able to beat him.



Markus Ruhl

Pound for pound, Ruhl may be the most enormous bodybuilder ever, aside from Ronnie in his prime. He was freaky huge and well-conditioned, though not quite as hard as he was that year he made Top 5 at the Olympia. Just like I said with Dennis, if Markus had brought the type of condition that Evan did, he might have won. Also, I know this was supposed to be the very last show ever for Markus, but I really think he should at least do the Olympia. Not that he owes his fans or anybody else anything, but the last couple times he was at the Olympia, he was way off. I just think it would be a good send-off for him to go out at his best at the big show.

Silvio Samuel

'The Matador' was the man to beat coming into this show. He has been seventh at the Mr. Olympia two years in a row, won the Pro Iron Man this year, and then took fifth at the Arnold. But the razor-sharp Silvio everyone has started to take for granted wasn't the one who competed here. I am only speculating, but I have to wonder if he is just burning the candle at both ends and doing too many shows. Nobody can be at their absolute best every single time. It's just not possible, with the human body and all the different variables involved. I'm not sure why he did this show unless it was for another check or because his sponsor may have asked him to, but it wasn't a great idea. Not winning the show he was the favorite to win hurts him.

Hide Yamagishi

This guy also does a lot of shows and is pretty consistent with his conditioning. I'm a fan of Hide's, mainly because I love the classical 'old-school' style of posing he does. I'd much rather see that than dancing around any day. The only things that limit Hide are his shape and the amount of

size his smaller frame can hold. He is still capable of winning one of the smaller shows one of these days.

Kevin English—A Freaky 202!

Props to Kevin for winning the 202s for the second year in a row in New York! He also took second to Kai in the Open last year before they made the guys decide between 202 or Open. I've heard that it's very difficult for Kevin to get down to 202, so maybe we won't be seeing him in that division much longer.



BRANDEN RAY

By Branden Ray

Road to the USAs

I'm writing this month's column from Dulles Airport in the D.C. Metropolitan area while waiting for my flight to Vegas. Hopefully, my next flight to Vegas will be to earn my pro card. You guys have been with me from last year's heartbreaker and through many FST-7 workouts. I found a new gym that I call home and met some hardcore and hungry bodybuilders, like my man Carlos and big Jerry.

Kevin Levrone actually opened my eyes to Rockville Fitness in Rockville, MD, and for the first time in my 10 years of training, I am training consistently in a gym that gives out chalk and actually recommends that you drop the dumbbells after a heavy set of inclines. This gym reminds me a lot of my favorite gym, Bob Bonham's Strong and Shapely, where I train whenever I go back home to see my family. It has a lot of old-school equipment and it's really well-kept. It's also pretty free from civilians who will ask to work in with you during your heaviest set.

As I reflect and compare my progress each week to last year's prep, I believe that the main difference is mental. You have to prepare yourself to go to war every day. You cannot and I repeat *cannot* allow your exhaustion to fool you into thinking that you're good enough. Self-deception is the number-one reason that people do not get conditioned. I hear it all the time— "My body fat is this..." (this, that or *whatever*). I NEVER measure my body fat, and most of the people who you hear blurt it out are making bogus claims.

Skeletal Fat?

The other issue with measuring body fat is one that I faced. My body fat is relatively low year-round— however— Hany explained to me that I had *skeletal fat*. Usually when body fat is measured, you are measuring subcutaneous fat or fat beneath the skin. Being a young bodybuilder, Hany wanted to burn skeletal fat, or fat found inside the muscle. This is key to getting the deep cuts and striations to show. It just looks that much more impressive when you see Kai's and Branch's feathered quads versus some normal cut quads. David Henry's lats are very impressive, with striations and deep cuts.



PHOTO BY PER BERNAL

Branden Ray—Road to the USAs

I started achieving this by grinding out the treadmill on an empty stomach first thing in the morning. The supplements that I take pre-cardio are 2000 mg L-carnitine and VPX's Clenbutrx. I kept the speed between 5 and 6, and grinded out each step, squeezing my glutes and hams at the bottom. This is pretty universal in contest prep, but there are so many who avoid it because they fool themselves into thinking that the intensity is too high and that their body fat is low enough. Suck it up and quit lying to yourself— especially if you're a young bodybuilder!

Getting rid of skeletal muscle fat is like ringing out a wet cloth over and over again until the water doesn't drip out anymore. Most people will settle for going onstage looking like a wet rag, just because they fooled themselves into thinking that they're better than what they actually are.

Civilian Pest Control

In addition, block out the opinions of civilians when prepping. Cover up if you have to. A civilian will see the blood vessel on your temple during your workout and say you are ready to hop onstage or my favorite, "You look three weeks out." I once overheard someone tell a woman who was competing that she was ready, but when she did her quarter-turns, it looked like she was doing the hula-hoop. It was more like a quarter-pounder turn supersize with fries!

Civilians will also tell a bodybuilder the three worst words ever, "You're getting small." Once these words are

said, it messes up the whole psyche of the bodybuilder. I've heard guys afterward say I'm going to get a cheat meal to fill out— dude, pump the breaks! You're listening to the same guy who used clips on the Smith machine— the same guy who uses four dimes and a nickel on each side of the bar when benching, instead of a 45-pound plate— the same guy who says that he's getting into MMA because that's more his niche. :-/

Also beware of the false guru who thinks he knows it all because he competed before you were even born. When you ask these guys to see their contest pics, you're usually three times better than what they ever were, yet they want to guide you in the 'right' direction, because they placed top five at a show at your local high school back in '87. I definitely respect the old guys, but also understand that the science of this sport has evolved a *lot*. My best advice? Research EVERY tip that someone gives you. You may be receiving great advice— or you might be guided in the wrong direction by the 'Cotton Monster.'

