

GET THE **PUMP**

The Last Word In
Bodybuilding

GET THE PUMP

LEGAL DISCLAIMER

This book represents the culmination of over 100 years of bodybuilding knowledge and know-how. Hopefully, you will enjoy reading it, and will come to refer to it from time to time as your bodybuilding goals change. This book would not have been possible were it not for Iovate Health Sciences, who sponsored and generously paid for all costs involved in its development, and the dedicated Iovate researchers, who worked with the authors in developing the content. In this book, you will see products promoted. Feel free to investigate them further if you are interested, since knowledge is power. If you do use a supplement, make sure you read the label carefully and follow its instructions. It is also advisable to consult a physician before beginning any diet or exercise program, including those contained in this book. Feel free to log on to **getthepump.com** to fill out a survey to help in creating other books in the future that you find truly interesting, and to share more about your experiences as a bodybuilder. That's enough lawyer-speak and red tape ... get busy reading and have some fun!

DEDICATION

This book is dedicated to you – the bodybuilder. Your discipline, passion, and dedication to bodybuilding served as the inspiration we drew upon to create the best book we could.

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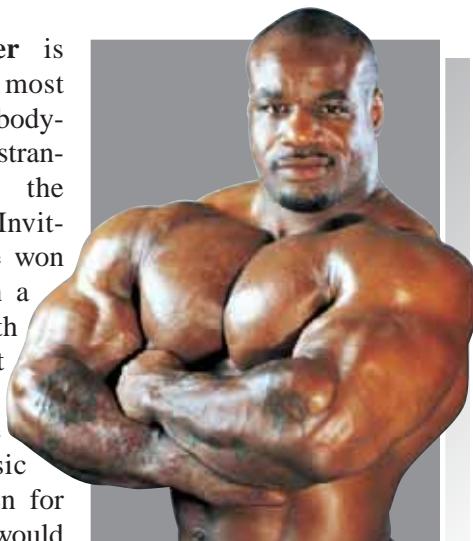
Helena Yoon



Scott Abel is considered by many in the industry to be the trainer to see when you want to win a bodybuilding championship. In fact, it usually comes as no surprise when Scott's clients take home the hardware at the shows in which they compete. Scott's real-world and theoretical knowledge of diet, supplementation, and

training, along with his ability to apply it to just about any bodybuilder preparing for a contest, makes him a true icon in the sport. Scott is also the innovator behind a unique training system called "Innervation Training." Educated at Queen's University, Scott is a regular lecturer and contributor to magazines around the world. Not one to rest on his laurels, Scott also sports what some consider to be the best physique of any trainer out there. He practices what he preaches!

Chris Cormier is this decade's most successful pro bodybuilder. With a stranglehold on the Ironman Pro Invitational title (he won it four years in a row), and with four straight runner-up finishes at the Arnold Classic (had it not been for Jay Cutler, he would be a three-time champion), Chris has cemented himself a place in bodybuilding's hall of fame whenever he decides he's had enough of winning shows. With arguably the most



symmetrically complete physique for a big man ever, Chris dominates when he steps onstage. With knowledge gleaned through years of toil in and out of the gym, and shared in his regular column in *Muscular Development* magazine, Chris has developed a knack for knowing what works and what doesn't.

Jonathan Coyne

obtained his honors bachelor degree in biological sciences from the University of Guelph. Currently enrolled in post-graduate studies at world-renowned University of Toronto, Jonathan has spent the past 10 years studying the scientific principles of hormone interaction, nutritional supplementation, and biochemistry as they relate to muscle growth. Jonathan has also managed to take time away from his studies to compete successfully on the amateur side of bodybuilding in order to apply his theoretical knowledge. An avid supplement industry expert and employee at Iovate Health Sciences Inc., Jonathan's unique knowledge of the ins and outs of nutritional supplements brings an exciting edge to this book.



Jay Cutler is the hottest bodybuilder on the pro circuit today. No one has finished first or second in as many shows as Jay has in the last three years. Thrice a runner-up in the Mr. Olympia contest, and the winner of the first three-peat in the history of the Arnold Classic, Jay is the epitome of professional bodybuilding

success. With arguably the most massively complete physique onstage and conditioning that is second to none, Jay is the pundits' pick as the heir apparent to the Mr. Olympia throne. The writer of a monthly column in *Muscular Development* magazine, Jay is respected as a true authority in the sport of bodybuilding. However, Jay's success comes primarily due to his mentally intense approach to bodybuilding. Cerebral, methodical, and intelligent, Jay prides himself on coming into each show prepared to win. And he does.



Never has a bodybuilder been able to express himself as eloquently as **Mat Duvall**, as evidenced by his regular and much-read column in *Muscular Development* magazine. And at the same time, few bodybuilders train and diet with the intensity Mat demonstrates. As a pre-med student in university, Mat

studied human physiology and nutrition. He would later apply this knowledge as he built a National-Championship-caliber physique and most certainly the strongest and freakiest arms the world has ever seen. Mat lends his intelligent and intense approach to building massive arm pumps for readers. Caution: His tale is not for the weak of heart!

Dr. Nick Evans, BSc, MD, FRCS (Orth), is an orthopedic surgeon and sports physician in Los Angeles, California. He studied medicine at the University of London in England and was trained in orthopedic surgery at the University Hospital of Wales.

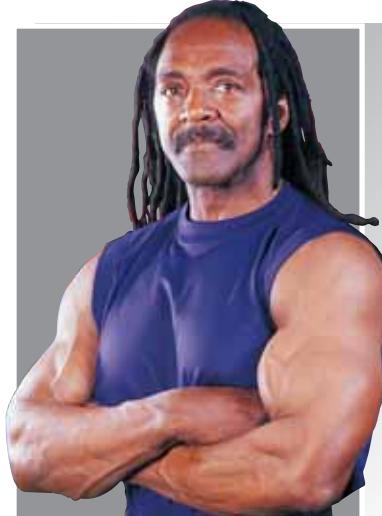
Dr. Evans developed additional skills in arthroscopic surgery at Dalhousie University in Canada and at the Southern California Center for Sports Medicine. As a physician, he has worked with many elite athletes. As a scientist, he has fostered research in sports injury and performance-enhancing aids. He has written for over 15 scientific publications and has spoken at numerous international meetings. Dr. Evans is a columnist for *MuscleMag International*. In honor of his work, Dr. Evans recently appeared in an edition of *Who's Who in Medicine and Healthcare*.



If you ask the best pro bodybuilders in the world, **Charles Glass** needs no introduction. When top pro bodybuilders run into training problems, they see Charles, and he fixes the problem. More sought-after than any other trainer in the world, Charles operates out of prestigious Gold's Gym in Venice, California.

With a university education

in engineering, Charles has a keen understanding of the mechanics and movement of the human body, and is able to tackle any muscle group with a thorough and scientific training regimen guaranteed to solve the problem. Charles is a regular and outstandingly popular columnist for both *MuscleMag International* and *Muscular Development* magazines. But Charles isn't just a great trainer and author. Charles is also an IFBB pro and world-champion bodybuilder. Now in his forties, Charles sports a physique that remains as stunning as ever – a testament to his knowledge and know-how.



National champion **King Kamali** is one of the most feared new bodybuilders on professional stages today. With a physique that can lay to waste those of more established pros and a persona that takes charge, King is the future of bodybuilding. A regular feature in *Flex* magazine, King's brash, no-holds-barred approach to bodybuilding has revolutionized the sport.

With freaky conditioning and full, round muscles, King is knocking on the door of bodybuilding's most hallowed contests. With an intense attitude in the gym and a voracious appetite for knowledge about physiology and nutrition, King is the perfect bodybuilder to consult for true success. Educated at George Mason University with a bachelor of science degree in exercise physiology, King can talk the talk and walk the walk. With this book, King brings his no-nonsense attitude to the printed page for the first time ever.

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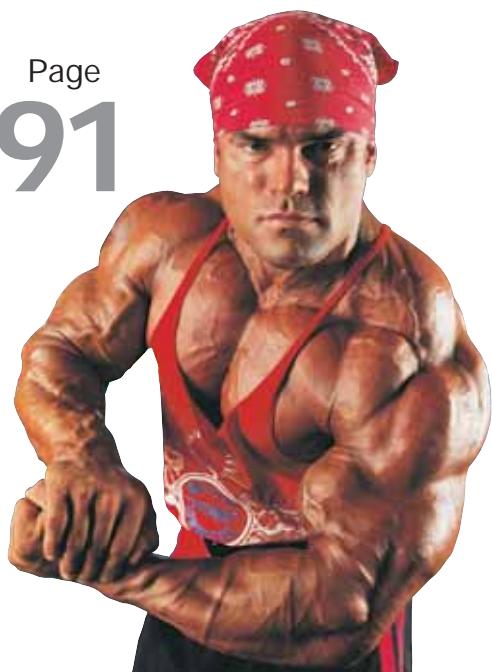
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The Last Word In Bodybuilding



Get The PUMP And Get GROWING

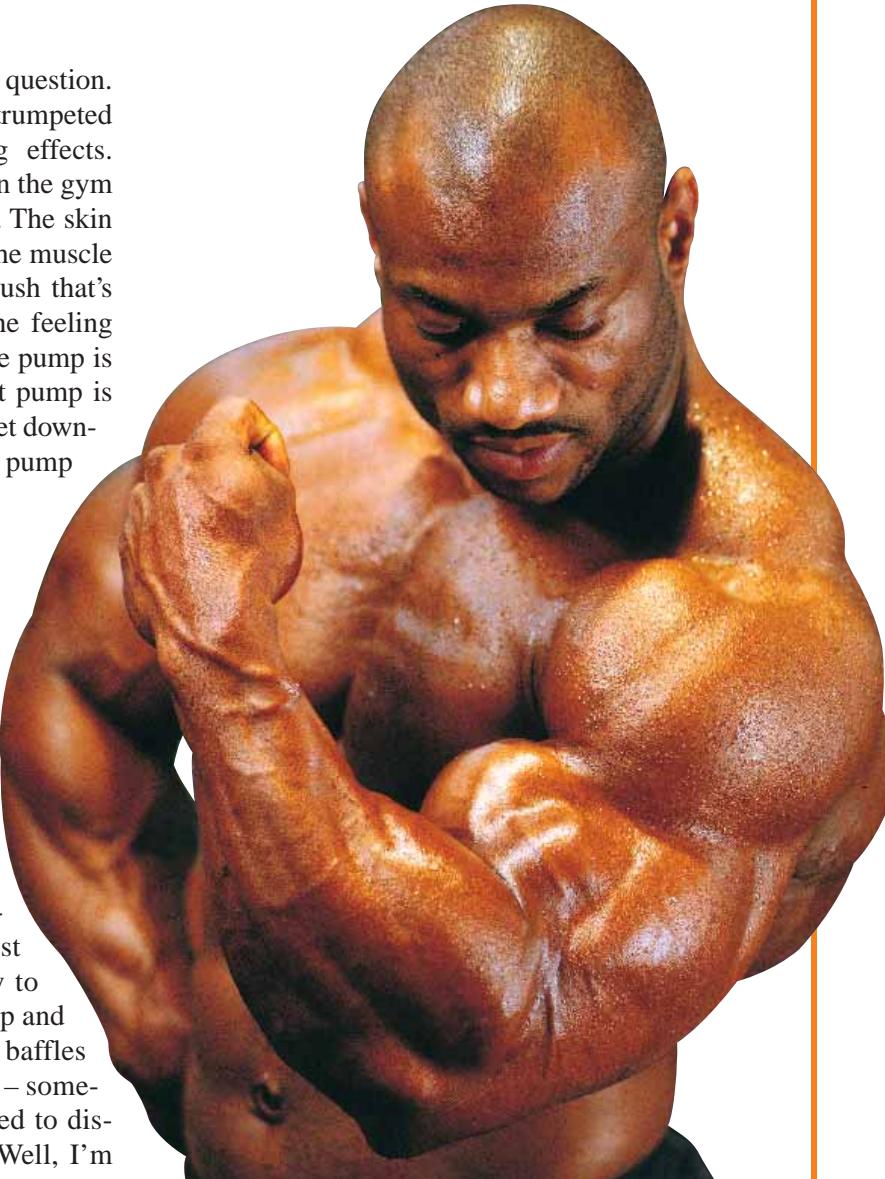
– Jonathan Coyne

WHY SHOULD YOU READ THIS BOOK?

Why even bother chasing the pump? Good question. After all, it's not like the pump has ever been trumpeted for its musclebuilding or strength-boosting effects. Truth be told, we've all just chased the pump in the gym for one simple reason – it feels damned good. The skin stretches. The muscle aches. The veins pop. The muscle bellies start to swell, and all is good. It's a rush that's indescribable, really – I certainly can't do the feeling justice in this chapter. For us bodybuilders, the pump is like an addiction. We're like junkies, and that pump is our fix. Heck, I've known bodybuilders who get downright cranky and moody when they don't get a pump – like they're jonesing for it.

We've done the research, and it's true! Maximizing the pump is the secret to building massive muscular growth!

So we've established that the pump feels good, but is there any reason to get a pump in the gym beyond a type of mental and psychological pick-me-up? Absolutely! It's just that no one (and this seems absolutely crazy to me) has ever really bothered to study the pump and what it does to your muscles. I mean, it really baffles me that no one has bothered to take the pump – something so elemental to bodybuilding – and tried to dissect it to see if anything good comes of it. Well, I'm here to tell you that we've done the research, and there is a pot of gold at the end of that rainbow. Curious? Thought you would be.



Now this is what pumped muscle looks like! Dexter Jackson, one of the world's best pro bodybuilders, demonstrates how knowledge of the pump leads to real size!

THE PUMP – THE UNSTUDIED TRUE SECRET TO BODYBUILDING SUCCESS

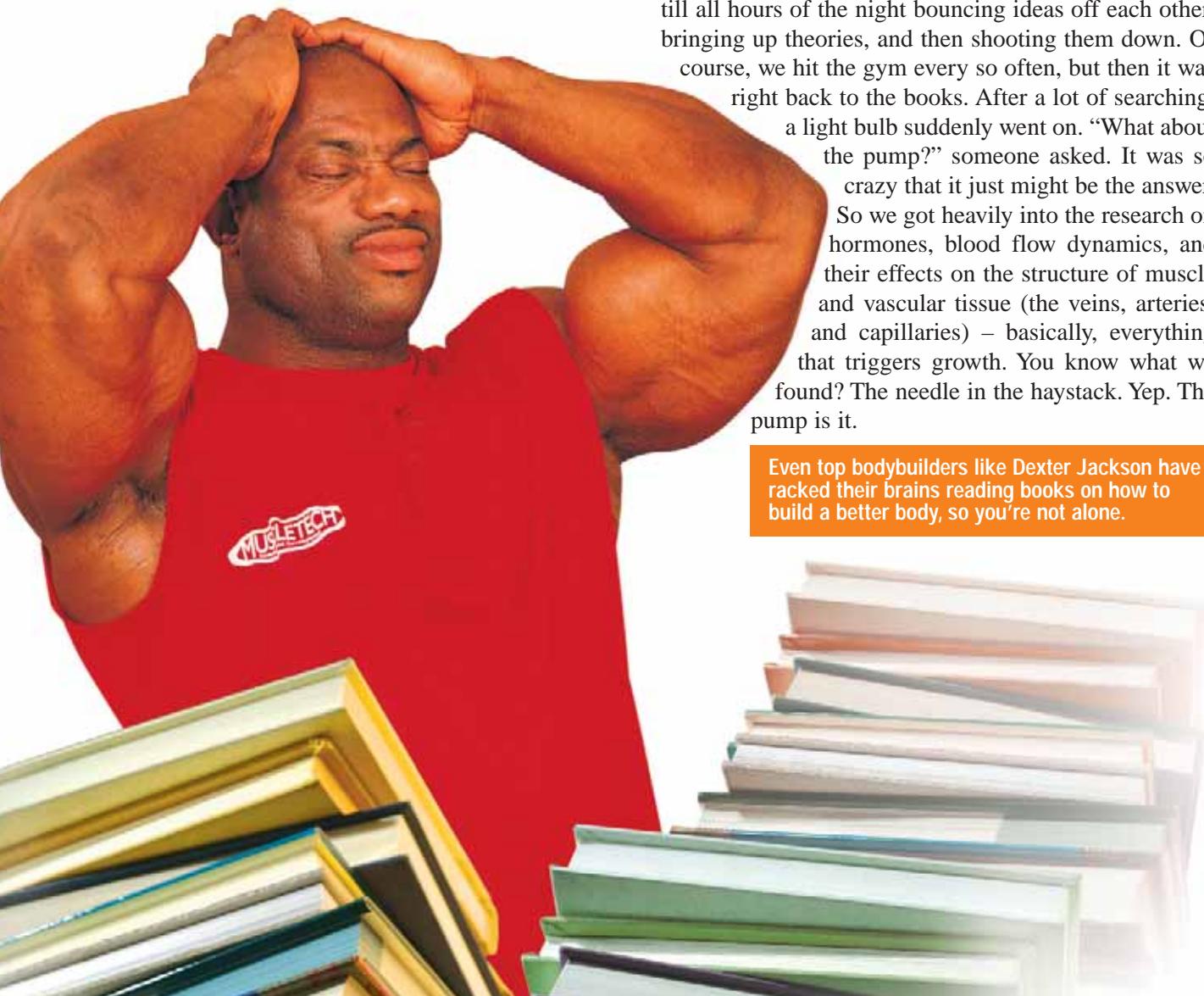
A while back, I was thinking to myself, “If I see another book on some bodybuilding secret, I’ll tear my hair out and throw my weight belt across the room!” There are just so many books out there that it’s impossible to count them all. You’ve got books on dieting – low carbs, high protein, low fat, lots of fish, no fish, vegetarian, lots of meat – not to mention mainstream books for your mom and dad about things like the South Beach diet, the Atkins diet, and Dr. Phil’s plan, among others. You’ve got training books coming out of the woodwork – high reps, low reps, power bodybuilding, powerlifting, heavy-duty training, periodization – and that’s just a snapshot. I ask you, how are you supposed to make head or tail of this mess? I know I can’t, and I make my living off this sport. What’s a guy to do? All I want to do is get big and strong as fast as possible, and if you can give me a tip or two along the

way to make it easier, then thank you very much. We bodybuilders aren’t afraid of hard work in the gym or sitting down to a plate of chicken and rice – just don’t waste our time. We get really mad when you waste our time.

**It's time to cut through the crap
and give you the real information
you need to grow. That's
what this book does!**

So I wondered one day, “Is there really a true secret to getting bigger and stronger in less time?” I didn’t think so at first, but my team and I weren’t ready to give up that easily. We hit the library. We pored over scientific journal after scientific journal. We stayed up till all hours of the night bouncing ideas off each other, bringing up theories, and then shooting them down. Of course, we hit the gym every so often, but then it was right back to the books. After a lot of searching, a light bulb suddenly went on. “What about the pump?” someone asked. It was so crazy that it just might be the answer. So we got heavily into the research on hormones, blood flow dynamics, and their effects on the structure of muscle and vascular tissue (the veins, arteries, and capillaries) – basically, everything that triggers growth. You know what we found? The needle in the haystack. Yep. The pump is it.

Even top bodybuilders like Dexter Jackson have racked their brains reading books on how to build a better body, so you're not alone.



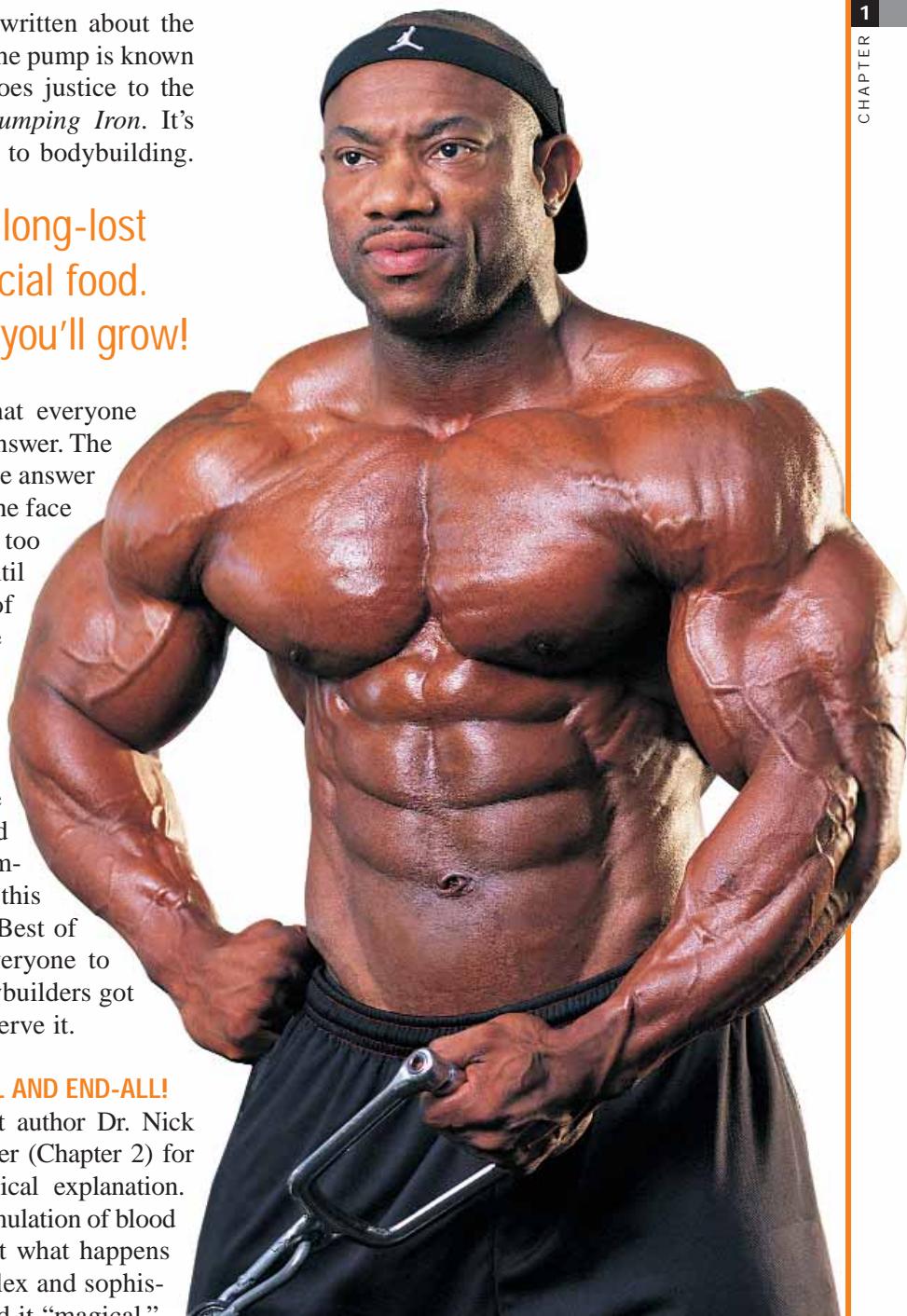
Then it hit us – no one has ever written about the pump's benefits. Why not? After all, the pump is known to all bodybuilders. Heck, Arnold does justice to the glory of the pump in the movie *Pumping Iron*. It's something so basic and fundamental to bodybuilding.

The secret isn't some long-lost training routine or special food. Maximize the pump, and you'll grow!

But I guess it's been so obvious that everyone must have figured it couldn't be the answer. The pump? Nah! Well, we're here to say the answer to real growth has been staring us in the face this whole time ... we were just too bloody ignorant to take notice. Until now. Like I said, there's been a ton of books before this one preaching some kind of "secret" for growth. And I'm sure some of them were well-researched and meant well. But the secret isn't some long lost training regimen from Bulgaria. It's not some food combination you've never heard of. It's a lot more simple and more complex at the same time. But it's here in this book, and you're going to get it all. Best of all, we're going to lay it out for everyone to know. No more secrets. It's time bodybuilders got the real tricks for getting big. We deserve it.

THE PUMP – THIS BOOK IS THE BE-ALL AND END-ALL!

What's a pump? We'll let our expert author Dr. Nick Evans touch on that in the next chapter (Chapter 2) for those of you wanting the physiological explanation. Quite simply, the pump is just an accumulation of blood inside the muscle. Sounds simple. But what happens as a result of the pump is truly complex and sophisticated ... one of our guys even called it "magical." If you're high on the scientific physiological explanations on why your body does what it does, then this chapter is for you. I don't think there's anyone out there today with a greater breadth of expertise in the industry on physiology and anatomy than Dr. Nick Evans. When he speaks, smart bodybuilders listen. This is one man who knows his stuff inside and out. Best of all, he doesn't just look like a pencil in a lab coat – this is one seriously big doctor. Just looking at the size of his arms, you know he's learning stuff in the lab and testing it in the gym.



This book has it all – the best advice on how to train, eat, and supplement to maximize the pump. That'll get you the body you've wanted!

Then you get resident expert Scott Abel's breakdown on how the pump builds muscle size and strength. When bodybuilders want to get as big and as ripped as possible for their contests, you can bet a lot of them turn to one man – Scott Abel. His reputation speaks for itself. This cat has forgotten more about how to get massive and shredded than most will ever learn in three lifetimes. His roster of clients is so jam-packed full of champion body-



Scott Abel is well-recognized as a pioneer in helping bodybuilders grow. And we got him to write for this book for the first time ever. His Chapters are a must-read!

builders that there's a waiting list a mile long to become one of his clients. And when you do, you can pretty much guarantee victory. Scott might be the planet's first living, breathing PhD in bodybuilding. He knows his stuff. Best of all, you can tell the man practices what he preaches – I know pros who wish they were as big as he is! You simply can't afford to pass by Chapters 3 and 4.

We got the best bodybuilding authorities to write this book. It's the last book you'll ever need!

They explain the nuts and bolts of why the pump really does make you big and strong. They're a definite must-read. I'm not kidding when I say the information in these chapters alone usually costs Scott's clients over \$1000!

And if you haven't had your fill of amazing experts, check this out – we've got the one and only Charles Glass on our panel of authors as well. You name the pro bodybuilder, and he'll tell you Charles is a wizard in the gym. There's no one out there who knows how to simply annihilate the muscle in the gym like Charles does. He's got all the angles, the moves, and the inside secrets.

It's astounding. He works in Gold's Gym in Venice – the Mecca of bodybuilding! And there is literally a lineup just to hear him speak, let alone to train with him. He's simply the best trainer at the best bodybuilding gym in the world. Hundreds of thousands of people pore over every word of his columns in *MuscleMag* and

Our experts explain the nuts and bolts of the pump, and why maximizing the pump works like nothing else!

Muscular Development. The demand for his services is so hot it's thermonuclear, but when he got wind of our project, he couldn't wait to get on board. His years of expertise had already taught him the value of the pump, and now for the first time ever, in Chapter 6, Charles



Charles Glass is the trainer of trainers. The best pros use him to help them in the gym. Check out Chapter 6 for his views on training and supplements!

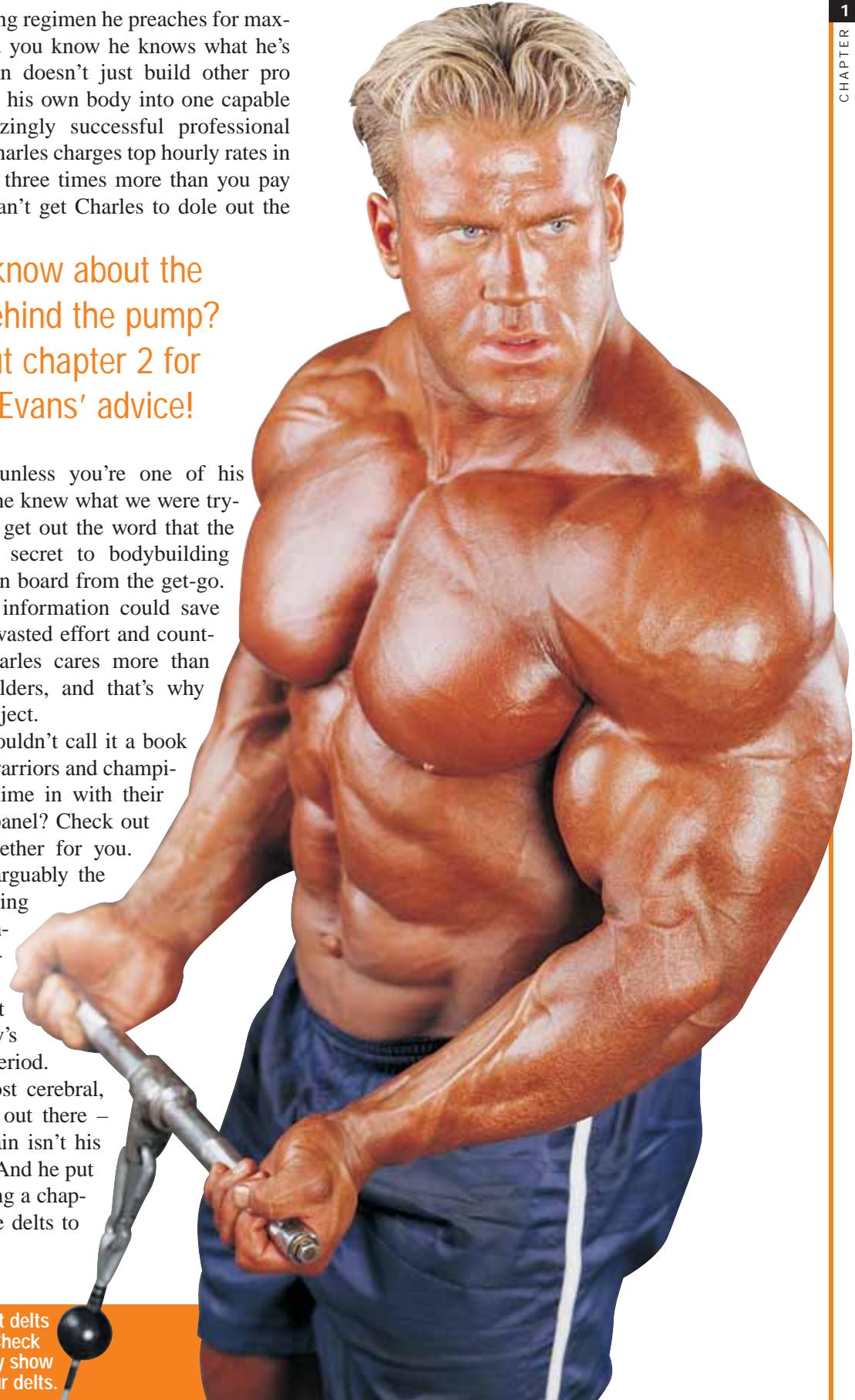
gives you the real training regimen he preaches for maximizing the pump. And you know he knows what he's talking about. The man doesn't just build other pro bodybuilders – he built his own body into one capable of sustaining an amazingly successful professional bodybuilding career! Charles charges top hourly rates in Venice, and he's worth three times more than you pay him. Trust me – you can't get Charles to dole out the

Need to know about the science behind the pump?
Check out chapter 2 for Dr. Nick Evans' advice!

advice in Chapter 6 unless you're one of his privileged clients. But he knew what we were trying to accomplish – to get out the word that the pump is the ultimate secret to bodybuilding success – and he was on board from the get-go. He knew this type of information could save bodybuilders years of wasted effort and countless saved dollars. Charles cares more than anyone about bodybuilders, and that's why he's with us for this project.

And of course, we couldn't call it a book unless we got the true warriors and champions of our sport to chime in with their work. Want an expert panel? Check out what we've pulled together for you. You get Jay Cutler – arguably the best bodybuilder walking the planet today – teaching you how to maximize your delts in Chapter 9. Deltoids don't get any better than Jay's boulder shoulders – period. Jay is probably the most cerebral, intelligent bodybuilder out there – I'm not so sure his brain isn't his most powerful muscle. And he put it to work for us, penning a chapter on how to pump the delts to the max.

Are these not the biggest delts in bodybuilding today? Check out Chapter 8 and let Jay show you how to pump up your delts.



You get Chris Cormier – probably the most consistently effective pro bodybuilder of the last decade – teaching you how to pump your chest for serious growth in Chapter 10. Many feel that Chris has the world's most symmetrical physique, and I have to agree. Best of all, Chris is a true student of the game – he's learned it all three times over! This man knows what he's talking about!

Check out Chapter 8 to see which supplements you need to take your pumps to a new level!

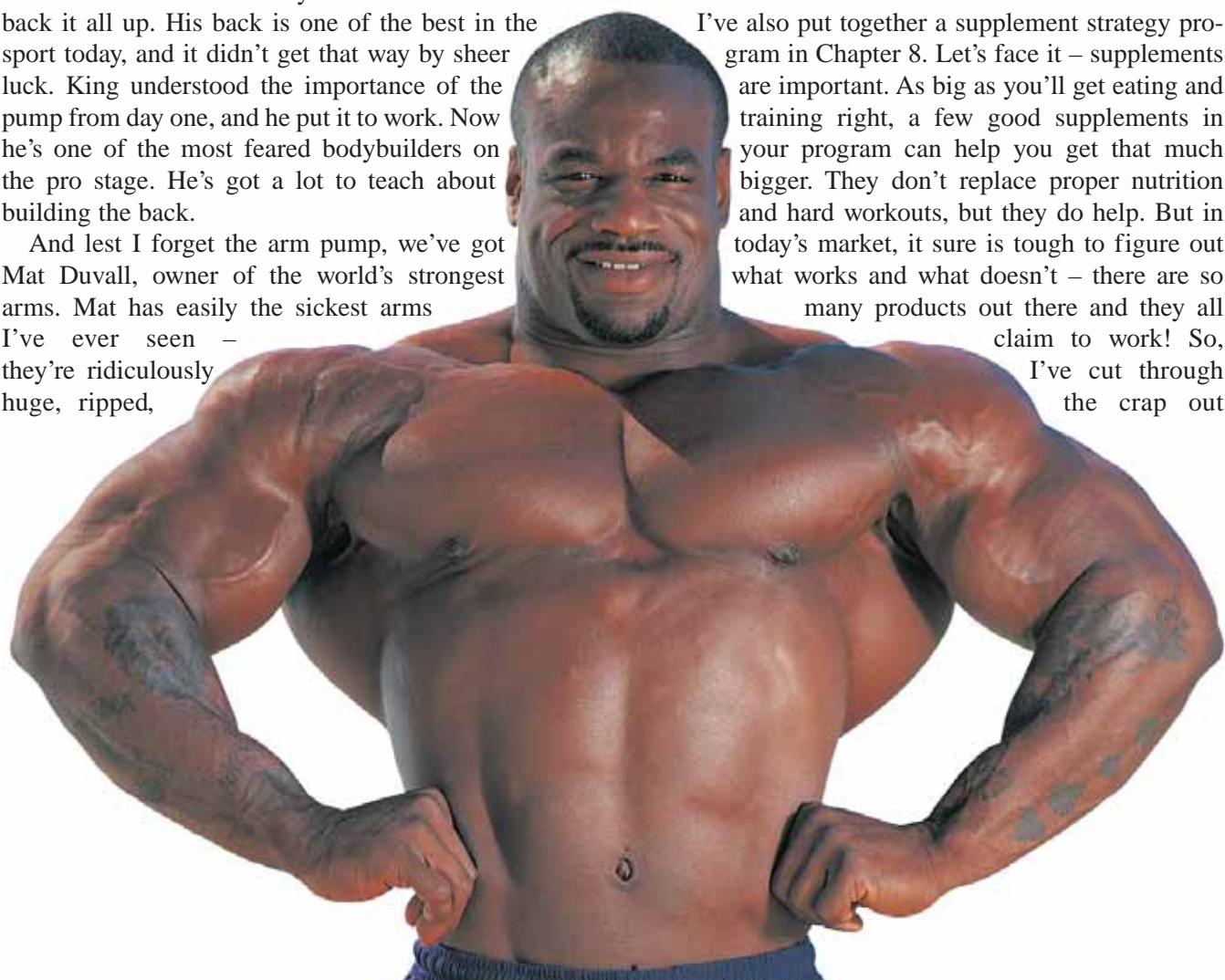
Then we've got King Kamali showing you how to pump the back for wings you can fly with in Chapter 12. This is one guy who tells it like it is and keeps it real. He's a no-BS kind of bodybuilder with the brains to back it all up. His back is one of the best in the sport today, and it didn't get that way by sheer luck. King understood the importance of the pump from day one, and he put it to work. Now he's one of the most feared bodybuilders on the pro stage. He's got a lot to teach about building the back.

And lest I forget the arm pump, we've got Mat Duvall, owner of the world's strongest arms. Mat has easily the sickest arms I've ever seen – they're ridiculously huge, ripped,

and vascular. But the great thing about Mat is that he knows how to help other bodybuilders build their own sick sets of guns. Mat's a thinking man's bodybuilder who values the mental part of the process as much as the physical. There's no better expert to speak about building massively pumped arms, and that's why Mat was the perfect choice to pen Chapter 11. Check it out – your arms will never be the same!

And if you haven't had enough by that point, you can read the stuff I've contributed to this already awesome manifesto. In Chapter 7, I put my brain to good use by penning what I think is the last word in nutrition. In it, I explain what the nutrients are, and how to set up a foolproof strategy to get the right nutrients at the right times, and the end of the chapter is loaded with customizable charts and what not to help you get even further. I suggest you check us out at getthepump.com for even more information on nutrition that you can't get in this book alone.

I've also put together a supplement strategy program in Chapter 8. Let's face it – supplements are important. As big as you'll get eating and training right, a few good supplements in your program can help you get that much bigger. They don't replace proper nutrition and hard workouts, but they do help. But in today's market, it sure is tough to figure out what works and what doesn't – there are so many products out there and they all claim to work! So, I've cut through the crap out



A big, thick, wide chest is the order of the day in Chapter 10. Chris Cormier shows you how to do it!



The world's freakiest, strongest guns belong to Mat Duvall. It's no surprise, then, that he shows you how to get massively pumped guns in Chapter 11. It's awesome!

there and I've tried to make the plan as simple and easy to follow as possible. Your supplement strategy shouldn't be fancy. The products you use should be backed by science, though. I worked with all the guys to put together a solid plan. Actually, we're all using the products in Chapter 8 and making some pretty noticeable gains as a result. The supplements we recommend focus on increasing the pump, so they work perfectly with all the recommendations in this book. And for good measure, I threw in a few non-supplement tips beyond in Chapter 8 that I think you'll find quite interesting. It's advanced stuff for you bodybuilding geeks out there!

GET READY FOR REAL INSIDE INFORMATION

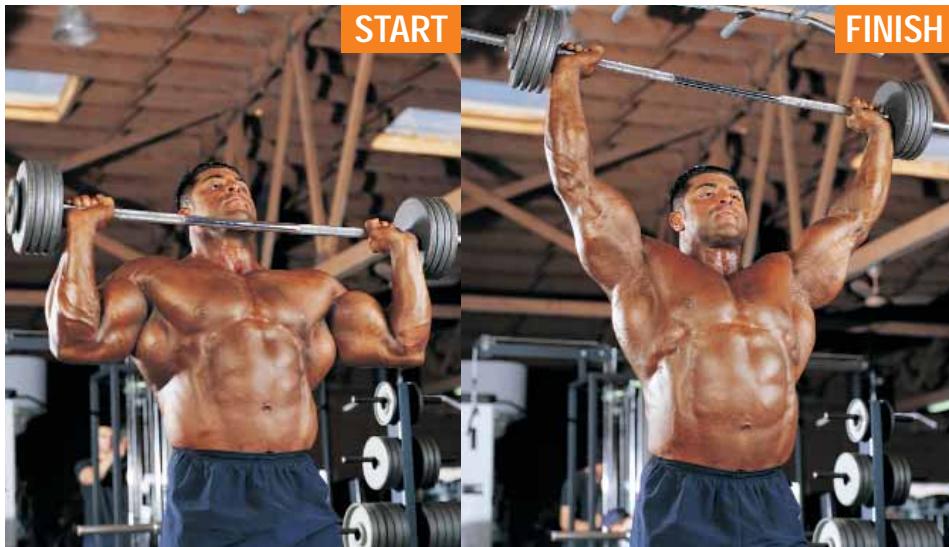
Our book certainly isn't the first book telling how to get big and strong. But no other book I've found has brought together the

top experts in the field for this kind of collaborative effort. And truly, no one else, in my mind, has really hit the nail on the head the way we did by exploring the value of the pump. But believe me when I tell you: Once you harness the pump, you'll kick yourself in the ass and pat yourself on the back at the same time. You'll kick yourself in the ass, of course, for having wasted so much time and money to this point. And you'll pat yourself on the back because the days of frustrating lack of progress are over.