A Cotton Monster is the guy who looks huge in the gym, but wears layers of old, dingy sweats that add up to about 20 pounds. I don't know how these guys do it in the middle of July without passing out. One sweatshirt is enough— but a sweatshirt over a long sleeve T-shirt over a T-shirt over a tank top is way over the top... thus we have, the 'Cotton Monster.' They never take their layers off, because they're 'keeping their physiques under wrap'... yeah, *right*.

Tips of The Month

After watching a **Melvin Anthony** (who has one of the best backs out there) training video I started doing rows on the unilateral leg press machine. It's the leg press that gives you the option to work one leg at a time; however, if you grab hold of the rack for loading the plates on the machine, it forms the perfect angle for doing rows. I get double resistance and I'm able to get a tight contraction. I do this for my 7s now at the end of back day.

My other tip is a posing tip. From many e-mails that I receive, it appears that the hardest pose is rear double bi. Unless you have mirrors positioned right or a posing room in your gym, it's hard to see how you look in the pose. Many people actually have better rear poses, but they just aren't hitting the pose right. Once I learned how to hit this pose, it made a world of difference, especially to my confidence. The key was changing the point where I arched my back.

Many people bend their back from the middle. This can hurt the pose because it



makes the lats appear much higher than they actually are.

Instead, you want to bend from the very lower back right at the bottom of your spinal erectors.

This will bring out your traps, rhomboids, drop your lats, and show your spinal erectors from top to bottom. A great person to watch hitting this pose is the great **Ron**

Coleman. He would always lean back first bending his back only at the very bottom and then hit his double bicep.

Not everyone— well anyone— will have a back like Mr. Coleman, but learning how to present your physique can make a tremendous difference and actually reveal that a weakness may not be as weak as you initially thought. Pose, pose, pose!!

Talk to you guys next month, and in the meantime, train hard and stop wearing three sweat-shirts to look big, LOL! Later. ■

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EVAN CENTOPANI BEAST From The EAST!

By Evan Centopani



MD Cover #4!

When I found out I was going to be on the cover of this issue of MD, I had to step back and take a breath. This is my fourth cover of MD, the most hardcore bodybuilding magazine in the world! I can't thank Steve Blechman enough for believing in me these last few years and for giving me so much publicity and exposure. MD is all over the world. I have a friend serving in Iraq, and he told me he was in one of the bathrooms on base there and reached for a magazine. It just so happened to be one of the issues of MD that I was on the cover of! I feel very fortunate, and I don't take any of this for granted. And now, by popular demand. . .

How would you suggest adding carbs back in, after being on a keto diet? I cut from 275 to about 200 and was very fat, but now I'm about 12 percent. I've always been a bigger kid and don't wanna balloon up too bad again. I'm going to taper the carbs in— but how do you think I should go about doing it? The reason I'm asking is because I believe your younger body type is similar to mine. Thanks for all the help!

I would eat carbs three times a day so your body can adjust to having them again. Stay away from a lot of simple carbs and focus on higher-quality carbs like oatmeal, brown rice, and potatoes. I also believe in eating as much clean, home-cooked food as possible instead of eating out a lot. The rebound period after a show is the perfect time to grow. Don't worry about getting fat for at least a few weeks. After a long diet, your body is like a sponge and just soaks up nutrients. Eat a lot of good food and train hard, and you will make some outstanding gains. I always do!

I saw that pic of you on your website when you were in your basement gym when you were like 16 or something. Did you just fuckin' eat, train, sleep, and grow **FOR YEARS** in order to get up to the size you felt you needed to be before you competed? And how did you keep your head on straight for so long when you probably looked in the mirror more than a couple times with your shirt off and got frustrated because you probably put on some body fat or felt you didn't look good? I'm 17, and that's where I'm at now.

That's ALL I did, bro! I approached my eating and training with tremendous consistency and did everything I could in the best way I knew how. There were times (many times!) when I felt fat or discontented with how I looked, but I knew I was growing underneath and getting stronger. I just reminded myself that it was part of the process and that if I wanted to reach my goals, I would have to forego the beach muscles. It all depends on what you hope to accomplish and what you're willing to sacrifice to get there. You can do it. You just have to have patience and faith. With both on your side, nothing can stop you.



PHOTOGRAPHY BY PER BERNAL



A DAY IN MY PRE-CONTEST LIFE

8:30 a.m. Wake up and drink one liter of water to replace what my body lost during the night. Lay in bed and watch TV for a little while to let it absorb.

9 a.m. One hour on my treadmill. I take two packs of Animal Nitro amino acids while I do my cardio. I honestly believe this is the best amino acid product on the market.

10:30 a.m. Eat meal #1: 10 ounces flounder, 1 cup white rice, 1 cup string beans. After that, I shower and get my meals packed and ready to drive to Brooklyn to train with Oscar.

11:30 a.m. Leave my house and start down the I-95.

12:30 p.m. Pull over and eat meal #2: 10 ounces turkey breast, medium white potato, and 1 cup of string beans.

1:30 p.m. Arrive and meet Oscar. Go over anything we need to talk

about.

2 p.m.-4 p.m. Train. I take another two packs of Animal Nitro during the workout.

4 p.m. Meal #3: Same as meal #1.

4:30 p.m. Hit the road and head home to Connecticut.

6:30 p.m. Pull over and eat meal #4: 10 ounces turkey, 1 cup string beans, and 1/3 cup of cashews. If traffic is really bad, I will just eat while I'm driving and chew my food nice and slowly. If the traffic is moving, I prefer to pull over. Often it's not moving at this time of day.

7:30 p.m. Arrive home. Check e-mail.

8:30 p.m. Meal #5, same as meals 1 and 3.

9:30 p.m. On the treadmill for another hour.

10:30 p.m. Shower, get to bed by 11, and do it all over again the next day!

One suggestion is to keep an eye on the supermarket flyers you probably get every week in your mailbox. Sometimes you can find chicken thighs for as cheap as 99 cents a pound, or breasts as low as \$1.99. Obviously, you only want to buy it on sale, because chicken breast can be five or six bucks a pound most of the time. Ground chicken and beef is pretty cheap and a good protein source for a young guy trying to grow. Protein powder and cottage cheese are a couple other cost-efficient ways to get the protein you need. Eggs are fairly inexpensive if you buy in bulk from places like Costco or BJ's.

Tuna is fine, but I wouldn't eat that all the time. Try to mix up your protein sources and don't be afraid of eating some dietary fat.

Evan, you're a badass! I tell my girlfriend whenever you say something about your girl and how hard it is for them to be there to support us. This thing we do is tough and this is my first time prepping for my show. I'm two weeks out and I have to reassure my lady that I am 100 percent into our relationship mentally, even though my energy levels and state of mind don't let me show it physically every time I would like to. It makes me feel better to know that you actually express the way relationships go during contest prep and let me know I'm not alone in my journey to achieve my goals and dreams. Thanks for being a source of inspiration and motivation.

The whole process can be very trying when it comes to relationships. It's very hard for most people to understand the process and deal with it in a positive way. It takes practice, that's for sure! And it definitely takes two to make it work. It takes reassurance and your being sensitive to her feelings; and it also takes her being understanding and allowing you the time and space to do what you need to do. She has to be strong enough to trust that you'll be back to normal once it's over and you have to assure her of that.

It's tough, man, no doubt. I know that it's clichéd and corny but it's true: alongside every strong man is a strong woman. Respect and understanding are both so important from both sides of the table. If you guys can have both for each other, there's no doubt that

First off you're a fuckin' beast! Congrats on the NY Pro, that's insane you took first at your first pro show. What's your take on tuna? I'm 18, so I can't always buy a ton of food, but tuna is relatively cheap. I'm trying to mature in terms of nutrition and was wondering if you can add mass with tuna, because it seems like fish is always associated with cutting down. But I'd like to gain, not lose weight.

Lower-calorie fish like tuna and tilapia are more suited for losing weight, you are right. But you can still make good gains with tuna. I ate a lot of it when I was younger. It's cheap, portable, and convenient. You just pop off the top and dig in! I don't think it's the best choice, though. I'm pretty leery of anything that can sit in a can on a shelf for years. I just have to wonder how many nutrients are still in there after a while.

EVAN CENTOPANI—*BEAST*FromTheEAST!

you'll be happier and more successful with each other than without one another. I wish you the best of luck, my man— I know it's tough. Tell your girl I said to hang in there and have some faith. Nothing is ever accomplished without faith!

How do you push through on those days where you just feel tired and/or around 60 percent in the gym? Some days I just feel drained, and those frickin weights just feel like mountains. How do you feed yourself mentally and physically to smash through OR do you just take it a little easier on those kind of days? It's impossible to be 100 percent all the time— so how do deal with having a so-so workout without feeling like you undercut yourself?

When it comes to training, you pretty much always have to push. That is, unless of course you feel like you may injure yourself. Otherwise, training must be hard and intense. The things that get changed are rest, diet and other things that affect recovery. You may decide to skip a workout, but if you do decide to go for it, it HAS to be 100 percent. All or nothing. If you feel like you can't give it your all, I think you're always better off taking a break and coming back the next day.

Congratulations!

I want to congratulate my girlfriend Erica for graduating dental hygiene school and passing her board exams. I've seen her work so hard toward this goal for the last two years, and I am so proud of her for what she's achieved. She should be working as a dental hygienist by the time you read this. So if my teeth start looking better all of a sudden, you'll know why.

I'd Like to Thank...

I've got a giant list of people that I would like to thank this month. Having achieved what I feel is a tremendous amount of success, I feel very fortunate. And while bodybuilding is considered a very individual endeavor, it would be false to say that I have only myself to thank for getting to where I am.

First and foremost, I have to thank my family for ALWAYS being there! Right or wrong, rain or shine, I know my family will always back me up.

I want to thank my girlfriend Erica, for her support and for understanding what it takes. I love you and am better because of you. I'd like to thank her mother and father for being two of the most supportive and loving people I know.

Thank you to all my friends who always told me that I needed to pursue bodybuilding: Ron Rich, Keith Connolly, Dennis Wilbeck, Jay Oliveira, P.J. Braun, Frank DiFonzo and Chris Tuttle; I love you guys.

To my good buddy Frank Lieto; we did it!

I want to thank Dr. Mike Troknya: you're a genius!

To the Montanari Brothers: Darren, Dino, Jerry and Richie, and to Kenny Wallach— thank you for making

Regarding giant sets: are they good for packing on mass?

I think they can be. Used off and on I think they're great. Would I do them all the time? No. But then again, I don't think there is any one way of training you should follow all the time. Definitely incorporate them occasionally. You wouldn't want to do them all the time for two reasons. One, your body would eventually adapt to that form of stress. Two, giant sets force you to go a lot lighter, and heavy weights are a must when adding muscle mass is your goal.

Cooking with Evan: HOMEMADE FRENCH FRIES

I just slice up some Yukon gold potatoes on a mandolin using the crinkle blade, toss them in macadamia nut or olive oil and sea salt, spread 'em out on a baking sheet, and broil 'em in the oven until they brown. Serves one big, hungry bodybuilder!



Gold's New Haven the BEST fucking gym the world over!

I'd like to thank Universal Nutrition for being behind me 100 percent and always treating me with respect; you guys are second to none.