Follow what this book teaches, and you will grow!

I know I speak for our team of authors when I say we've managed to give you the best book in bodybuilding history. We're really proud of it. We couldn't have done it alone, mind you. We had a lot help from Iovate researchers. With their company providing generous financial support in helping us get our hands on the research, we were able to get this project off the ground. It's a very forward-thinking company that's funding and publishing cutting-edge research on a daily basis to help bodybuilders grow bigger and stronger. And Iovate researchers make the best products for bodybuilders and serious athletes anywhere in the world. They simply care about bodybuilders. I like that in a company. I'm sure you do too.

Most of all, we'd like to thank you for taking the time to read our book. We think that if you put the information to use, you're going to get big, strong, pumped, and looking the way you've always wanted. So let's get to it!



King Kamali demonstrates the standing military press – a seldom-used exercise to work the delts. For more on what King does to get big, read about how he pumps his massive lats in Chapter 12.



The SCIENCE Behind The PUMP

– Dr. Nick Evans, MD

WHAT THE HECK IS BLOOD, ANYWAY?

The average person weighing 175 pounds will have about 5 liters of blood. And if you get heavier and more muscular, your blood volume will increase. Bigger guys have more blood! The body's whole blood volume gets circulated throughout the entire body every minute. That means the cardiac output (the amount of blood your heart pumps out) is on the order of five liters per minute!

Dr. Nick Evans is a licensed medical physician and avid bodybuilder. When he speaks, smart bodybuilders listen!

The blood has four components. First, there are the white blood cells and platelets, but they're not really involved in what we're talking about here. Then there are the red blood cells. Red blood cells are the key cells in the blood that serve to bring oxygen from the lungs to the tissues of the body, and they also remove waste products and carbon dioxide. The final important component is the plasma, which transports various dissolved substances in the body.

You don't get to be as big as National champion Branch Warren without understanding a thing or two about the science behind muscle pumps!



HOW DOES BLOOD OXYGENATE ITSELF AND TRAVEL THROUGH THE BODY?

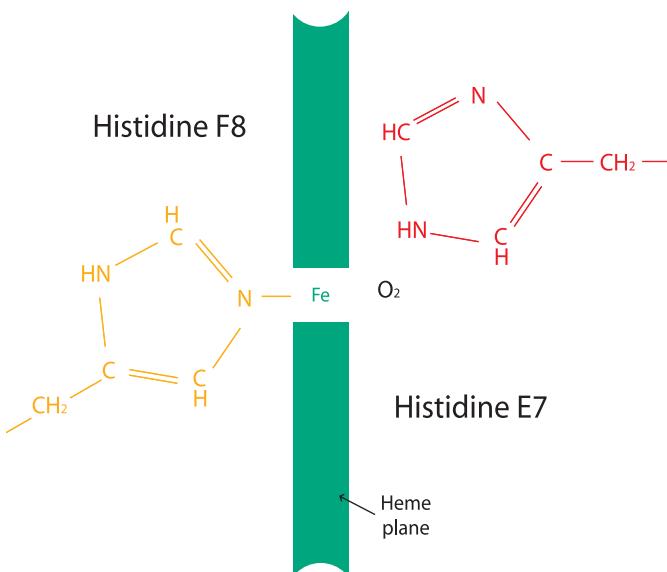
We need oxygen in order to survive. The primary function of the lungs is to exchange gases in the body – oxygen and carbon dioxide, primarily. When you take a breath, oxygen from the air comes into the lungs. Within the lungs, there is a network of tiny little structures that look like clusters of grapes. These are called the alveoli.

Understanding why your body creates a pump can help you maximize results in the gym. As Branch Warren proves, knowledge of the pump yields bodybuilding power!

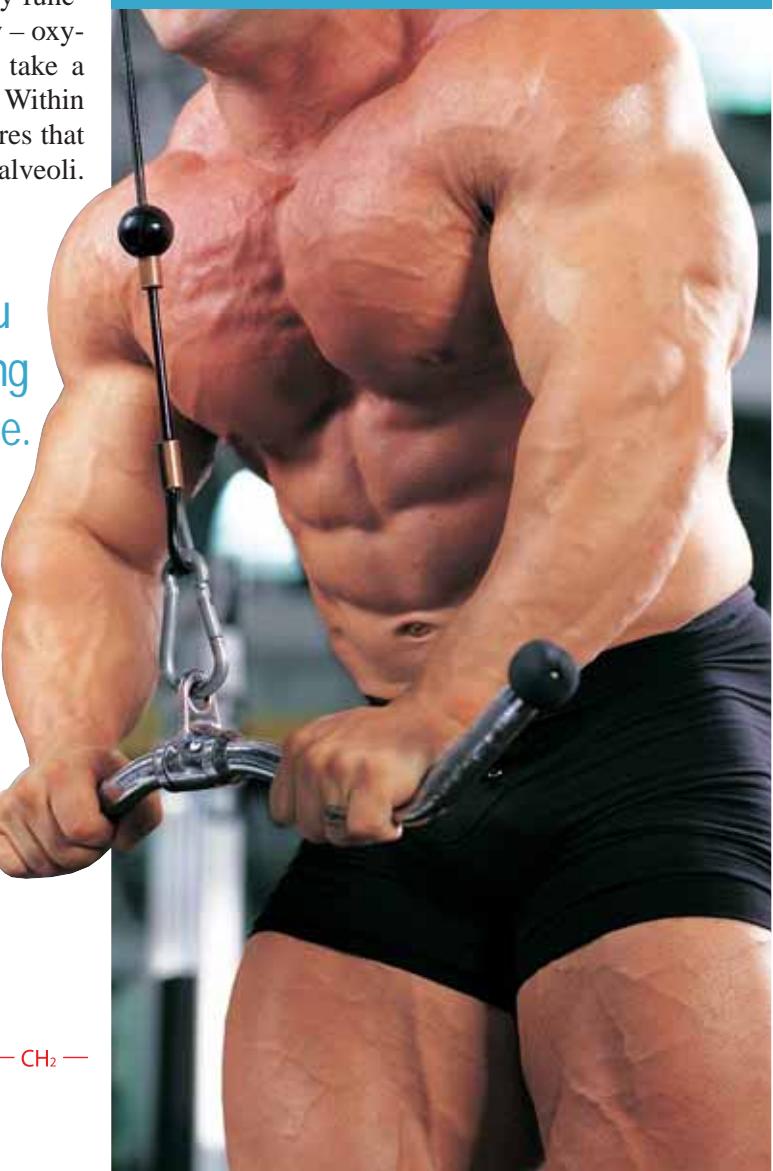
We need oxygen to survive. By increasing the muscle pump, you deliver more oxygen to the working muscles for improved performance.

When you breathe in, the level of oxygen in the alveoli becomes very high. Meanwhile, blood traveling to the lungs is rich in carbon dioxide, and the blood's job is to release the carbon dioxide into the lungs (this is then breathed out) and then bind the fresh oxygen in the lungs and deliver it to the body.

Inside each red blood cell is something called hemoglobin, which has an affinity for oxygen and carbon



Here's a molecular image of the oxygen-carrying component of the hemoglobin molecule in each red blood cell in your body. Each hemoglobin molecule binds a molecule of oxygen and carries it from the lungs to the muscles. Hemoglobin is an essential component of the blood. Its function in maximizing the benefits of the pump cannot be understated.



dioxide, depending on the relative amounts of each of those gases. The relative amounts of those two gases within any particular part of the body will decide whether the hemoglobin takes up oxygen or carbon dioxide. Where the oxygen concentration is high (like in your lungs just after you take a breath), your red blood cells will take up the oxygen and release any carbon dioxide they're holding. If the level of carbon dioxide is high (like in exercising muscles), the red blood cells will take up carbon dioxide and release any oxygen they're holding. Essentially, the blood that is being passed into the lungs is there to take up oxygen and release carbon dioxide. That freshly oxygenated blood then passes back through the left side of the heart and is then sent out into the body.

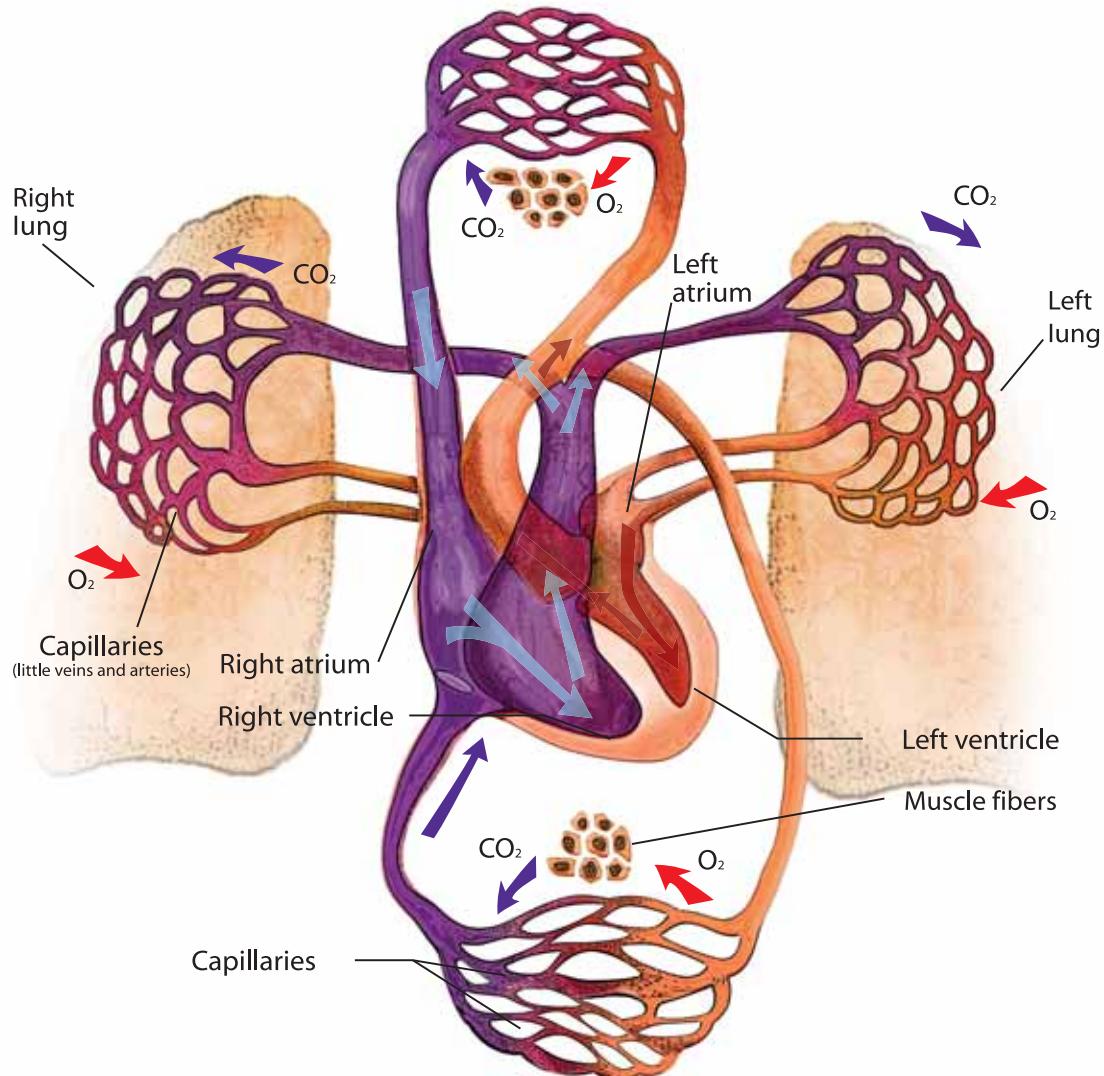
HOW DOES BLOOD FEED THE BODY?

Now we know how the body uses blood to deliver oxygen, but what about nutrients? Again, we are talking about a separate system in the body that supplies and extracts materials from the gastrointestinal tract. When liquid or solid food goes into the stomach and then into the small intestine, the larger molecules (things like carbohydrates, fats, and proteins), are broken down into small components. Then these smaller components are absorbed by the intestines into the blood that circulates around the intestines. Next, all those absorbed components are sent through the liver. Some things are detoxified right away, and other items pass. Essentially, the liver is releasing blood that is high in nutrients to the rest of the body.

After you've eaten a meal, those nutrients are sent to the rest of the body. You've got amino acids (the smaller components of the proteins you eat), simple sugar molecules (the smaller components of the carbo-

All those nutrients you eat get sent to the various tissues in the body thanks to the blood!

hydrates you eat) and fatty acids (the smaller components of the fats you eat) being delivered through the bloodstream, dissolved in the plasma, to the various tissues of the body.



This diagram shows how the blood is circulated in the body. First, blood is pumped out of the right side of the heart (the middle blue portion) to the lungs, where carbon dioxide is exchanged for oxygen. This oxygen-rich blood then travels from the lungs back to the heart (the far right red side), to be then pumped out to the body's various tissues, like the muscle fibers. There, the blood cells donate their oxygen to the muscles in exchange for the carbon dioxide built up in working muscles. The blood then travels back to the heart (the far left blue side), where it's pumped back to the lungs to drop off the carbon dioxide and pick up more fresh oxygen. Then, the process repeats itself over and over again!

IT ALL STARTS WHEN YOU STRIKE THE MATCH!

You could say your body tries to be quite simple. We're usually at rest and possibly eating. The flip side of this is the body's response to activity – the "fight-or-flight" response, which is activated to differing degrees when

Once you start to work out, it's a fight-or-flight situation. It's you against the weight!

you get physically active. When you get active, you get a massive outflow from your nervous system – in particular, a section called the sympathetic nervous system – which causes a complex downstream system of nerves to begin firing. The nerve endings release an instantaneous burst of substances called catecholamines (epinephrine and norepinephrine), which increase the

heart rate. The fight-or-flight response is essentially out of your control. It's your body's way of preparing itself for some kind of physical activity. You may not have even done anything yet, but your heart is going to beat faster and your breathing will become rapid.

If you're about to walk into that gym, you will feel that fight-or-flight response to some degree. Once you start to work out, it's a fight-or-flight situation. It's you against the weight. What's notable is that the intensity of the stimulus will determine the intensity of the fight-or-flight response. But in any case, your heart rate, breathing rate, and blood pressure will all increase. It's important to understand that these are all events going on inside your body to meet the demands you are putting it under. These events are followed by a change in activity within the muscles and the rest of the body. This secondary reaction is the result of a change in blood-flow dynamics.

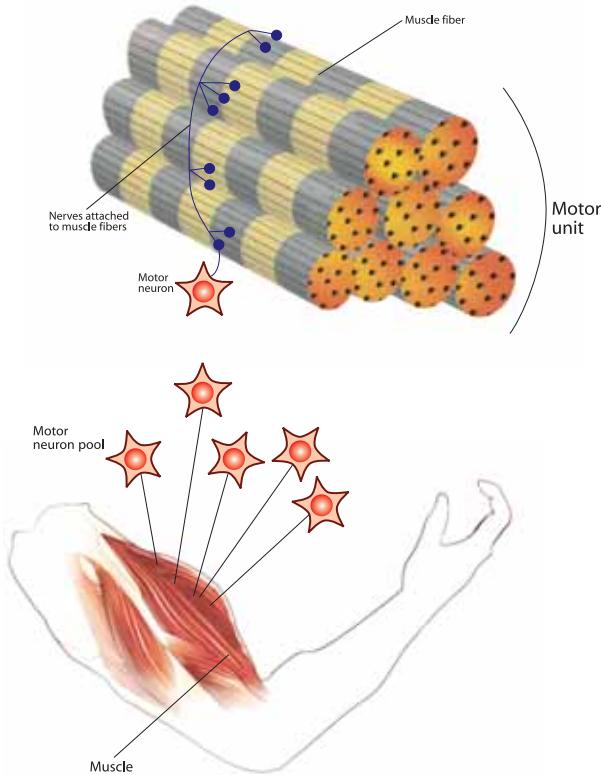


A good workout in the gym produces an adrenaline rush that starts the whole process of creating the pump into motion. And for getting a good pump in your arms, try standing alternate dumbbell curls, as shown here.

FIGHT-OR-FLIGHT? WHAT DOES YOUR BODY DO?

When it's fight-or-flight time, there's a nervous response, but there's also a hormonal response. Your brain sends out a variety of signals to the nerves, which release hormones that stimulate the heart. As mentioned before, this is the sympathetic nervous system at work (as opposed to the other part of the autonomic nervous system – the cholinergic/parasympathetic nerves, which are the ones acting when you are feeling calm and relaxed). The nerves are firing, telling your heart to beat faster. Your breathing rate is going to increase to absorb more oxygen from the lungs. For example, if your pulse rate is normally 60 beats per minute and your breath rate is at 12 or 15 breaths per minute, firing down this sympathetic cascade puts it all into overdrive – your pulse might race to 160 beats per minute and your breathing rate might double.

This is all due to the nervous system, which is activated by the fight-or-flight situation. The secondary



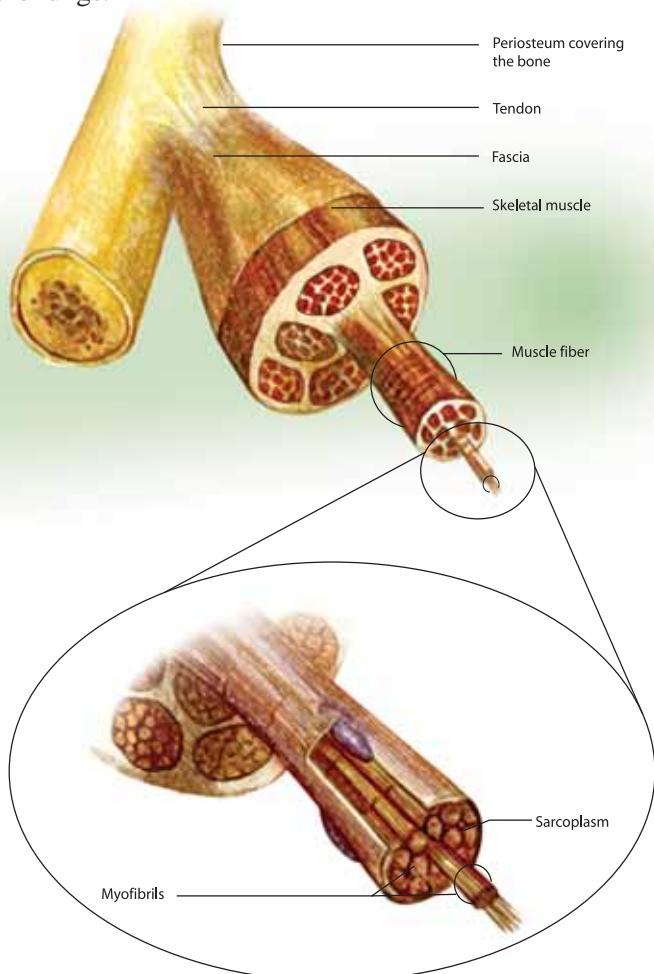
Above: This diagram shows how the nervous system is connected to muscle tissue. Intense muscular contractions send signals through these nerves back up to the brain. The brain interprets these signals, tells the heart to beat faster, and also focuses blood flow to the working muscles for a greater pump.

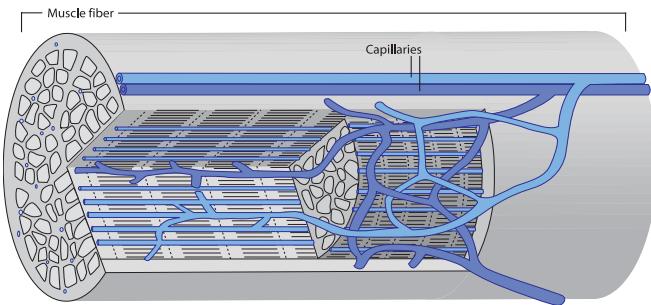
Right: This diagram shows the individual components of the muscle. Each muscle fiber is made up of many individual myofibrils, and each myofibril contains actin and myosin proteins.

phenomenon is the release of hormones from elsewhere in the body. All of these responses come from the adrenal glands, and they are subsequently delivered by the blood. It is an endocrine hormonal response in addition to the nervous response by the nerves. Those both

The brain, hormones, and vascular system interact to cause the pump.

act together and raise the heart rate and respiratory rate. When you do your first set to the point of fatigue, your muscles create a host of waste products, and as a result, they need to replenish depleted oxygen stores to keep functioning. Another wave of instructions from your muscles is sent to the brain, letting it know that they need to get rid of the lactic acid and carbon dioxide, and that they crave oxygen. The brain then signals your lungs to keep your breathing rate elevated, because once the blood eventually leaves the muscles when that set is done, it's going back to the heart, which will send it to the lungs.





This diagram shows how a muscle fiber contains an intricate network of capillaries (tiny arteries and veins) that bathe the muscle fibers in blood. If the capillaries dilate, as they do when you get a pump, then more blood is able to bathe the muscle fiber for improved performance enhancement.

LET'S TALK ABOUT MUSCULAR PUMPS

Why does the muscle get pumped? Why does it get full of blood? Simply put, the muscle needs the blood to supply the energy and to get rid of the junk. If you can facilitate that process, then you're going to get more out of that exercise.

The muscle needs blood to supply the energy and get rid of the junk.

Let's say you're hitting your chest in the gym. For the most part, the whole body will shut down the usage of unnecessary things in order to direct blood flow to the chest. When the blood becomes oxygenated, the body pools that blood in the working muscles. There are several different mechanisms that drive this process, and it all starts with the fight-or-flight response. Remember how the fight-or-flight response increased the ability of the heart to pump more blood? Well, that first set has triggered a downstream effect that will allow all this blood to flood into the muscle.

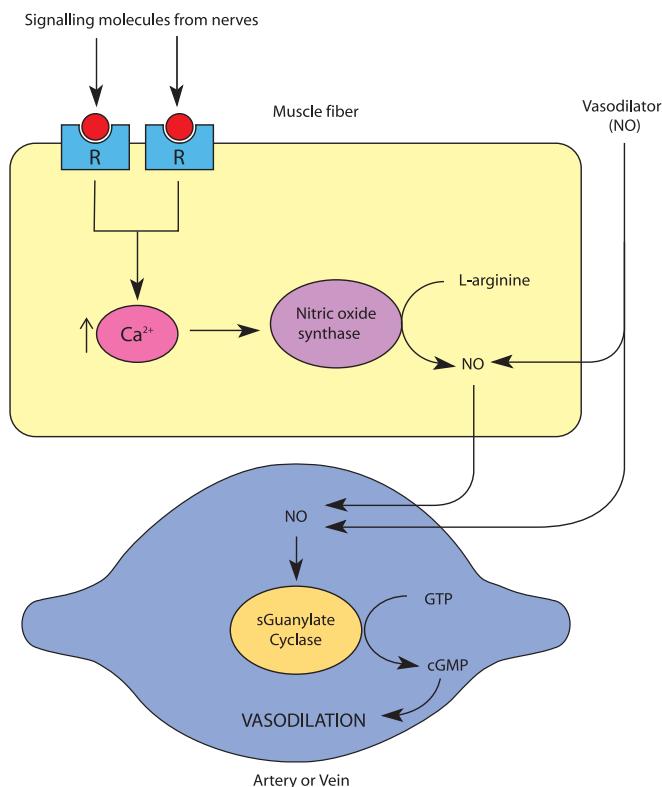
When you're in the gym, the blood is diverted from nonessential uses in the body. If you are going to work out, you don't need any blood going to the stomach and intestines. After all, you're not going to be digesting food when you are doing something more important like bench pressing the bar. So, the body will favor blood circulation to the muscles' vascular bed.

The fight-or-flight neuroendocrine response is an increase in blood pressure, an increase in cardiac output, and an increase in heart rate. If you are then diverting blood flow from nonessential areas (like the gut), then that extra cardiac output of blood is going to be diverted to the muscles. The muscles are being fed three to four times more blood than they normally get. Therefore, the blood volume will increase in your chest muscles to facilitate nutrient delivery.

A hard set requires energy, and your energy is going to be derived anaerobically from energy sources that already exist in the muscle (things like adenosine triphosphate (ATP), creatine phosphate, and muscle glycogen). Once you hit failure on that set, you can't force another contraction until you send oxygen into the muscle and remove waste products. That's why there's a pump (or what scientists call active hyperemia). There's an increase in lactate in the muscle, which increases

When you're pumped, the muscles are fed 3 to 4 times more blood than normal!

acidity in the blood. Carbon dioxide levels elevate in the muscle tissue. Potassium is forced from the inside of your muscle cell and pools in the intercellular spaces. And at the end of it all, these events all trigger the release of further hormones (including things like nitric oxide [NO]) to create the pump. These hormones and signaling factors will signal the local capillaries within the muscle to dilate.



This diagram shows how signalling molecules from nerves stimulate a muscle fiber to produce nitric oxide. Then, the nitric oxide travels outside the muscle to interact with a nearby artery or vein, causing it to dilate. This dilation causes the muscle to feel pumped!

You want to maximize blood flow into the region that you want to build. Simply put, if you deliver more oxygen and nutrients to the exercising muscle and get rid of waste products, your training will be more effective and you will recover from the set more quickly. And all of this blood works to remove the lactic acid and the carbon dioxide and any other byproducts of the muscular contraction, and to exchange these waste products for the energy and nutrients the muscle needs to continue the muscular contraction process. The result? You will be able to lift more weight during upcoming workouts.

If your muscle is filled with blood, it is getting bigger. In order to expand or allow that muscle room within the tissue to hypertrophy, you have to stretch the fascial tissue constraining the muscle. That is what, to an extent, the pump will do. Some of the “nice pain” that you may experience from a muscle pump is the stretching of that outer layer.

The “nice pain” from the pump stretches the muscle.

In the end, it's the anabolic hormones in your body that play a big role. There is no question that they switch on the process of building muscle. Hormones are chemical signals delivered through the blood. It is like bricks and cement. The bricks are like the protein, and the cement might be like the anabolic hormones. You have to have the protein delivered (through food), and if you don't get the protein in (through hormones), the muscle is not going to repair. The point is that your muscles can't do without blood.

But you can create more vascular channels so that your blood flow becomes more efficient (more on that later). That is the key to reaching your full potential. If you adhere to a strict training and eating schedule, your body will adapt. You get a bigger bang for your buck because more blood will be going through your muscles.

There's nothing more impressive than a fully pumped muscle. Just ask Branch Warren – this guy's got muscle to spare. You know he understands how important a solid pump can be.





How The PUMP Builds MUSCLE

– Scott Abel

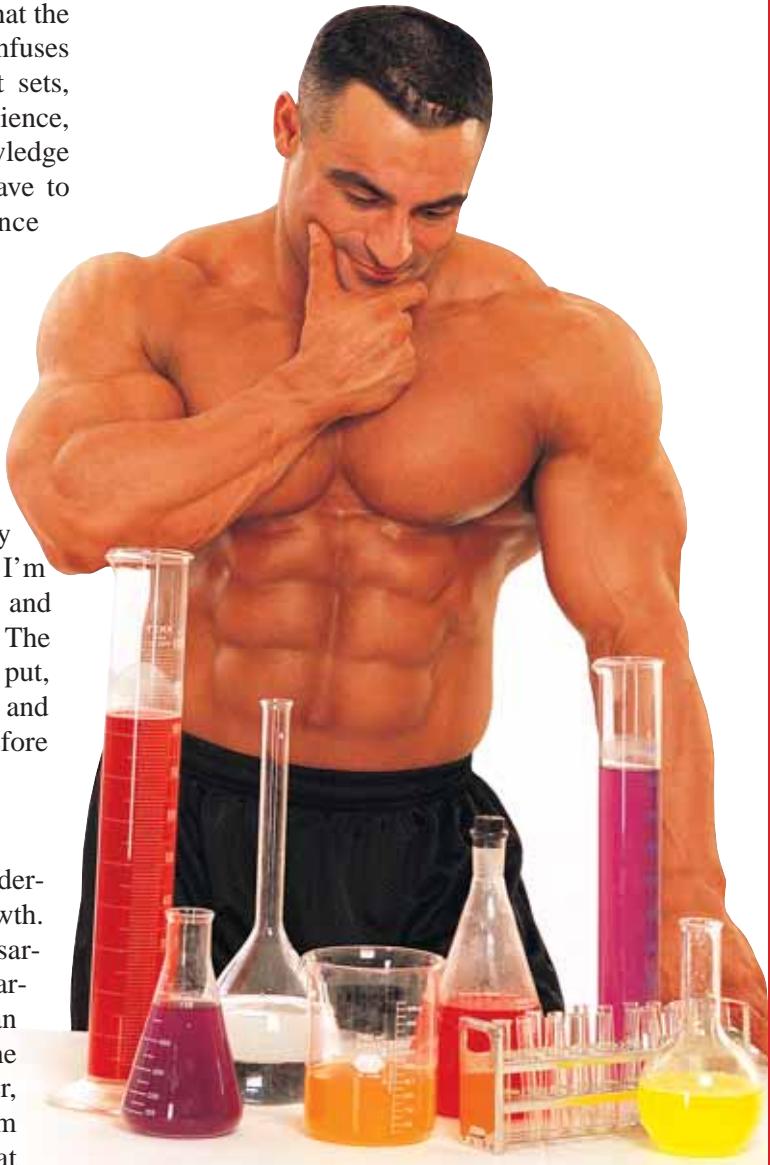
People often ask me at gyms or at my seminars what the real key to muscle growth is. My answer often confuses them. Most expect to hear some opinion about sets, reps, and workout frequency. But I am a man of science, and my results have largely come from my knowledge base. In order to make real-world gains, you have to have some understanding of the basic science involved in growing massive muscles.

**The key to muscle growth
is increasing blood volume
and cell hydration.**

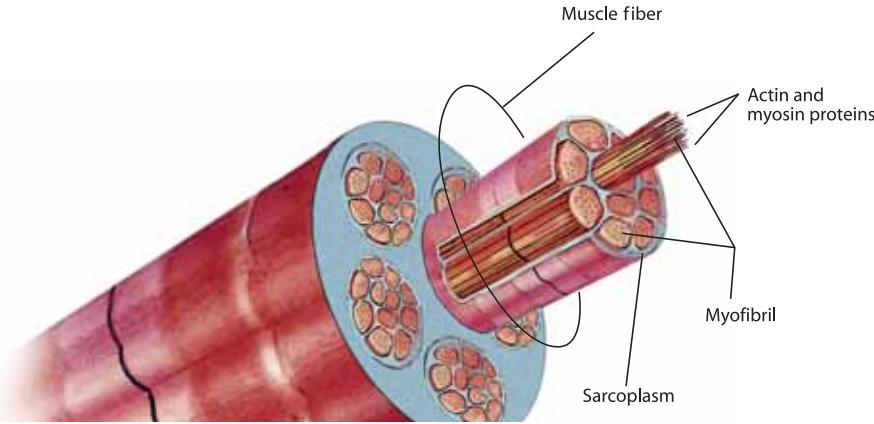
Only the genetically gifted get by without any kind of knowledge about muscle development. I'm going to walk you through some important facts and information about the science of building muscle. The key to building muscle growth is twofold. Simply put, the keys are blood volume and cell hydration, and neither seldom occurs without the other. But before we get to that, let's talk about the muscle itself.

THE STRUCTURE OF WHAT A MUSCLE LOOKS LIKE

A muscle consists of several components, and understanding these is important to understanding growth. The two main parts of a muscle fiber are the sarcoplasm and the myofibrils. I'd compare the sarcoplasm to the white that surrounds the yolk of an egg. The sarcoplasm's main job is to bathe the myofibrils with nutrients such as oxygen, water, amino acids, glucose, and creatine. The sarcoplasm is a jellylike substance in our muscle fibers that feeds the working components, which leads me to the myofibrils.



In order to make real-world gains, you need to understand the basic science involved in growing massive muscles.



This diagram shows an entire muscle fiber. As you can see, each muscle fiber is made up of many myofibrils. The myofibrils contain the functional proteins of your muscles – proteins called actin and myosin. Each myofibril is also surrounded by something called sarcoplasm – a jellylike substance that bathes each myofibril in precious nutrients to foster growth.

Myofibrils are actually the fast-twitch IIa and IIb fibers you've all read so much about. These myofibrils are the components of the muscles that make them flex and relax. The myofibrils are like the pistons that drive an engine, and the sarcoplasm is like the oil that lubricates and keeps the pistons happy and healthy.

Each of these little myofibrils contains specific proteins called actin and myosin. When your muscles contract, these actin and myosin proteins actually slide across each other through an action called "cross bridging," and surprise ... your muscles contract!

Before I leave this section, it's also important to note that surrounding any muscle fiber are many other little structures called "satellite cells." Satellite cells are like little baby muscle fibers waiting to become big muscle fibers. They're immature, and they aren't really part of your muscle fibers yet. But if you can get them to hook up and incorporate themselves into your existing muscle fibers, you'll get bigger.

OK, so now we know a little about the major players that make up your muscle fibers: the sarcoplasm, the satellite cells, and the myofibrils.



Pro bodybuilders Gustavo Badell and Ahmad Haidar train hard in the gym to maximize the pump. The fruits of their labors are quite evident!

HYPERTROPHY – HOW WE MAKE OUR MUSCLES BIGGER

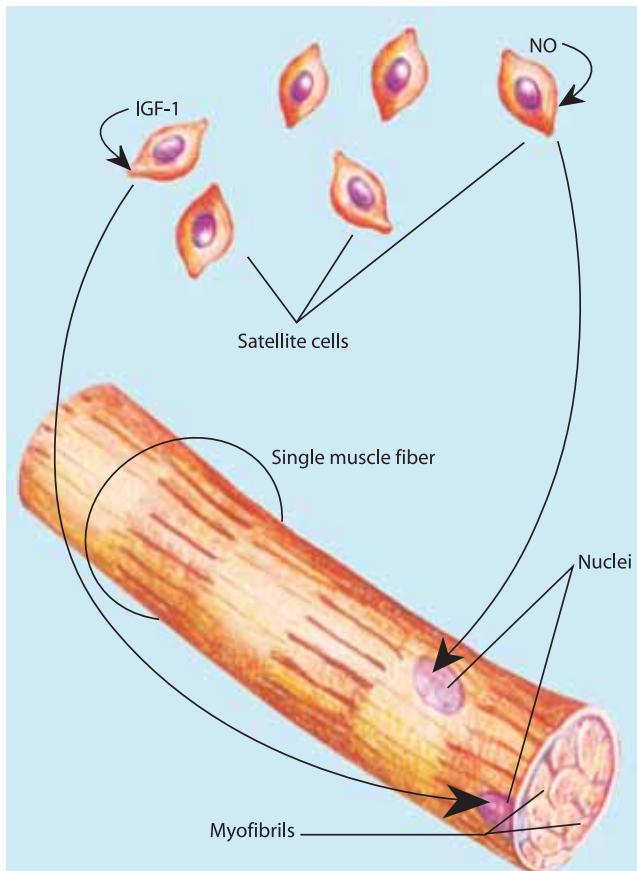
The most basic and clinical definition of muscle hypertrophy is, simply, an increase in the size of a muscle fiber. That could happen by increasing the volume of the jellylike sarcoplasm, increasing the amount of actin or

Hypertrophy is simply defined as an increase in the area and size of each muscle fiber.

myosin in your myofibrils, increasing the fusion of satellite cells into your muscle fibers, or all of the above!

The Effect on the Satellite Cells

When you train hard in the gym, you actually break up existing muscle fibers. This breakup creates tiny holes in the muscle fibers. When that happens, a whole cascade of biochemical and hormonal activity occurs.



This diagram shows how tiny satellite cells are involved in muscle growth. Hormones such as nitric oxide, IGF-1, and VEGF stimulate satellite cells to incorporate themselves into the muscle fiber. This increases the number of nuclei per muscle fiber, which leads to larger, more massive muscle fibers!



World champion bodybuilder Ahmad Haidar is known for bringing a seriously massive and shredded physique come competition day – clear evidence that he understands the importance of the pump.

Hormones such as fibroblast growth factor (FGF) and insulin-like growth factor-1 (IGF-1) leak out of the cell. The hormones that leak out of a broken muscle fiber send a direct message to the immature satellite cells, which surround the muscle fiber. In response, the satellite cells fuse themselves with your muscle fiber, which creates a larger muscle fiber as a result.

The Effect on the Myofibrils

The word “synthesis” means “building up.” So, when it comes to your muscles, protein synthesis is the buildup or increase in the levels of protein (actin and myosin) found in your myofibrils. But protein synthesis in your muscles is kept in check by two important things; amino acid availability and exercise. These two interact with each other in profound ways and affect protein synthesis.

Training hard increases hormone levels which tell the muscle fibers to make more actin and myosin proteins, which ultimately make the muscle fibers bigger. But without amino acids floating around in the sarcoplasm, you won't have the building blocks necessary to make these new proteins.

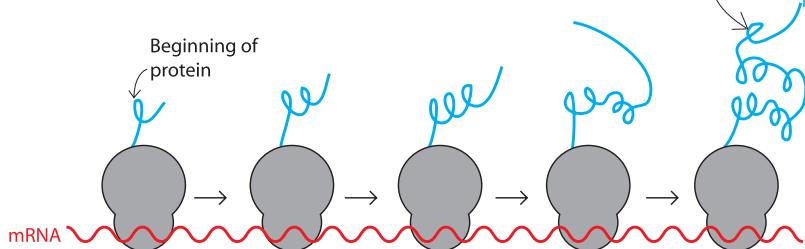
Protein synthesis is defined as the buildup of muscle protein.

So, what we've just learned here is that muscle hypertrophy (growth) takes place as a specific response to intense training. And muscle hypertrophy is very much dependent on the amount of protein synthesis going on within the muscle. So while training itself produces a stimulus for protein synthesis, this stimulus must also be met by adequate amounts and proper timing of meals and protein intake, which supplies the amino acids needed to synthesize all those new muscle proteins!

The Effect on the Sarcoplasm

Hypertrophy (or muscle growth) can also occur if you swell the volume of the sarcoplasm in the muscle fibers. Remember, the sarcoplasm is that jellylike substance that bathes your myofibrils and feeds them. If the volume of the sarcoplasm is swelled

The diagram below demonstrates how proteins are made. Strands of DNA are copied to make mRNA. The mRNA then hooks up with ribosomes, and these ribosomes begin traveling down the length of the mRNA chain, picking up amino acids along the way. The amino acids are then strung together in very specific sequences. That's how your muscles make proteins to make themselves larger!



Gustavo Badell's massive physique is the result of hard training, proper nutrition, and the right supplements. You can't argue with this guy's fully pumped muscular impression!

beyond normal (something scientists call “cell volumization”), then a signal is sent to the muscle fiber that it’s OK to grow – there’s plenty of nutrients ready to feed the growing muscle.

THE PUMP – HOW IT BUILDS MUSCLE

Perhaps the single most important influence on muscle growth is what we call “the pump”. A solid pump consists of increased blood volume surrounding working muscles. This is known, scientifically, as “exercise-induced hyperaemia,” but I’ll just refer to it as the pump for simplicity’s sake.