A huge thank you to Oscar Ardon; I cannot thank you enough for all your time, your sincere desire to help me be my best, and all the knowledge you have shared with me. Your knowledge of training and nutrition is impressive but the far-reaching understanding you have of life in general is worth far more. You have helped me more than you or anyone can possibly know.

Thank you Steve Blechman, for your faith in me and the opportunity to be a part of the best bodybuilding magazine in the world.

And last but certainly not least, I want to thank all the fans out there and people I've met for being cool as hell; without all of you, this sport ceases to exist. I feel so fortunate to be able to do what I love, day in and day out. Thank you to everyone who helps make it possible. ■

Got a question for Evan Centopani? You can ask him directly on the MD website and have Evan personally answer your question! Go to www.musculardevelopment.com. MD Forums, MD Staff and Pros, Q and A for Evan Centopani.

ERIK FANKHOUSER—NORTH AMERICAN CHAMPION

Erik 'The House' Fankhouser

By Erik Fankhouser

Against the Flow

At some point in your life, you've got to choose— go with the flow or against the flow. Well, if you are reading this, then you are like me and went against the flow. I say fuck the flow! The flow is for the weak, the ones who take the easy way out, the ones who don't want to stand up for what they feel, the ones who don't want to cause conflict, the ones who want to be like everyone else!

Today, people don't want to fight for what they want, or work their balls off to get what they want. People today are fuckin' lazy because they choose to go with the flow. We learn what is right and wrong at a young age— but some of the things you learned were wrong. You ask why— well, because your parents were lazy and just going with the flow! The flow is a path set from guidelines created to scare you— molding you like a fuckin' cookie cutter.

I never wanted to be like all the other people. I never wanted to walk in a straight line or go the speed limit when I could drive. I always wanted to see how I could be different, and lead a good life. Just because you are not on the same path as others doesn't mean you are on the wrong path. Bodybuilding is against the flow. Not too many people can go against the flow and fight off all that fucks with us on our contest diets, or training goals. What we choose to do is against the flow, but I think that is what attracts us to bodybuilding. Bodybuilding is a fight— a fight against time, nature, temptations, one's body, one's family, one's friends, one's life. When you find that you can fight off the flow of what others do, then you can be a bodybuilder.

Bodybuilding never gets easier— we just find easier ways to stay out of the flow. You got to stand tall and don't let others pull you down in this game because, just like in the game of life, people will step on you and try to pull you back into the flow. Most people don't like to see other people do things that they know they can't or see people distance themselves from the flow.

To Train or Not to Train! What Comes First?

Some people say the egg; others say the chicken. I say, who cares? Both of them are a good source of protein— eat them all! As to train or not to train, I would say there is always time to train and always time to rest. What I am trying to say is you can have the best of both worlds but you just got to think things over and plan shit.

I have been getting this question a lot. House, how do you do it? How do you find time to train, work and spend time with your family? It is simple as making things happen. Most people waste too much time on things that don't matter. First off, you got to find what matters the most to you and make a list of other things after that. I can't make this list for you, because most people have different priorities and different goals... it's like saying don't hide all your money in one pocket, because if you lose that money it's all gone. I like to spread my money out in different places, so I will always have money somewhere. Be well-rounded so if bodybuilding is gone, then I still have my family and a job.

My list goes like this: family, work, bodybuilding. Family is first, because family is what makes me. My children are here because of me, so I must support them over everything. Work is second, because I need work to support my family and without work, my family will suffer. Training is third, because my family doesn't need me to train or be a bodybuilder. Training is something that I like to do, so it takes

third place. With balance and flexibility in your schedule, you should be able to have a family, work and train... you can't be selfish.

I am not going to sit here and tell you it is easy, because then I would not be honest— but it can be done. Take one for the team and mount up to your responsibilities, and remember you are your maker and you got to look back at the mirror to see the true picture.



PHOTOGRAPHY BY PER BERNAL

Eric Fankhouser—North American Champion



I started bodybuilding a few years back and have only had a few small breaks between shows. After this season, I am going to take some time off to grow. One major reason I have never taken an off-season is because I am afraid of getting too fat. I was way out of shape before I found bodybuilding and don't want to go back. Do you have any tips for me and how do I deal with the mind games?

Good choice, take some time— don't be afraid to gain some weight. If you never try to gain, then how are you going to get better? The best advice I can give you is have a good clean off-season. You still need to eat and you need to eat enough calories to grow. You will lose some lines and gain some fat, but just take it slow and keep taking the calories higher as you gain weight.

Biggest mistake is eating way too many calories at first, because then your body will store them as fat if you don't use them, but if you start out slow and keep increasing the calories as you gain, then you will not spill over as much. If you find yourself stuck at a weight, then it is time to increase the calories, and bump it up 200-500 calories per day and see what happens... If you look in the mirror and notice you are getting too fat in the off-season, you can do some cardio first thing in the morning or cut back on the calories.

In the off-season, I like to eat protein with each meal and a source of carbs or a source of good fats. I like to eat my carb meals first thing in the morning and then pre- and post-workout. My other meals would be higher in fat and low in carbs, if any. Amounts just depend on how my body is burning at the time. If I am hungry in the off-season, I eat plain and simple. As for the mind games, Bro, this sport is nothing but mind games, so be headstrong or you will never get better. You can't be a pretty boy all year round... eat some food and don't shave for a few months— that is what off-season is all about.

Got a question for Erik Fankhouser? You can ask him directly on the MD website and have Erik personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Staff and Pros, Q and A for Erik Fankhouser.

Training Journal NY Pro

I never got to tell Evan congratulations on winning his first pro show, so congrats, Bro, you earned it! Watching Evan win the show was the best thing that could have happened to me. I got tons of motivation seeing him up onstage. I am driven now to better myself and win the show next year.

I don't do shows just to do shows anymore. In the past, I would say as long as I looked better than last time, I did what I needed to do. Well, now I don't play that game anymore; that was a rookie game. Now I got my feet wet, and I want to be on that center X at the end of the night. I have made some good moves this off-season. I am lifting heavy and eating cleaner and taking it slow. I am not chasing mass, but I will be thicker and dryer at the 2010 NY pro. I am training for the NY pro because I want to keep it closer to home for me. Not that NY is a stone's throw away— but it is within driving distance and all my family will be able to come. Plus I think the NY crowd will love to see the freaky version of me next year.

Well, we found out for sure that we are going to have a girl. All I got to say is— my girl is got to be a girly-girl— nothing but pink and flowers for her. Xavier is a rough boy— dirt and bugs, and now London is going to be a girly-girl, with her daddy wrapped around her finger. I would not have it any other way.

The NPC Erik Fankhouser Classic is coming up soon— September 12, 2009. If you need any info, please e-mail me at wvbodybuilding@msn.com. I am also going to plan a ABC Animal event for the day after the show. I will have more info on that soon and will post it on animalpak.com and on the boards on MD. Also I started a Teen Q&A in the teen bodybuilding section on MD. So if there are any young bodybuilders out there, ask me some questions there also.

"You are your maker."—House ■

The **PRO** Creator

By Hany Rambod



FST-7 Q&A

I have been using your FST-7 for a month or so and I can say I'm starting to see some good results, especially in my arms, which have always been a slow growth area for me.

My question is about my waistline. What is it that helps really bring the waistline in nice and tight? I know that many of the pros stay lean year-round, but their stomachs are still sticking out. I have heard that it's the growth hormone and all that, but I don't buy it. Whenever I lift heavy for a long period, my stomach relaxes and looks bigger. What exercises or practices should I employ to get my waistline back to where it was before I started trying to pack on some size? I used to have a 30-inch waist and I'm at 36.5 inches at the moment. Any help would be deeply appreciated.

The expanded waistlines you often see in bodybuilders are due to a combination of factors. The two biggest culprits are not strengthening the core, and overeating. The stomach wall is comprised of smooth muscle, and it will stretch out over time if it's continually filled with extreme volumes of food. The supplements you mentioned can also contribute to distension of the abdominal wall.

I do recommend working your core with exercises including but not limited to crunches, reverse crunches, and hanging leg raises and the Roman chair to focus more on the lower section of the abs. It's also critical that you keep your food portions in check. Bodybuilders tend to eat larger meals less frequently in the off-season, often to the point of feeling stuffed. You should never feel so full that breathing is a struggle. Try to eat more moderate-sized meals a bit more frequently, as you do dur-

ing a contest diet, just with slightly larger portions.

Another thing I recommend for my clients is to incorporate probiotics and digestive enzymes. The probiotics are comprised of multiple strains of natural bacteria that can help balance out the natural flora inside your intestines. This in turn will help accelerate the digestion rate of proteins. Remember, the bacteria has to be kept refrigerated, so be sure to pick it up in the refrigerated section of a store like Whole Foods.

It needs to be kept refrigerated to be alive and stable. This means that leaving it in your car on a hot day would render it worthless. The product I use and recommend to my clients is All Flora by New Chapter. It contains nine different strains of probiotics. Two capsules deliver an estimated six billion live cells. You should also supplement with digestive enzymes. The product I recommend is Digest-All by MRM. It's an herbal-based digestive enzyme that can help increase the effectiveness of the probiotics.

What would be the ideal post-workout nutrition, as far as a whole meal or shake for someone in the off-season?

I have always been a huge advocate of whole foods, and not a big fan of whey protein shakes. What I suggest immediately after your workout are BCAAs, L-Glutamine, and creatine. Thirty minutes later, have a whole food meal. If you're trying to get lean or stay lean, make the protein source very low-fat, such as



PHOTOGRAPHY BY PER BERNAL



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grilled chicken breast or tilapia and a complex carb like a sweet potato or brown rice. If it's the off-season, or you just would rather focus on mass gaining in general, have red meat for your protein source in that meal instead.

I would only suggest having a whey protein shake after training if you absolutely can't get to a solid meal for at least an hour. Even in the off-season, I like to see my clients eating almost entirely whole foods. If they have a protein shake, I'd rather see them do it to satisfy a sweet tooth. A protein smoothie with protein powder and a banana is a better choice than a bowl of Ben and Jerry's!

When is the FST-7 DVD coming out? I can't wait to see it—and you have been talking about it for a while! I saw the trailer on YouTube and it looks badass!

Originally, the FST-7 DVD was going to be mainly a documentary style video with **Jay Cutler** and **Phil Heath** training with me. There was going to be almost no instruction at all. Once the first edit was complete, I took a look at it and realized that I simply had to go back and shoot some solid instructional material. Not only would people be expecting it, but if I didn't put any instruction in there I would be deluged with requests for another DVD immediately! So please keep checking the FST-7 site. It may even be available by the time you read this.

It's saw something on your website about an FST-7 Transformation Challenge. I love the system and I have been looking for something to shoot for, since I don't compete and don't really plan to. What's this challenge all about?

It's a 12-week challenge, and we are doing them now on a regular basis. You sign up and consult with me personally on your training and nutrition, and the person who makes the best improvement in each 12-week period gets a trip to San Jose, California, to train and

have dinner with me and a surprise IFBB pro athlete. Visit my site for more information on how to enter.

I keep reading that you're gonna have FST-7 shirts. Where can I get one? I want to rock one of those bad boys at my gym!