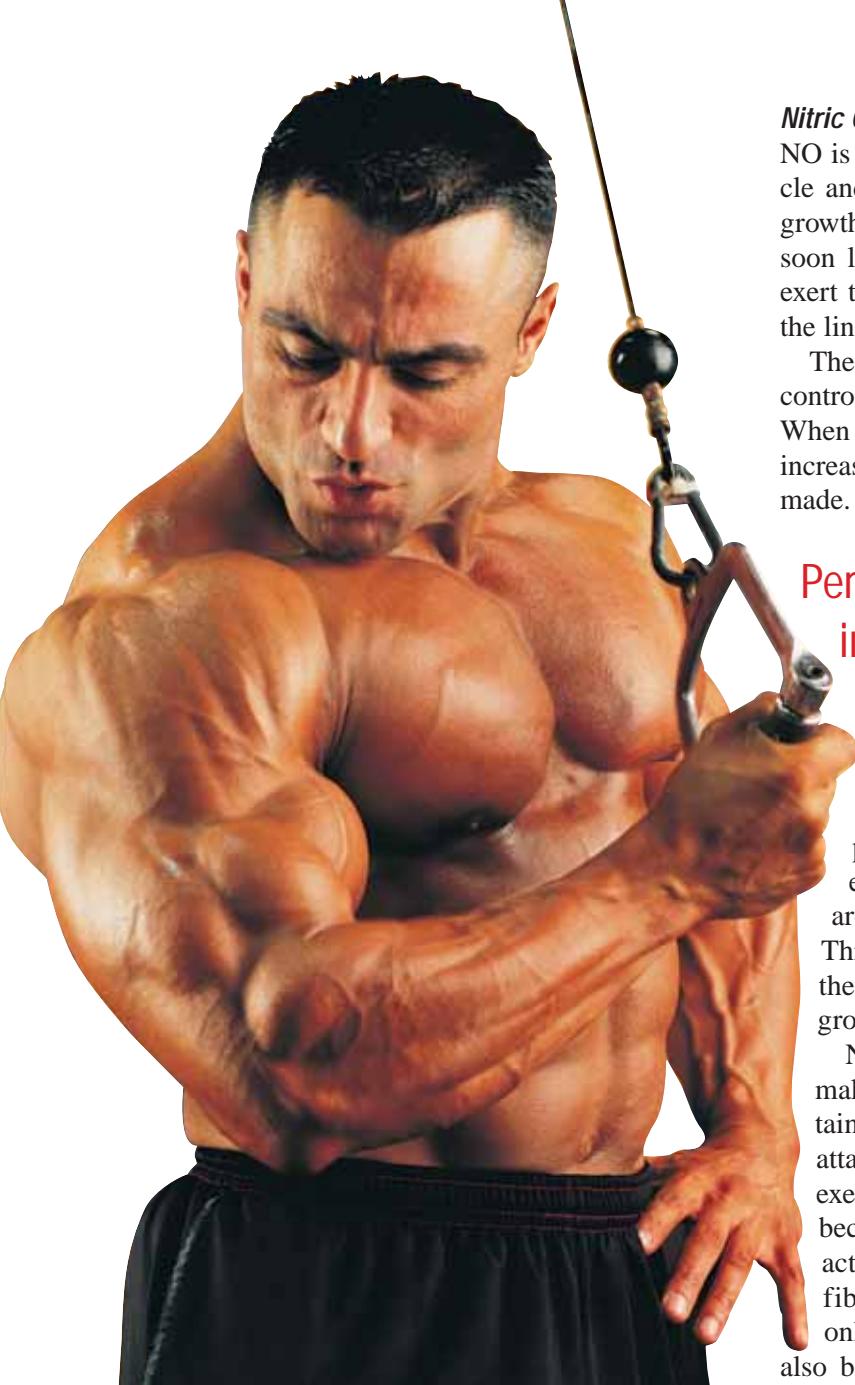
At least one study to date illustrates that the amount of blood flowing through your muscles seems to be a limiting factor for muscle size. In other words,

more blood in the muscle appears to increase muscle size. That’s probably because nutrient delivery, removal of fatigue toxins when you train, and other important responses to hard training are all

Eating the right foods within 24 to 48 hours of a workout governs hypertrophy.

much more efficient when you have a pump. The bottom line is you need a pump to realize muscle growth. Let’s get into how the pump actually builds muscle.





Intense training provides the stimuli your muscles need to get pumped and build up in size.

The pump triggers growth by increasing the levels of certain hormones that have profound effects on growth.

Protein synthesis increases the amount of protein in the muscle. This causes hypertrophy!

In no particular order of importance, the big three are vascular endothelial growth factor (VEGF), nitric oxide (NO), and insulin-like growth factor-1 (IGF-1).

Nitric Oxide (NO)

NO is a hormone that increases blood flow to the muscle and as a result, has pronounced effects on muscle growth. What's more, the other two hormones we'll soon learn about are dependent upon NO in order to exert their influence on blood flow and growth. NO is the linchpin that triggers the explosion.

The amount of NO your body makes is tightly controlled by an enzyme called nitric oxide synthase. When you train hard, the level of nitric oxide synthase increases three- to six-fold, which means more NO is made. When you start exercising, signals are sent to the

Perhaps the single most important influence on muscle growth is what we call the pump!

nitric oxide synthase enzymes to make a lot more NO. NO is so important in producing a pump that some of the nitric oxide synthase enzymes are located within the muscle and some are in the blood vessels surrounding the muscles. This allows NO to work quickly on the muscles and the blood vessels to create a pump and influence growth.

NO is the primary factor in helping your body make and sustain a pump. In fact, NO not only sustains a muscle pump, but is also responsible for attaining maximal muscle pump, which allows NO to exert all its positive effects on muscle growth. That's because NO has a direct influence on satellite cell activation and prompts them to fuse with muscle fibers, thus making your muscles bigger. And not only does NO boost muscle growth itself, but it also builds muscle by elevating other musclebuilding hormones such as VEGF and, just as importantly, IGF-1.

Insulin-Like Growth Factor-1 (IGF-1)

As I said earlier on in this chapter, as you're training, tiny holes are created when you tear the muscle fibers. This causes the muscle to produce IGF-1, and this IGF-1 leaks out and has a whole host of effects on growth.

IGF-1 influences muscle growth mainly by activating satellite cells and causing them to fuse into existing muscle fibers, as well as increasing the rate of protein synthesis. This is a sort of one-two punch, if you will. The fact that IGF-1 influences both satellite cell activation and muscle protein buildup suggests a link between IGF-1 and NO. They definitely seem to work in concert

with one another in satellite cell activation, muscle repair, and growth when you're pumped. Here's some proof.

The pump and its effects on muscles and factors that lead to growth are so important!

Research shows that IGF-1 is able to enhance muscle pumps by influencing and increasing NO. And research also shows that you need NO in order for IGF-1 to boost muscle growth. The codependency of NO and IGF-1 is very intriguing and, as yet, not totally understood. But what is understood is that both NO and IGF-1 create pumps, and you can't have one without the other.

Vascular Endothelial Growth Factor (VEGF)

VEGF is a hormone made by your muscles that has three important functions – increasing muscle growth, increasing muscle oxygenation and increasing the amount of capillaries (tiny veins and arteries) that feed your muscles.

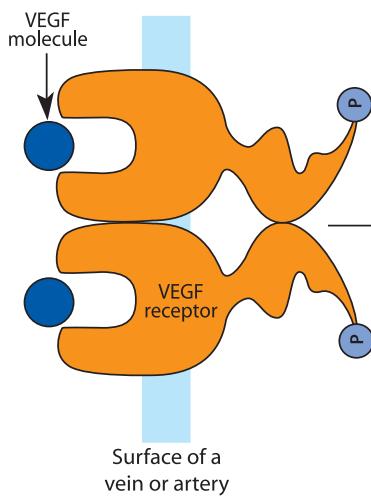
What processes tell your body to make more VEGF?

One trigger is a lack of oxygen in the muscle. This increases VEGF levels, which can be brought on if you're training heavy in the gym. Once VEGF levels are boosted by a lack of oxygen in the muscle, the VEGF goes to work helping the muscle make more myoglobin

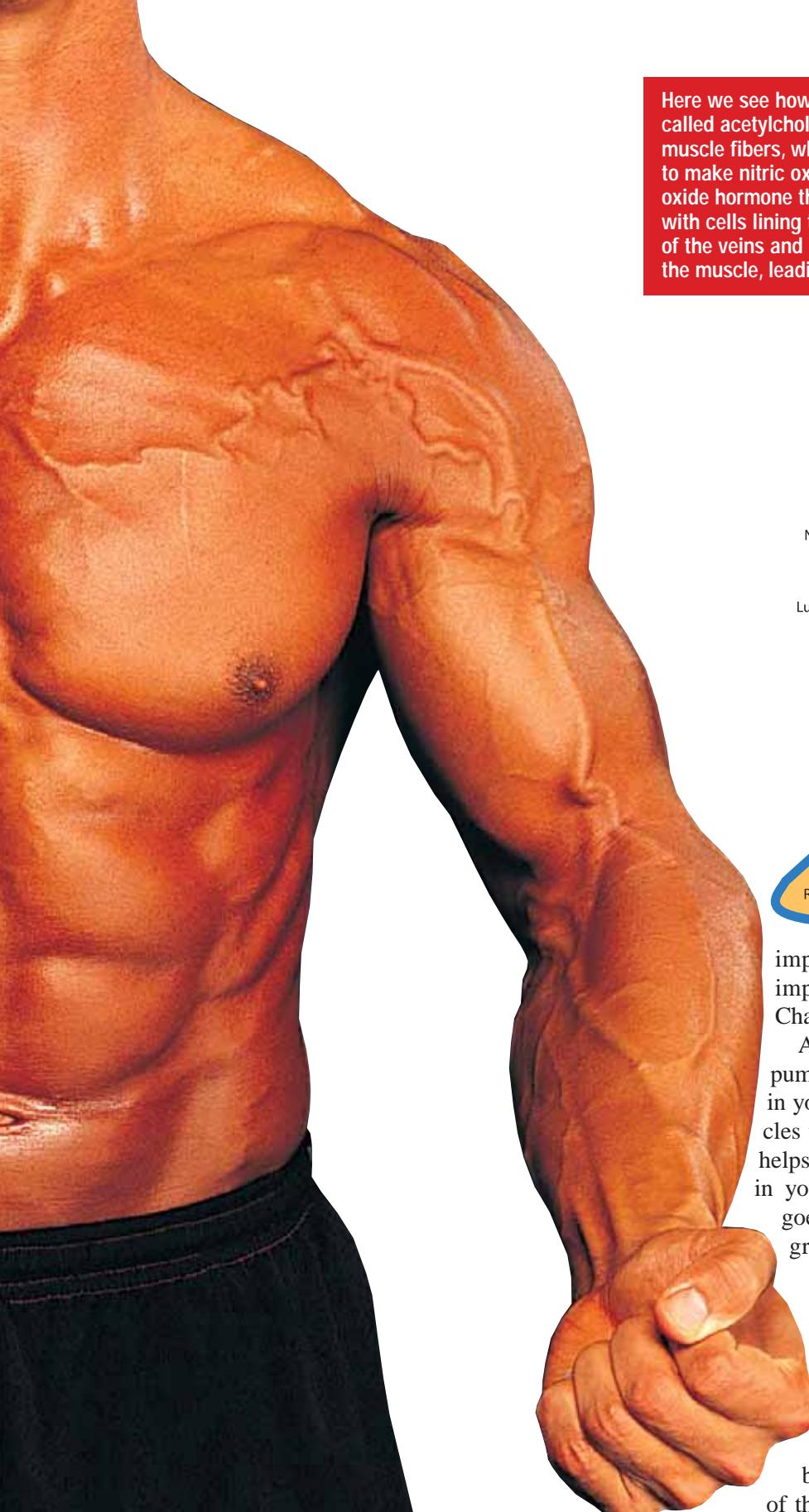


The results of training for the pump are evident. Gustavo Badell didn't build his physique by accident. He trained for the pump, and look where it got him! You should do the same.

– up to 2.8 times more. This is important during both training and recovery because myoglobin carries oxygen in the muscle fibers and therefore, increased myoglobin

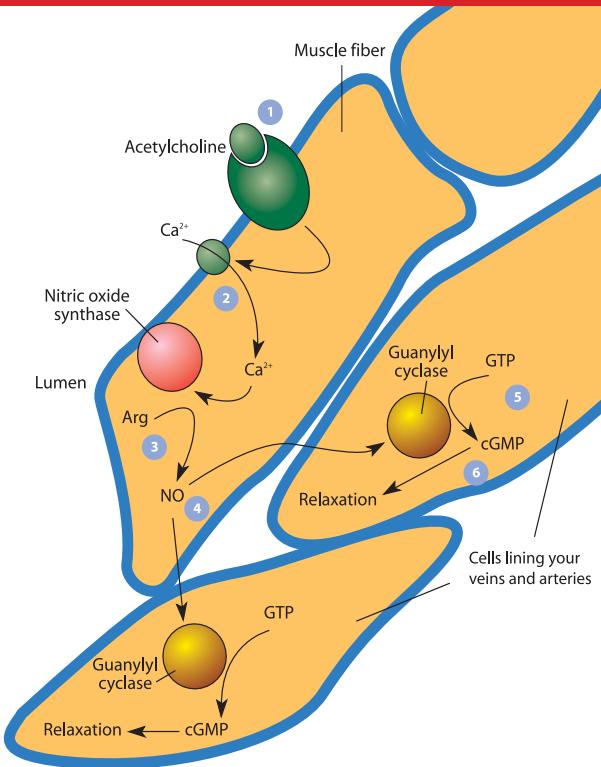


This diagram shows how the hormone VEGF, made by your muscle fibers and released into the bloodstream in response to the pump, interacts with the cells that line the walls of the tiny arteries and veins that run inside your muscle fibers. When VEGF encounters a receptor on the surface of one of these arteries or veins, it sends a complicated signal that ends up creating more arteries and veins. This leads, over the long term, to more efficacious and extreme muscular pumps.



When you're pumped, the skin looks tighter and the muscles stick out. It's a great feeling!

Here we see how the pump happens. A neurotransmitter called acetylcholine triggers a release of calcium in the muscle fibers, which causes the enzyme nitric oxide synthase to make nitric oxide from the amino acid arginine. The nitric oxide hormone then leaves the muscle fiber and hooks up with cells lining the veins and arteries. This causes dilation of the veins and arteries, which allows more blood to enter the muscle, leading to a pump!



improves muscle oxygenation, which improves recovery. More on that in Chapter 5.

A second trigger is a prolonged, heavy pump – that stretches the veins and arteries in your muscles. This stretch tells the muscles to make more VEGF. This VEGF then helps the body build more arteries and veins in your muscles. That just means as time goes on, your pumps get greater and greater due to VEGF.

A final triggering event is heavy eccentric lifting in the gym (i.e., focusing on negative repetitions, like lowering the weight during a bench press). For example, training in the gym produces a three- to six-fold increase in VEGF levels. VEGF is produced by the muscle fibers in response to one of those three triggering events mentioned above, and all of the above events help you get even greater muscle pumps, which leads to more muscle

growth. How much? Well, VEGF encourages satellite cells to fuse with existing muscle fibers five times faster to make bigger muscle fibers. That's proof.

WRAPPING IT UP

Let's wrap it up by recapping what we've learned. It's easy to remember if you remember "3 sets of 3":

The muscle fiber's three main components are:

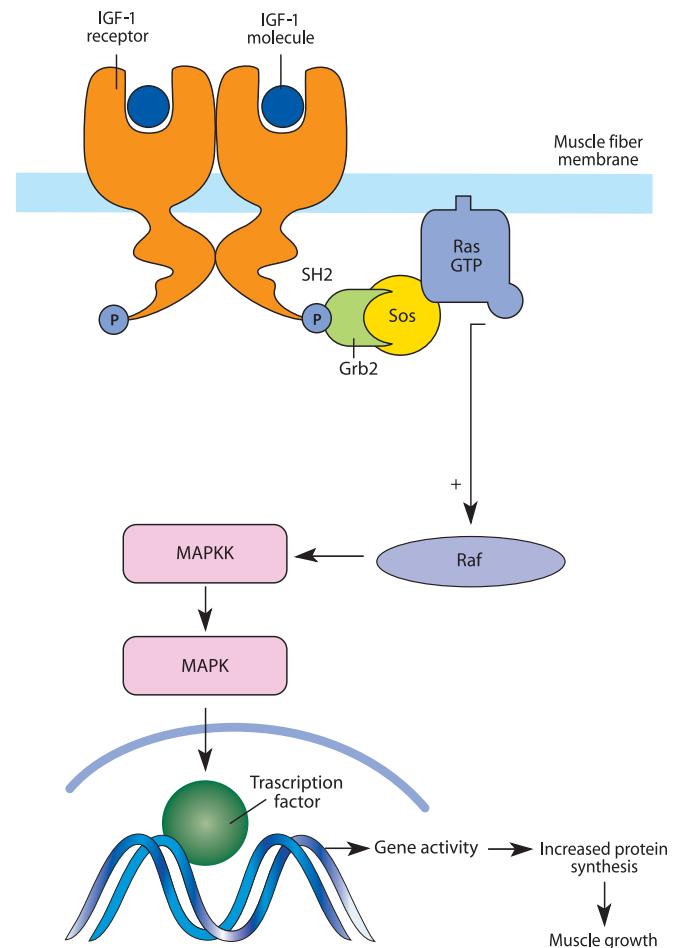
1. Sarcoplasm: the fluid that surrounds myofibrils and bathes them in nutrients and feeds them energy
2. Myofibrils: they contain the actin and myosin proteins. Responsible for making the muscles contract
3. Satellite cells: little immature muscle fibers that hang around muscle fibers waiting to fuse in

You now know the big three ways in which a muscle actually makes itself bigger:

1. Myofibril hypertrophy: an increase in protein synthesis, which makes the actin and myosin proteins in those myofibrils bigger
2. Sarcoplasmic hypertrophy: an increase in the volume of the sarcoplasm. Also called cell volumization
3. Satellite cell fusion: little satellite cells fuse themselves to existing muscle fibers, allowing the muscle fibers to grow bigger

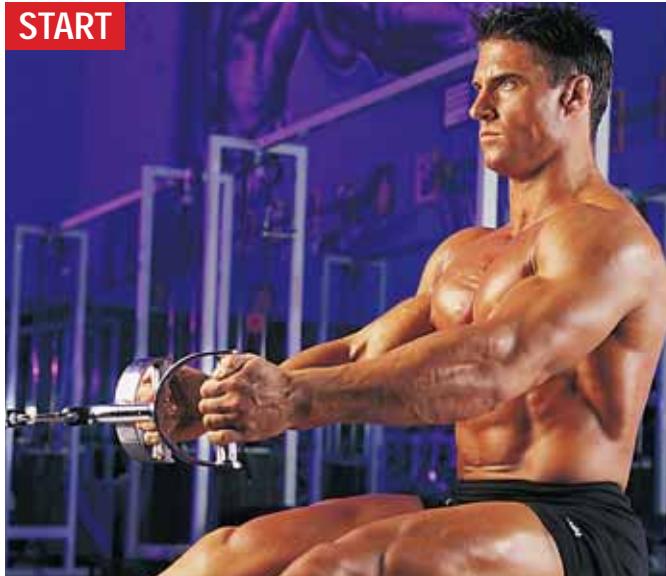
You now know the big three hormones your body releases to either amplify the pump or in response to the pump. These big three hormones have profound effects on muscle growth, and boosting their levels by getting better pumps means larger muscles.

1. Nitric oxide
2. Insulin-like growth factor-1
3. Vascular endothelial growth factor

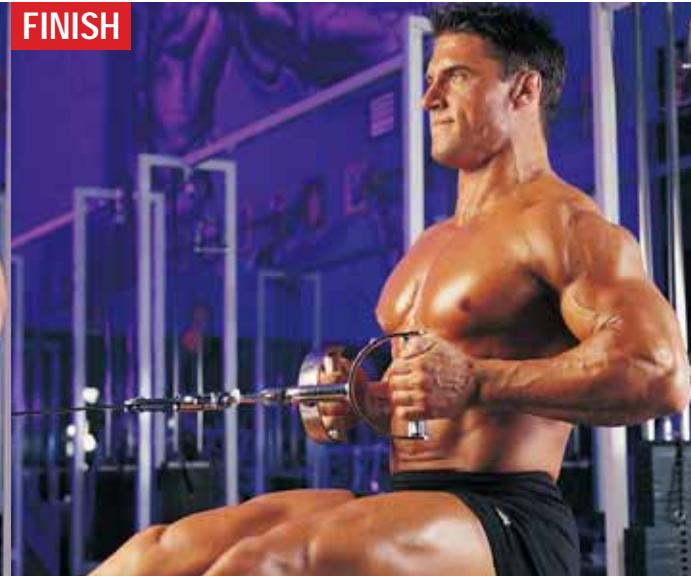


IGF-1 acts on muscle fibers by hooking up with a receptor. This sends a signal through the muscle fiber to make larger muscle fibers. But, without a pump, there is no nitric oxide. And without nitric oxide, IGF-1 can't work properly to build bigger muscles.

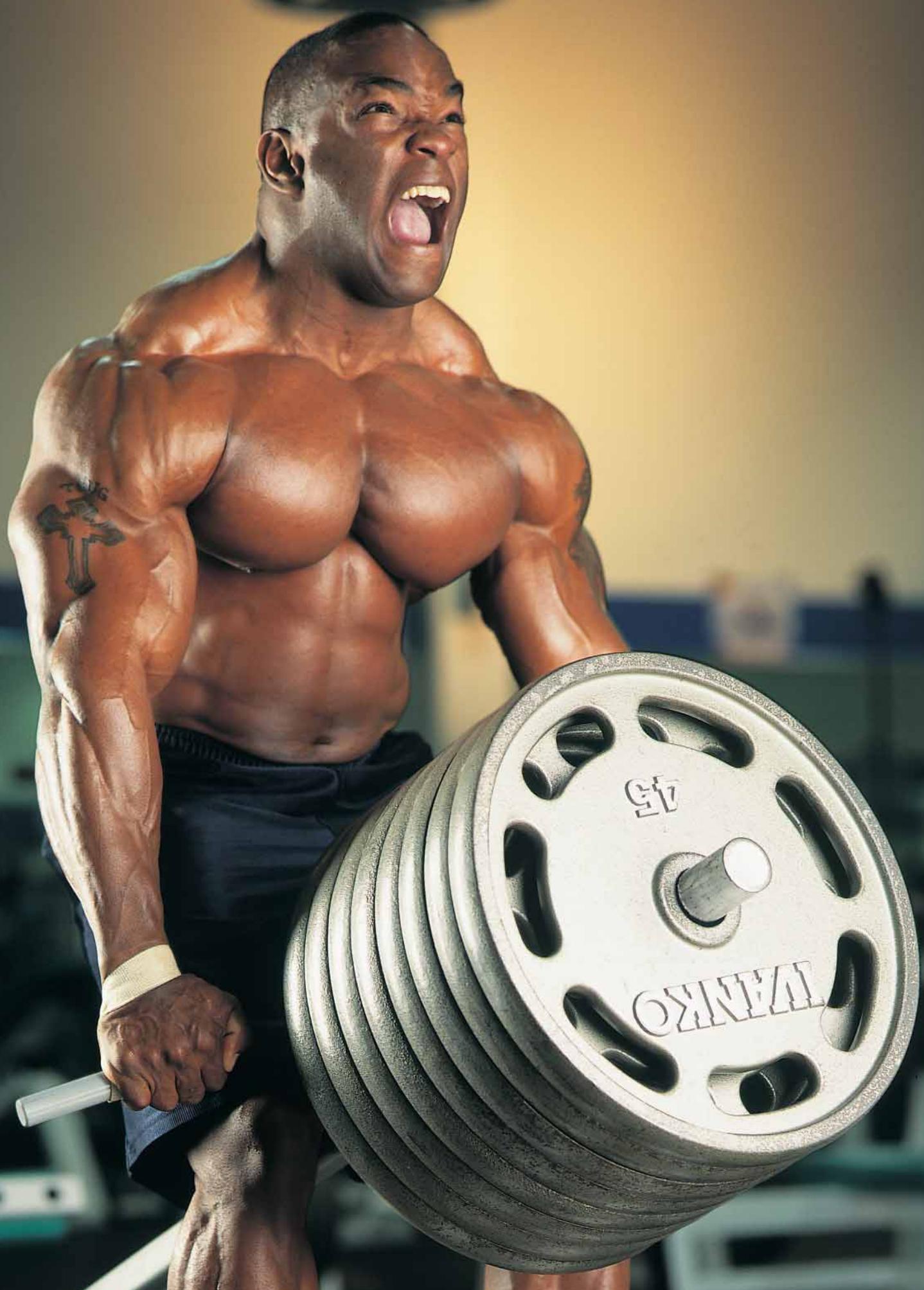
START



FINISH



Building muscle size means staying focused on creating as massive a pump as possible in the muscle being worked. Here we see Brad Baker working on building a massive lat pump doing seated cable rows.



Using The PUMP To Build Real STRENGTH

– Scott Abel

In the last chapter, we looked at how a muscle pump aids in muscle growth. In this chapter, we're going to look at how a muscle pump can contribute to greater muscular strength. Just like the last chapter, we will take a scientific approach to the task at hand, because understanding these concepts gives you knowledge, and knowledge is power.

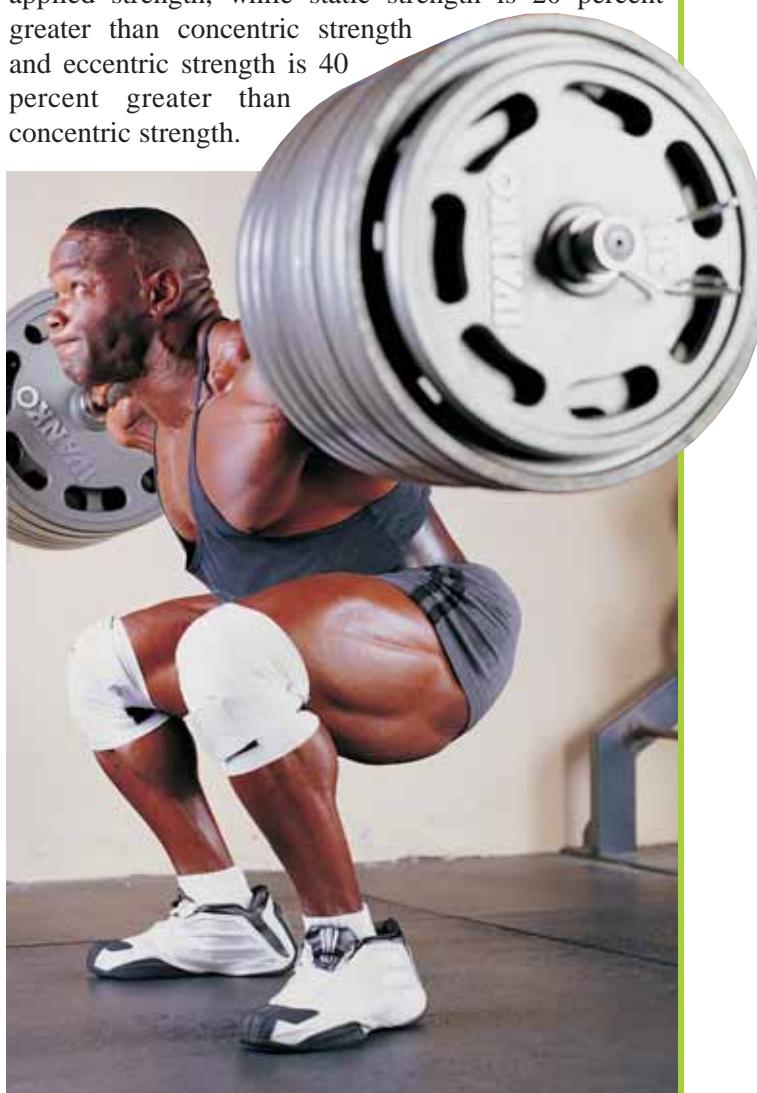
This chapter looks into how a muscle pump can contribute to muscle strength development.

You'll remember that in the last chapter, we digressed a bit and looked at the structure of a muscle before proceeding on to how a muscle grows. In this chapter, I need to backtrack and tackle the concept of strength for you to have a proper understanding of what strength really is.

THE THREE KINDS OF STRENGTH

Although there are many types of strength, there are only three kinds of muscle strength. They are concentric strength, eccentric strength, and static strength. Static strength involves contracting a muscle in a fixed spot and holding the contraction, or contracting against an immovable force, so long as the muscle is not lengthening or shortening. Eccentric strength is strength measured when a muscle is stretched with resistance, as in lowering a weight from a contracted position. Finally, concentric strength is what we all commonly think of when we think of strength. It involves a muscle contracting or shortening with resistance, as in the curling part of a biceps curl.

Concentric strength is considered the weakest kind of applied strength, while static strength is 20 percent greater than concentric strength and eccentric strength is 40 percent greater than concentric strength.



An 835 lb. squat? You betcha! Johnnie Jackson is quite possibly the world's strongest bodybuilder. And he knows the value of the pump for boosting strength.

It's also important to keep in mind that, like muscle growth, strength is also closely correlated with the cross-sectional area of the muscle fibers. Make no mistake – strength also has to do with factors such as biomechanical and structural leverage advantages, as well as tendon thickness and length. But there is no point in discussing things like biomechanical leverage points or tendon length, because we can't do anything to alter them for greater strength – what you have is what you're stuck with. But creating a denser and larger muscle fiber is something we can control, and this is what most strength training protocols are designed to accomplish.

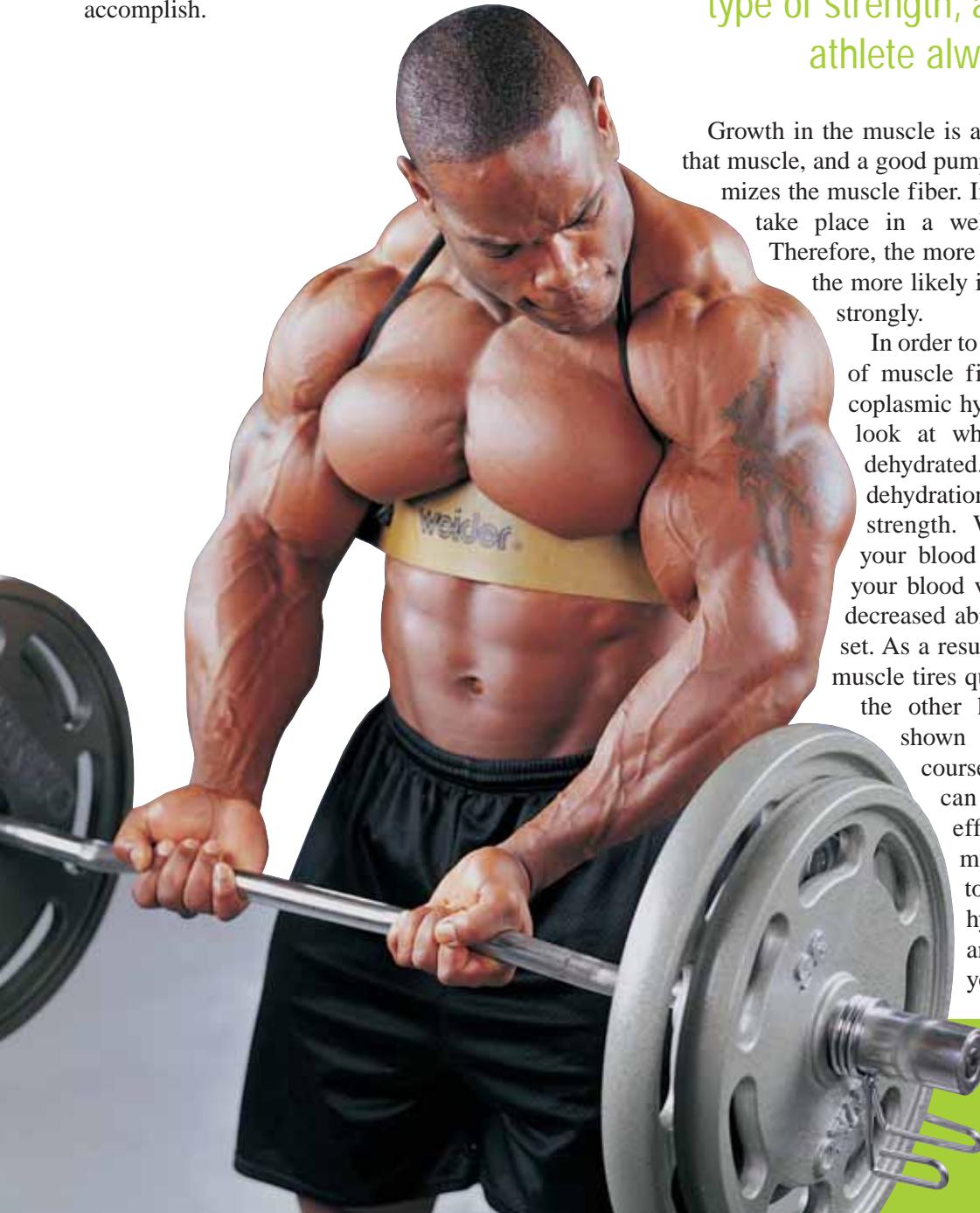
CELL VOLUMIZATION, THE PUMP, AND MUSCLE STRENGTH

In the last chapter, I said that the main factor that contributes to growth in the muscle fiber is the pump because it helps boost protein synthesis, cell volumization, and satellite cell fusion. For our purposes though, I'm going to focus on cell volumization.

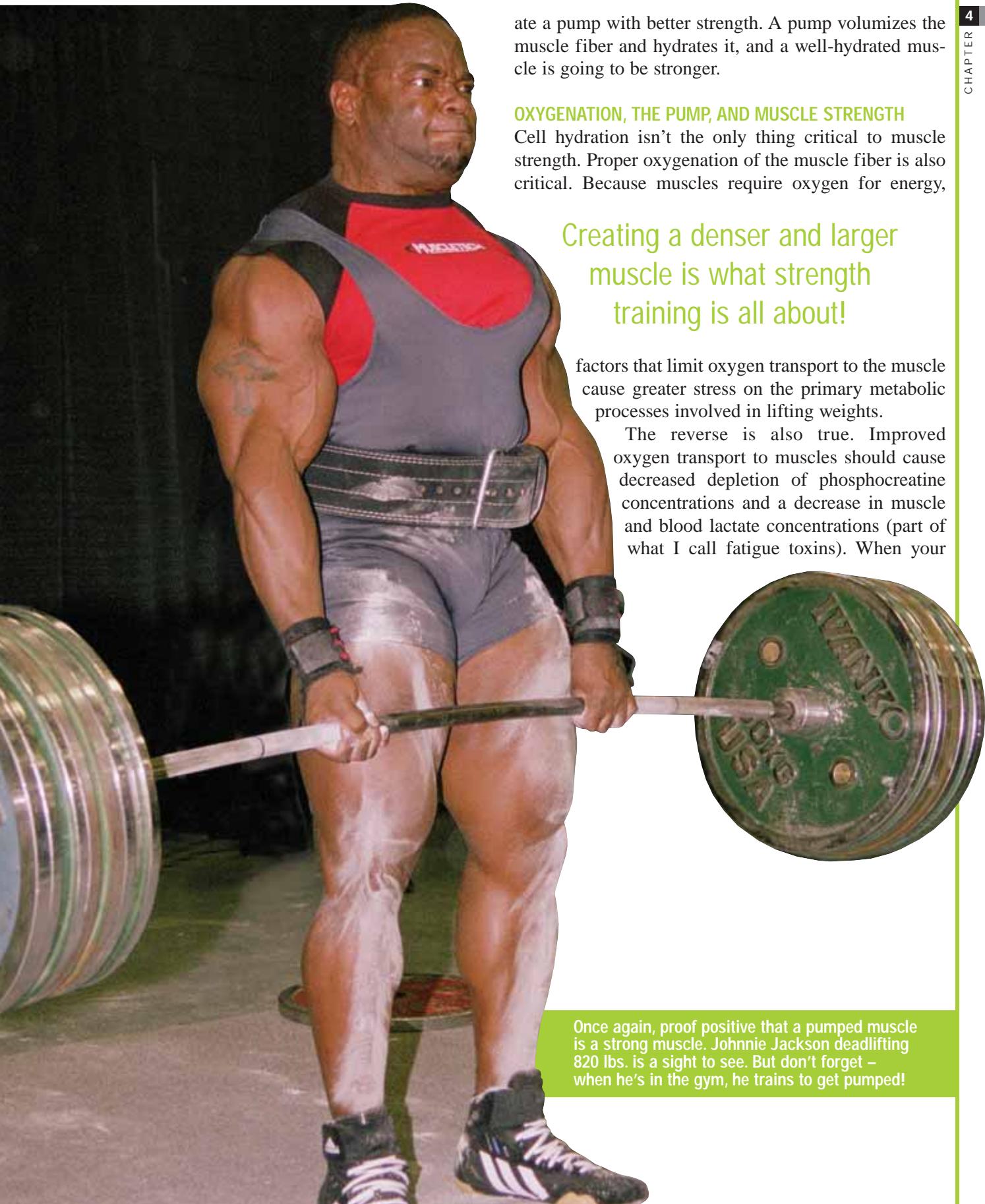
Even though the demands of every sport are different, all involve some type of strength, and the stronger athlete always wins.

Growth in the muscle is a result of the hydration of that muscle, and a good pump really hydrates and volumizes the muscle fiber. Increased strength can only take place in a well-hydrated muscle fiber. Therefore, the more hydrated the muscle fiber, the more likely it is that it'll perform more strongly.

In order to understand the importance of muscle fiber volumization (or sarcoplasmic hypertrophy), you need only look at what happens when you're dehydrated. Studies have shown that dehydration has negative effects on strength. When you're dehydrated, your blood volume decreases. When your blood volume is low, you have a decreased ability to push further into a set. As a result, strength suffers and the muscle tires quicker and quits faster. On the other hand, other studies have shown that rehydration over the course of just a couple of hours can alleviate the negative effects of dehydration on muscle strength. This goes to show how important cell hydration is to strength gain and performance, and it's yet another reason to associ-



It's a fact: A strong muscle is a full muscle. Need proof? Check out the fullness of Johnnie Jackson's pecs and arms. He's curling a ton of weight because the muscles are pumped!



Once again, proof positive that a pumped muscle is a strong muscle. Johnnie Jackson deadlifting 820 lbs. is a sight to see. But don't forget – when he's in the gym, he trains to get pumped!

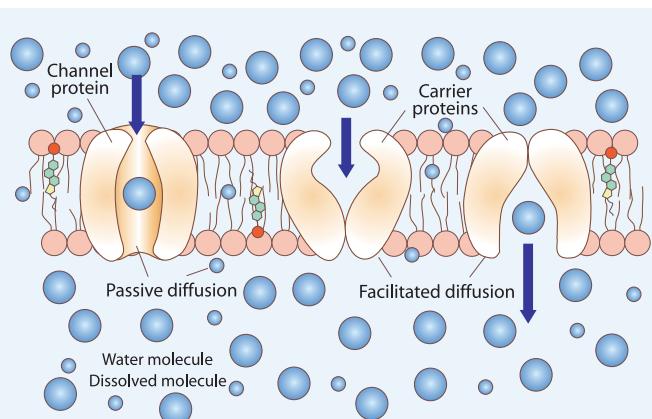
muscle is pumped, you get better oxygen delivery to the muscles, which then improves maximum strength and speeds recovery between sets.

FREE RADICALS, THE PUMP, AND MUSCLE STRENGTH

Your muscles' ability to contract is reduced when there are high levels of free radicals in the muscle fibers (more examples of fatigue toxins). Among the byproducts of hardworking muscles are free radicals ... and free radicals damage cells. You've probably read about how free radicals can decrease exercise performance and recovery.

Like muscle growth, strength is dependent upon how large your muscle fibers are. Bigger fibers are stronger fibers!

But a better pump and increased blood flow helps ensure more prompt removal of these free radicals. What's more, when you're pumped, there's better nutrient delivery to the muscles as well. You may have heard that antioxidants fight off free radicals and the damage they cause. Research shows that antioxidants help speed recovery between sets and between workouts. Well, improved nutrient delivery to the working and recovering muscles (by means of a better pump) means improved delivery of antioxidants, which can minimize free-radical damage.



This diagram shows how the muscle fibers pull water from the blood to the inside of the muscle. When water is pulled inside the muscle, the process is called cell volumization. A well hydrated, volumized muscle fiber is a stronger muscle fiber. By delivering more fluid to the muscle, the pump fosters strength and growth.

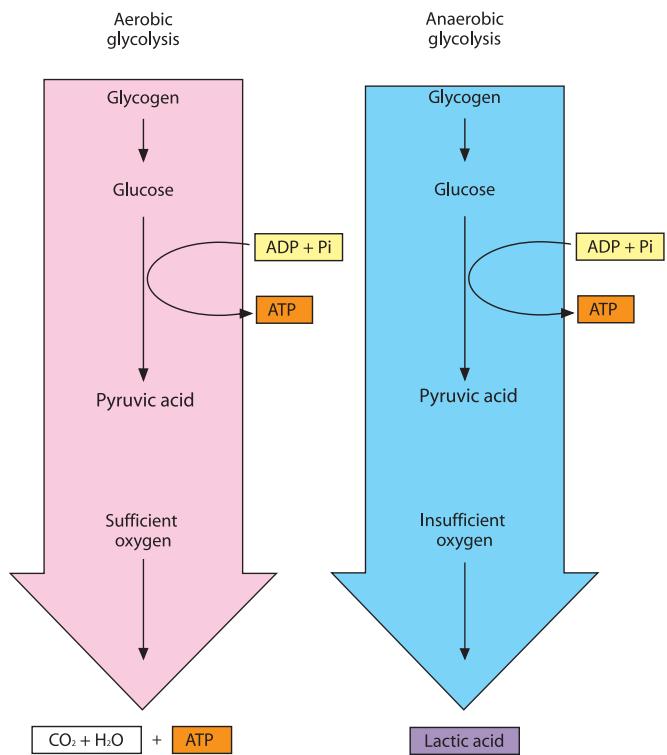


A strong muscle can be a great-looking muscle, as evidenced by Johnnie Jackson.