Yes, the FST-7 shirts are now available on the FST-7 websites. You can have any color you want, as long as it's ash white. Also, our sizes start at Large, so if you're not big enough yet you'll have to grow into it!

Client Update: Bill Wilmore

Bill Wilmore is getting ready for the Tampa and Europa shows. He's been bringing his legs up with different versions of FST-7 over this last off-season. These photos show him at eight weeks out from the first show at 274 pounds. For those people who think their legs can't improve after many years of training, take a look. He now has considerably better outer thigh sweep from using FST-7 than he ever had previously. ■



Got a question for Hany Rambod? You can ask him directly on the MD website and have Hany personally answer your question! Go to www.musculardevelopment.com, MD Forums, MD Staff and Pros, Q and A for Hany Rambod.

CHARLES GLASS

Trainer of Champions

By Charles Glass



THE BODYBUILDING WIZARD

I would like some opinions on poundages. I am 41 and have been lifting for about 20 years, but never seriously until a couple of years ago. I am 5'10" and weigh roughly 180. I don't compete, but just want to put on some size and not get too fat. I am trying to clean up my diet, but that is hard after years of not 'really' caring about nutrition.

Should I be worrying about how much I can lift at my age? I generally do 45-degree leg presses with about 430 pounds for 8-10 reps and several sets. For

squats though, I only do around 225 pounds for 6-8 reps. I have never been able to do many pull-ups, so I usually use an assisted machine. I tend to stick to incline presses and currently use 65's for dumbbells. I use 85 pounds on barbell curls. I try to slightly increase my weight or estimated 1-rep max each time. I know I need to lift heavier weights to put on some mass, but I don't want to damage anything.

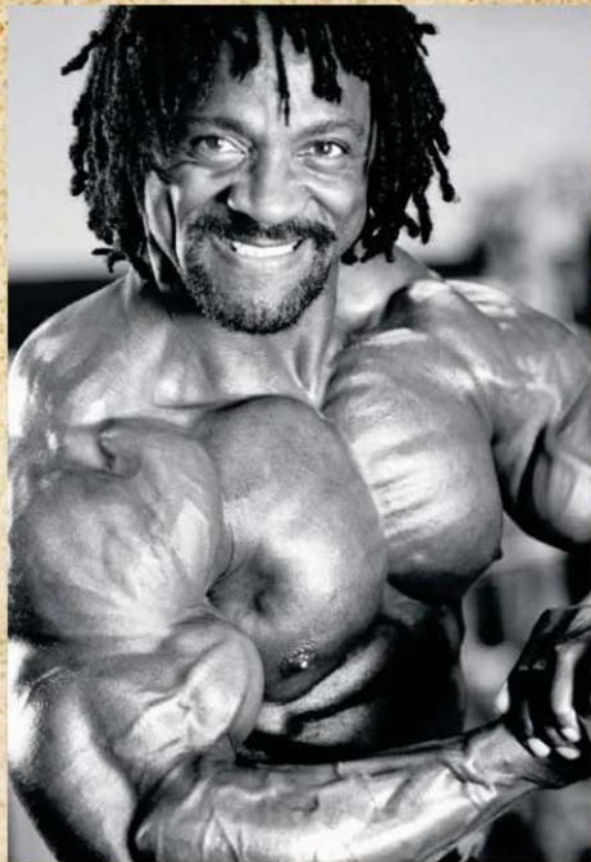
I've also dealt with shoulder pain over the years, but not too bad. I have been making progress with

1983: The Year I Turned Pro

Just recently I realized that in all the time I have had my column in MD, I've never talked about the year I became a professional bodybuilder. I started competing in 1976 at very modest, local shows. Over the next couple of years, I won a few titles in the Amateur Athletic Union (AAU) including Mr. Southern California, and my height class at the Junior Mr. America. I even placed in the Mr. America twice.

But by 1982 there was a brand-new amateur bodybuilding organization called the National Physique Committee, led by Mr. Jim Manion and based in his hometown of Pittsburgh. I competed in their first National Championships, and placed third as a light-heavyweight. The Heavyweight and Overall winner was **Lee Haney**, who would begin an eight-year reign as Mr. Olympia just two years later. But to turn pro, he had to go over to the IFBB World Championships, which used to be known as the Mr. Universe, and win his class there against heavyweights from around the world. That's what we all wanted to do—it was the top amateur title you could win, and from there your next goal was to get on the Mr. Olympia stage.

I knew I had come in a little too heavy in '82, and decided my best bet would be to get completely shredded and drop down to a middleweight for the '83 Nationals. The trouble was, another local guy from the San Gabriel Valley (about 30 miles east of L.A.) named Jon 'Jaguar' Aranita was the odds-on favorite to win the middles. He had just won that class at the Cal, and people around Gold's told me not to waste my time when Aranita was going to win anyway. I didn't listen, of course.



PHOTOGRAPH BY PER BERNAL

mass, as many friends and co-workers have made positive comments. I am trying to get a little leaner for summer, but have never truly tried to get really lean.

Poundage is always a relative thing. What may be 'light' for you could be very heavy to someone else, and what's 'heavy' for you might be a warm-up weight for a much stronger person. Your strength sounds OK to me. You won't be breaking any powerlifting records anytime soon, but if physique development and an improved appearance are your goals, that's totally irrelevant. As long as you are getting gradually stronger and eating plenty of good quality food, you will keep growing.

Granted, your potential to build muscle mass isn't the same at 41 as it was at 21, due to a natural decline in the production of testosterone and growth hormone. But that doesn't mean you can't still continue making progress. And because you are heading toward middle age, you are smart to be concerned with avoiding injury. Just like you don't grow as quickly as you did in your youth, any injuries you incur now would heal much more slowly.