This diagram shows two different pathways your body can use to make energy to fuel muscle contraction – aerobic or anaerobic glycolysis. If your muscles burn glucose anaerobically, only a fraction of energy (ATP) is produced, and byproducts such as lactic acid build up, which causes muscular failure. Your muscles use anaerobic glycolysis when they don't have enough oxygen. But if you're pumped, you're delivering more oxygen to the muscles, and that can allow for more aerobic glycolysis. This allows more energy to be produced and muscular failure to happen later in the set. You'll get more reps on every set, which stimulates more muscle growth.

NITRIC OXIDE, THE PUMP, AND MUSCLE STRENGTH

You will recall that when blood flow starts to increase in working muscles, a hormone called nitric oxide (NO) is released. NO has a pronounced effect not only in increasing the pump but also in maintaining it. Imagine it: The pump is so important to exercise metabolism that it has its own hormonal system! When you're pumped, NO is released, and NO helps the muscles' ability to maintain force. Since NO is released and increased when your muscles are pumped, the pump is vital for generating strength gains.



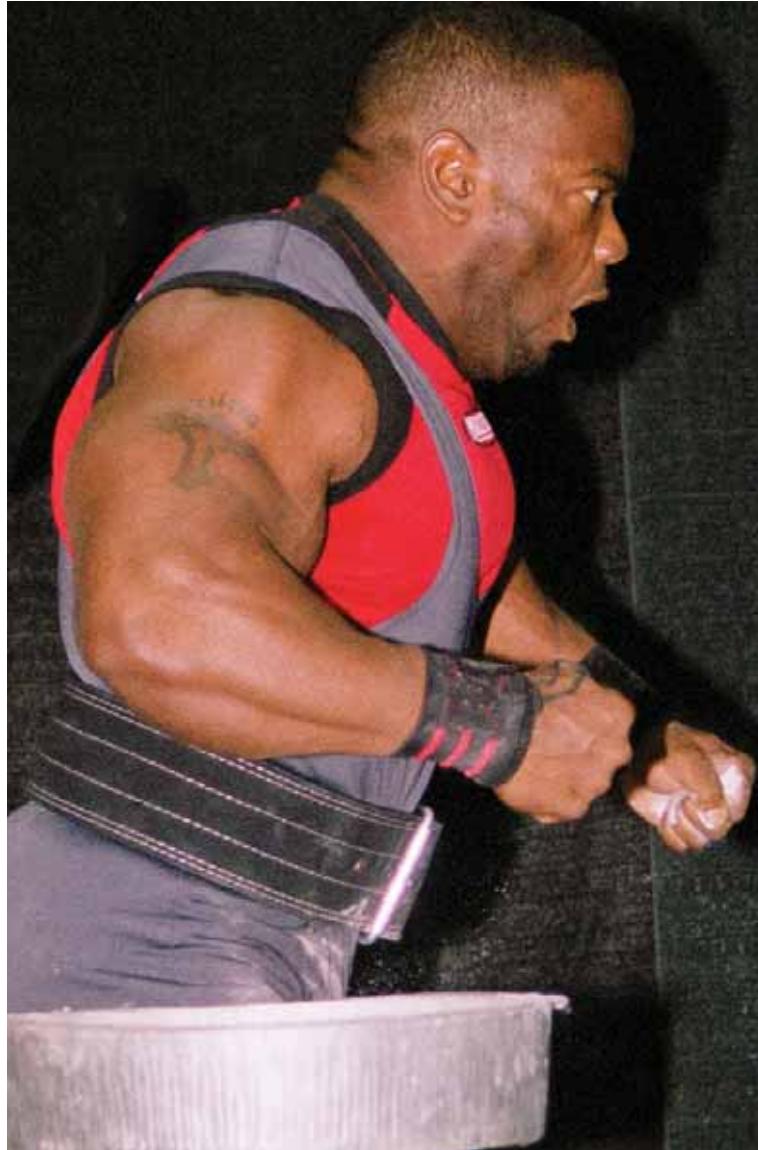
Mr. America Bill Davey shows us how to do the T-bar row – an old-time exercise made popular in the seventies for building back size and strength.

NO has the following direct effects on strength:

1. NO makes muscles contract faster and therefore generate more force.
2. NO increases two types of speed strength – starting strength (which is defined as maximum instantaneous fiber recruitment) and explosive strength (which is defined as being able to use recruited fibers until they are no longer needed).
3. NO increases glucose uptake in the muscles, which provides more nutrients to working muscles. Research shows this effect is even more pronounced in trained individuals. It's a chronic, long-term adaptation that you'll make if you continually focus on getting pumped when you work out.



A pump can help emphasize big, strong muscles, as seen here on Johnnie Jackson.



The pump isn't just physical. A pump increases motivation and desire when you're training to lift the big weights.

MENTALLY PRIMING THE PUMP

While so far we have examined the physiological effects of the pump, it's necessary to note the psychological effects of the pump as well. The psychological impact of the pump feeds positively into keeping a pump and

The pump increases motivation, desire, and a sense of well-being while training.

working toward it, which further generates all the above positive physiological effects. A pump helps to develop a keen sense of mind-body awareness, which becomes really important when you engage in high-intensity

work. A pump increases motivation, desire, and a sense of well-being while training. The pump makes it easier to maintain enthusiasm for the course of a grueling workout. But you all know this. This is just the real-world psychological effect of higher blood volume ... the pump!

MAXIMIZING THE PUMP

Now that you understand how imperative it is to seek and maintain a pump during training in order to make real-world strength gains, let me give you some *dos* and *don'ts* for doing this wisely:

1. Choose the most compound movements, and do them explosively.
For example, choose the bench press first before the cable crossover.
2. Thoroughly develop the mind-muscle connection by targeting only the muscle intended. Don't throw weights around for ego's sake.
Focus on your lift, and stay strict.
3. Use intensity techniques. Do lots of sets with heavy weight, drop sets, and extended sets. These techniques recruit the most stubborn muscle fibers, and that can have a big impact on your strength.
4. Use proper exercise selection. The difference between a good athlete and a great one, especially in bodybuilding, is having a program where the sequence of exercises within a workout makes sense for recruitment, stimulus, and recovery. Check out Chapter 6 for Charles Glass' no-nonsense approach.
5. Use a high-volume approach to training. Use 20-plus sets per body part once you are in good enough condition to handle the increased workload capacity. High-volume training equals high blood volume in the muscle. And sustained high blood volume in the muscle creates increased strength.
6. Never do maximum singles or doubles in a training situation (unless you're a powerlifter training within the last few weeks before a powerlifting meet. Even so, maximum singles and doubles aren't done so much for boosting strength as for measuring your maximum performance).

This is a shortlist of the most important training protocols that I would recommend to insure optimal strength gains. All the above principles force and maintain higher blood volume in the muscles, so the pump is

You need to force and maintain higher blood volume in the muscles if you want strength.

obviously imperative if you're seeking results. Scientifically and in terms of common sense, it should be very clear just how important it is to strive to achieve and maintain a pump in a training situation.





How The PUMP Feeds Your MUSCLES

– Jonathan Coyne

If I could sum up nutrient delivery in a more easy-to-understand statement, I'd call it "feeding the muscles." Jay Cutler puts it perfectly later on in this book, when he says "a well-fed muscle is a bigger muscle." Of course, the principle of nutrient delivery doesn't just limit itself to the muscles. Nutrients need to be delivered to your brain, your heart, and your intestines, among other places. And that's all well and good, but for the purpose of this book, we're concerned about one thing: getting more nutrients into the muscle tissue. In the past two

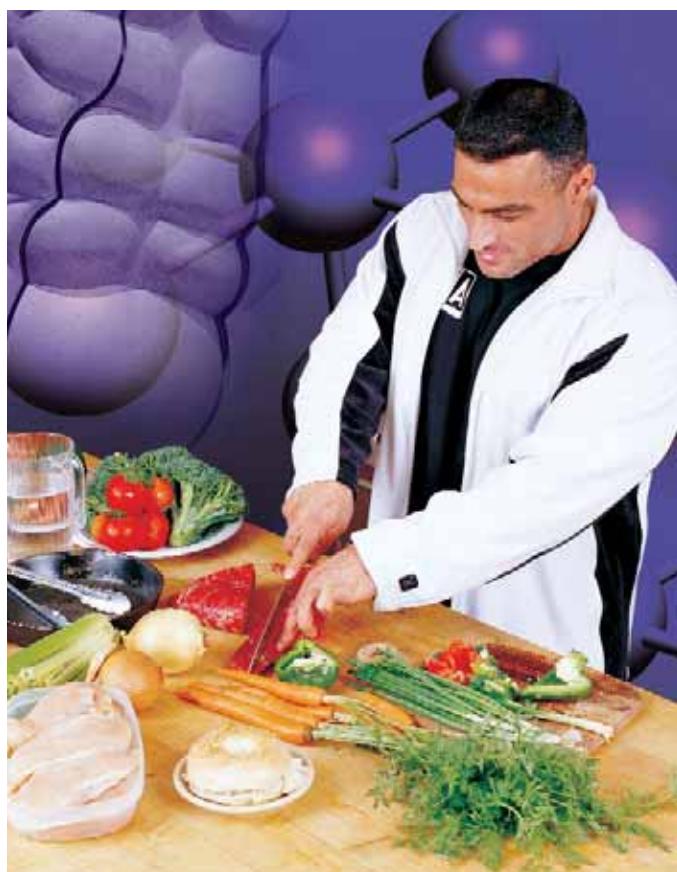
**Proper nutrient delivery ensures properly fed muscles.
If you don't get pumped, you don't maximize delivery.**

chapters, Scott Abel talked about how a muscle pump directly stimulates muscle growth. He then talked about how a pump can crank up muscular strength. This chapter's going to touch on why delivering nutrients to the muscles is an important physiological process and why the pump plays such an integral role.

HOW DOES NUTRIENT DELIVERY WORK?

When you eat, all of the food you slam down your gullet winds up in your digestive tract. At this point, the food is broken down by digestive enzymes into tiny components. A piece of steak is broken down into small proteins, and eventually, into amino acids and small peptides (a peptide is just a few amino acids strung together). The potato you had is broken down into small chains of sugars, and even into individual sugar molecules such as glucose, fructose, and galactose. The

fats in your meal are broken down into fatty acids and glycerol. This is the process of digestion, in a nutshell. It's the process of breaking down the food you eat into tiny components that are usable by the body for its various metabolic processes. And once the food has been successfully broken down into these tiny individual components, your intestines are ready to absorb them. Here's what happens next.



Making sure you feed your body the right foods can make all the difference. Feed your body the right nutrients, and the pump will deliver them to your muscles.

There are cells in the intestines called villi that absorb the nutrients and relay them into the blood that circulates around the intestines. This blood is then immediately sent to the liver (just as Dr. Evans touched on earlier in Chapter 2). The liver is like a gatekeeper; things are sent back, broken down right there, or let in. The liver might send some things right to the kidneys to be sent out in the urine as waste. It might even send them back into the intestines. The liver also takes some nutrients for itself – some fats, amino acids, and sugars – because the liver needs nutrients to survive too. The liver just gets first crack ... that's all. Finally, the liver will let the majority of the nutrients pass into the circulatory system to feed all the other tissues in your body – including your brain, your heart, and most importantly to us, the muscles!

Once you've absorbed nutrients through digestion, they can be sent to your muscles.

Once we're past the liver, you've got a bunch of nutrients aimlessly floating around in your bloodstream. Obviously, the \$64,000 question is: How do we direct the lion's share of those nutrients into the muscle fibers? The answer is, as always, by maximizing the pump!

THE PUMP – REAL EFFECTS ON NUTRIENT DELIVERY

The timing of the pump couldn't be better for muscle-building purposes, which makes perfect sense. As you well know, lifting in the gym produces an immediate pump, and this pump lasts for about 45 minutes after your workout is done. An important function of the pump is to drive precious nutrients to the working muscles. And as we'll learn, a more efficient and effective pump yields a more productive result. In essence, that short-term pump you build in the gym is going to slam more nutrients into your muscles. But like I've already said, that's what I like to call "short-term pumps for short-term effects." Don't let the language fool you though – short-term pumps can have big-time effects!

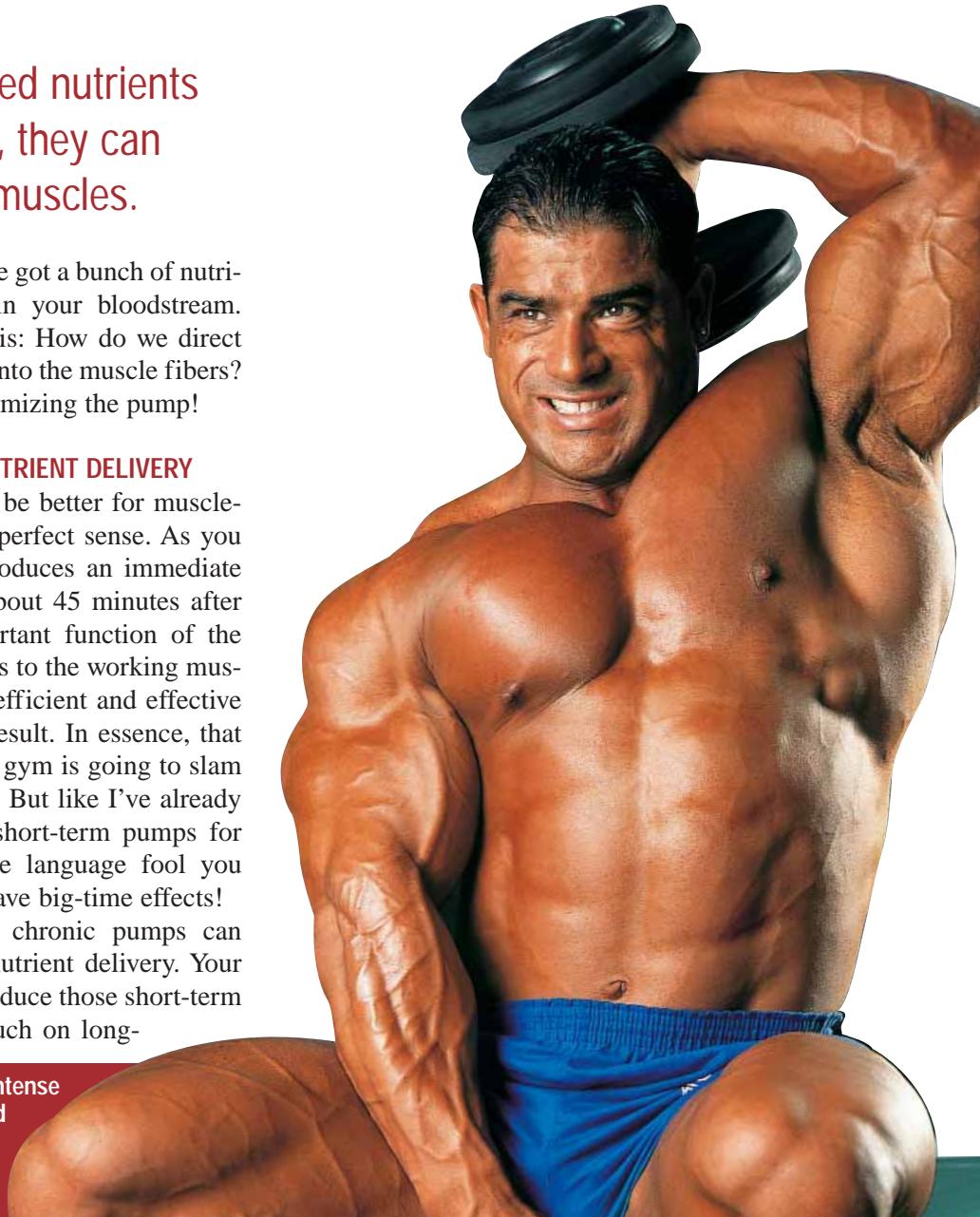
Over the long run, however, chronic pumps can really have a marked effect on nutrient delivery. Your training in the gym is going to produce those short-term pumps, but I'm also going to touch on long-

IFBB pro Mike Dragna knows that intense training promotes a huge pump, and a huge pump will deliver the nutrients he eats right to those pumped muscles.

term pumps, their effects on nutrient delivery, and how you can go beyond the gym to propagate these long-term pumps for true maximal nutrient delivery. By cou-

A more powerful pump promotes powerful nutrient delivery.

pling short-term and long-term pumps, you're going to maximize nutrient delivery to the muscles, thereby giving your muscles all the building blocks they need to get massive and strong. True, the pump by itself will get you bigger and stronger (as Scott touched on in Chapters 2 and 3). But by maximizing nutrient delivery, you're going to blow your results into the stratosphere!



SHORT-TERM NUTRIENT DELIVERY –

THE BENEFITS OF THE PUMP

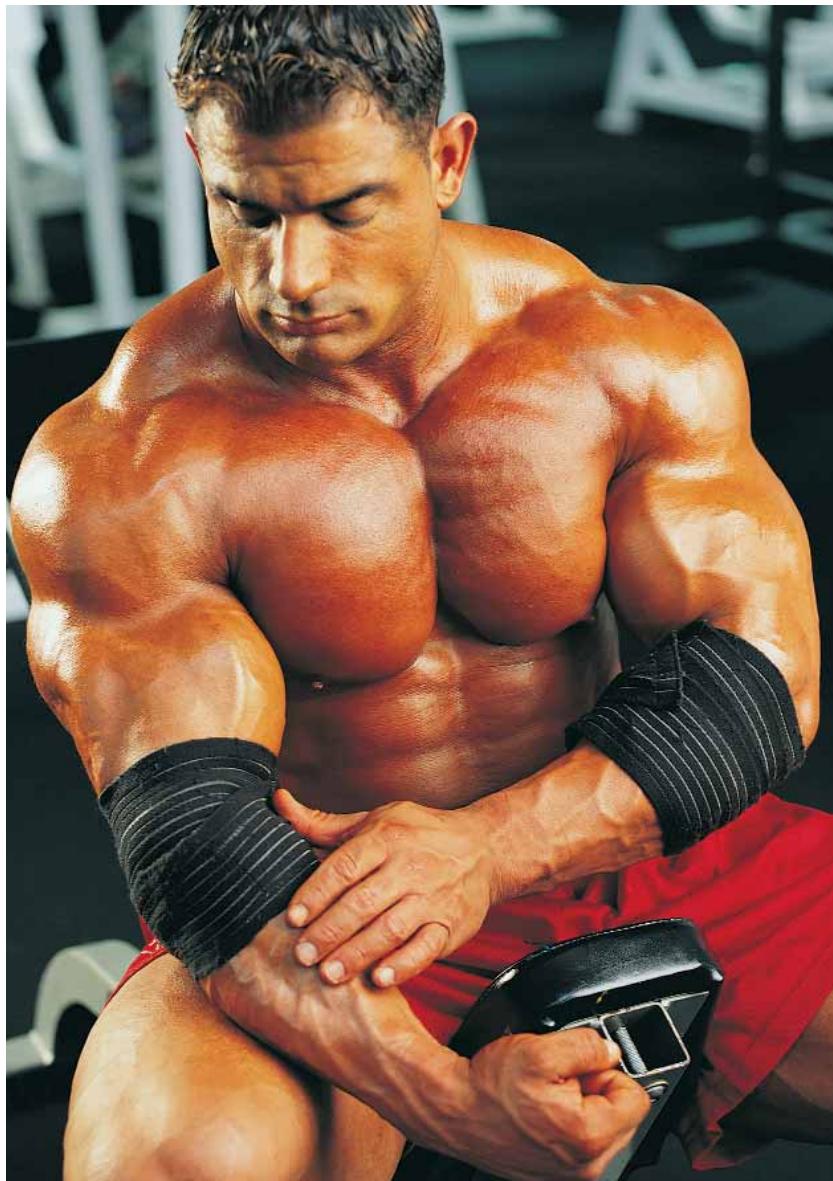
The pump helps the muscles recover over a very short-term period. As Scott touched on in previous chapters, muscles depend on oxygen to keep strength up. And as Dr. Evans discussed, the blood is responsible for carrying oxygen to the muscles.

In the short term, the pump helps move more oxygen and glucose into working muscles to fuel recovery.

Creatine is a major storage form of fuel that drives muscular contractions when you're lifting heavy weights. But once you use up creatine stores, they have to be regenerated or further contractions can't take place. It's easy to understand, then, that if you can hyper-regenerate creatine stores in your muscles, you'll be able to rest less between sets, get more power out of each set, get more reps from each set, and thus stimulate more muscle fibers during each set. That leads to more growth. So how does this relate to the pump?

Well, the pump drives blood from the muscles to the lungs, and then back again very quickly. This allows the blood to pull carbon dioxide waste from the muscles, and bring back fresh oxygen from the lungs. The hemoglobin in the blood releases the oxygen, which is transferred to something in the muscles called myoglobin. This oxygen is then used indirectly to help the muscles regenerate creatine levels. So, you see, if your pump is greater, there will be greater oxygen delivery to the muscle. And more oxygen to the muscle means higher creatine levels, faster. Ultimately, that leads to better workouts and better growth.

But oxygen isn't the only thing the pump brings to tired muscles during the workout. The pump also brings precious glucose to the muscles to fuel those intense contractions. During exercise, blood flow to active muscles is considerably increased by the dilation of capillaries, which helps deliver more glucose to working muscles. This ensures quicker recovery. Glucose is vital to muscle contractions in the gym – just as much as phosphocreatine is, if not more. Without glucose in your



Shown here is a picture of Mike Dragna wrapping his elbows prior to an intense training session. Doing so protects the joints and also keeps a strong pump in the arms.

muscles, your set will end much more quickly, and the weight lifted will be much less than it could be. Trouble is, after a couple of sets, most of the glucose in your muscles is burned up. So how do you keep working out? You get more glucose to the muscles, that's how.

When your muscles are full of blood, you can hyper-deliver amino acids, glucose, and creatine to them.

A good, strong pump drives glucose to the muscles. The pump picks up extra glucose from the liver (remember what I said about the liver keeping some nutrients

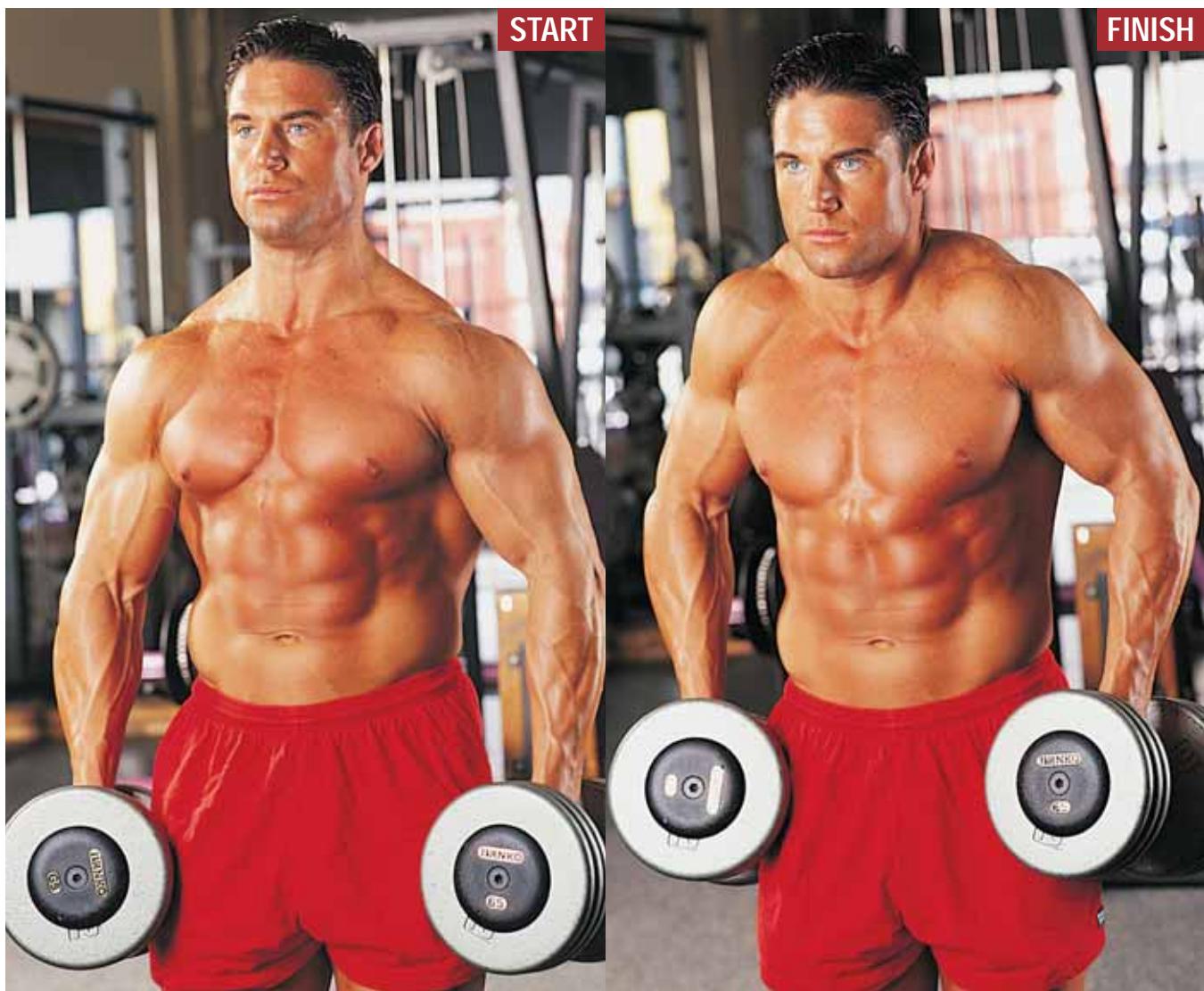
for itself? Well, that's why). This glucose is then quickly propelled to the muscles as blood begins to pool around the muscles – the first signs of the pump. What's interesting is that the muscles are hyper-conditioned at

That 45-minute window after your workout is critical. Take advantage of it!

this point to absorb the glucose from the bloodstream. Normally, insulin would have to be present to drive the glucose into the muscles. But during exercise, when the muscles are pumped, they're able to pull more glucose out of the bloodstream all on their own without insulin. That's why the pump is so critical for nutrient delivery.

So, as you see, the short-term effects of the pump are quite dramatic. During those intense workouts, the pump helps to drive oxygen and glucose into your muscles. This helps you work out harder for a longer period of time. And as a result of working out harder and longer, you stimulate more muscle fibers for greater growth. You get more out of each workout! But the pump doesn't stop working there.

For about 45 minutes after your workout, your muscles will remain pumped. This timeframe also happens to correspond perfectly with the "nutrient delivery window." This nutrient delivery window is a special time period every bodybuilder has at his disposal for 45 minutes after every workout to flood the muscles with growth-promoting nutrients. Fail to take advantage of this window, and you won't grow as big. Take full advantage, and your gains will skyrocket.



Training hard in the gym is the first step. For example, hit your traps hard with some dumbbell shrugs (shown above), and get them pumped. But within 45 minutes, you'd better get some serious nutrition into your body to take advantage of the pump.



A short-term 45-minute window exists to feed your muscles once you're done blasting them. You have to consume the right nutrients so the pump can force them into the muscles.

With your muscles flooded with blood, you can hyper-deliver things such as amino acids, glucose, and creatine to them. If you can get these nutrients into the bloodstream via the digestive process right after a workout, you're going to grow. The blood will pull those nutrients from your digestive tract and pool around the muscle tissues. This gives all the amino acids, glucose, and creatine a greater chance to be absorbed by the muscles.

It's crucial to get the highest quality glucose, amino acids, and creatine into your body right after a workout.

Amino acids are building blocks for the proteins that make up the structural components of your muscle fibers. Proteins called actin and myosin lie within each muscle fiber. Make the actin and myosin bigger, and your muscle fibers get bigger. When muscle fibers get bigger, you have to buy bigger shirts! Glucose and creatine are used as a fuel source to power muscles through

intense workouts – when their levels are elevated in the muscles, they make you stronger and send a signal to the muscle that it's okay to grow ... that there's plenty of fuel to drive the growth. But the only way muscle fibers get bigger is through a two-step process.

First, something tells the muscle fibers to get ready to grow. In this case, the pump does a great job by boosting musclebuilding hormone levels and triggering growth sequences in the muscle (see Chapter 2 for a review).

Second, once the muscles are told to grow, they'll need amino acids to make bigger actin and myosin proteins. The pump can help pool amino acid-rich blood around the muscles (if you eat the right foods after a workout), which maximizes amino acid uptake into the muscles. The result is that muscles now have the signal and the blocks to build themselves up as bigger versions of their former selves! The muscles will also need glucose and creatine to fuel further workouts and swell the muscle fiber. Once again, a muscle pumped with nutrient-rich blood will do the trick.

That's why it's crucial to get the highest quality source of amino acids, glucose, and creatine immediately after you're done your last set – I'm talking within 5 to 15 minutes of setting down that weight.

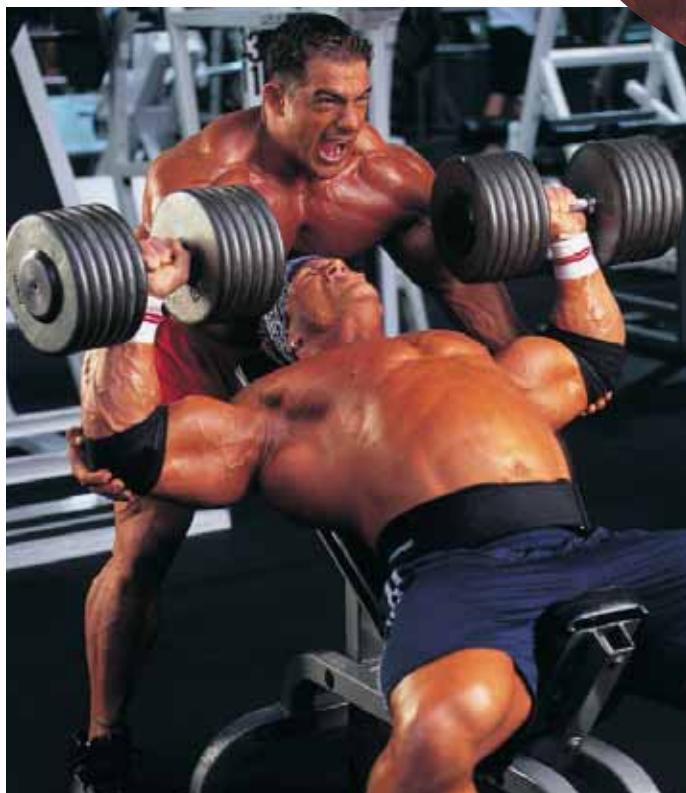
LONG-TERM NUTRIENT DELIVERY –

THE BENEFITS OF THE PUMP

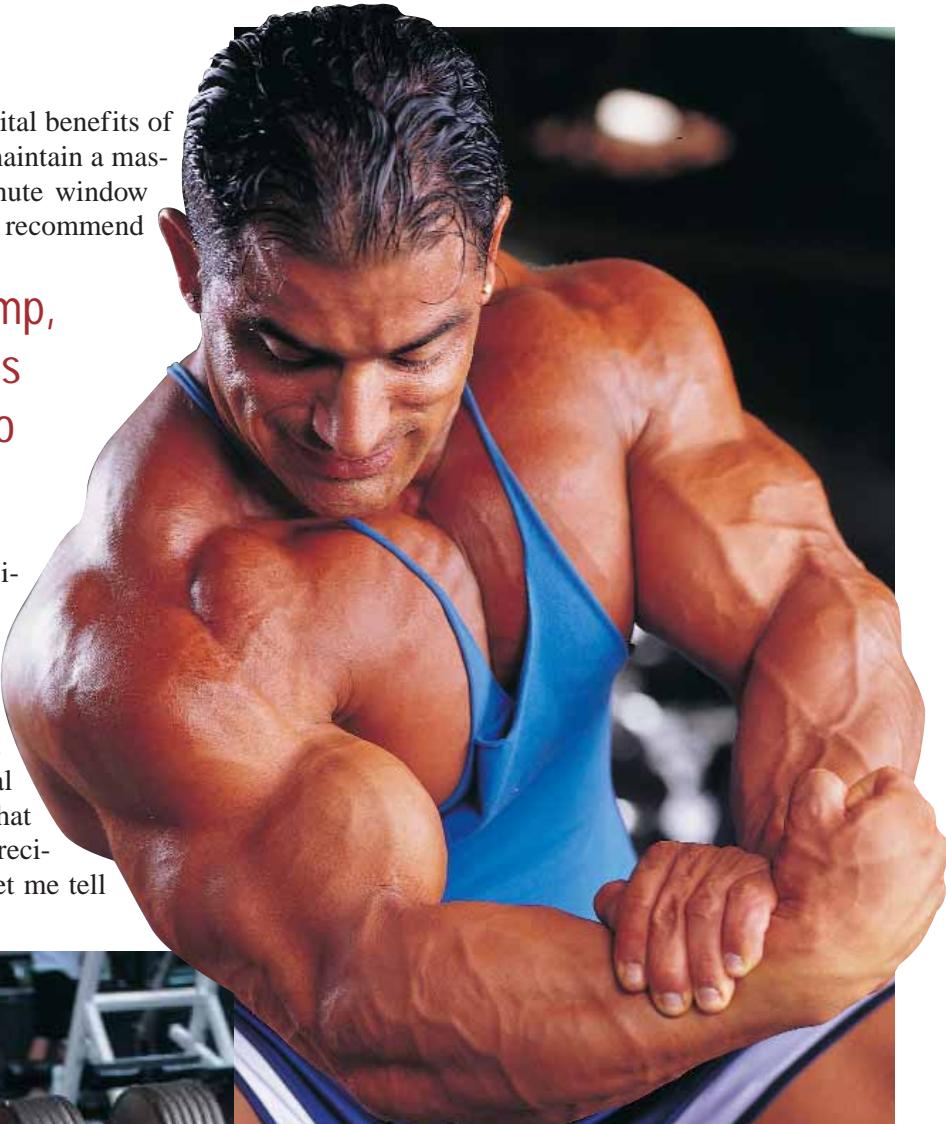
Perhaps the most misunderstood yet vital benefits of the pump come when you're able to maintain a massive muscular pump past that 45-minute window and beyond the gym. Essentially, I recommend

The greater the pump,
the more nutrients
you can deliver to
hungry muscles.

remaining pumped for as long as possible throughout the day. The reasoning behind my recommendation is simple. If the pump is able to trigger muscle growth and enhance nutrient uptake into the muscles over the short run, then why not propagate that signal for hours? It's a simple proposition that works. Doing it, however, requires precision. Let me tell you why, and then let me tell you how.



Bomb the muscles in the gym to create a pump. Then try to keep that pump as long as you can. The longer you stay pumped, the more nutrients you can force into the muscles.



When you consistently use the pump to help speed nutrients to the muscles, you end up getting bigger and stronger. Mike Dragna shows just how big!

First off, as Scott touched on in his chapter, a massive pump goes hand in hand with an increase in key musclebuilding hormones such as insulin-like growth factor-1 (IGF-1), insulin, nitric oxide (NO), and vascular endothelial growth factor (VEGF) – some real serious musclebuilding agents. IGF-1 and insulin are responsible for the hypertrophy of muscle fibers and also boost nutrient uptake by the muscles. NO helps dilate blood vessels for greater pumps and also signals muscle growth. VEGF increases blood flow and can even cause the body to create new blood vessels for even greater pumps and blood flow.

The power of these hormones to induce nutrient delivery is undisputed – these are the kings. But the trick is to increase the levels of these hormones not just for a few minutes, but for hours at a time. The greater the elevation in hormone levels, and the longer

their elevation, the greater the time they have to interact with muscle fibers to deliver nutrients. Since these hormones are intrinsically linked to a pump, you can see why I recommend remaining pumped for as long as possible. By doing so, you'll use the power of these hormones to maximize nutrient delivery as long as possible, thereby maximizing your results. That's why you should want to create long-term pumps. Here's how to do it.

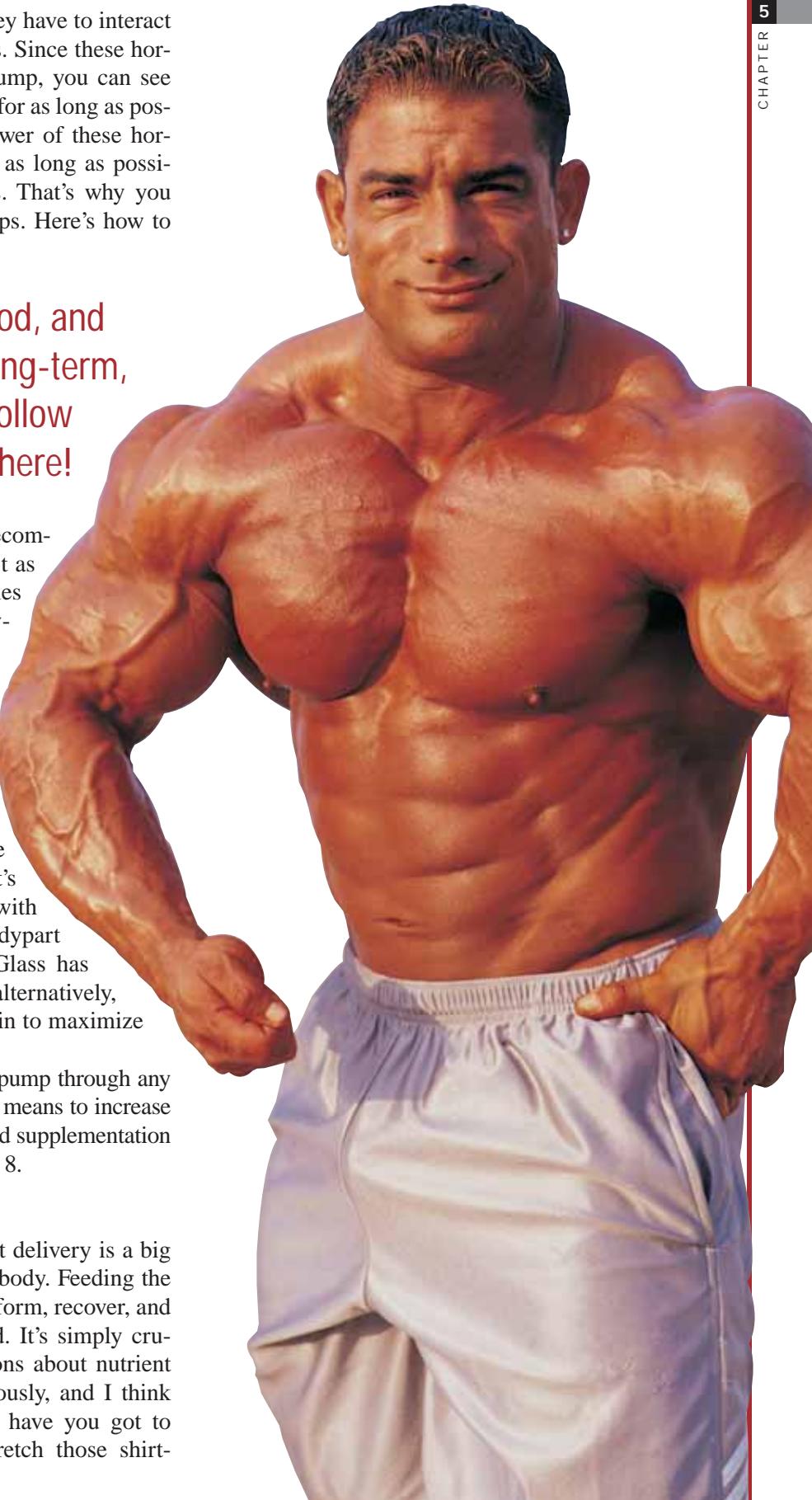
The right training, food, and supplements create long-term, massive pumps. Follow our advice to get there!