Always make sure you take plenty of time to warm up before doing any heavy weights, and on that subject, keep your reps around 10-12 for the upper body and 12-20 for the lower. There's no point in doing very low reps unless your main goal is to become stronger. Moderate reps will stimulate more growth because they keep the muscles under tension longer. And with your shoulders being a potential problem if you aren't careful, be very sure to use strict form on all exercises on shoulder and chest day.

As for getting leaner, you should know what that takes— diet and cardio! You said you have never tried to get really lean. There's no time like the present, my friend!

Now that Dorian Yates is onboard with MD, I am curious as to your opinion of his HIT style of training— heavy weights for only one or two all-out sets per exercise. Have you ever tried it with clients?

That's not my preferred style of training, so I have not done it with my clients. I have seen a lot of people who tried HIT (High Intensity Training) for a time come back to more traditional training. In fact, to my recollection, everyone I have ever known who trained that way stopped after awhile. I think it can be a good interlude for someone who is very overtrained and needs to reduce his volume drastically for a while, but in terms of long-term effectiveness, I have my doubts.

My real issue with the idea of doing just one heavy all-out set is safety. I just don't think it's safe to hammer your joints and connective tissues with maximum weights for sets of 6-8 on a regular basis. And though I know Dorian was a stickler for good form and a full range of motion, others I have seen emulating 'Heavy' Duty or HIT or whatever you want to call it have not always done the same. More than a few times I have watched guys loading up the squat bar with 600 pounds and doing quarter-reps. What do they think that's going to do for them? But I'm not putting HIT down. For some it seems to work very well, at least for a time.

The Nationals that year was an excellent competition. In the heavy-weights, won by **Bob Paris**, you also had **Rory Leidelmeyer**, **Mike Christian**, **Matt Mendenhall**, **Rich Gaspari**, and Ron Love. All but Rory and Matt went on to become top pros. It was a good thing I ignored all the negative talk and entered, because I won the middleweights. Aranita, who had another great physique like Mendenhall and Rory but never turned pro, took third. In sixth place was a guy from Florida named **Tony Little**, who became more famous than all of us thanks to his fitness-gadget infomercials.

But I still wasn't a pro— none of us who won our class at the Nationals were yet (it would be a few more years until that changed). In four weeks, we all headed to Singapore to represent the USA at the IFBB World Championships. That trip turned out to be a nightmare, but thankfully it all worked out in the end.

The first time I tried to get to Singapore, I had grabbed the wrong

item before heading to the airport, and left my passport at home. That meant I had to fly all the way back to San Francisco again and get that straightened out before I could enter Singapore. On my second flight across the Pacific, I ran out of food and was forced to rely on the flight attendants, who felt sorry for me and my 'plight,' so they sneaked me a couple of meals from the onboard kitchen. By the time I got to Singapore, the stress of it all combined with the water retention from all that flying (a total of about 45 hours!), and eating salty foods, had put me well over the middleweight limit of 176 pounds.

As soon as I got to the hotel and put my stuff away, I started jogging around the place— desperately trying to shed that excess weight. By the time of the weigh-ins, I was still 'borderline' and panicking that I wouldn't make it. The USA already had a light-heavy, **Chuck Williams**, so if I missed my weight the whole trip would have been for nothing. Needless to say, the NPC wouldn't

have been too pleased with me, either.

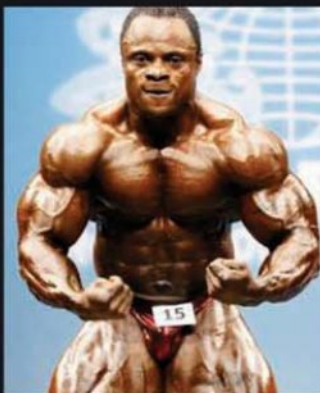
As I watched the weigh-ins, I noticed that the guy calling out the weights would pause after the pounds and before the percentages: "One seventy-six... point 1." When it was my turn, I gave him just long enough to announce '176,' and then I jumped off. I probably was still a little over the limit of 176 ¼. Once I got up onstage with the other middleweights, I got the first callout and they kept calling me out to compare me with other guys. It got to the point where I wanted to hide after awhile, because I was tired of hitting poses!

In the end, I won my class and turned pro. Team USA did well that year. **Bob Paris** won the heavies, and **Chuck Williams** won the light-heavies. Only our lightweight, **Jesse Lujan**, didn't win his class, but it's always been tough for Americans to beat the lighter guys from Europe and Asia. All this happened over 25 years ago, but I still remember it like it was yesterday.

CHARLES GLASS—Trainer of Champs

The New York Pro

I made it out to New York once again to watch the final contest of the spring season, and two of my clients made the top five. I was very impressed with **Hide Yamagishi** and the improvements he made since we started working together about six months ago. He either trains with me or with my colleague, Paul Finn, and he is an ideal client. Hide is always on time, and puts out maximum effort at every workout. Going purely on condition, you could have argued to place him higher than fifth. But structurally, he still has a couple of areas he needs



to fill in more. He has done very well this year at the Iron Man and Orlando shows, and the biggest mystery to me is: why doesn't a magazine have this amazing up-and-coming pro under contract?

As for **Silvio Samuel**, plain and simple, he didn't train hard enough for this show. He was stuck in Spain for almost a month in the first half of his prep,

and had a run of bad luck over there, including having his car broken into. By the time he got back here and we started working together, I could see his heart just wasn't into this one. But his visa situation is being settled now, and he's looking forward to getting back to his best form at the Mr. Olympia.

It was great to see **Markus Ruhl** back up there. I'm not

sure if this really was his last show ever (he may not even know that at this point), but I would like to see him even out his fullness. Some parts of his physique were fuller than others, and I think it's an issue he could address.

Dennis James looked just about the best I have ever seen him. I still see some room for improvement, and hopefully we will be working together for the Olympia.

As for **Evan Centopani**, congratulations on a job well done. It couldn't have been easy—going into his first show up against some real veterans, and doing it with a new coach—but he pulled it off and looked really good. Evan has amazing potential as long as he keeps improving, which I am sure he will. He's still a young guy and he seems to have a solid work ethic.

Before I get into my comments on the 202 class, realize that these are just my opinions. Since bodybuilding is a subjective sport, 'opinions' about physiques are all it really comes down to anyway. To my eyes, **David Henry** should have won rather than taken third place. I say this while taking nothing away from winner **Kevin English** or runner-up **Mark Dugdale**, who are both excellent competitors. The only weakness Henry showed was a film of water on his glutes and hams, areas Kevin and Mark were hard as nails in. But from the front, Henry was just as hard as they were, and even from the back—if you go from the waist up. David packs a lot of thick dense muscle and I thought he had superior back, chest, shoulder, and arm development. I wasn't a judge obviously, but that's how I saw it.



New Client: Stan McQuay

He turned pro at the 2006 NPC Nationals, and now that the 202 class is taking off, **Stan McQuay** will finally be competing in the IFBB. We've only started training together recently, but so far it's been very productive. Stan puts 110 percent into every workout, and is willing to try new exercises and 'tweaks' on old ones. The guy has phenomenal shape, structure, and symmetry, and I think he will make a real impact in the 202s at the Tampa show later this year.

Missed You In New York, Kai

I meant to talk to Kai in New York, because the way we both left things when he left was pretty vague. I saw him from a distance and tried to get down to say "hi," but by the time I got there he was gone (I tweaked my lower back earlier in the week back in L.A., and couldn't move too fast like I normally do). Since I know he reads MD, I just want to say that I am truly happy for him and the success he's had, and I wish him the best in everything he does. ■

Got a question for Charles? E-mail it to him at editor@musculardevelopment.com and you could see it answered right here in MD!

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LET'S HEAR IT FOR THE LADIES!

I must congratulate Steve Blechman and MD for starting to feature women's bodybuilding again— something no other major bodybuilding magazine is currently doing. This is great news. I have always had the utmost respect for how hard the women work for such little reward and recognition. Are there some female physiques I don't like and that I think have taken things too far? Yes, but I still respect the hard work and dedication they put out year after year.

Personally, I would love to see women's bodybuilding go back to the 'old days' of **Cory Everson** and company and that type of body. I know you can't turn back time, but this generation of ladies would be wise to consider that back then, women's contests were often held as stand-alone events, not paired up with a men's pro show or anything else, and they routinely sold out large venues. These days the women's pro shows often seem like an afterthought, tacked onto or in between another pro or even an amateur event, or some sort of filler between the Fitness and Figure girls.

Back in the late '80s and early '90s, we had great female pros like **Tonya Knight, Sharon Bruneau, Anja Langer, Juliette Bergman, Lenda Murray** and others with fantastic, yet decidedly feminine, physiques. Women, even young girls, would see their photos and want to look like them. Then things began to change. The women soon began getting bigger, and femininity ceased to be a consideration for many. Stomachs and waistlines expanded. Acne got worse, voices got deeper, hairlines receded (as beard stubble advanced!), faces got harsher looking— you know the story.

I don't blame them. They did what they had to do to keep up with what was being rewarded in their sport. The nice-looking women with the pretty, but smaller bodies were not placing anymore. Their only two options were to walk away from the sport they loved, or put the mass on and stick around.

Bigger is not always better. I know what you will say to that—who the fuck am I to judge how big a woman should get? If any woman wants to get as huge as she possibly can, that's certainly her prerogative. But if you want women's pro bodybuilding to start growing again and gain some measure of acceptance from the general public (right now even most bodybuilding fans have ceased to support it), things have to calm down with the mass and masculin-

ization. Judges have to stop rewarding the biggest, freakiest girls. Instead, place the girls with nice shape and symmetry, nice complexions, and pleasing physiques higher. Then, the bigger girls will see they need to tone it down a bit. Look, money talks and bullshit walks, right?

Apart from my ex-wife Cathy, I don't know of any female bodybuilders who have a supplement contract—and that includes several Ms. Olympia and Ms. International winners. Can you imagine a Mr. O or an Arnold Classic champ without a supplement contract? Most of the female champions today simply aren't marketable, even within their own sport. There are a lot of young guys out there who want to look like Kai, Victor, Jay, Dexter, or Wolf, but not many young women who want to look like Iris or Yaxeni (no offense to either one and nothing personal at all— just making a point).

In the 'good old days,' you saw female bodybuilders on magazine covers, in training articles, and in supplement ads. 'Fitness models' have taken their places. The women work hard and they deserve so much more than to be ignored or patronized. They won't get it until they tone down the drug usage. Why is it OK for the men, but not the women? It's not! Dorian and Ronnie redefined muscle mass, and too many other guys destroyed their physiques trying to play the size game. They got bigger muscles— plus bloated guts, bald heads, and you suddenly saw 25-year-olds looking 40.

Now it's going the other way, toward tighter midsections and better shape and not necessarily being as enormous as possible. We have a 230-pound Mr. Olympia right now after 20 years of 250-300-pounders! With wide shoulders and a small waist, you always create an illusion of more size anyway.

I want to see female bodybuilders get all the respect and everything else they deserve, because I know they have more than paid their dues. They just need to do their part and try to get back to the ideals that made Cory and Lenda Murray so popular in their heydays. It will take some time to make the adjustments, but with MD stepping up to the plate and pledging their support by featuring the ladies of muscle, we're off to a great start. Let's work together to put women's bodybuilding back on the map in a big way! ■

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