You start by following the diet recommendations made in Chapter 7, or just as easily, by following the diet principles laid out by the professional body-builders in the subsequent chapters. Making sure your body is well-fed ensures you have the nutrients necessary to feed growing muscles. Next, you have to train hard. No taking it easy; you have to haul ass in the gym and give it your all. High-intensity sets create the largest pumps possible for maximum blood volume. What's more, you need to pound the muscle with lots of sets – no 1- or 2-set-per-bodypart workouts. Check out what Charles Glass has written out for you in Chapter 6, or alternatively, see how Jay, Chris, Mat, and King train to maximize the pump.

Next up, you need to maximize the pump through any other means possible. The most logical means to increase the pump is through the use of advanced supplementation and I'll talk more about that in Chapter 8.

SUMMING IT UP

There's no question about it – nutrient delivery is a big reason the pump exists in the human body. Feeding the muscles the nutrients they need to perform, recover, and grow bigger can't be overemphasized. It's simply crucial! Take this book's recommendations about nutrient delivery and boosting the pump seriously, and I think you'll be pleasantly surprised. What have you got to lose, after all? Get to work and stretch those shirt-sleeves!





Train For The MAXIMUM PUMP

– Charles Glass

THE GLASS THEORY ON TRAINING FOR THE PUMP

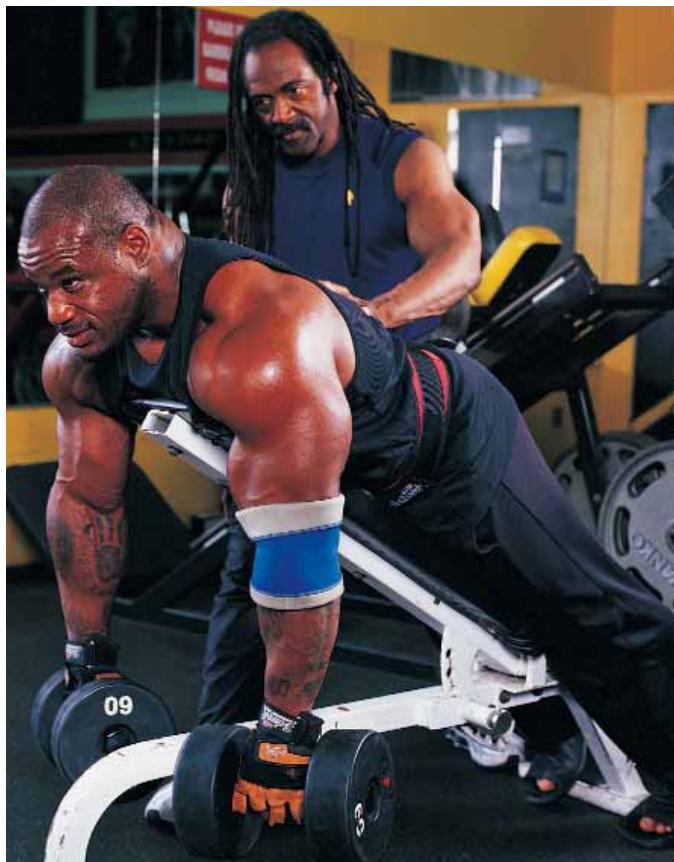
Every body is different. But every muscle needs blood in it to grow. The muscles need blood in order to get the nutrients in and circulate the waste products out. I believe you have to focus your training on increasing blood volume to put on size. Otherwise, you won't put enough blood into that muscle group. You don't grow unless you have blood there to grow from. Blood and water push all of the nutrients through the body, and that is what we need to grow.

**Every muscle needs blood to grow.
You don't grow unless you have
blood there to grow from.**

I also see a lot of people who don't grow because they don't train at the right intensity. They use lower reps and are not getting the proper amount of blood into the muscle to grow. You need to have that blood in there. Otherwise, your body will simply not develop. It is a waste of your time. And that means you have to be able to endure high repetitions for each set to get more blood volume circulating throughout the body.

You need to make sure you get a muscular pump during your workout. It helps to push everything through your blood to get into the muscles for new growth. That's why I also recommend using PUMP-TECH™. By training and using PUMP-TECH, you will feel a bigger surge of blood going through your body. I use it, and PUMP-TECH gives me such a huge pump that I just can't believe it. The way my body has been responding is fantastic. I have been recommending it to everyone. PUMP-TECH is just such a great product. The pump that I get now with PUMP-TECH is amazing compared

to what I used to get. I have talked to other bodybuilders who are using PUMP-TECH, and they can't believe the pumps they are getting. It happens within a short amount of time, too. My pumps used to last up until my workout was over ... maybe up to 30 minutes later. But now I get pumps for several hours afterward. It's great! But enough about that. Let's get to the goods: how to train for the pump!



Every body is different. But every muscle needs blood in it to grow. The muscles need blood in order to get the nutrients in and circulate the waste products out.

DAY ONE: LEG TRAINING

This is the leg workout I recommend. It allows you to get maximum pumps, and is particularly effective for building up the size and sweep of the quads (the front thigh muscles).

Hack Squats

You start the workout by doing hack squats for 4 sets of 12 to 15 reps once your legs are fully warmed up. These will put more pressure on the outside sweep of the quad. Also, try keeping your feet up a little higher on the platform. That way, you'll hit your glutes less and put more stress on the quad muscles. When you do your reps, go all the way down at a medium-paced speed. And don't keep your back right against the pad; keep it lifted slightly away from the pad.

Leg Press

Next up, go to the 45-degree leg press. Put your feet squarely in the middle of the platform and set the backrest so that it's at about a 20-degree angle from the floor. When you do your reps, move the weight down nice and easy at a slower pace. Your feet should be spaced a little less than shoulder width apart with your toes pointing straight ahead; you don't want to put pressure on the glutes – just the quads. For this exercise, do 3 sets of 12 to 15 reps. You should be hitting failure by the time you hit rep number 12, and by this time, your legs should be shaking.

Smith Machine Squats

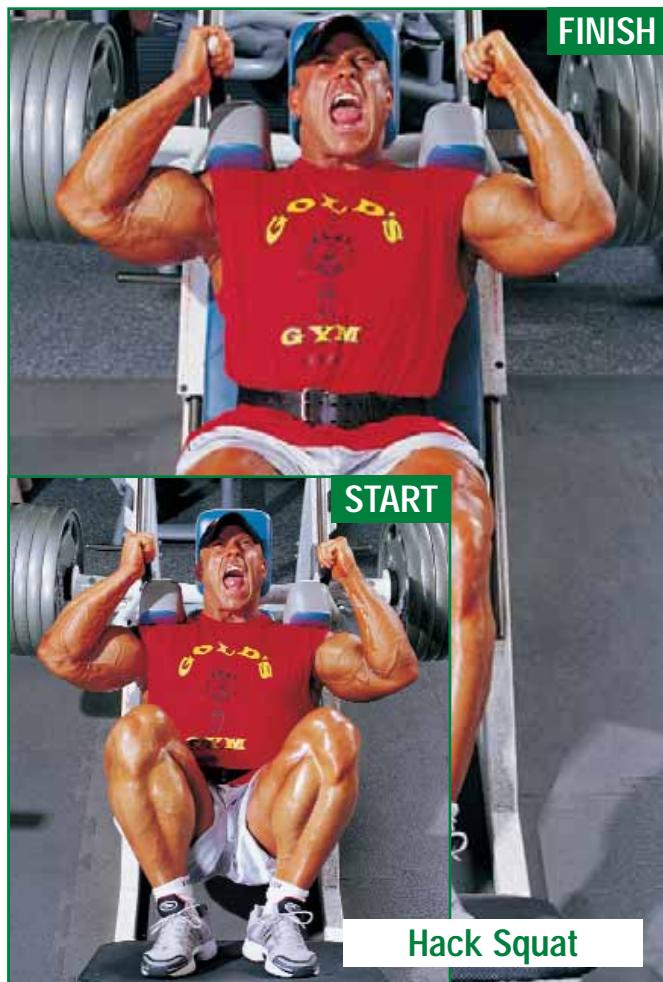
Now it's on to Smith machine squats. Position yourself straight under the bar – you don't want your feet too far forward or behind you. Also, have the safety racks set at the bottom of the movement. When you're ready, unhook the bar and descend until you hit the safety racks. When you hit them, stop moving for just a moment, then explode upward. Do 3 sets of 6 to 7 reps.

Lying Leg Curl

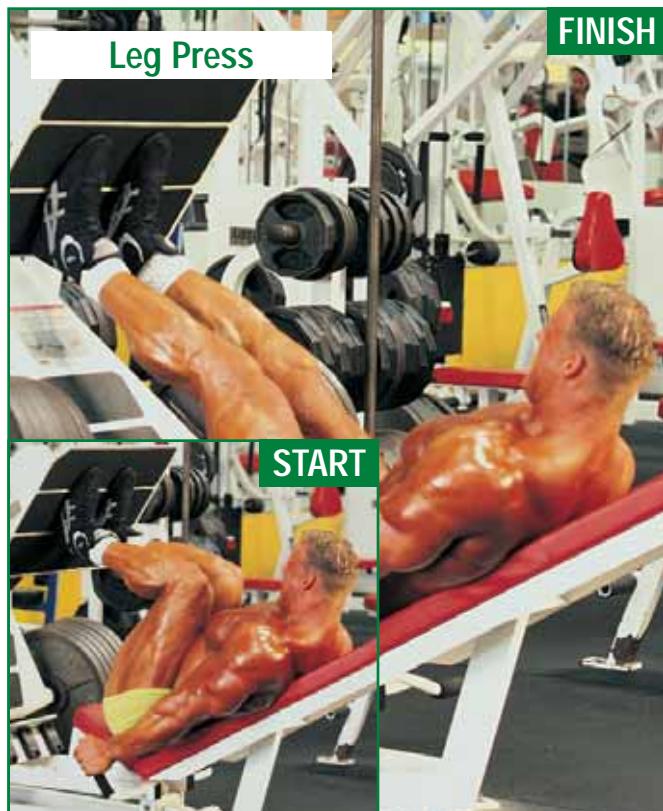
It's now time to hit the hamstrings with lying leg curls. For this exercise, do 4 working sets of 12 to 15 reps, preceded by one warm-up set. When you do your reps, keep your chest off the pad and up in the air. Your chest should never touch the pad.

Seated Leg Curl

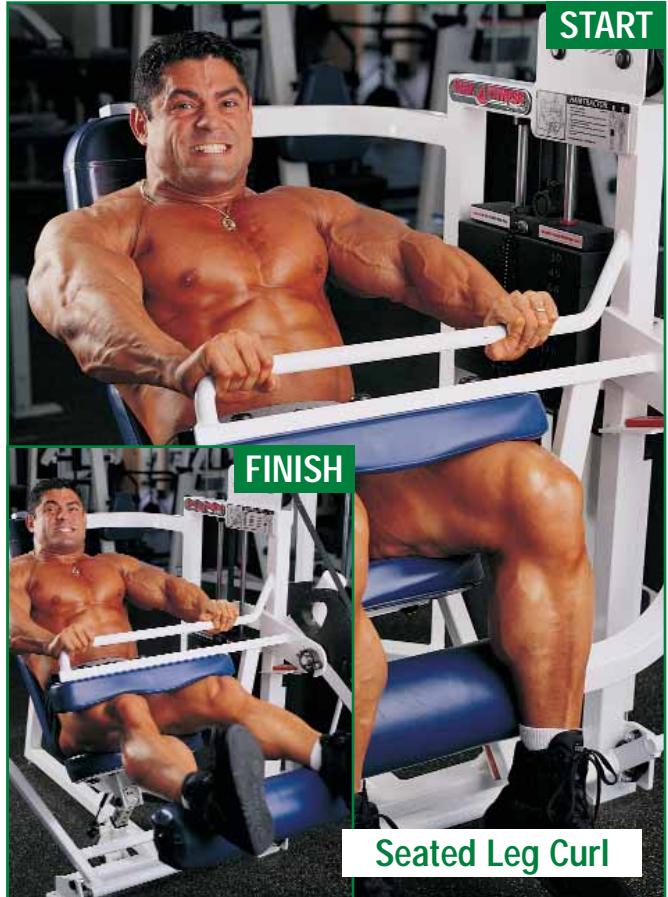
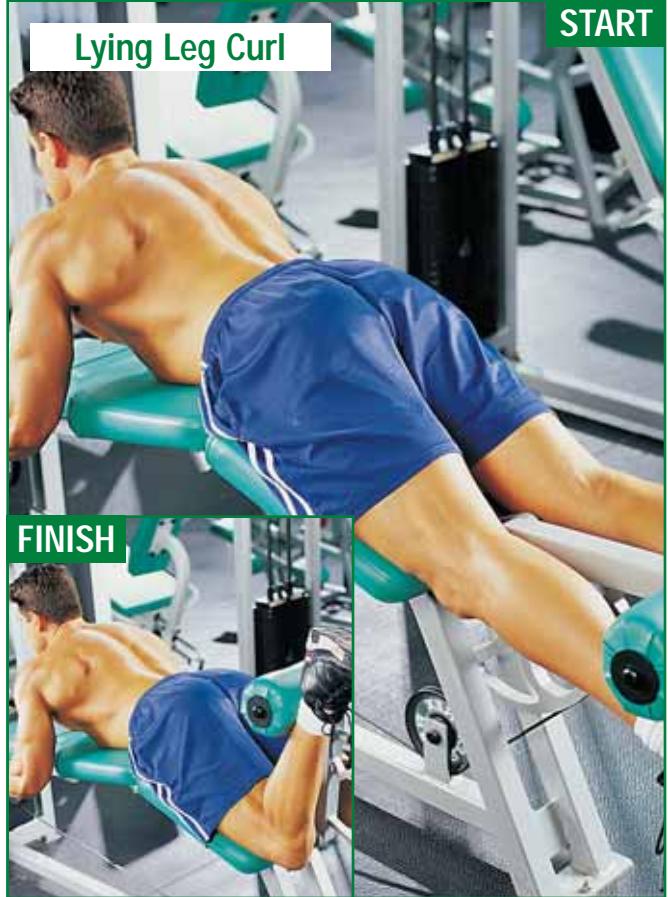
Next up is the seated leg curl, and you'll perform 4 sets of 8 reps. Make sure you point your toes away from your body as you curl the weight, and then point the toes up toward the ceiling as you return the weight to the starting position. That's it for hamstrings, and that's it in total for your legs.



Hack Squat



Leg Press



DAY TWO: CHEST TRAINING

There's no rest after the leg workout – you're back in the gym to hit your chest (pectoral muscles).

Incline Dumbbell Presses

The chest workout starts with incline dumbbell presses. You'll do 3 sets of 15 reps with the bench set at a 45-degree incline. As you do your reps, keep your elbows flared out to the sides (perpendicular to your upper body). That gets more of your pecs involved in the movement. When you tuck your elbows into your sides, it becomes a powerlifting movement. As you press up, stop just short of an elbow lock to help preserve your elbow joints over time.

Incline Barbell Presses

For the incline barbell press, do 3 sets of 10 to 12 reps. Throughout the movement, focus on keeping your shoulder blades squeezed together throughout the press movement, and keep your elbows flared out to the side.

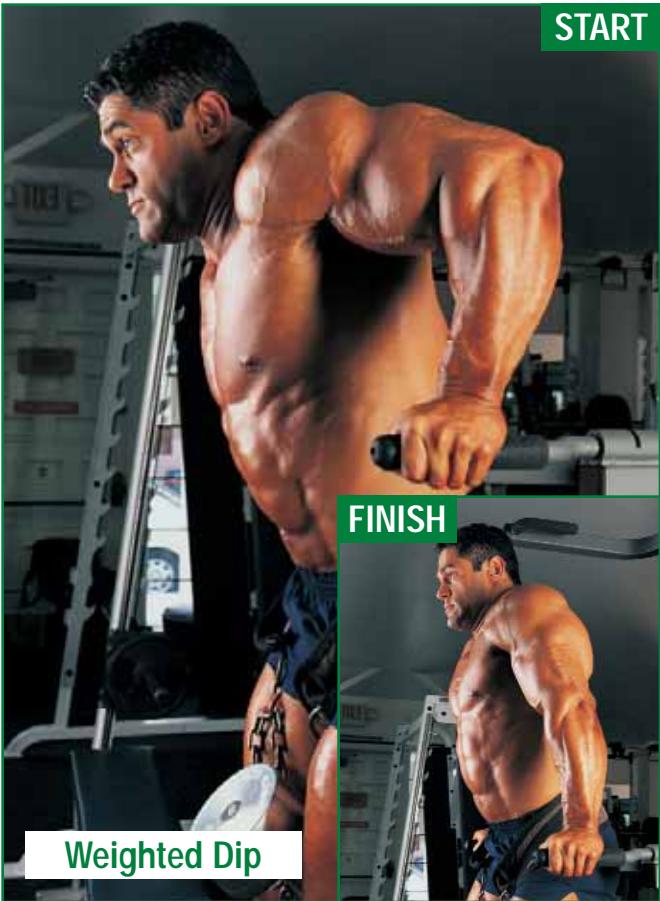
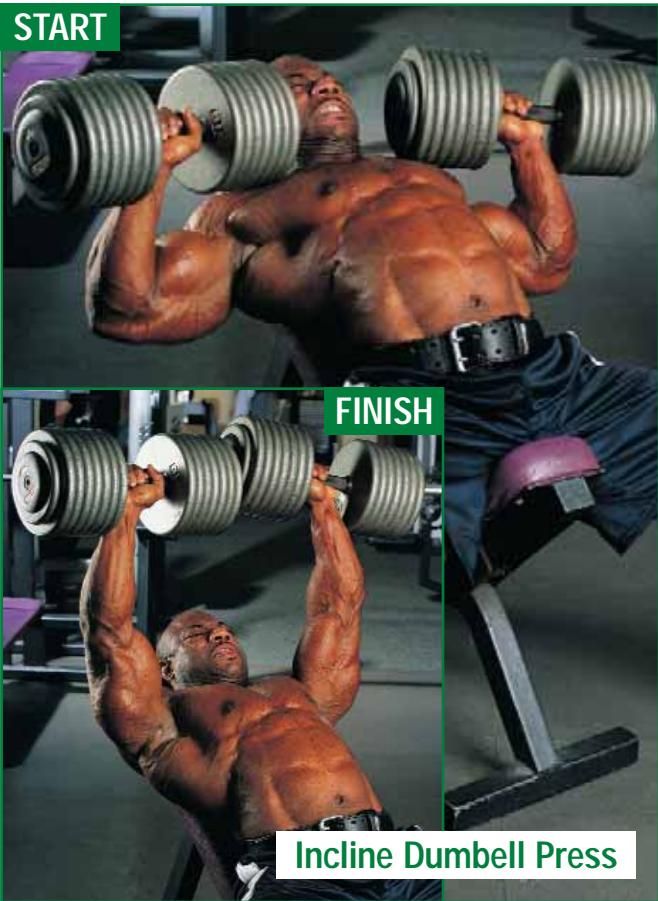
Weighted Dips

Time to move on to weighted dips for 3 sets of 10 to 12 reps. Your hands should grasp the dip bar with a shoulder-width grip. If you can do more than 12 reps with just your bodyweight, wrap a belt around your waist that allows you to attach extra weight to it to make the movement harder. When you dip, don't keep your torso upright. Instead, lean forward to put more pressure on the chest rather than the triceps. Your torso should be as horizontal as possible.

Dumbbell Flyes

You finish the chest workout with dumbbell flyes – 2 sets of 10 to 12 reps at an incline, and then 2 sets of 10 to 12 reps lying flat.



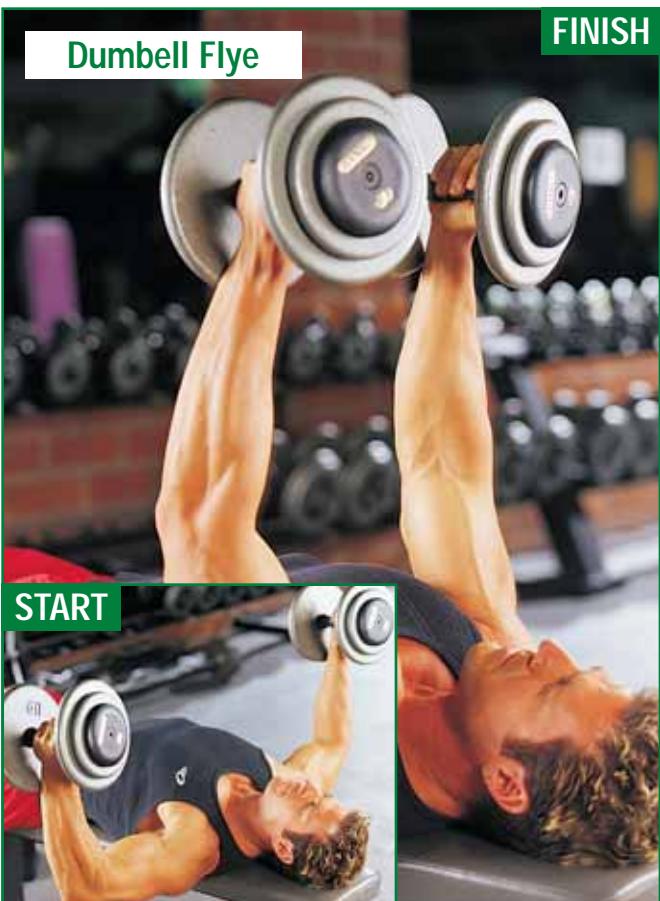


Incline Dumbbell Press

Weighted Dip



FINISH



Dumbbell Flye

START

DAY FOUR: BACK TRAINING

You should be well-rested from your day off, so it's time to get back into the gym. Day Four means it's time to blast the back. One tip I like to keep in mind whenever hitting the back: Always use your hands as hooks. Otherwise, you'll tire your forearms out. If you tire your arms and forearms out, you won't be able to do any more. Use your hands as hooks, and really use your back to train rather than pulling with your arms and biceps.

Seated Cable Row

First up is the narrow-grip seated cable row. This movement is great for hitting the meaty part at the center of the back, and to do that, you need a close grip. When you do your reps, remember to pull your shoulders back and pinch them together. As you are pulling back, you want to be pulling the bar into the middle of your abs. Do 4 sets of 12 to 15 reps.

Lat Pulldowns

I recommend doing your lat pulldowns to the front. To really hit the lats, pull the bar right down so that it touches your chin. When you perform your reps, your upper torso should be perfectly vertical with your chin up so you can touch it with the bar as you contract your lats. Your elbows should travel slightly in front of your torso as you execute each rep, and as you pull down, your shoulder blades should squeeze together. Do 4 sets of 15 reps for this exercise.

Bent-Over Dumbbell Row

This is a unique back exercise I recommend to my clients needing more back size. You start by lying on an incline bench with a dumbbell in each hand and your palms facing you. You then row both dumbbells up at the same time back into your hips. The reason I use dumbbells instead of the barbell for this movement is because it allows you to pull the weights further back for a better contraction and pump. As you row the dumbbells into your hips, slowly twist the dumbbells so that at full contraction, your palms are facing away from you. Also, as the weights travel to your hips, your chest should begin to rise and angle upward, and your lower back should remain arched. This movement calls for 4 sets of 12 reps.

One-Arm Standing Cable Row

To do this unique movement, start by facing a weight stack with a one-hand handle attached to the cable down by your feet. Then, bend over slightly about 45 degrees at the waist and grasp the handle. Your feet should be staggered, and your head should be up. Then you pull the cable attachment into your hip as you contract your back muscles. This exercise calls for 3 sets of 12 to 15 reps.

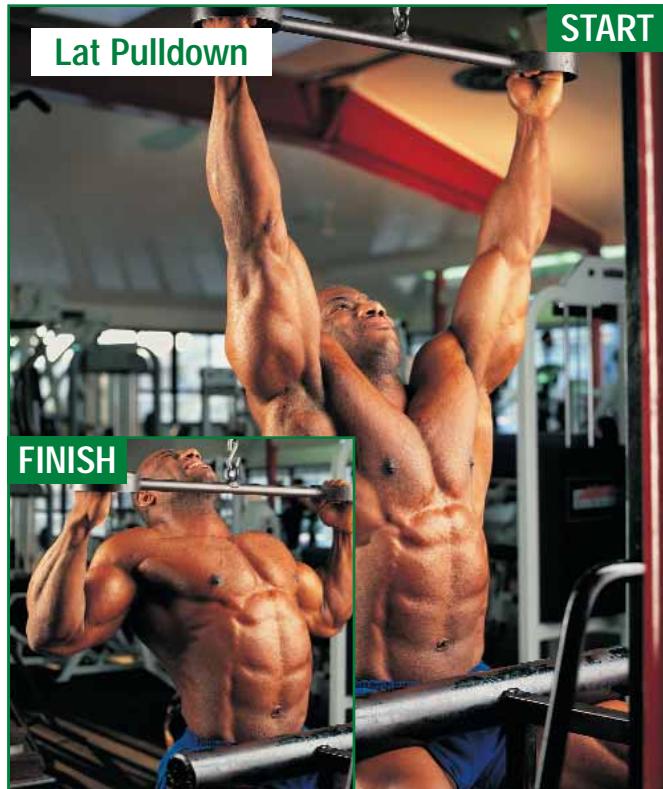
Deadlifts

I prefer dumbbells to barbells when it comes to deadlifts. They allow for a deeper stretch, but you want to make sure that you don't go down

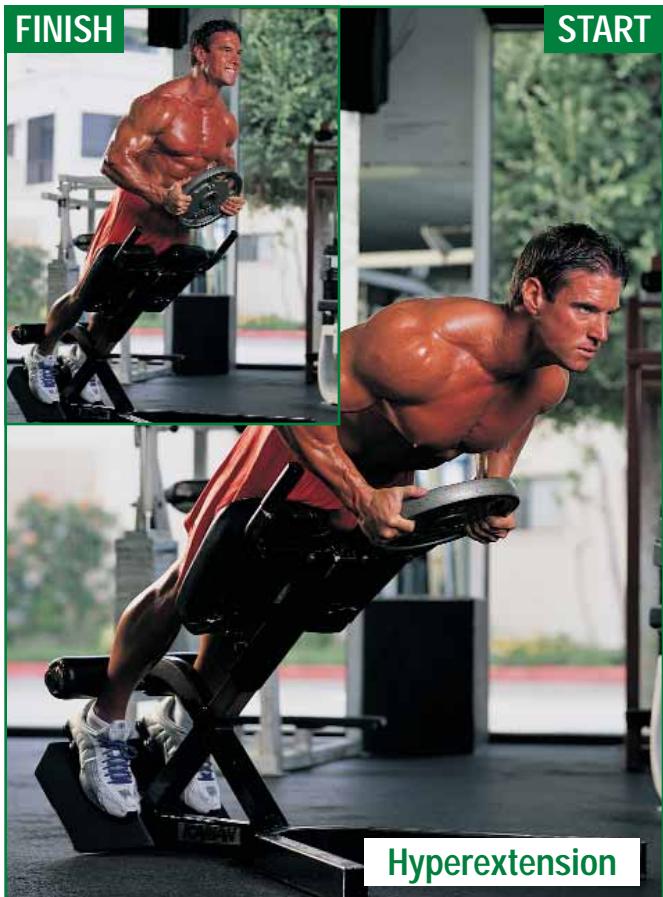
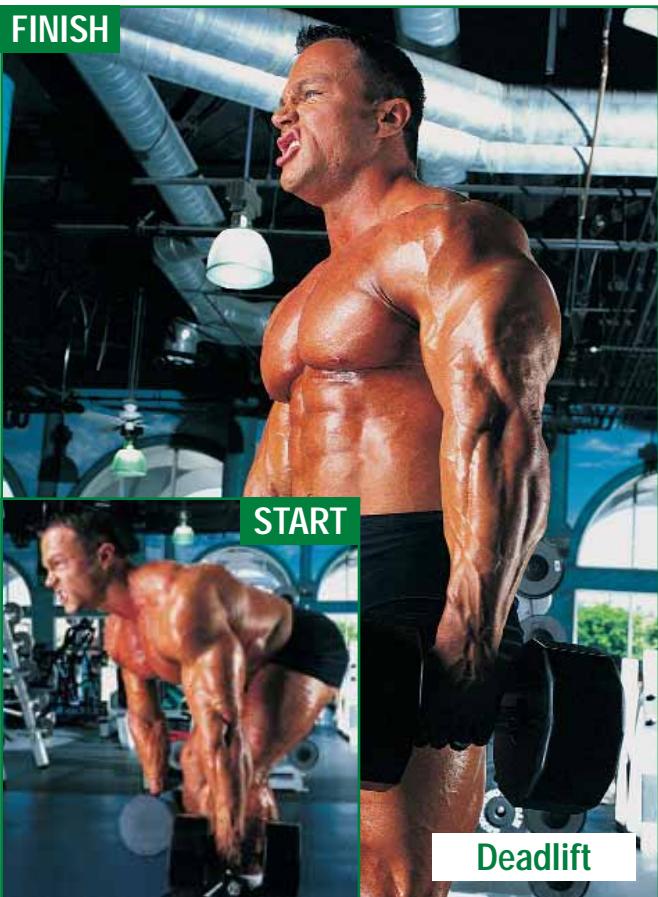
too low. You just bend over at the waist so that the dumbbells go down just below your knees, and then you pull straight back up, squeezing your back. Do 2 sets of 10 to 12 reps.

Hyperextensions

When doing hyperextensions, suck your stomach in and pull up. This way, your erectors are the only muscles used. The program calls for 2 sets of 15 to 20 reps.



Bent-Over Dumbbell Row



DAY FIVE: SHOULDER TRAINING

You just hit back yesterday, so let's go through the shoulder workout you should follow to get pumped.

Side Dumbbell Laterals

Shoulder workouts start with seated side laterals with dumbbells. I recommend doing them seated because you want the least amount of torso sway possible. When bodybuilders do the movement standing, they tend to rock back and forth and throw their bodies into the movement. That's why seated side laterals are best. When you choose a bench, if you can choose one with a back pad so you can brace yourself against it – like you're sitting against the back of a chair. Start with the dumbbells hanging at your sides, and then lift them out to the side away from your body. The very top of the movement happens when the dumbbells are level with your ears. I also believe that as you do the reps, your pinkie fingers should be elevated higher than your thumbs. Do 4 sets of 10 to 12 reps.

Front Dumbbell Laterals

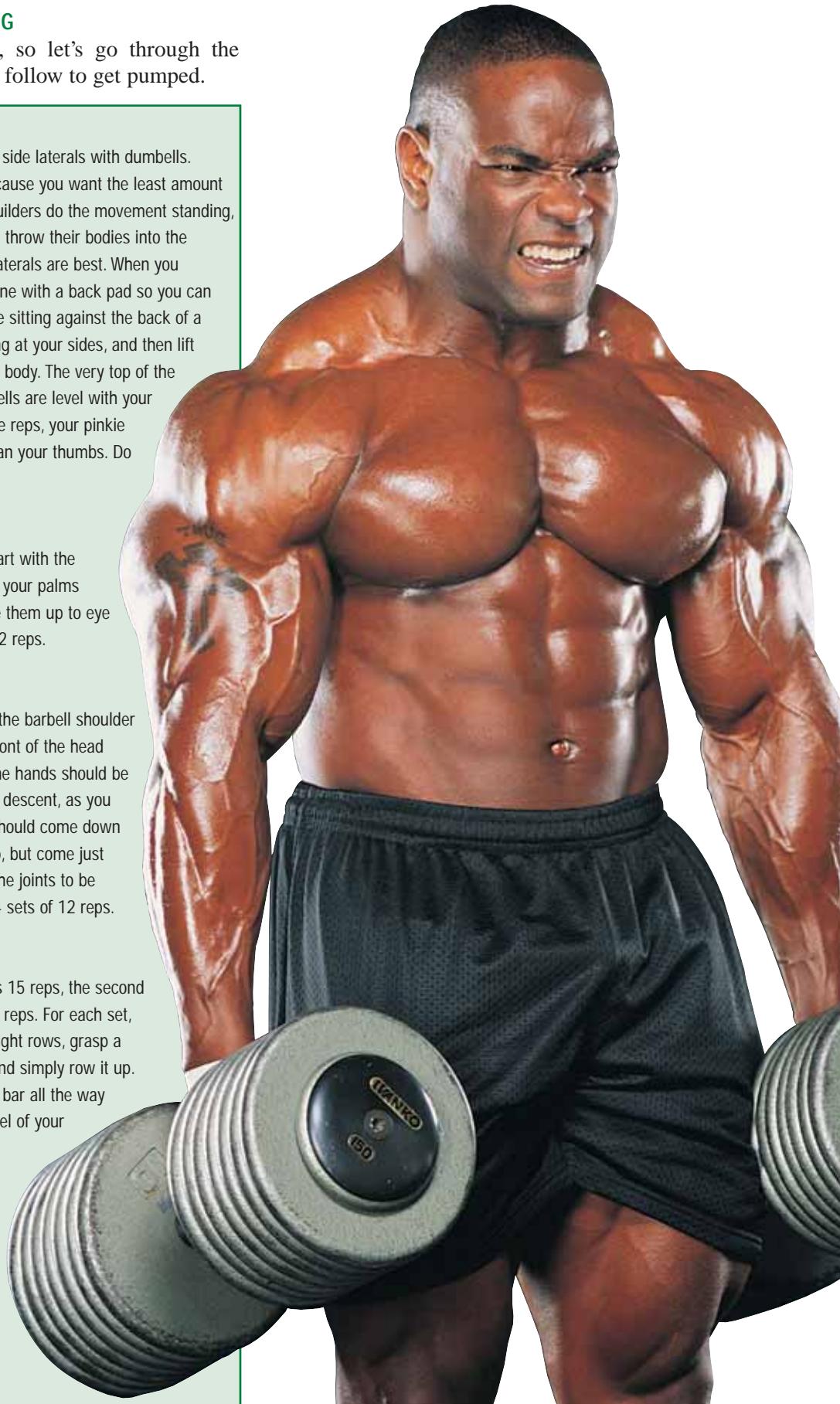
Next come front dumbbell laterals. Start with the dumbbells hanging at your sides with your palms facing your thighs. Then simply raise them up to eye level at the top. It's 4 sets of 10 to 12 reps.

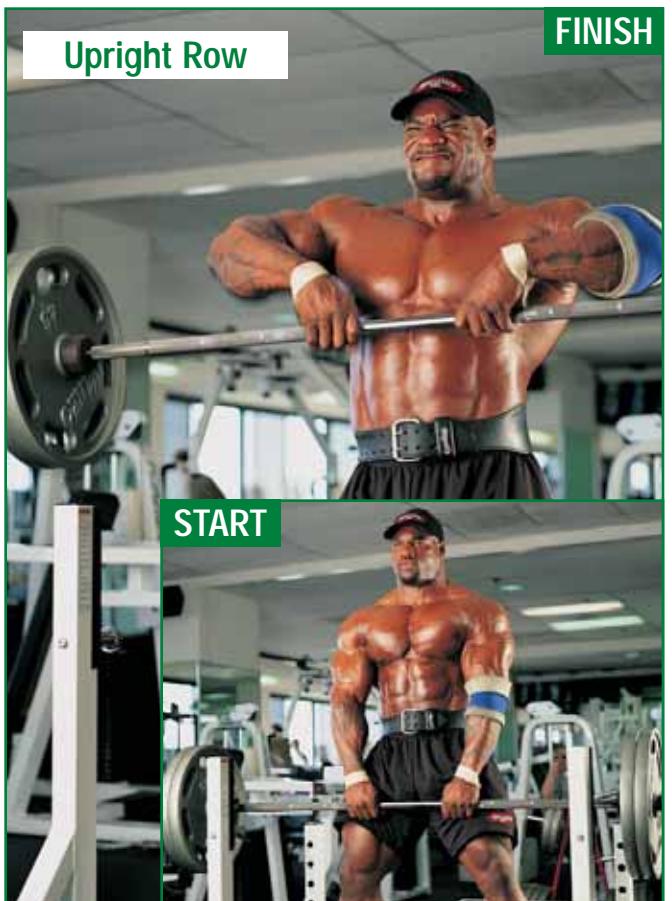
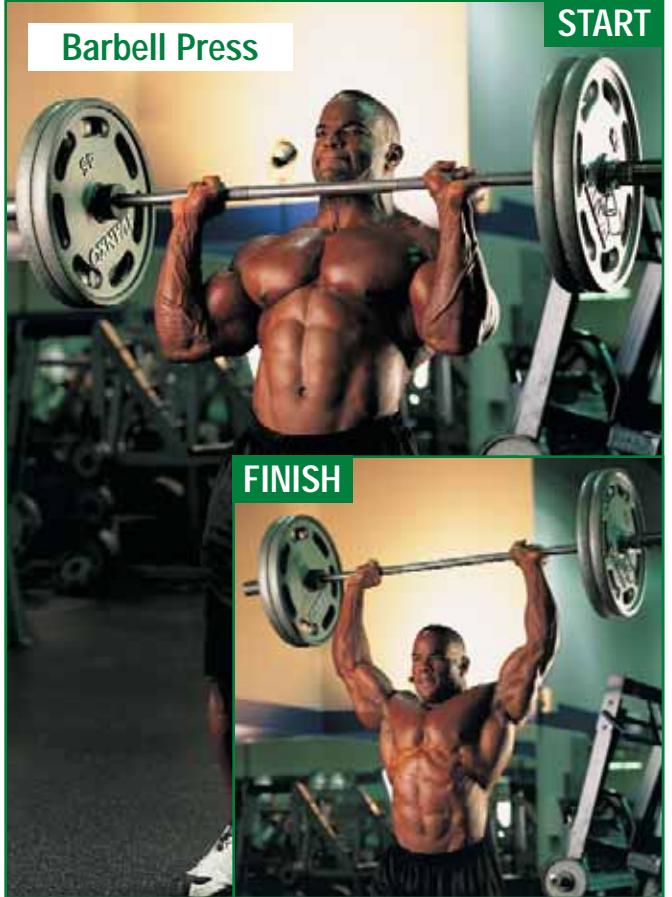
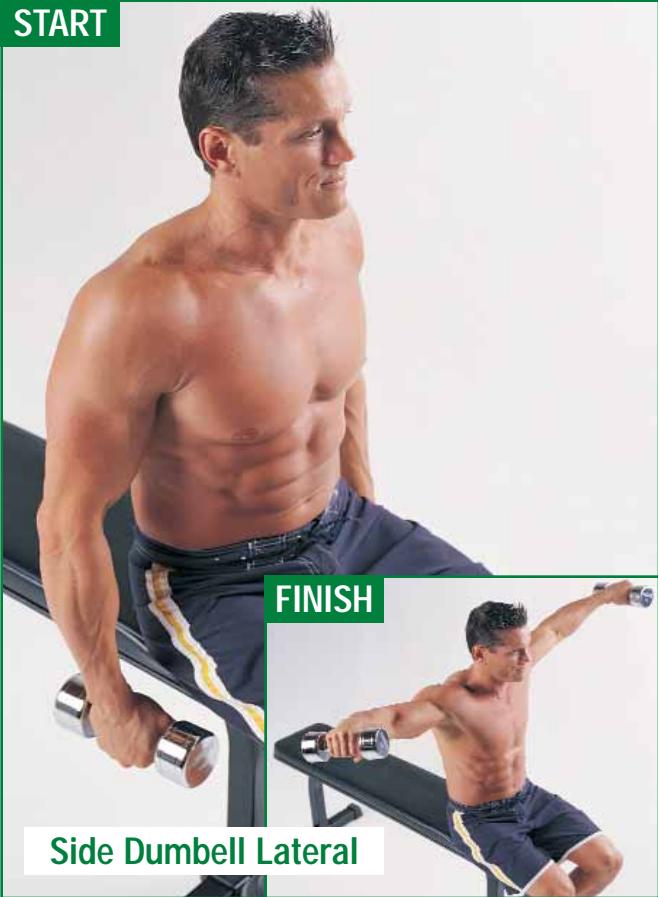
Barbell Presses

The next exercise in this workout is the barbell shoulder press. The bar should travel to the front of the head rather than behind to avoid injury. The hands should be spaced shoulder width apart. On the descent, as you bring the weight down, the barbell should come down to the chin. Then push the weight up, but come just shy of locking out – we don't want the joints to be impacted. This exercise is done for 4 sets of 12 reps.

Upright Rows

Next, do upright rows. The first set is 15 reps, the second is 12 reps, and the final set is for 10 reps. For each set, you increase the weight. For the upright rows, grasp a barbell with a shoulder-width grip, and simply row it up. Mind you, you don't want to row the bar all the way up in the air; just pull it up to the level of your nipples.





DAY SEVEN: ARM TRAINING

You should be well-rested after a day off following your shoulder workout. Now it's finally time to hit those arms. On arm day, I recommend you do two biceps exercises, then do two triceps exercises, follow with one final biceps exercise, and then wrap up with one last triceps exercise.

Barbell Curls

The first exercise is the standing barbell curl. Grasp a straight bar (not an EZ-curl bar) with a wide grip, with the wrists slightly bent back. Do 4 sets of 15, 12, 10, and then 8 reps as you increase the weight each set.

Seated Incline Dumbbell Curls

The next biceps exercise is the seated incline dumbbell curl. Start with a dumbbell in each hand with your palms facing away from you. You should be leaning back on a bench set at a high incline. Then simply curl the weight up keeping your palms facing up. Once again, it's 4 sets of 15, 12, 10, and then 8 reps as you increase the weight with each set.

Triceps Pushdowns

Triceps pushdowns are next. I recommend you use a straight bar with the hands fairly close together. You'll do 4 sets of 15, 12, 10, and then 8 reps, with the weight getting heavier each set.

Lying Triceps Extensions

Next up are lying triceps extension with the EZ-curl bar. Lie down on a flat bench and do 4 sets with increasingly heavy weight so that you wind up doing 15, 12, 10, and then 8 reps.

Preacher Curl

Now it's time to move to the final biceps exercise, which is the preacher curl. Do 4 sets of 10 to 12 reps.

Close-Grip Bench Press

This exercise should be done on the traditional flat bench-press apparatus. Lie down, grip the bar with hands at shoulder width, and lower it to your sternum while keeping your elbows tucked in tightly to your sides. Then simply press all the way up to full lockout. This exercise calls for 4 sets of 10 to 12 reps.

START



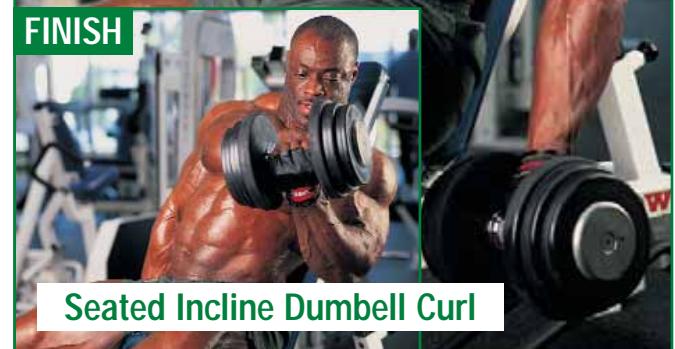
Barbell Curl



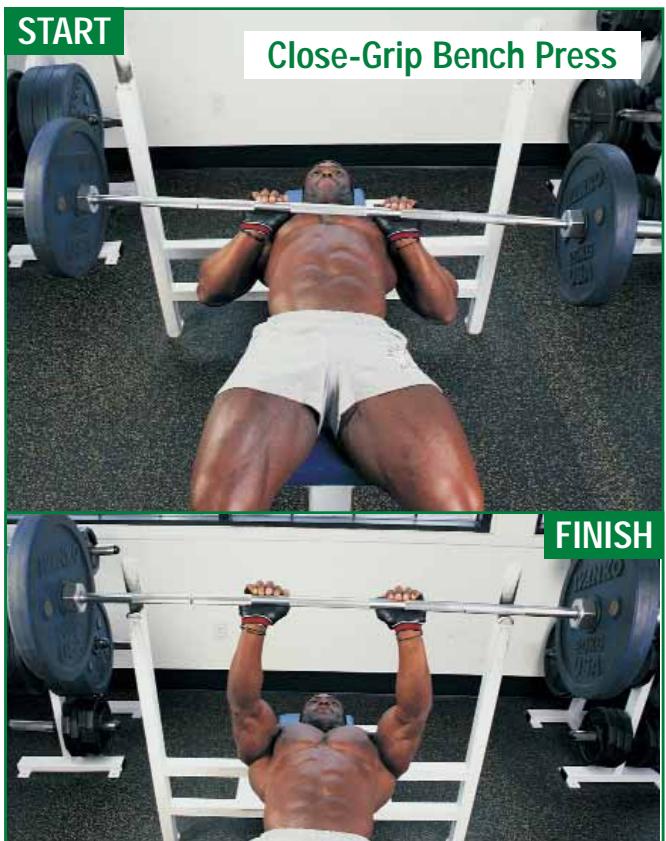
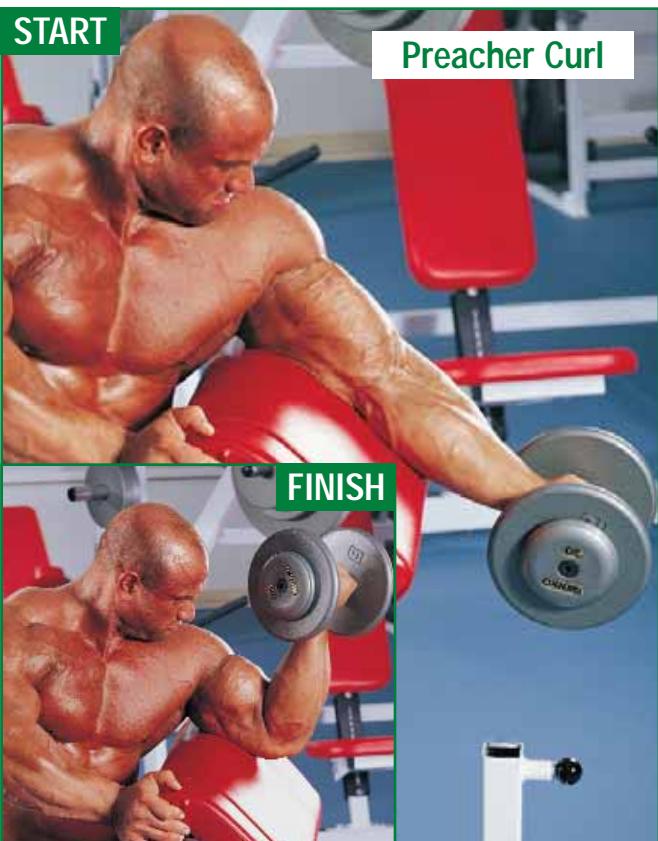
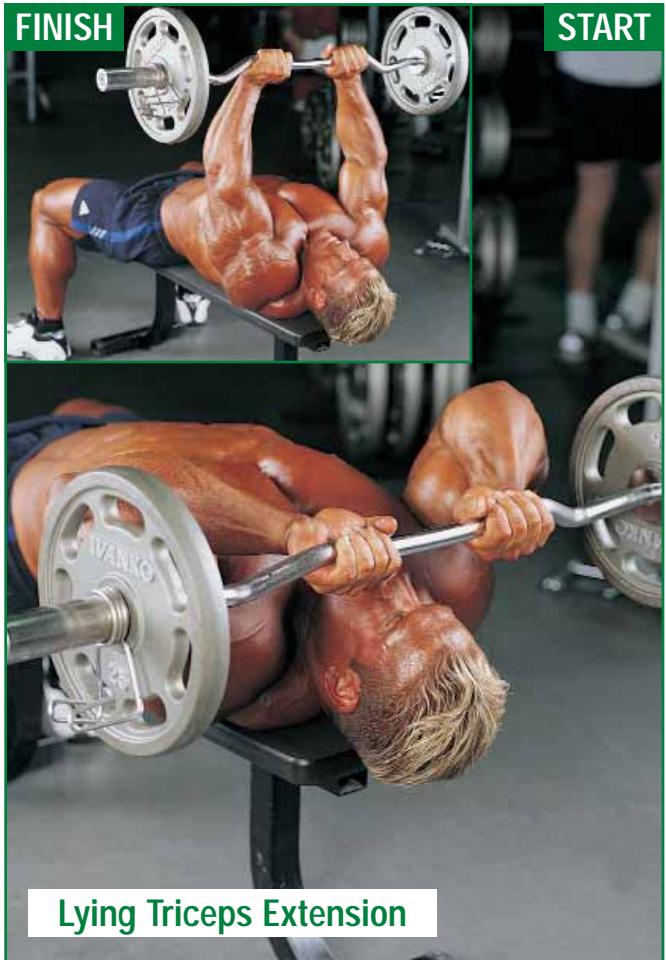
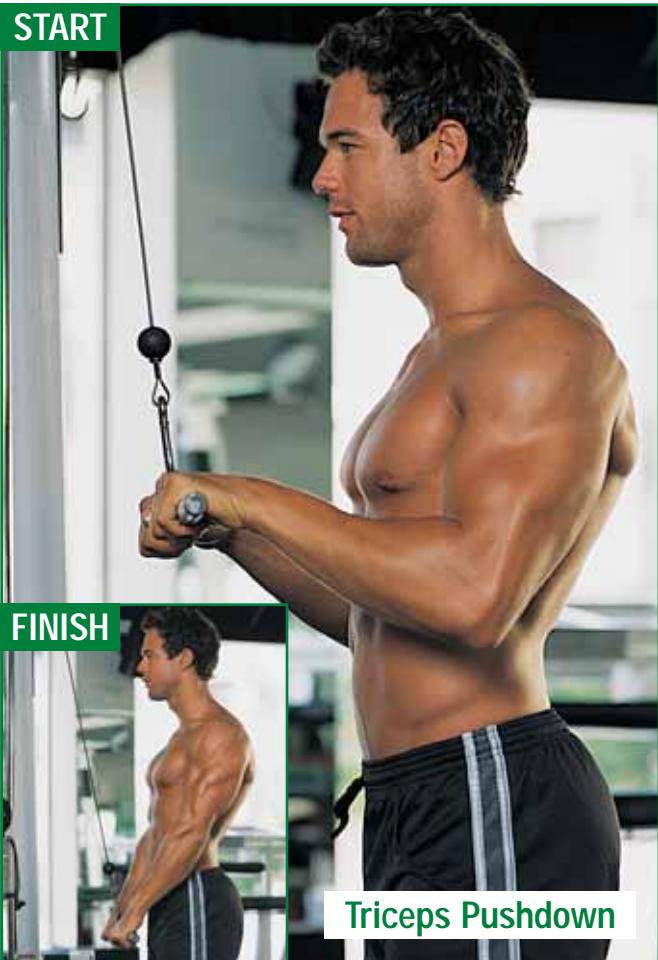
FINISH



START



Seated Incline Dumbbell Curl



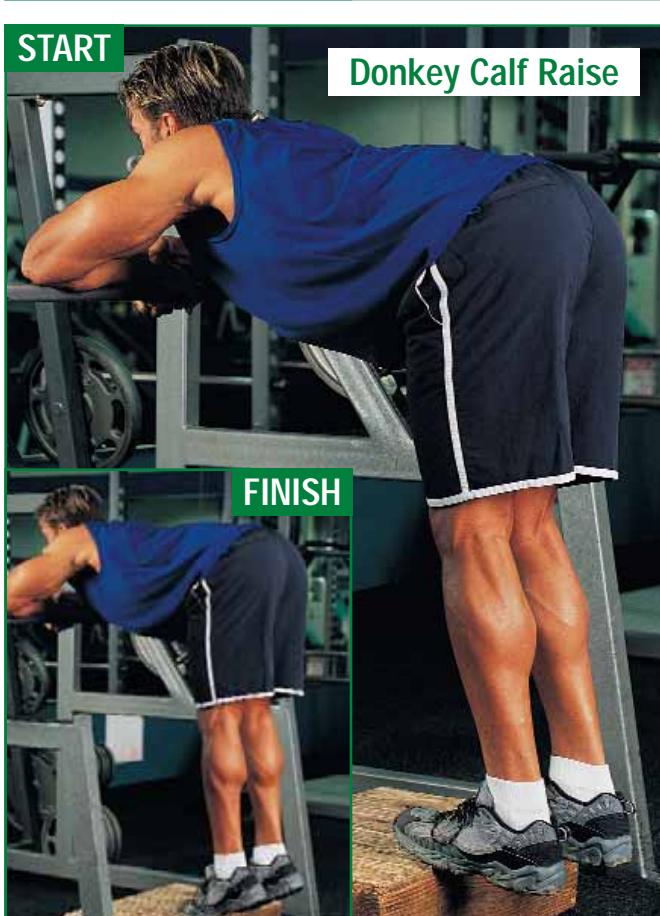
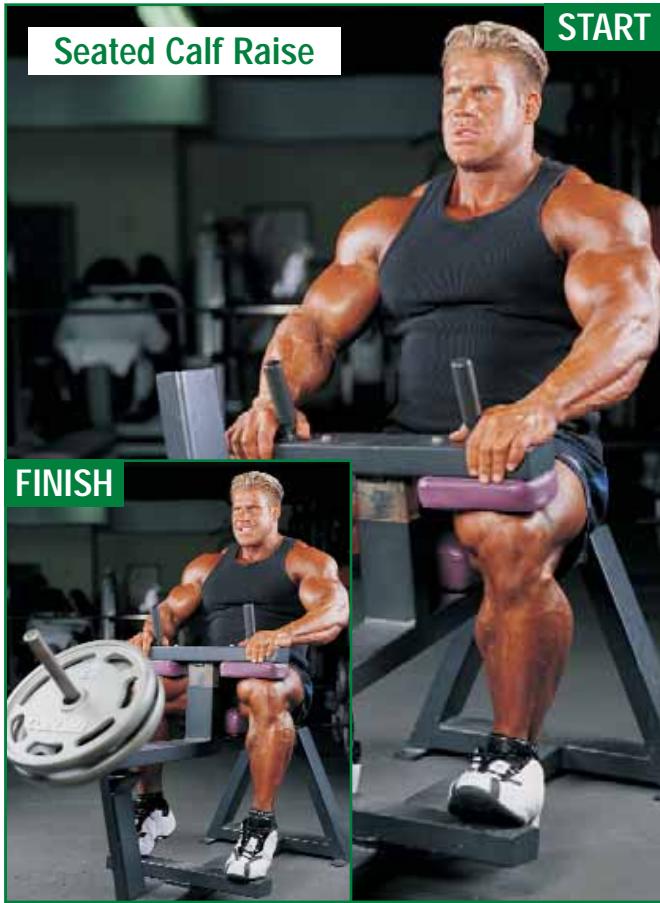
DAY ONE, TWO, FOUR, AND FIVE: CALVES

I recommend that my clients hit calves two days in a row, take a day off, and then hit them again two days in a row. Then, take the rest of the seven-day cycle off. I like to really pound the calves. You use your calves often during the day as you walk, so you have to really hammer the calves to make them grow. Each workout, I recommend picking 2 exercises and doing 2 sets of 25 reps per exercise. Here are the exercises I recommend:

- Standing Calf Raises
- Seated Calf Raises
- Donkey Calf Raises

When working your calves, do high-repetition sets because calves can take a pounding. After all, you walk on your calves all of the time. Here's a trick: Simply by turning your feet, you end up working different parts of the calves. Point your toes inward to put pressure on the outer calf muscle. Point them outward to hit the inner calf muscle.







Eat BIG For BIG PUMPS

– Jonathan Coyne

We've talked to lots of pro bodybuilders, and they all say the same thing: Nutrition is one of the most important elements in stimulating growth – perhaps the most important. Know what the next common thing they say is? It took them years to learn how to perfect their diets.

How can something be so important and yet so misunderstood by so many bodybuilders? Who cares? What matters is that we have a simple plan. It's a diet plan that causes you to feel pumped all day long. It's a diet plan that's easy to follow. It's a diet plan you can customize. Best of all, it's a diet plan that works. We're taking the fuss out of dieting.

Proper nutrition may very well be the key secret to massive growth!

We're also asking you to take a leap of faith, trust us, and dump your current diet. You might be growing with your current diet (or not), but you're not growing as fast as if you followed this diet. It's a bold claim, but we're confident in the plan. Give the plan time, and if you're not bigger and totally pumped all day long, then just check out our website at getthepump.com and tell us. Likewise, when the six-week point rolls around and you're jacked beyond belief, don't leave us hanging – tell us how things are going and what you're doing!

Basically, I'm here to tell you that dieting doesn't have to be complicated. It can be as easy as one, two, three. We're not going to make your life more complicated – we're going to actually make it easier! We're going to give you the equivalent of a crash course in Nutrition 101 and teach you how to eat specifically to get pumped, bigger, and stronger!



Jay Cutler says it best: A well-fed muscle is a bigger muscle. I couldn't agree more. Feed those muscles properly, and you'll get pumped. Then you'll get huge.

The ideas and principles we'll teach you won't come without a price, though. You have to be ready to commit to yourself! You have to want to change. Otherwise, this program won't work. You'll have to grin and bear it through the early phases of the diet as you grow accustomed to this advanced diet plan. However, once you've made that commitment to yourself, you'll quickly notice that the sacrifices you'll have to make are few compared to the rewards. If you're ready to commit, then strap in.

TEXTBOOK NUTRITION – THE ABRIDGED VERSION

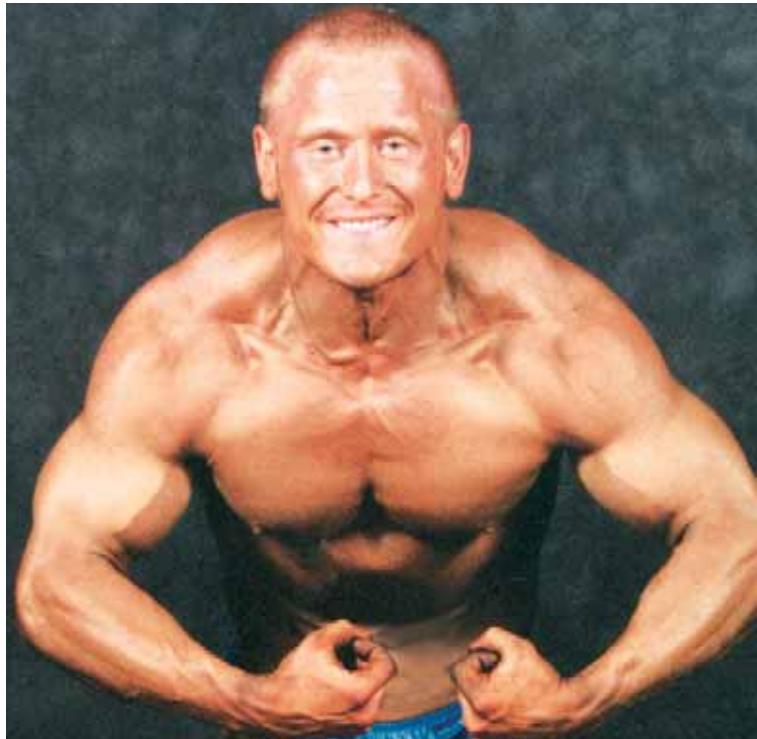
In the interests of keeping it simple, the principle of nutrition for pumps dictates consuming more calories than you need to cover basic metabolic needs, in accurate proportions. There are high-fat diets, high-protein

Nutrition doesn't have to be complex. Keeping it simple is important when success is on the line!

diets, and high-carb diets, among other plans, but not all of them maximize the pump. Some would argue that a one-size-fits-all diet is too simplistic, but in fact, the opposite is true. Here's why.



Cutler versus Cormier. Doesn't get any more momentous than that. But the only way these two gentlemen even get there is by making sure they've addressed their diets.



I promise – you won't need a degree in nutrition to grasp the concepts in this chapter. All you'll need is an interest in eating to get pumped and some discipline. Hey, it even worked for me (pictured above), and I'm a hardgainer!

The fact that we are all human beings means that the same thing often works for many people. For example, prescription drugs work for just about everyone at some level. And if we were all different, how could doctors learn operation procedures for removing an inflamed appendix or stitching up a wound? Of course, we are not all exactly alike either. But if we were all so completely different that nothing worked for almost all people, then there would be no such thing as science. In much the same way, if you're healthy, this nutrition program will work and help you build maximum pumps.

You may respond quickly to the program. Conversely, your response to our recommendations may be a little slower, but rest assured, you will respond. We all process nutrients in the same way, and vary only by degrees in our ability to do so. In other words, this diet plan can work for you despite your previous failures and genetic predisposition. Success is inevitable. All you have to do is commit and follow the instructions. We can't provide the discipline – that's all up to you. But we can give you the know-how and the plan.

Dieting is all about fooling the body. The body is a remarkably resistant and obstinate organism, but it isn't terribly bright. With a few sleight-of-hand tactics, you're going to learn how to trick the body into fueling mind-blowing pumps. But first, let's understand what we're going to be eating.

PROTEIN

Proteins yield 4 calories for every gram you eat. Proteins are large structures that are often called polypeptides, and a polypeptide is a chain of amino acids. Think of amino acids as the building blocks of proteins. So you see, proteins are made up of amino acids, and these amino acids can link together in millions of different combinations to make up what we call a protein (or a polypeptide).

The protein you eat supplies the amino acids your muscles need to get bigger.

Each amino acid is made up of various combinations of nitrogen (the importance of which we'll talk about later), oxygen, hydrogen, carbon, and, in some cases, sulfur. There are 20 amino acids the body uses to make its various protein structures, and they're either essential or nonessential. The essential (or indispensable) amino acids must be obtained from the diet because the body cannot make them in adequate amounts, while nonessential (or dispensable) amino acids are those amino acids that the body can synthesize from the essential ones, if necessary. There are even some amino acids, such as glutamine and arginine, that can become indispensable if your body is under a lot of stress, such as after a tough workout. If your main concern is building new muscle or improving your athletic performance, then you need to be concerned about getting your essential amino acids.

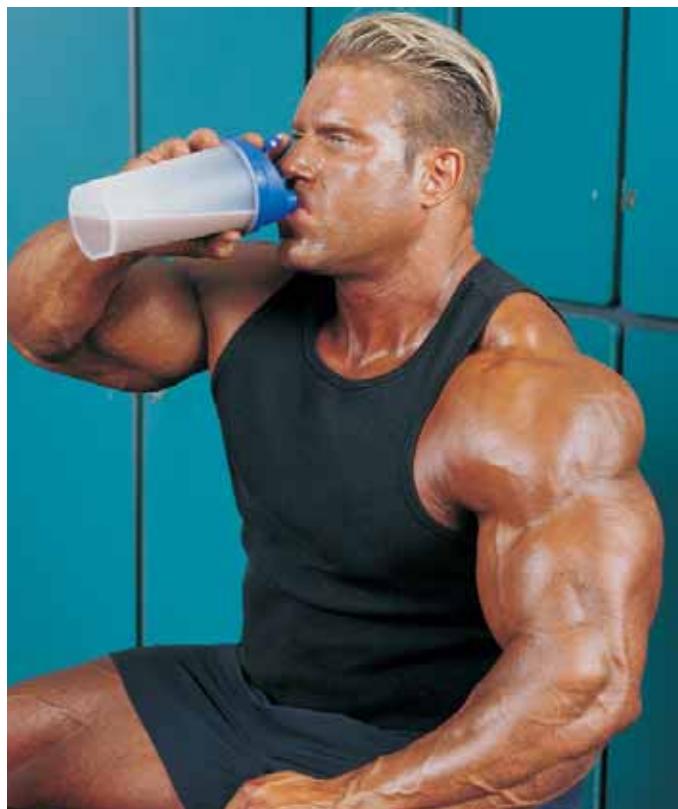
TABLE 1: Dispensable and indispensable amino acids

Dispensable	Indispensable
Alanine	Lysine
Glutamic acid	Isoleucine (b)
Aspartic acid	Leucine (b)
Glycine	Valine (b)
Serine	Threonine
Proline	Tryptophan
Glutamine (a)	Methionine
Arginine (a)	Phenylalanine
Taurine (a)	Histidine (c)
Asparagine	
Cysteine	
Tyrosine	

(a) Can become conditionally indispensable

(b) Are called branched-chain amino acids (BCAAs) because of their structure.

(c) Is only essential for growing individuals, such as babies and adolescents.



You won't catch Jay Cutler missing out on protein. He knows the amino acids in every protein shake he drinks give his muscles the building blocks they need to grow bigger and stronger.

In humans, nitrogen is a key atom that is found in every amino acid, and it's used to make up the millions of different proteins our body contains. If you can keep your body from losing too much nitrogen relative to the amount you eat, then you're in a positive nitrogen balance. This means that your body is keeping more nitrogen than it is losing at that given point in time. If you're in a negative nitrogen balance, you're going to lose more nitrogen over the course of the day than you've gained, and that can mean the loss of muscle.

Let's draw an example by looking at your biceps. For instance, say you've just completed a biceps workout that involved some barbell and dumbbell curls. What you've done is essentially broken down some of the existing protein structures of your muscles and chewed them up into tiny bits, if you'll excuse the analogy.

Now your biceps are going to have to be rebuilt as larger and stronger versions of their former selves in order to adapt to the stress imposed by your workouts. To do so, you've got to supply amino acids to those muscles. Otherwise, you'll be in a negative nitrogen balance. In other words, the workout will break the muscle down, but there won't be enough building blocks to build it back up, and the result will be a lack of progress and frustration with your results in the gym.



Red meat – it's tasty and it supplies the complete protein bodybuilders need to grow. No wonder the pros in this book swear by the stuff!

When your biceps attempt to rebuild themselves, they're going to need a whack of amino acids at their ready disposal. If you don't supply all of the indispensable amino acids, you aren't going to maximize the rebuilding process. It's like your biceps are trying to spell some new words that will teach your muscles to be stronger. If the biceps don't have all the right letters of the alphabet at their beck and call, they won't be able to spell the right word. And if your biceps can't spell the right word, then your muscles won't understand the intended message – to get bigger and stronger.

The question then becomes how to get all of these indispensable amino acids into your body so as to maximize your return on the investment you've made in the gym. Well, we're glad you asked. The best source of amino acids for humans is the diet, so we're going to go into a little treatise on the classification of proteins you can find in your daily diet.

PROTEINS – COMPLETE AND INCOMPLETE

Virtually any protein from an animal source (whether that means flesh or milk or egg-derived proteins) constitutes a complete source of protein. That means that animal sources of protein supply the indispensable amino acids at a level that ensures that you won't have any amino acid deficiencies. That doesn't necessarily mean that all complete protein sources are equal; it just means that consuming them won't necessarily lead to disease.

On the other hand, plant sources of protein are considered deficient in one or more of the indispensable amino acids (these are often referred to as incomplete proteins). Sources of protein like wheat or corn don't contain enough indispensable amino acids to promote optimal growth, health, or tissue repair. For instance, if you were to try to live off corn (yuck!), you would develop a protein/amino acid deficiency and eventually die. In comparison, the amino acid spectrum in whey protein provides all indispensable amino acids at such high levels that it is often classified as the gold standard of protein foods.

TABLE 2: Examples of sources of protein found in the diet

Complete	Incomplete
Whey	Wheat
Milk	Corn
Casein	Various vegetables
Cheese	Beans
Eggs	Nuts
Beef	
Fish	
Soy and soy-based products	

PROTEIN DIGESTION – GETTING IT INTO YOU

One of the major ways your body provides amino acids for the synthesis of new protein inside the body is through the protein in your diet. Still, your body does not absorb an entire protein intact. It must first break that protein down into individual amino acids and small chains of two or three amino acids (these are called dipeptides and tripeptides).

**You won't get big eating
incomplete sources of protein.
Use complete sources to
get truly large.**

When you eat protein (such as a whey protein shake, for example), the entire structure is first destroyed by the enzymes in your stomach and broken down into smaller peptides and individual amino acids. These enzymes are like scissors that cut the long polypeptide chain of the proteins you eat into tiny little snippets. The small intestine absorbs these little snippets. The amino acids and short peptides are transported from your small intestine directly into the bloodstream. From there, their first destination is the liver, and then it's on to the rest of the body.

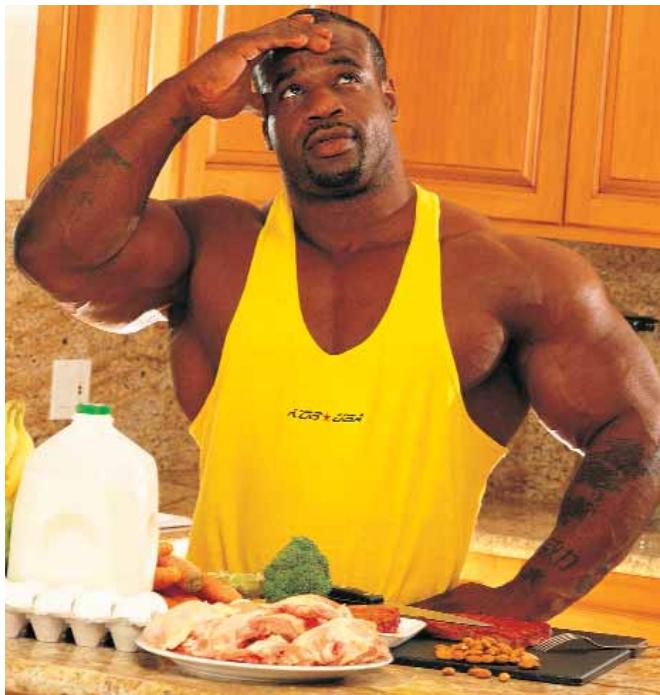
Scientists have measured which protein leads to the most growth, and consistently, whey protein is tops.

TABLE 3: Biological values of various protein sources

Protein Type	Biological Value
Whey protein (lactalbumin)	104 to as high as 159
Whole egg	100
Cow's milk	91
Beef	80
Soya protein	74
Potato	71
Rice	59
Wheat	54
Beans	49

HOW MUCH PROTEIN DO YOU NEED PER DAY?

Growing bodies need more protein than the average inactive person's body does. You should be consuming a gram and a half of complete, high-quality protein per pound of bodyweight. A 200-pound bodybuilder should strive to eat 50 grams of protein as part of his 6 meals per day. Not everyone can eat this many good, high-protein meals each day, but with the help of protein supplements, it is fairly easy. You can fulfill your requirement for 50 grams of protein by simply consuming roughly two and a half scoops of a whey-protein-based powder such as NITRO-TECH®. You can also find 50 grams of protein in about 200 grams of cooked chicken breast or beef.



Even pro bodybuilders like Chris Cormier wonder what to eat and when. That's why we put this book together – to take the guesswork out of eating to get pumped and huge.



This picture shows just how dedicated Chris is to getting shredded and fully pumped come contest time. He doesn't take any chances with his nutrition in getting there, as evidenced by the rock-bottom bodyfat levels he carries.

FATS

Fats are extremely calorie-dense; they provide 9 calories for every gram you eat. Stored fat in the body is the major source of energy in our bodies. It acts as an insulator against cold weather, a source of heat to regulate body temperature, a preventative mechanism against starvation, and a protective agent against trauma for the body's internal organs. Fat also serves as a warehouse of fat-soluble vitamins such as A, D, E, and K. There are basically two types of fats to concern yourself with when watching what you eat.

Fats from your diet are very calorie-dense. The right ones help. The wrong ones destroy physiques.

Saturated fats are usually solid at room temperature. For example, lard, the fat on pork chops, butter, and chicken skin are all solid at room temperature – a direct result of the high level of saturated fats found within. You can pretty much assume that any fats found in a food source derived from an animal are saturated fats. Conversely, unsaturated (mono- and polyunsaturated fats) fats are liquid at room temperature (e.g., olive, flax, corn, and canola oil). Plants give us unsaturated fats, though you can also find some in fish oil as well.

Regardless of the saturation status of a fat, it gives the body 9 calories for every gram eaten. It's easy to see why people get fat when they eat more fat, seeing as you only get 4 calories for every gram of carbohydrate or protein eaten. Favoring the intake of unsaturated fats over that of saturated fats is a healthy way to go, owing to the fact that saturated fats are linked to a host of diseases, while some unsaturated fats, such as linolenic acid and other omega-3 fatty acids, are linked with a host of health benefits and can actually improve blood flow for better pumps. Your diet should contain 10 percent fat on a caloric basis. You should also try to get fats from plant and oil sources rather than from animal sources.

CARBOHYDRATES

Like protein, carbohydrates yield 4 calories for every gram you eat. Carbohydrates can be either simple or complex. A simple carbohydrate can be something like a sugar molecule (e.g., glucose, galactose, or fructose) or a longer chain of sugar molecules that make up something like starch or fiber. Regardless of whether they're simple or complex, all carbohydrates yield 4 calories for every gram. All carbohydrates you ingest in your diet must eventually be broken down to sugar molecules to be used by the body.

Carbohydrates are the main macronutrient responsible for stimulating the release of insulin, the body's natural "storage" hormone. Insulin is responsible for delivering sugars, amino acids, creatine, fatty acids, and various other nutrients from the bloodstream to the interior of the body's various cells.

Carbohydrates in your diet boost insulin levels, which help force more nutrients into starving muscles.

Insulin is quite possibly the most crucial hormone that should be of concern to the athlete. No other hormone has insulin's ability to radically alter muscle gains and fat loss, and the best part about insulin is that you can control it and manipulate it to your desires with only one weapon – food!

When you eat, your pancreas releases insulin, which begins to deliver the nutrients into the fibers of your muscles. This serves to refuel and rebuild any damaged muscles so that they're all set for the next workout. By controlling the insulin signal to build muscle, the following dietary strategy takes full advantage of the good points insulin has to offer.



You don't get much better than these two guys. They're the best at what they do because they eat to stay pumped all year round. Take a lesson from the pros for real success.



Simple or higher-glycemic carbohydrates, as shown in this picture of muffins, should be used judiciously to promote massive pumps. Try having simple carbohydrates for breakfast or after a workout to get pumped. Check out the end of this chapter for more information on how to do it right.

EATING TO MAXIMIZE THE PUMP

Great – now your education in the function and sources of the three major nutrients is complete. The next step is to learn how to proportion each of these nutrients in the perfect ratios and at the right times to maximize 24-hour-long pumps. The plan itself requires some discipline to follow, but when you see rope-like veins sticking out on your forearms within a week and the muscle size and strength start to pile on a few weeks later, you'll thank me. And you'll never abandon the diet. The results are just too sweet for words ... trust me.

The diet strategies in this book maximize the pump. That leads to more growth!

This diet has been designed for you in order to maximize pumps. It is tailored to your needs insofar as it will help you add muscle at the quickest rate possible without the annoying and cumbersome addition of unwanted bodyfat. Here's the reasoning behind why we proportion the nutrients the way we do. If you wish, I also recommend trying one of the diets espoused by one

of the four big guys in Chapters 9 through 12. Bear in mind, though, that these guys follow some pretty extreme diet plans – possibly too extreme for the average bodybuilder. That doesn't mean they're wrong. It's just that the diets are designed for high-performance professional bodies, and you might want to work your way up to that, rather than to start there. It's up to you.

PROTEIN STRATEGY

Your protein intake throughout the day will remain very consistent, and for good reason. The muscles must always have access to protein to grow – always! That means serious feedings every two and a half to three hours. The good news is that you'll get used to it and almost start to crave protein. While the protein itself won't enhance pumps to any extent, it's meant to be a critical part of the diet for one important reason: When the pumps do happen, you want that blood full of amino acids to feed hungry, growing muscles. Otherwise, you might as well not even get pumped. You'll also notice that I only count complete protein in the diet. Incomplete sources of protein from things such as potatoes or rice don't count.



Don't walk into that gym to bomb your muscles if you haven't eaten right. Jay wouldn't do it. Why should you?

FAT STRATEGY

As far as fat is concerned, we're going to have you eating a lower fat diet filled with the right fats. This is for a few reasons. First, too much fat in the diet delays nutrient absorption by the gut. If nutrients hang around in the stomach and intestines too long, then they're not getting in the blood. And if nutrients aren't getting into the blood, you're not maximizing the nutrient-delivery benefits of the pump.

The right kinds of fats actually promote better pumps!

Second, only highly unsaturated fats such as omega-3 fatty acids will do. These types of fats help make the blood vessels (the arteries and veins) more pliable, and more likely to expand with the pump. Essentially, they can help improve blood flow. These types of fats also improve the structural integrity of the muscle fibers, making them more sensitive and prone to nutrient absorption.

CARBOHYDRATE STRATEGY

Maximizing the pump through proper nutrition requires precise carbohydrate timing. The principles of carbohydrate timing involve glycogen supercompensation and modifying insulin sensitivity. By coordinating these two principles, we can maximize the pump, nutrient delivery, and growth, and we can minimize nutrient wastage or even fat gain, since that's also an issue to be concerned with.

Supercompensation involves loading more glycogen (the storage form of carbohydrates in the muscle) into the muscle than is normally possible. Large stores of glycogen fuel stronger, longer workouts, which allow for greater pumps. They also swell muscle fibers, which stimulates protein synthesis and muscle fiber growth. Glycogen supercompensation also provides a very tight, pumped feeling to the muscles. And we all know the benefits of a pump by now.

Insulin sensitivity is the scientific term used to describe how receptive your muscles are to the nutrient-storage capabilities of insulin. If your muscles are very sensitive, then insulin can drive more amino acids and creatine into your muscles and create a situation that allows for more glycogen storage (supercompensation). To increase insulin sensitivity, we have to stagger carbohydrate intake. Some meals will be very, very low in carbohydrates, which causes the muscles to become very sensitive to insulin. Then, we hit the muscles with a large dose of protein and carbohydrates at specific times when they're most sensitive (like in the morning or after a workout) to maximize nutrient storage and muscular pumps.



Jay Cutler is a big believer in proper carbohydrate timing and consumption. It helps him keep his muscles full and promotes greater strength in the gym for intense workouts. Better workouts lead to better pumps, which leads to hypergrowth! And Jay is one guy who's developed some serious size.

SUPPLEMENT STRATEGY

Your supplement strategy is easy. You need three products: PUMP-TECH, NITRO-TECH, and CELL-TECH. Short and sweet, here's why we recommend them, and why we wouldn't recommend any other brand.

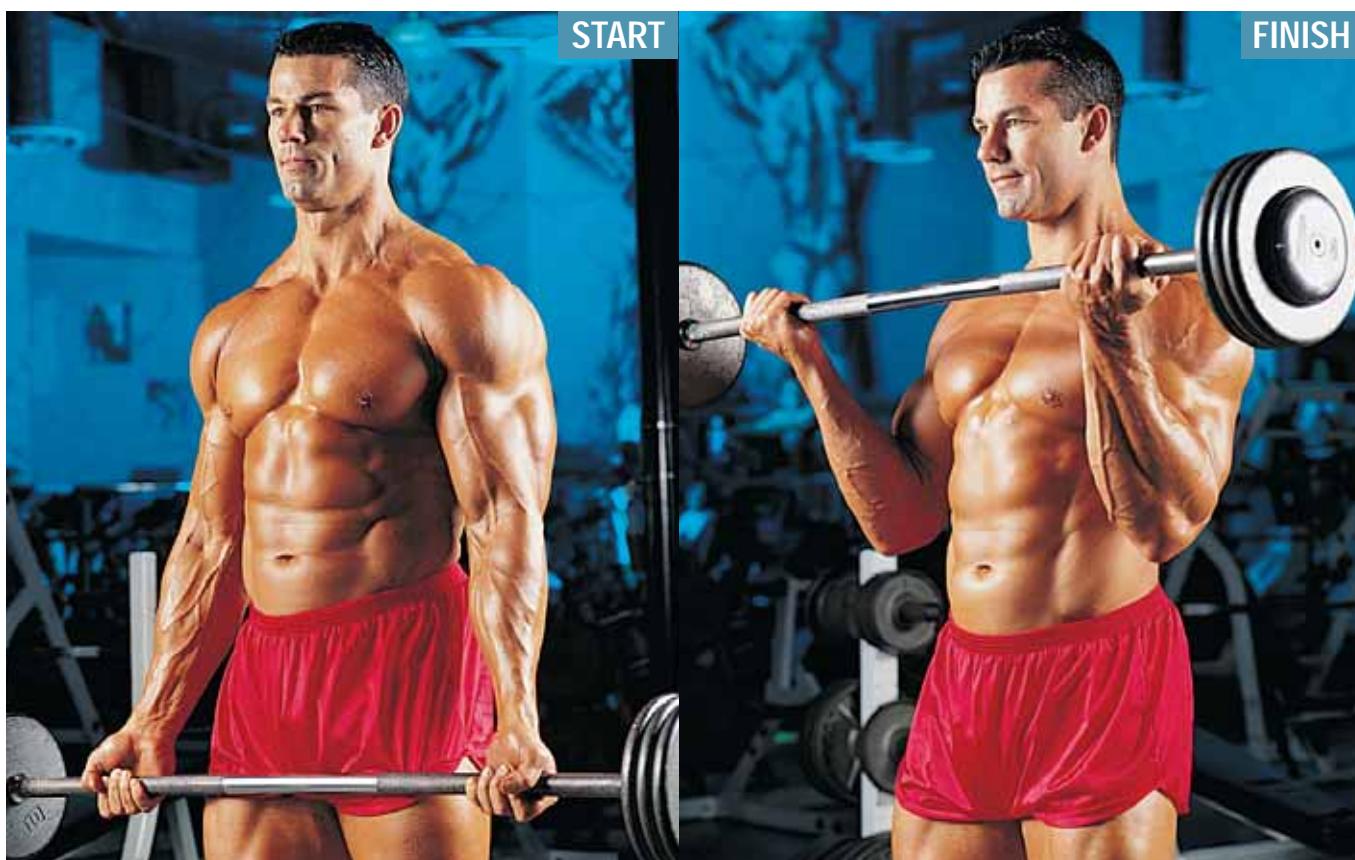
Stacking PUMP-TECH™, NITRO-TECH®, and CELL-TECH™ together builds better pumps!

First, we recommend PUMP-TECH. It's a nitric oxide (NO) stimulating product, so it definitely helps boosts NO levels to blast a pump into your muscles. But more than that, it increases NO through four separate pathways, so you get a full-on pump. Plus, it builds muscle – something every bodybuilder needs in a supplement. Plus, before all the guys who wrote this book actually sat down to pen it, they were all using PUMP-TECH instead of other brands. So it makes sense – to fuel the pump, use PUMP-TECH.

Second, we recommend NITRO-TECH. It's an advanced whey protein powder, so you know it'll give your muscles the highest quality source of protein they

need to take advantage of the pump you get from PUMP-TECH. But what's also cool about NITRO-TECH is that it too supports NO levels, using an ingredient complex called Nitroxen™. So by using PUMP-TECH and NITRO-TECH, you get that one-two punch. And NITRO-TECH also has a delivery system that helps force more amino acids into your muscles, thereby complementing the nutrient-delivery aspects of the pump. And NITRO-TECH has been studied in university labs and been proven to work. It builds muscle size and strength – exactly what a bodybuilder looking for a no-fuss product really needs.

Third, we also recommend you use CELL-TECH. This product produces big-time pumps. Your muscles literally swell up using this stuff – it's truly awesome that a supplement is so powerful. CELL-TECH gives your muscles the carbs and creatine they need to swell up and grow and get pumped. And CELL-TECH also contains alpha lipoic acid to help make your muscles more sensitive to insulin, which helps once again with the nutrient-delivery properties of the pump. Plus, CELL-TECH is clinically tested, and we like that! It's been proven to build muscle size and strength. There aren't any creatine products we could find that impressed us the way CELL-TECH does.



Working your arms hard with barbell curls (shown above) is a great way to trigger a pump. But remember – what you feed your pumped muscles is just as important as your workout. Proper nutrition makes for bigger muscles every time.

THE DIET

Here I've laid out a daily diet plan for a 200-pound bodybuilder. Obviously, the diet would need to be adjusted depending on your bodyweight, and the table later on in this chapter should help you out there.

MEAL 1 (Immediately when you wake up)

(50 g of protein, 140 g of carbohydrates, 6 g of fat)

- 2½ scoops of NITRO-TECH® mixed with 296 ml (10 oz.) of water
- 2 scoops of CELL-TECH™ mixed with 473 ml (16 oz.) of water
- 3 pieces of white bread (toasted) with 1 tbsp. of honey on each slice
- 8 caplets of PUMP-TECH™ washed down with 177 ml (6 oz.) of water

MEAL 2 (2½ hours after Meal 1)

(50 g of protein, 0 g of carbohydrates, 6 g of fat)

- 200 g of boneless, skinless chicken breast (weighed after cooking). We recommend grilling on a barbecue, baking in the oven, or using the George Foreman grill.
- 946 ml (32 oz.) of water

MEAL 3 (2½ hours after Meal 2)

(50 g of protein, 0 g of carbohydrates, 7 g of fat)

- 200 g of boneless eye of round steak (weighed after cooking). We recommend the barbecue or a George Foreman grill.
- 946 ml (32 oz.) of water

MEAL 4 (Pre-workout)

(50 g of protein, 70 g of carbohydrates, 5 g of fat)

- 420 g (1¾ cups) of fat-free cottage cheese
- 1 large baked potato (about 300 g in size, or 4" in diameter)
- 1 tsp. of olive oil drizzled on the potato
- 8 caplets of PUMP-TECH 30 to 60 minutes before training

MEAL 5 (Within 5 to 10 minutes of completing your workout)

(50 g of protein, 140 g of carbohydrates, 4 g of fat)

- 2½ scoops of NITRO-TECH mixed with 296 ml (10 oz.) of water
- 2 scoops of CELL-TECH mixed with 473 ml (16 oz.) of water
- 1 banana or 1 large apple
- 1 can of your favorite soda (I always choose Pepsi, but that's just me. You don't want diet soda – the regular kind is what you need)

MEAL 6 (2½ hours after meal 5)

(50 g of protein, 70 g of carbohydrates, 7 g of fat)

- 15 egg whites mixed together and scrambled. Or, you can eat them hard-boiled. Top with ketchup or picante sauce, if you like.
- 1 cup of vegetables – any kind will do, and they can be fresh, steamed, or frozen. Sprinkle 1 tsp. of olive oil and 1 tsp. of vinegar over top.
- 1½ cups of rice (measured after cooking)

on the chart below, and then see how many grams of protein, carbohydrates, and fat you should be eating every day. But regardless of your weight, here are the principles to keep in mind:

1. Keep protein intake consistent throughout the day. Split up your daily protein intake evenly over the six times you eat each day.
2. Keep fat intake consistent throughout the day. Split up your daily fat intake so you get a roughly equal amount whenever you eat.
3. To calculate carb allowances per meal, first split up your total daily carbohydrate intake over six meals. Then, take the carbs you would have eaten in Meals 2 and 3, and add them to the carbs you eat for breakfast and your post-workout meals (you're doubling the carbs for those two meals). Also, your carbohydrates should be simple carbs (or more accurately, high-glycemic carbs) for breakfast and after your workout, but complex carbs during Meals 4 and 6.
4. For acceptable foods, check out the quick reference table we have here, or even better, check out the USDA National Nutrient Database (<http://www.nal.usda.gov/fnic/foodcomp/search/>) to find out the nutrient content of just about any food you can think of. This government-run site is absolutely awesome. Hey, tax dollars are working for bodybuilders!

Daily caloric and macronutrient intake for maximizing the pump to gain muscle size and strength

Bodyweight (lbs.)	Calories	Protein (g)	Carbohydrates (g)	Fat (g)
150	2400	225	320	25
155	2480	235	320	30
160	2560	240	330	30
165	2640	250	345	30
170	2720	255	360	30
175	2800	265	370	30
180	2880	270	380	30
185	2960	280	380	35
190	3040	285	395	35
195	3120	295	405	35
200	3200	300	420	35
205	3280	310	430	35
210	3360	315	445	35
215	3420	325	445	40
220	3500	330	460	40
225	3580	340	470	40
230	3660	345	495	40
235	3740	355	505	40
240	3820	360	515	40
245	3900	370	515	45
250	3980	375	530	45
255	4060	385	540	45
260	4140	390	555	45
265	4220	400	560	45
270	4300	405	565	45

This example was for a 200-pound bodybuilder. If you're a little heavier or lighter, match up your weight

QUICK REFERENCE GUIDE

Optimal protein servings

TYPE	30 g protein	40 g protein	50 g protein	60 g protein
NITRO-TECH	1½ scoops	2 scoops	2½ scoops	3 scoops
Boneless, skinless chicken breast (baked or broiled)	100 g (3½ oz.)	130 g (4⅔ oz.)	170 g (5¾ oz.)	200 g (7 oz.)
Egg whites	9 egg whites	11 egg whites	15 egg whites	18 egg whites
Lean steak (red meat; eye of round)	100 g (3½ oz.)	130 g (4⅔ oz.)	170 g (5¾ oz.)	200 g (7 oz.)
Boneless, skinless turkey breast (baked or broiled)	100 g (3½ oz.)	130 g (4⅔ oz.)	170 g (5¾ oz.)	200 g (7 oz.)
Tuna (canned in water and drained)	120 g (4⅓ oz.)	160 g (5⅓ oz.)	200 g (7⅓ oz.)	240 g (8⅓ oz.)
Baked fish	140 g (5 oz.)	180 g (6½ oz.)	225 g (8 oz.)	275 g (9½ oz.)
Fat-free cottage cheese	175 g (6¼ oz.)	230 g (8 oz.)	290 g (10¼ oz.)	350 g (12½ oz.)

Optimal complex (Lower-Glycemic) carbohydrate servings (Meals 4 and 6)

TYPE	50 g carbohydrates	60 g carbohydrates	70 g carbohydrates	80 g carbohydrates
Baked potato (with skin)	200 g (about 3" in diameter)	300 g (about 4" in diameter)	400 g (about 5" in diameter)	500 g (2 potatoes, each about 3" in diameter)
Rice (parboiled, measured after cooking)	1 cup	1½ cups	1½ cup	1¾ cups
Pasta (any kind, boiled, measured after cooking)	175 g (1¼ cups)	210 g (1½ cups)	245 g (1¾ cups)	280 g (2 cups)

Optimal simple (Higher-Glycemic) carbohydrate servings (Meals 1 and 5)

TYPE	50 g carbohydrates	60 g carbohydrates	75 g carbohydrates	85 g carbohydrates
Soda	444 ml (15 oz.)	532 ml (18 oz.)	680 ml (23 oz.)	769 ml (26 oz.)
CELL-TECH	1½ scoops	1½ scoops	2 scoops	2½ scoops
Banana	1½ large bananas	2 large bananas		
Apple	1½ large apples	2 large apples		
Orange	2½ large oranges	3 large oranges		
White bread	4 slices	5 slices	6 slices	7 slices
Bagel	One 100 g (3½ oz.) bagel	One 113 g (4 oz.) bagel	One 142 g (5 oz.) bagel	One 156 g (5½ oz.) bagel

NOTE: honey, jams, jellies, and fruit preserves contain 14 g of simple carbs per tbsp.

Optimal fat servings (Meals 4 and 6)

TYPE	5 g fat	7 g fat	10 g fat	15 g fat
Olive oil (or any oil)	1 tsp.	1½ tsp.	2 tsp.	1 tbsp.



PUMP Up With The Right Supplements

– Jonathan Coyne

Choosing the right supplement isn't easy, as I said in Chapter 1. In fact, it's downright tough. I don't think there's ever been a time when bodybuilders had more choice when it comes to supplements. Just go back as far as the nineties. There were maybe two or three companies making decent stuff. Now, if you believe the advertising, you'd think there were hundreds. But that's perception. Here's the truth.

Choosing the right supplement is downright tough. This chapter makes it all a little easier.

There aren't a lot of good supplement companies, and there are even fewer good supplements. Why? Most companies don't invest in research, and research is all us bodybuilders have to distinguish good supplements from bad ones. But in today's ads in the mags, even crappy products claim to have research. Doesn't anyone tell the truth anymore?

I'll be honest – if I have a hard time making sense of this industry at times, I can only guess you do too. So I buried myself under stacks of research and came out on top with a few key supplement recommendations I can make to you to help you get more pumped. And yes, these products work. And yes, there's science to back them up. Good science. Clinical-type stuff.

Now, a supplement is just that – you add it to your diet and training to help yourself get bigger, stronger, and more pumped. Any product that seems too good to be true – such as ones that claim to work overnight or build 20 pounds of muscle in a week – probably isn't. A reputable company makes honest claims about its products, backs them up with science, and can show that

real-life top pro bodybuilders actually use the stuff. After all, if it's good enough for the world's best pros, it's probably good enough for any bodybuilder.

But I'm through boring you. Let's get to what works, and why.



Pro bodybuilder Aaron "Mr. Intensity" Maddron is always in search of supplements that help to build massive pumps. You should be too!

THE PRIMARY RECOMMENDATION – A PUMP-PROMOTING SUPPLEMENT

Seems like a no-brainer. If you want pumps, take a product that says it boosts pumps. The problem is that after this book comes out, there's going to be a ton of them. Heck, there are even products out there that claim to boost nitric oxide (NO) levels.

I'll be totally honest here – a lot of those products are okay. Like NO2, for example – it's a good product, especially for women seeking to improve blood flow. Some are complete trash, of course, but others more or less do what they say. They provide arginine, and arginine is converted into NO. Can't argue with that fact. The only issue is that simply providing arginine isn't the best way to boost NO. There are so many other things you could do. You may have bought some of these NO products in the past, and if you have, I can't blame you. You may have even gotten decent results (even though "decent" doesn't always cut the mustard). But before you buy another pump product or an NO product, hear me out.

There are enzymes in the body called nitric oxide synthase (NOS) that make NO. If you could influence these enzymes, you'd make even more NO. Think of it like a production line at a factory. If you just simply give

the workers more steel, they aren't necessarily going to make more widgets. They'll try, but they have their limits. But if you could make the factory workers move faster, then you'd be making widgets like crazy. It's the same deal with the NOS enzymes.

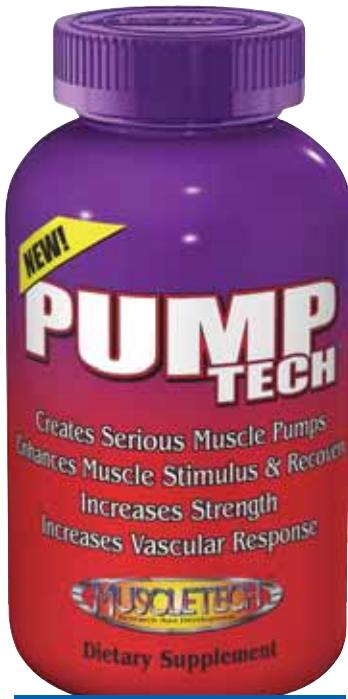
Most nitric oxide products aren't half-bad, but they don't address the pump from all angles.

Certain factors push these enzymes to move faster and make more NO. Things like ginsenosides and key amino acids like citrulline and aspartic acid actually help the NOS enzymes increase the rate at which they make NO. That's why a supplement can't just supply arginine to boost NO levels – it needs those other factors to throw the enzyme into overdrive.

And boosting a pump isn't all about NO, as we learned in some of the other chapters. Other things control pumps too. That's why the arginine route isn't the only way to pump up a muscle. There are exciting new scientific papers talking about ingredients like



I've spent some time with Jay Cutler when he does his supplement shopping. He's a choosy shopper who knows a lot about supplements, and he only chooses the right ones, which happen to be the ones I recommend in this chapter.



Taking a pump-promoting supplement is the number one choice a bodybuilder can make for getting big and pumped. I like PUMP-TECH – it's a great product that works.

pycnogenol. This stuff supports blood vessel dilation which helps propagate a pump. They might not know exactly how yet, but the stuff works. And things like creatine also boost the pump in the muscle by increasing cell volumization for that nice, tight feeling. Plus, creatine does a whole bunch of other things, such as making muscles bigger and stronger. Creatine is just a must-have.

With all that said, I'll get to my point. My point is that an NO product isn't the best way to boost pumps. Sure, it works, but not as well as other products. One product I like is PUMP-TECH. I recommend it as a pump-promoting supplement.

Here's a summary of why:

- It supplies ingredients that boost NOS enzyme activity. In fact, it uses four different pathways. That's three more than other supplements use.
- It supplies creatine, something your muscles need to get and stay pumped.
- It has a really cool time-release mechanism. It actually helps you get pumped and stay pumped for up to 8 hours. And as we learned earlier, the longer you stay pumped, the faster you grow.
- It has other factors, such as pycnogenol, that make it so much more than a regular NO product.
- It doesn't just supply arginine – you also get arginine alpha-ketoglutarate. The body absorbs this differently, which gives you a greater chance of getting pumped.

Well, those are the scientific reasons as to why you should choose PUMP-TECH first. A lot of the pros in this book also use the stuff. I have to admit, having all these pros using the stuff makes it easier for me to recommend. But these guys tell me the reason they like it is because the stuff works ... and when you're a pro, you don't have time to waste on stuff that just doesn't measure up. I think you should give PUMP-TECH a try. It's

a great product that works, and I think you'll be very surprised and happy with just how pumped it helps you feel.

SECONDARY RECOMMENDATIONS – SOME "NICE TO HAVE" SUPPLEMENTS

In this section, I'd like to go over a few other supplements I recommend to help you get pumped. If you use PUMP-TECH, you've chosen the best supplement to help you get pumped. But some guys like to have an extra edge, which is why I put this little section together.

PUMP-TECH builds pumps through several pathways for what I feel are the best pumps you can get from a supplement.

er. Using PUMP-TECH on its own is great – in my opinion, the average bodybuilder doesn't need to go any further. But a lot of the pros like to stack different supplements. So for you guys pushing the envelope, I put together some recommendations about which other supplements you might want to try to help you get pumped like crazy. I recommend trying them one at a time, to see which one works best with your body type. Then, once you find your favorites, start stacking them all together. It's how the pros do it – by process of elimination, you find what works, eliminate what doesn't, and then start stacking the stuff that works to get absolutely huge.



Taking supplements helps provide variety in your diet, and gives your body nutrients you can't often find in high enough amounts in regular food. Smart bodybuilders use good supplements.



Glycerin

This is a weird one. Not too many guys have tried this stuff, but I'll tell you what – it's potent! This is a new tip I picked up running with a circle of elite powerlifters. Powerlifters, as you might know, rely on explosive strength to power a weight up one time, and one time only. They don't care how big a muscle is – only how strong it is. But one thing powerlifters do care about is having everything feel "tight." They wear specially designed bench shirts that are so

Glycerin tastes awful, but the stuff gets you pumped. It's really advanced stuff, but if you can hack it, you might be impressed with the pumps it delivers.

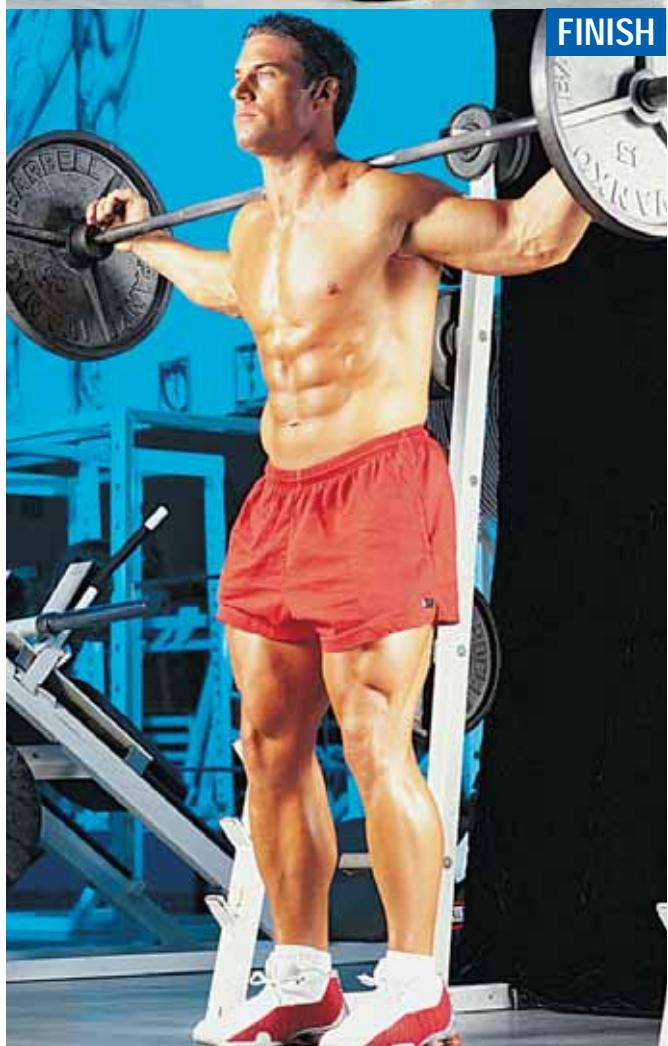
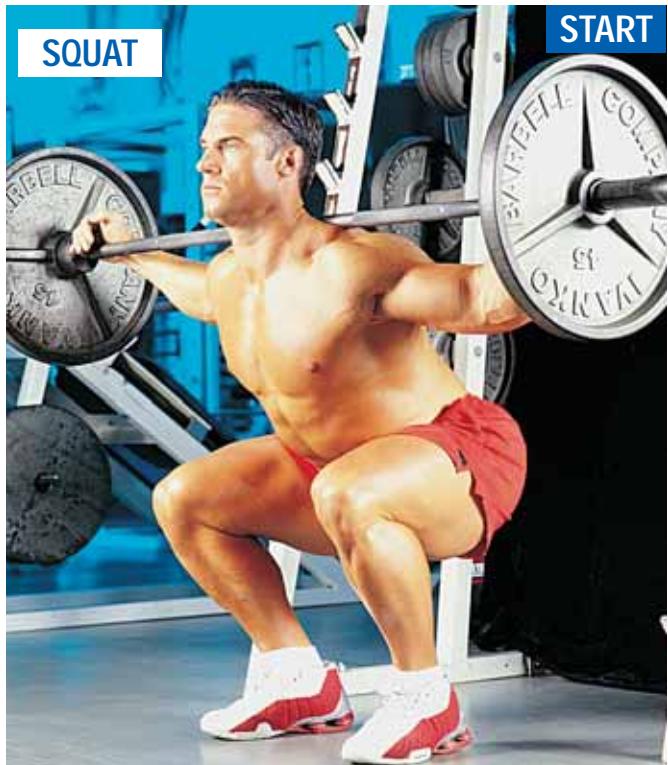
tight that they make their arms pop out forward. They wear tight elbow, knee, and wrist wraps. Heck, I'll bet they even wear tight underwear! Whatever it takes to get the weight up.

Choosing the right supplements can make all the difference between decent pumps and great pumps.

Choose wisely!

One thing these guys do is get the muscle feeling very tight and full before the lift. It adds a measure of security to the muscle, and it makes them feel more powerful. It's a trick that also pumps the muscle up like crazy. It involves glycerin loading. Here's how you do it.

You have to find some pharmaceutical-grade glycerin, which isn't hard. Just go to your local drugstore and get some. It's a food-grade product, so it's easy to get. It's very, very syrupy and almost sickeningly sweet, so be ready. To load, you take down 50 milliliters of the pure glycerin, and for every 10 milliliters, you also down 20 ounces of water. Do this approximately an hour before your workout. Trust me – you'll be pumped. Give it a try!

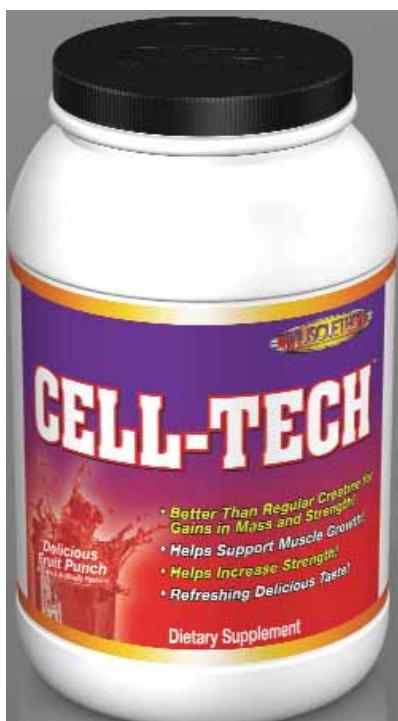


A Solid Creatine Supplement

These days, a good bodybuilder worth his salt will be on creatine, and not just for a few weeks – I’m talking year-round here. That old wives’ tale about “creatine receptor down-regulation” or “desensitization” is just a dumb old myth propagated by ads in magazines – it’s a joke. Researchers proved long ago your body doesn’t shut down its own creatine production. Of course, the pros know that – that’s why they don’t cycle off. So lesson number one – take creatine every day ... it’s just as important as protein and vitamins.

Make sure your creatine supplement contains enough carbohydrates in the form of dextrose – at least 75 grams should do the trick.

And please take your creatine with enough carbohydrates. That’s the only way you’re going to force the creatine into the muscles. Insulin pushes creatine into the muscles – that’s a fact. And the best way to boost insulin levels high enough is to take in at least 75 grams of simple carbs in one sitting. That’s what the research says. Any other product claiming to have solved the “high-carb” issue with creatine has no research to prove they’re right. Taking in a greater quantity of simple carbs makes for better creatine retention. And while you’re at it, take your creatine with some insulin-sensitizing agents (stuff like chromium, vitamin C, and alpha lipoic acid) for good measure, to make sure the insulin your body makes works properly. One product that fits this bill perfectly is CELL-TECH. You might want to give that a try.



CELL-TECH is a great creatine product. In my opinion, it’s unsurpassed. It’s still the #1 creatine product to this day because the stuff works.



Multivitamin/Multimineral Supplement

A good vitamin/mineral supplement belongs in every bodybuilder’s arsenal. A good vitamin/mineral supplement is like a cop for your muscles. You don’t always need cops. But when you do need them, boy, are you glad they’re there. Same with vitamins and minerals. If you eat well, you might not always need a vitamin/mineral supplement. But there will be times when you do.

Try a good multivitamin such as One A Day. It’s inexpensive and easy to find. I just couldn’t find any great bodybuilding vitamin supplements!

What if you trained especially hard and created more free radicals than usual? You need more vitamins to act as antioxidants. What if you slipped up and missed a meal (shame on you!)? You’d better have taken a vitamin/mineral supplement.

You won’t know when your body needs vitamins and minerals, but you’ll be able to grow faster if you always have them.

The truth is that you never know when your muscles might need a certain vitamin or mineral. That’s why you need to take the supplement. It’s like insurance for your muscles. It’s good to have them in case you need them. You won’t know when, but you’ll be able to grow faster if you always have the vitamins and minerals your body needs. Now, I haven’t seen anything that I think is a great vitamin/mineral supplement designed specifically for bodybuilders. And we’ll keep our eyes out for good vitamin/mineral supplements and let you guys know if we find one. So make sure you sign up to the website at getthepump.com.

A Great Protein Supplement

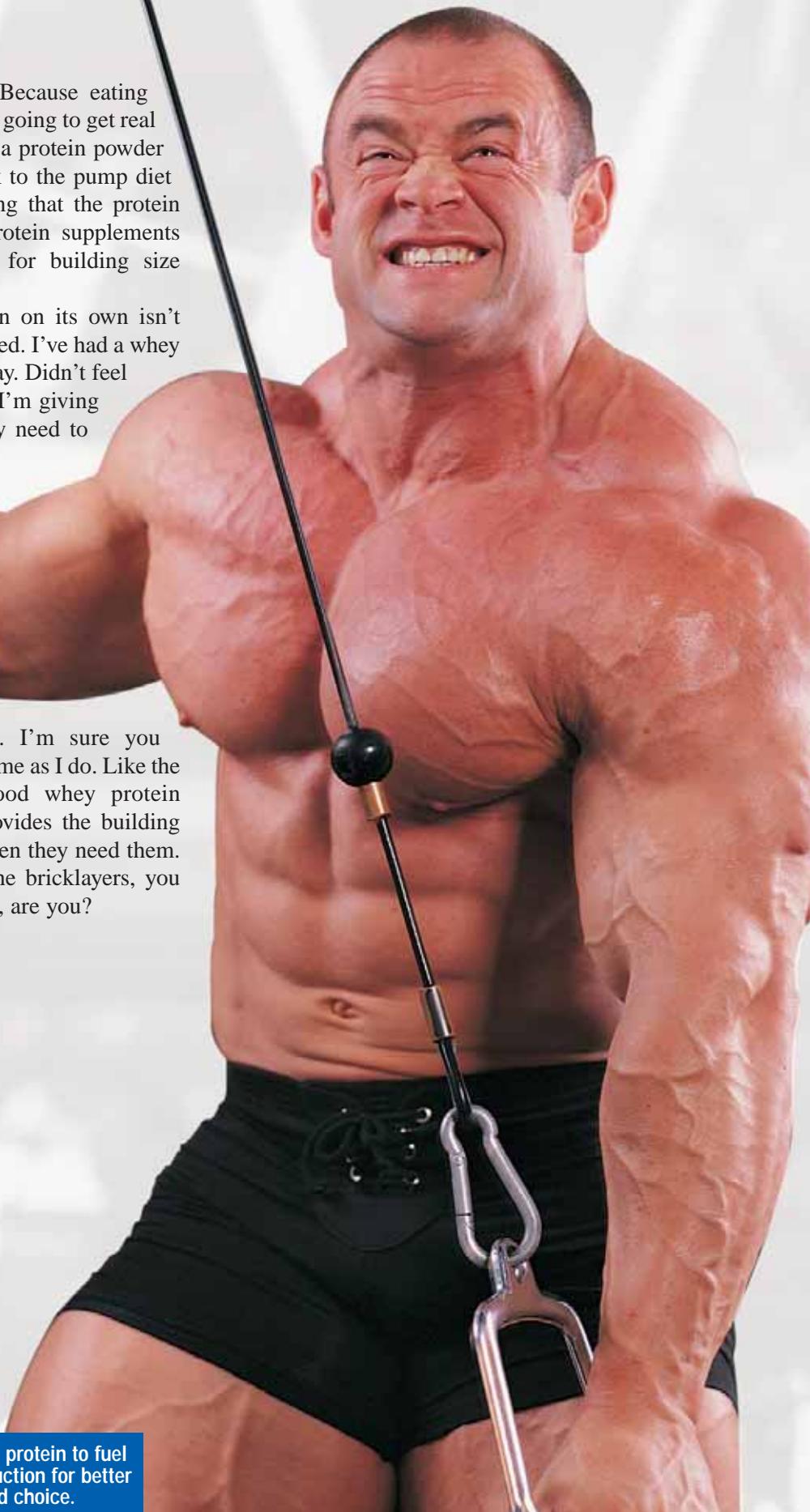
Why a great protein supplement? Because eating chicken breasts and tuna every day is going to get real old, real fast. The variety alone that a protein powder gives you is going to help you stick to the pump diet longer. Plus, science is now showing that the protein you get from high-quality whey protein supplements actually outperforms regular food for building size and strength.

Now, regular whey protein on its own isn't going to make you feel pumped. I've had a whey protein shake or two in my day. Didn't feel a thing. But at least I know I'm giving my muscles the protein they need to

grow. That counts for something. I'm sure you probably do the same, and feel the same as I do. Like the vitamin/mineral supplement, a good whey protein supplement is like insurance. It provides the building blocks your muscles use to grow when they need them. Hey, if you don't have bricks for the bricklayers, you aren't going to build the brick house, are you?



NITRO-TECH supplies very high-quality protein to fuel growth. Plus, it also supports NO production for better pumps. That makes **NITRO-TECH** a solid choice.



But I also believe a protein supplement should give you a little more than just whey protein. A lot of the pros in this book use NITRO-TECH, and they've convinced me the stuff works. NITRO-TECH works by delivering

The right protein powder shouldn't just supply the protein you need. It should also help support a pump.

more amino acids to your muscles, which is great. And it does so by sensitizing the muscles to the powers of insulin, as well as by helping to modulate NO levels. All in all, it's a really great protein powder that actually helps you stay pumped.

IN THE END ...

Most importantly, remember that when you train hard and eat right, you're going to get pumped and you'll grow. But with the right supplements, you'll get there that much faster. They won't turn you into Mr. Olympia overnight. No pro worth his salt would tell you that, and neither will I. But what I will tell you is that a smart bodybuilder can't afford to do without the science behind some of these products. It's the edge you need. To recap, here's a shortlist of the supplements you'll want to pick up:

- PUMP-TECH, a pure pump-promoting product that gives you pumps for up to 8 hours.
- A solid vitamin/mineral supplement to ensure your body has all the nutrients it needs to maximize growth.
- CELL-TECH, a great creatine supplement with the carbs and insulin sensitizers the smart bodybuilder needs to increase pumps and cell volumization.
- Glycerin, a unique, seldom-used pump-promoting product. Tastes horrible and it works.
- NITRO-TECH, a really great whey protein supplement that helps promote a pump and gives you the protein you need to build muscle when you don't eat right or when you need better protein than food can provide.

work for you, stay on the PUMP-TECH but drop the glycerin and switch to using the vitamin/mineral blend. Use it for a few weeks, and if it helps you, great. Stay on PUMP-TECH and the vitamin/mineral blend, and then start using a product like CELL-TECH ... and so on.

Stacking supplements is the smart way to stay pumped. Finding your best stack is the way to go!

Then, once you've found that magic mix that works for you, stack it all together and stay on it. It's a foolproof process for finding your best supplement stack.



If you're just starting out and want to see what supplements can do for you, I recommend you choose PUMP-TECH. Give it a try, and before long, you'll be pumped all day long. It's good stuff. Then, if you want to kick things up a notch, give a few of the other supplements I've recommended a try. Stay on PUMP-TECH, and then give the glycerin a try for a few weeks. If it doesn't



PUMP Up Your DELTS

– Jay Cutler

The feeling of the blood rushing into the muscle and the muscle getting bigger and fuller – that's the whole “pump experience.” The muscle feels like it is ready to explode. When your muscles get pumped, it's incredible! You feel like you're a piece of steel ... like you can conquer the world!

When I'm pumped, it seems like suddenly my muscles grow three times bigger!

What I like about the pump is that I feel indestructible. I feel like I could be shot, and bullets would just ricochet off of me.

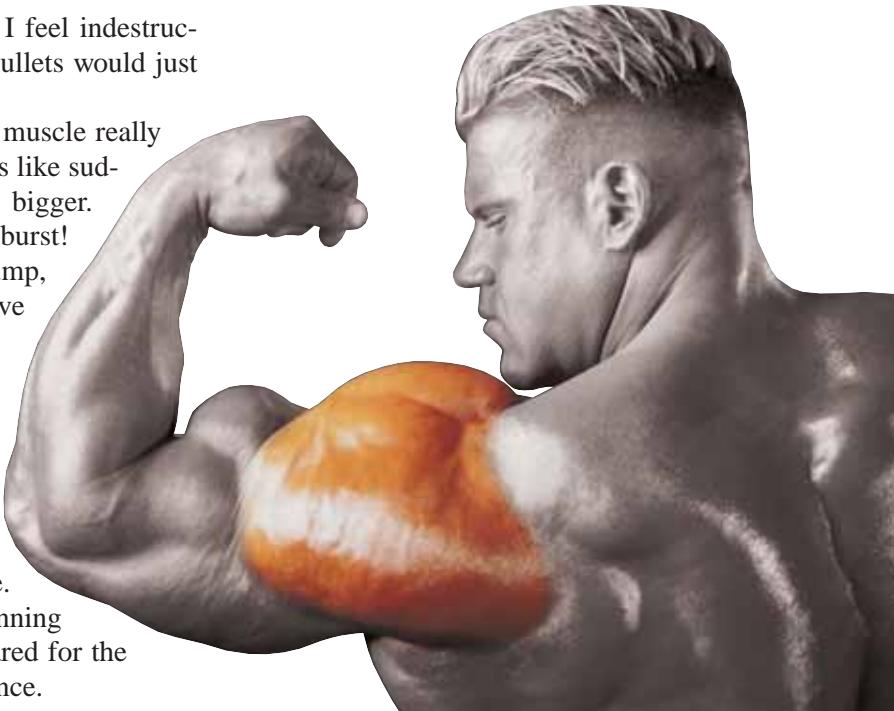
When it's pumped, the shape of the muscle really comes out. When I'm pumped, it seems like suddenly my muscles grow three times bigger. Your skin gets so tight that it's ready to burst! Everybody wants to get the ultimate pump, to the point where you can barely move the muscle.

Of course, to get the pump, your head has to be in the workout. You have to be mentally prepared for every workout. When I get to the gym, I don't even have to lay out my exercises because I've gone over it in my head so many times the day before. When I'm in the gym, it's like I'm running on instinct. Psychologically, I'm prepared for the workout I'm about to do a day in advance.

Of course, it is a matter of positive energy ... mind-muscle connection. If you go to the gym and start throwing the weights around without thinking about

your workout, you won't get the benefits. But if you do concentrate and if you do get the pump, you will be willing to push yourself harder to the extremes that it takes to get massive muscle growth. You use that ultimate pump as a gauge throughout the rest of your workouts. As a bodybuilder, the pump helps me evaluate the intensity of my workouts.

I know when I'm on top of my game just based on the workouts I'm having. I don't change a thing when the workouts are perfect. It's about all-around blood volume. That's what I always preach. It's all about increasing the blood volume in your muscles.



When the veins are bulging out, the muscle looks full, and the skin over the delts gets very thin ... that's when I know my delts are pumped.

THE MOST INTENSE DELT-TRAINING PROGRAM

I've tried several different training maneuvers, whether it's presses with dumbbells or a bar. I've discovered that the best beginning move is side dumbbell laterals. This move allows blood to fill in the deltoid muscle. Then after the side-lateral move, I move on to shoulder presses, cable laterals, front raises, and finish with my rear delts.

**When I train delts,
I get the most insane pump!
It's unreal!**

Once I finish this series of exercises, it feels like my shoulders have grown three inches on all sides. Onstage, that kind of growth gives me the illusion of being the widest guy, and that's what I'm recognized for. When



Blood volume in the muscles is so important. It's carrying the nutrients your muscles need!

the veins are bulging out, the muscle looks full, and the skin over the delts gets very thin ... that's when I know my delts are pumped.

Side Dumbbell Laterals:

5 total sets (2 warm-up sets and 3 work sets)

- 40 lbs. x 20 reps
- 40 lbs. x 20 reps
- 65 lbs. x 10 reps
- 65 lbs. x 10 reps
- 65 lbs. x 10 reps

Seated Dumbbell Press:

3 work sets

- 130 lbs. x 8 reps
 - 130 lbs. x 8 reps
 - 130 lbs. x 8 reps
- Immediately drop to 100 lbs. x 8 reps

Side Cable Laterals, One Arm at a Time:

3 work sets

- 70 lbs. x 10 reps
- 70 lbs. x 10 reps
- 70 lbs. x 10 reps

Front Barbell Raises:

3 work sets

- 135 lbs. x 8 reps
- 135 lbs. x 8 reps
- 135 lbs. x 8 reps

Rear Delt Machine Reverse Pec Deck:

2 work sets

- 170 lbs. x 10 reps
- 170 lbs. x 10 reps

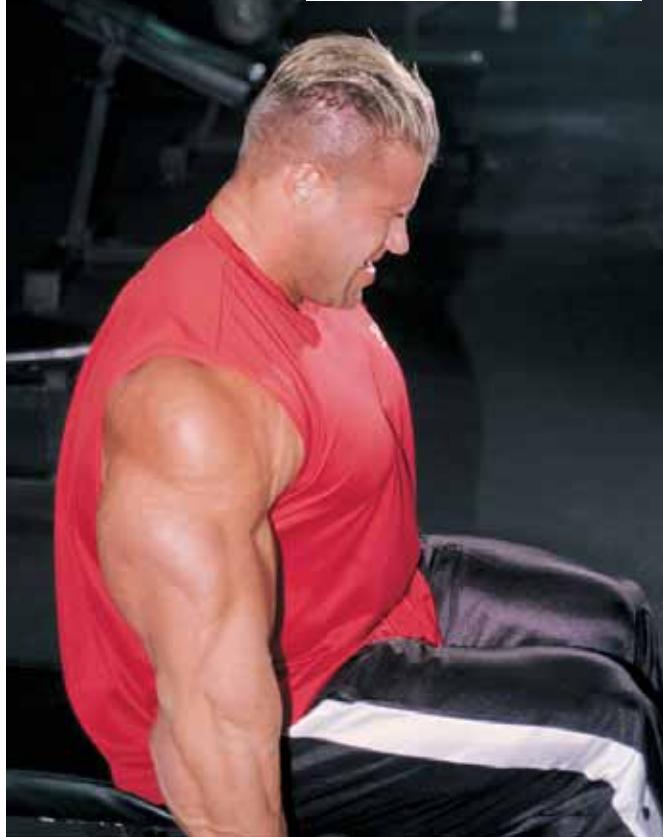
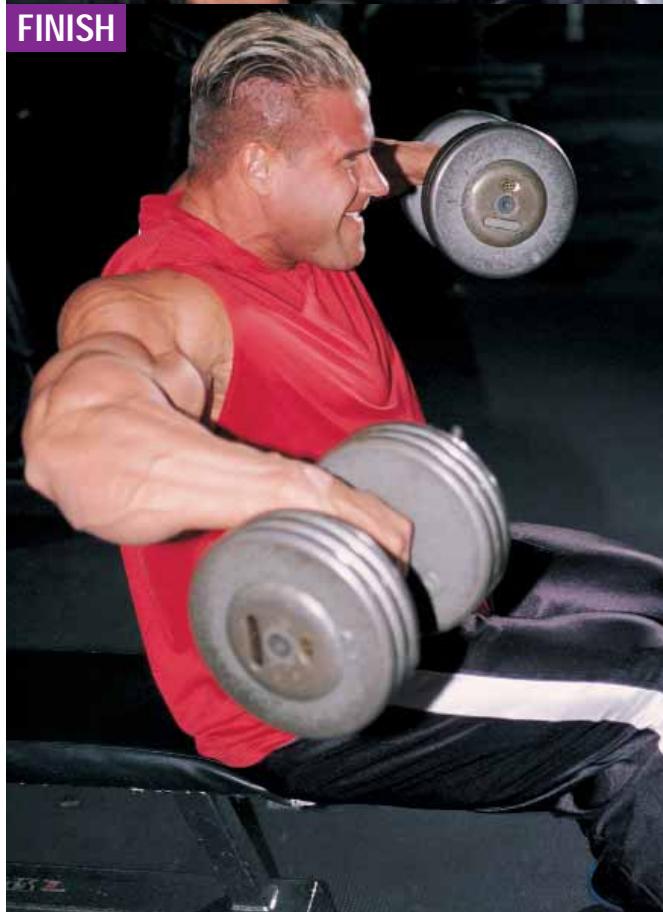
Immediately drop to 100 lbs. x 8 reps

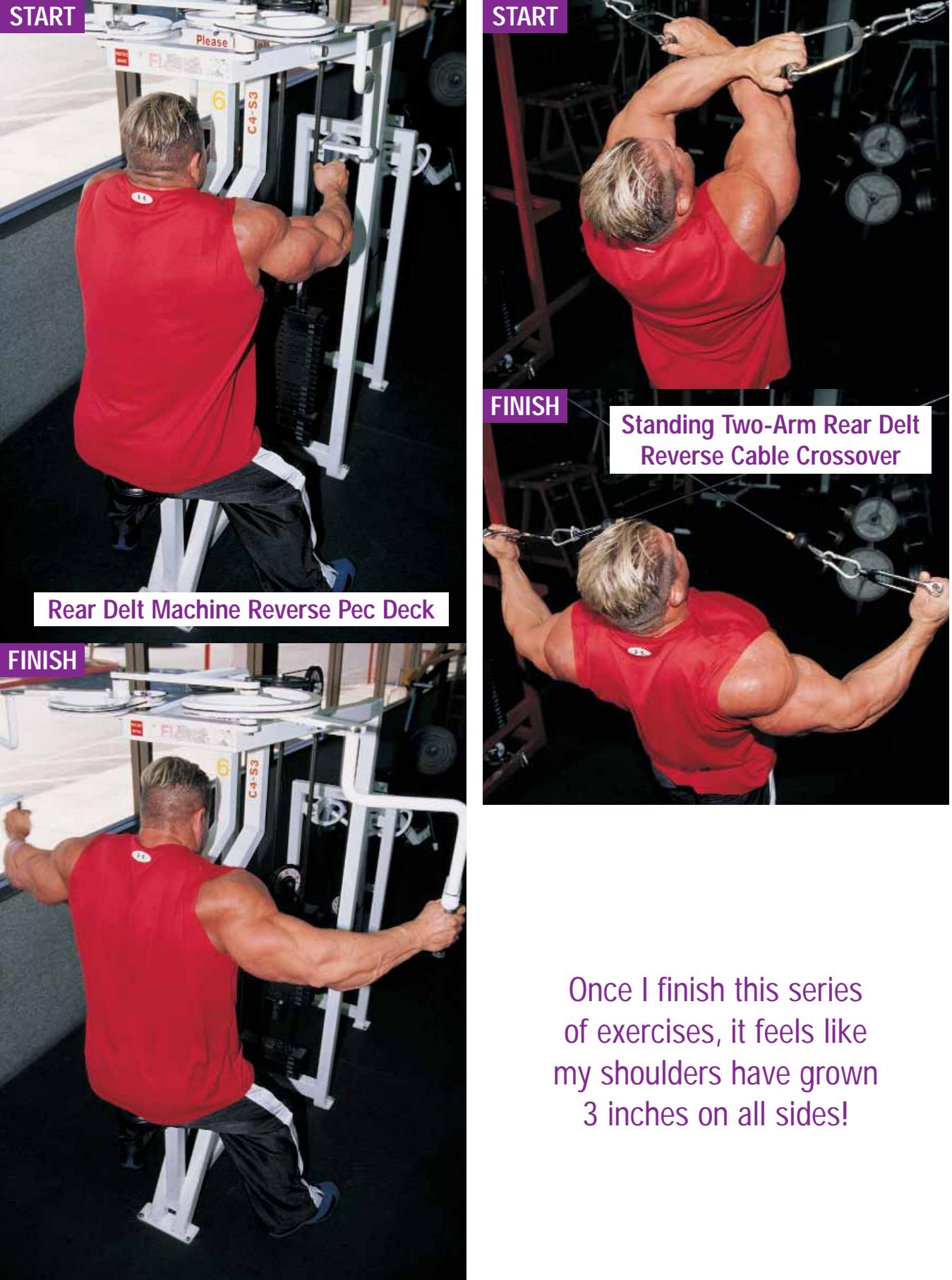
Standing Two-Arm Rear Delt Reverse Cable Crossover:

3 work sets

- 60 lbs. x 10 reps
- 60 lbs. x 10 reps
- 60 lbs. x 10 reps

The pump really lasts after the workout is done, depending on the amount of sleep and food I've eaten beforehand. When I train delts, I get the most insane pump! Even the people in the gym come up to me to tell me I look massive. It's unreal!

START**Side Dumbbell Lateral****FINISH****START****Side Cable Lateral****FINISH**



Once I finish this series of exercises, it feels like my shoulders have grown 3 inches on all sides!

MY DIET PLAN TO BUILD THE PUMP

Blood volume in the muscles is so important because it puts the nutrients into the muscle and stretches the shell (the fascia tissue that encapsulates your muscles). That's why the pump is so important. When blood is rushing to the muscle, the blood is carrying protein, nutrients ... everything you need to feed the muscle. You have to remember that a well-fed muscle will become a bigger muscle. If you don't get a pump, you're probably in a calorie deficit – you're not eating enough. You have to bump up the calories. When I'm in a calorie surplus, the pumps are the best I ever get. I'm hitting the gym hard, and even the warm-up sets get me totally pumped. My muscles are rounder, fuller, and better conditioned all at the same time.

The pump is going to exhaust the muscle and empty the glycogen stores and break down my muscle protein levels. The goal when you train is to totally deplete the stores of glycogen and protein within the muscle and then replenish those lost stores with new fluids and nutrients to help the muscle repair and grow. After I leave the gym, I make sure I replenish what I've burned off at the gym with food and supplements. What's more, keeping in mind that about 70 percent of the muscle is water, I have to drink close to 2 gallons of water daily.

I also use PUMP-TECH. Instead of having to work through the first sets in my workout to get pumped, PUMP-TECH helps me get pumped early on right away on my warm-up sets. I feel stronger – I feel like I have the ability to push more weight. And I like PUMP-TECH because it's helped create more roundness in the muscle, like in my shoulders, which is important.



Here's my daily meal plan for ensuring I'm getting the best pumps possible:

Meal #1 (pre-training meal – I train twice a day)

- 15 egg whites and 2 whole eggs (scrambled)
- 1 bagel with nothing on it
- 1 scoop of CELL-TECH™
- 1 cup of oatmeal (measured after cooking) with one tbsp. of honey
- 1 banana
- 1 serving of PUMP-TECH™

Post-Workout Supplementation (immediately post-workout)

- 2 scoops of CELL-TECH
- 2 scoops of NITRO-TECH®

Meal #2

- 8 oz. of lean hamburger (measured after cooking)
- 4 oz. of low-fat Healthy Choice® marinara sauce

Meal #3

- 8 oz. of chicken breast (measured after cooking)
- 1 cup of rice (measured after cooking)
- 2 scoops of NITRO-TECH
- 2 scoops of CELL-TECH

Meal #4 (pre-training meal before my second workout)

- 6 oz. of steak (measured after cooking)
- 1 cup of rice (measured after cooking)

Post-Workout Supplementation (immediately post-workout)

- 2 scoops of CELL-TECH
- 2 scoops of NITRO-TECH

Meal #5

- 6 oz. of steak (measured after cooking)
- 4 oz. of pasta (measured after cooking)

Meal #6

- 3 scoops of MASS-TECH™
- Sushi (my favorites are yellowtail and tuna)

Meal #7

- 12 egg whites (scrambled)
- 1 cup of oatmeal (measured after cooking)

Before Bed

- 1 serving of MASS-TECH

Jay Cutler is an athlete whose nutrition and supplementation requirements are extraordinary. Carefully read the entire label before use.

MY INSIDE TIPS FOR BETTER PUMPS

I tell everyone to keep a journal. Log your diet, sleep patterns, daily activities, your emotions ... write down even the stupidest comments. I usually write a few comments like “great pump” or a “little tired,” and it helps me keep track of my progress to see what is working and what is going on. As a bodybuilder, things like the qual-

Try incorporating a supplement like
PUMP-TECH for real results!

ity of the pump help me evaluate the intensity of my workouts. I'll finish a workout and write all of the details in my journal. Then I can adjust my schedule logically according to what I've written down if I need to change things up.

Stress is a big factor as well. If you're under stress, it's going to increase your cortisol levels, and as a result, you're not going to get strong workouts. You have to stay positive. If you let negative thoughts creep in – ones like “this isn't going anywhere,” “I'm not making any gains,” or “that guy at the gym is bigger than me” – then you're not going to progress.

Staying positive is important too. We'd all love to bench press 700 pounds and squat 800 pounds. But you just have to work with what your body can do. I would suggest taking a break from the gym and coming back fresh if negative attitudes creep in. Pick up your favorite bodybuilding magazine, watch workout videos, or read some books to see what other people are doing, and put that into context within your routine. All of these things can help you get a clear picture of what you need to do to get attainable results.



Finally, what you eat is crucial. In the beginning, I read everything to increase my knowledge about bodybuilding. From what I've learned, diet is 80 percent of what we do to get the pump and build muscle. Today, bodybuilders have an extensive array of supplements to choose from to help them, some of which are very advanced. When I started 12 years ago, there wasn't anything on the market like there is today. That is why bodybuilding has advanced to this level. Truly, nutrition and supplementation have advanced, and they will continue to advance with time.

The more blood in the muscle, the bigger it gets and the rounder it gets.

My advice is this: Don't even bother wasting your time at the gym if your nutritional intake is not in check. To get the most out of a supplement, you have to have a proper diet to go along with it. In time, as you grow, try incorporating a supplement like PUMP-TECH, MASS-TECH, CELL-TECH, or NITRO-TECH.

WRAPPING IT UP

When you're having an easy time getting pumped, that situation can create a lot of positive energy. You feel like a champion. That's why by the time I'm onstage I'm so certain I'm going to win. When I'm onstage, there is no doubt in my mind that I have prepared the most out of everyone, and that I look the best ... and that is it! A more massive pump, over the long term, gives the illusion of you being the biggest and roundest onstage. The more blood in the muscle, the bigger it gets and the rounder it gets, and of course, that leads to titles.



When I started 12 years ago, there wasn't anything available like there is today. Now I can take advantage of products like PUMP-TECH that work!



PUMP Up Your CHEST

– Chris Cormier

I really love the pump. For me, I could always equate the pump with a feeling of success in the gym. The intensity of the pump you get in the gym is important. The greater the pump, the greater the satisfaction. When you're pumped, you know what you're doing is right.

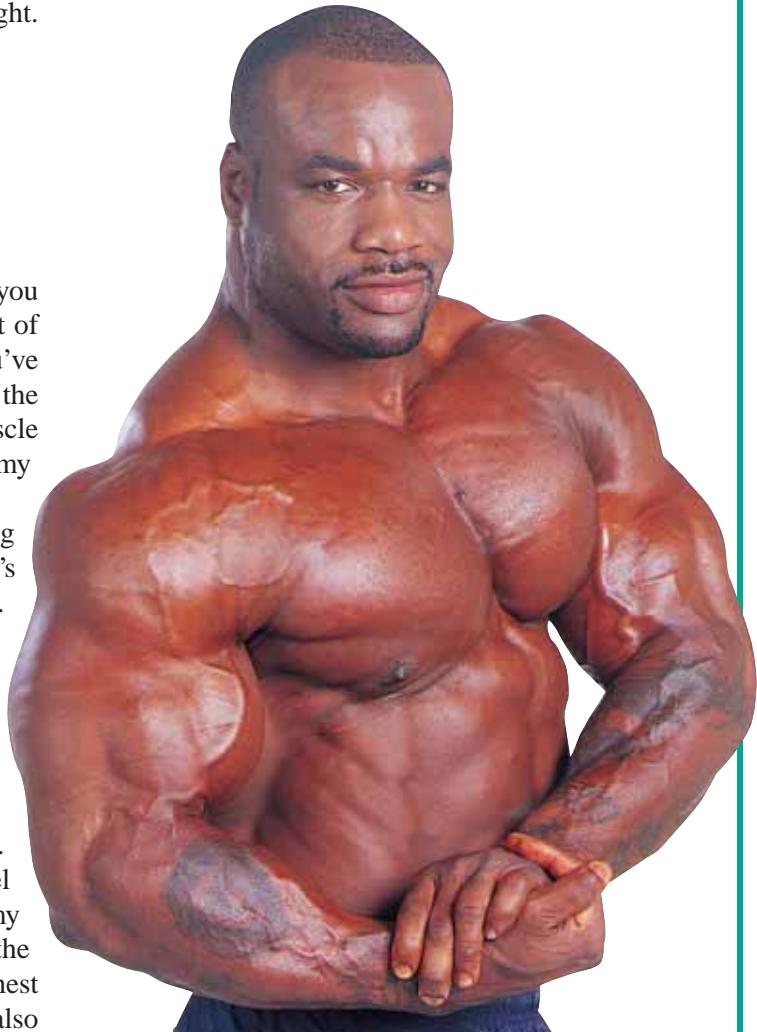
The intensity of the pump is important. The pump lets you know you're growing.

You'll know you hit the muscle properly, and that you stressed it to the point where you got something out of your efforts in the gym. The pump lets you know you've stimulated some new growth, that you've stressed the muscle fibers to the max, that you've filled the muscle with blood ... it lets you feel like, "Hey, I did my work."

You've got to keep the pump. That's the feeling you're after. That's why you go to the gym, and that's your goal. That extreme muscle pump is addictive. Once you feel that pump, you'll know it and you'll crave it. It's like getting to home plate on your first date!

You'll know the pump when it happens. A solid pump is going to push the muscle up against the skin. The muscle will get tighter, and it'll fill out underneath the skin and tighten the skin up around it. The pumps I get in my pecs are awesome. I can feel the pump push the muscle out until it feels like my skin can barely hold the pec muscle in there! That's the type of feeling that I'm experiencing when my chest gets pumped. All the while, I know that pump is also helping to deliver nutrients to the muscle to help it grow. When the blood gets to my chest, I know it's sending

that signal to the muscle fibers. In a way, that pump is telling the chest muscles that they need to grow to make some room for this pump. And I'm going to be putting that pump in there every week.



I can feel the pump push the muscle out. That's the type of feeling I get when my chest is pumped.

THE MOST INTENSE CHEST-TRAINING PROGRAM

These days, my chest pumps up pretty easily, and it feels incredible. When my chest is pumped, it literally feels like someone is inside my body pulling my rib cage apart! It sounds painful, but it's definitely a good pain. I call my chest pump a "T-shirt pump" – it makes me look good in a T-shirt!

When bodybuilders ask me how to work out properly, I always start by recommending that they get detailed information on the exercises they're about to do. Study how to keep your lifting technique strict. Don't just slam the weights around, bouncing them off your chest! Learn the kinesiology of the exercises and how the muscles involved work.

When my chest is pumped, it's painful. But it's definitely a good pain!

I learned early on to think about how to move the weight correctly to build the chest. That's the only way to do it! Coming up, I had a hard time building my pecs, so I read everything I could get my hands on about chest training. It paid off in the end because I used my knowledge to create a proportional physique.

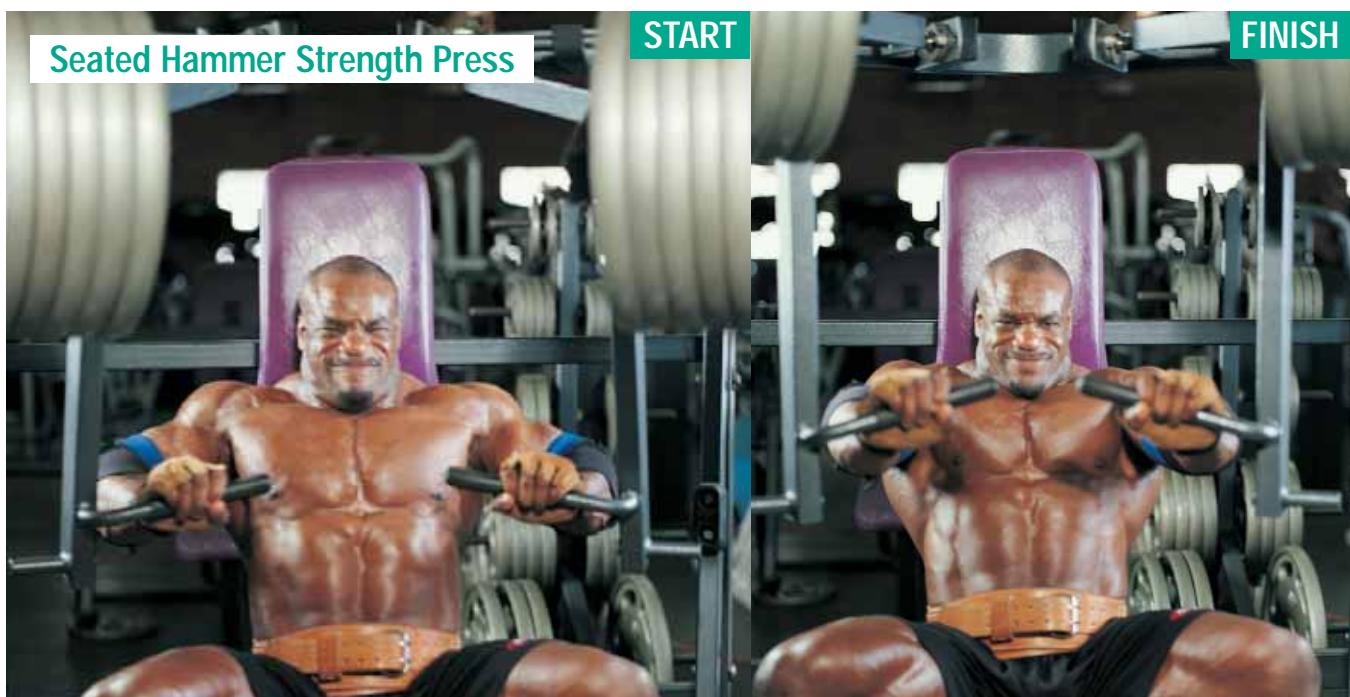
My chest workout starts with incline barbell presses first. I do four total sets, working my way up to 405 pounds on my heaviest set. I'll start with one plate per side, then progress to two plates, then three plates, and finally four plates per side for my final and most intense

set. There are form specifics you can use to work the muscle at the proper angle. I use a 45-degree angle bench and grip the bar with my hands slightly beyond shoulder width. My elbows always point directly out to the side and are in line with my wrists. When I bring the bar down, I actually touch my chin with it. That's a deep movement, but not so deep that you injure the shoulder or pec. Plus, you're not going to bounce the weight.

From there, I move on to the wide-grip Hammer Strength press machine (very similar to a flat bench press, except you're seated upright in a machine). I always make sure I get a very thorough squeeze on each rep. I start out with two plates on each side for my first set, and then move to three plates per side for my next set. Then, it's on to four and finally five plates per side for my last heavy set. I then like to bring it down to one plate per side for a final squeeze set. At full stretch, my hands are level with my upper-pec area, not my lower-pec area. Charles Glass taught me that technique a long time ago. It helps you really stretch the pec and allow for a more intense contraction and pump.

Then I'll move to the lying flye machine. I love this exercise because it gets my chest pumped to the max. After that, I'll finish off my chest workout with dips. On dips, I'll lean so far forward that my torso is almost parallel to the ground. It intensifies the exercise quite a bit and puts the bulk of the stress on the pecs. I'll pretty much finish it there!

After this workout, my pecs feel like cantaloupes under my shirt. They get extra-wide, so I'm not surprised that my chest is my favorite body part to pump. It's an instantaneous type of gratification.



Incline Barbell Presses: 4 total sets

- 135 lbs. x 15 reps
- 225 lbs. x 15 reps
- 315 lbs. x 12 reps
- 405 lbs. x 10 reps

Wide-Grip Seated Hammer Strength Presses: 5 total sets

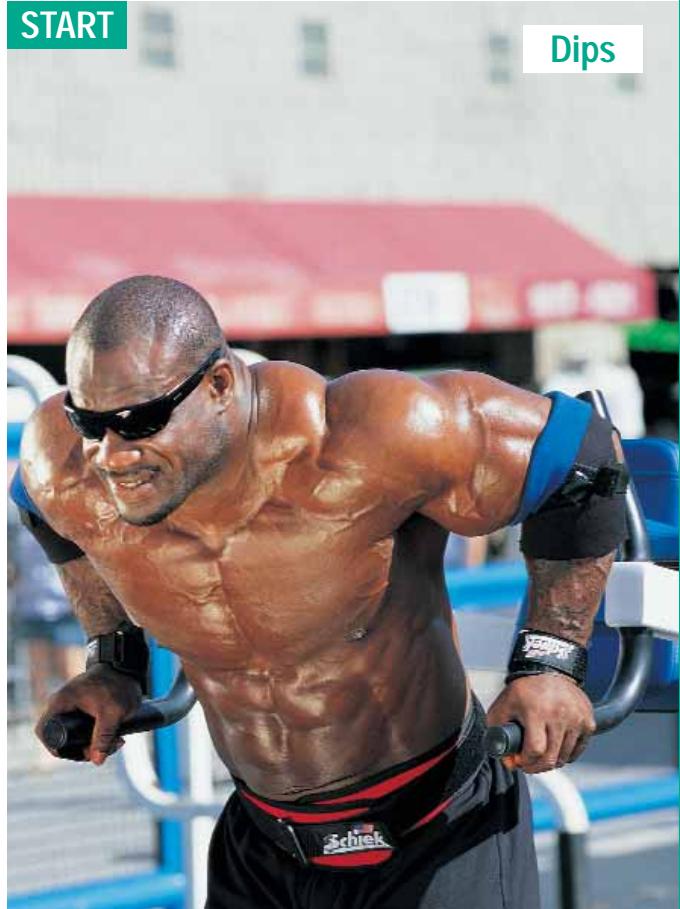
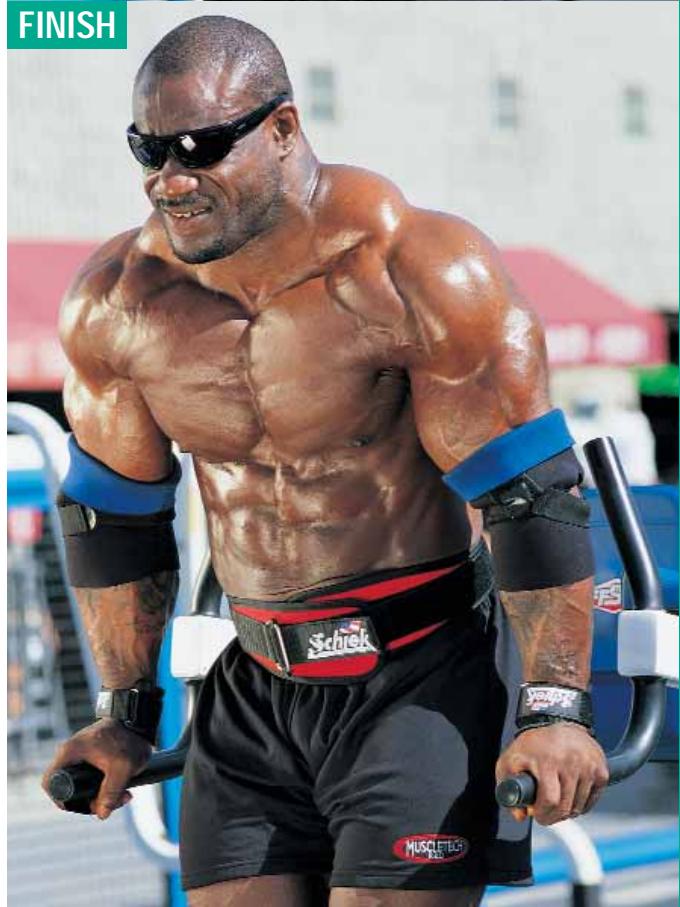
- 180 lbs. x 10 to 12 reps
- 270 lbs. x 10 to 12 reps
- 360 lbs. x 10 to 12 reps
- 450 lbs. x 10 to 12 reps
- 90 lbs. x 10 to 12 reps (finishing with a hard squeeze on each rep)

Lying Machine Fly Exercise: 4 work sets, 1 warm-up set

- 90 lbs. x 15 reps
- 140 lbs. x 15 reps

Dips: 2 total sets

- Bodyweight (280 lbs.) x 10 reps
- Bodyweight (280 lbs.) x 10 reps

START**Dips****START****Incline Barbell Press****FINISH****FINISH**

MY DIET PLAN TO BUILD THE PUMP

I can't emphasize enough how important your diet is for getting a pump. It makes all the difference in the world. Until you learn about the critical role nutrition plays in bodybuilding success, you won't get anywhere. You're not going to get the pump you need to grow. That's because you won't be eating the types of carbohydrates

You need to learn how critical nutrition is for success. Otherwise, you won't get anywhere and you won't get the pump you need to grow.

and getting the proper nitrogen balance you need to help yourself get that intense pump. But once you learn how to gauge if you have enough protein and nutrition and whatnot in your diet, then your body will be ready to create what we call the pump.

Upon Waking Up (pre-training meal)

- 4 scoops of NITRO-TECH® mixed with water

Meal #1 (immediately post-workout)

- 12 oz. of buffalo meat (measured after cooking)
- 1½ cups of rice (measured after cooking)

Meal #2

- 12 oz. of steak (measured after cooking)
- 1½ cups of rice (measured after cooking)

Meal #3

- 12 oz. of steak (measured after cooking)
- 1½ cups of rice (measured after cooking)

Meal #4

- 12 oz. of buffalo meat (measured after cooking)
- 1½ cups of rice (measured after cooking)

Meal #5 (pre-training meal before my second workout)

- 12 oz. of steak (measured after cooking)
- 1½ cups of rice (measured after cooking)

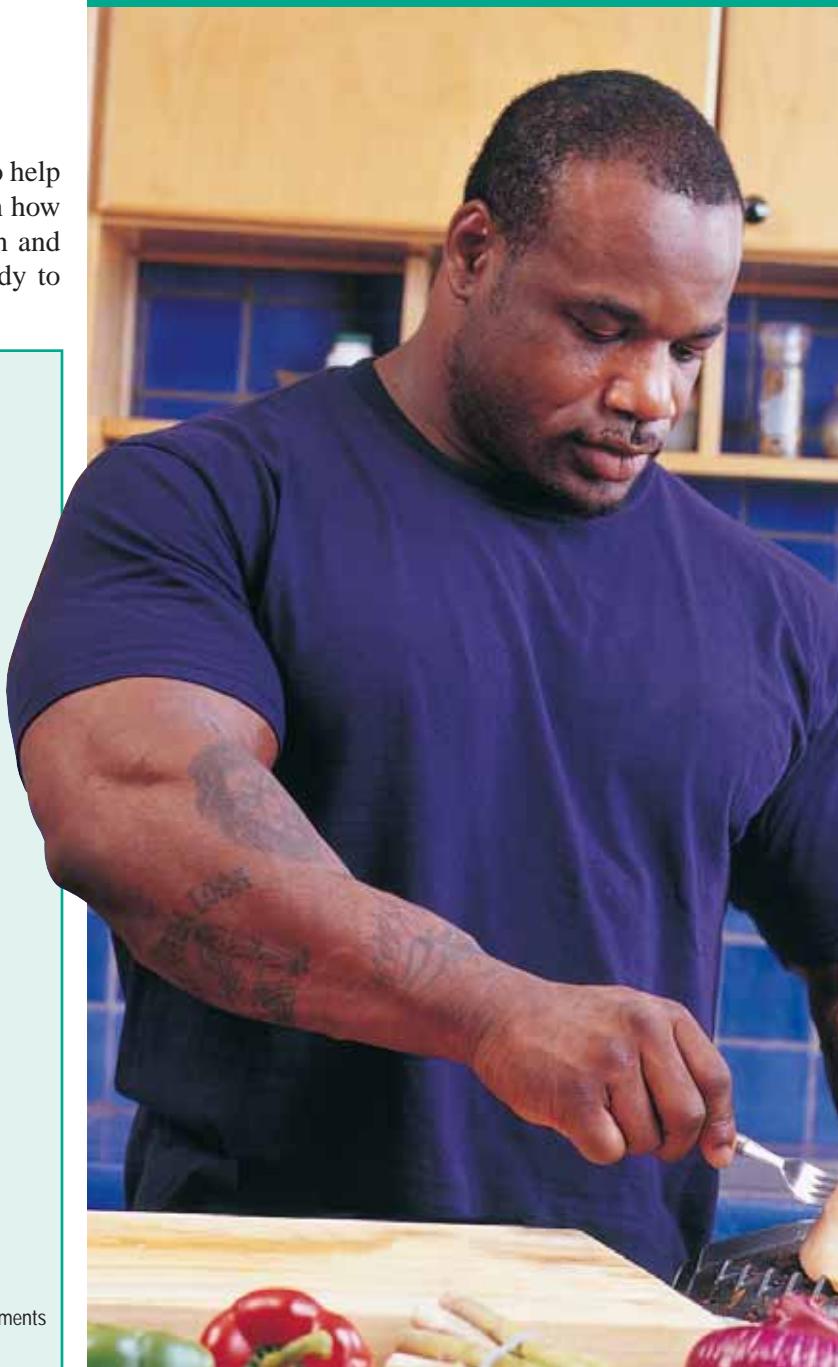
Post-Workout Supplementation

- 4 scoops of NITRO-TECH mixed with water
- 8 caplets of PUMP-TECH™

Chris Cormier is an athlete whose nutrition and supplementation requirements are extraordinary. Carefully read the entire label before use.

As you've noticed, I like to keep my diet very simple. It works, though – trust me. It's simple, and that makes it easier for me. I don't have to guess what I'm going to be eating or figure out if I have enough protein, enough of this, or enough of that. It's easy for me to weigh out exactly how much protein to have, how many carbs, and the like. A simple diet plan gives you structure, and that's so important. You need structure to your diet. You need to structure your workouts. Bodybuilding is all about structure. Best of all, I like the food!

I like to keep my diet very simple, but it works – trust me. It gives me structure.



MY INSIDE TIPS FOR BETTER PUMPS

I'm a big believer in a product called PUMP-TECH. At first, I thought to myself, "Okay, another supplement ... whatever." I thought that maybe a week down the road I might feel something. But I was shocked when I felt a difference so quickly! I felt like my veins were full of blood. And as I increased the intensity of my workouts,

**I felt a difference using
PUMP-TECH in the first two days.
This stuff works!**

my pumps were getting even better. Best of all, PUMP-TECH is time-released. I know this stuff works!

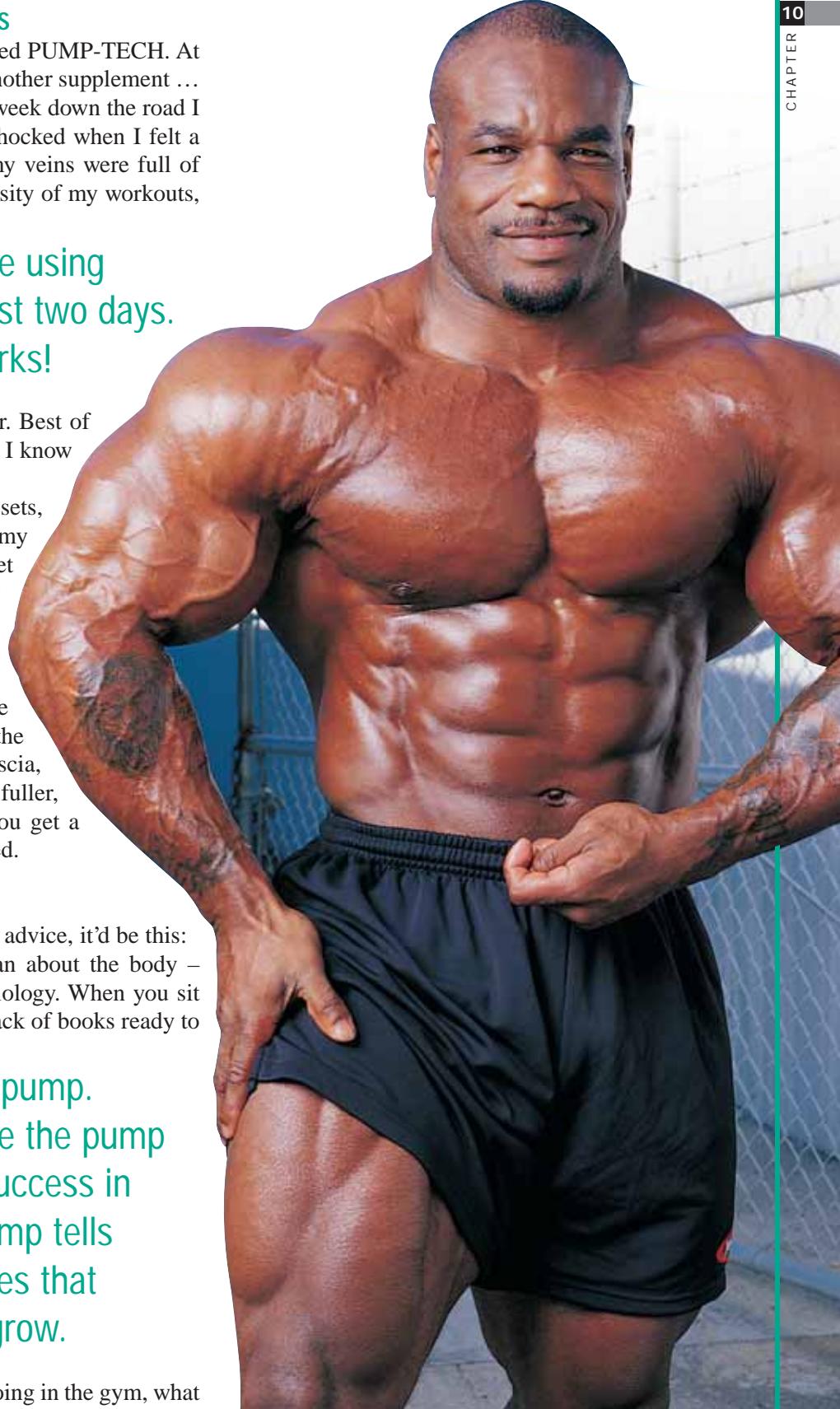
I also like to stretch between sets, especially when I'm working my chest. Stretching allows me to get more intensive pumps. Stretching allows more blood to get to the muscle. And I also believe in deep tissue massage. I try to have it done once a week. Deep tissue massage tears down the fascia that covers the muscle. When you massage the fascia, it allows the muscle to adopt a fuller, more natural shape. Best of all, you get a pump in the muscle being massaged.

WRAPPING IT UP

If I had to give some type of broad advice, it'd be this: Read and learn everything you can about the body – everything from nutrition to kinesiology. When you sit down at night, there should be a stack of books ready to

**I really love the pump.
I could always equate the pump
with a feeling of success in
the gym. That pump tells
the chest muscles that
they need to grow.**

be read. Learn about what you're doing in the gym, what you're eating, and the supplements you're taking. Don't stop thinking about what you're doing. You have to prepare yourself if you want to win.



Learn about what you're doing in the gym, what you're eating, and the supplements you're taking. You have to prepare yourself if you want to win!



PUMP Up Your ARMS

– Mat Duvall

The pump is why every bodybuilder goes to the gym. The pump is the deciding factor as to whether or not going to the gym was worth it.

Training arms provides the fastest, deepest, most muscle-fiber-tearing pump possible!

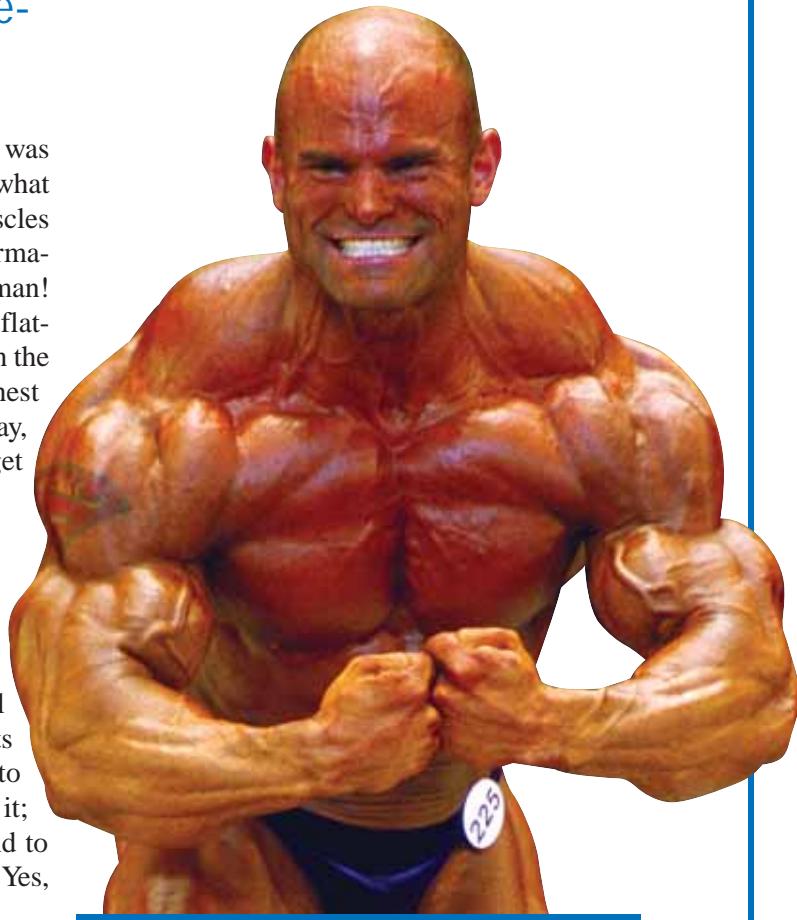
I still remember the first pump I ever achieved. I was in the basement, training chest and shoulders, and what I achieved was pure magic! As my pectoral muscles started to fill up, I could only hope that it was permanent. Achieving this pump made me feel like Superman! I was not only happy with what I was doing – I was flat-out hooked! Even after I was finished training and in the shower, I could feel my skin stretching across my chest and shoulder areas. I could not wait until the next day, the next training session, the next opportunity to get that feeling back!

THE MOST INTENSE ARM-TRAINING PROGRAM

I love to train arms. Training arms provides the fastest, deepest, most muscle-fiber-tearing pump one can imagine. With each and every muscle fiber that I tear through, more blood finds a place to fill under the skin. As the skin around my biceps gets tighter, the skin actually gets thinner. Details start to jump out all over the place. You have to experience it; you have to go for it! You have to want to grow, and to grow, it takes painful pumps. “Painful,” you ask? Yes, you have to hurt.

The best arm-training sessions for me are those occasions when I train biceps and triceps together. Getting a pump that takes over your entire arm is like nothing

you've ever experienced. Physically, feeling that pump is a dream come true to any athlete. Knowing that what you are doing is working, and feeling it at the same time helps one to know that his training is effective. Achieving a maximum pump will let you know that you have done all you can do, that there is no going further!



This is a picture taken of me when I won the superheavyweight class and overall titles at the National Championships in 2003. Focusing on the muscle pump was a big reason I won that day!

PUMPING THE BICEPS

I live for those days when I can't even reach my face after training arms. Biceps training goes as follows:

Preacher Curls: 4 total sets

(3 warm-up sets, followed by 1 work drop set)

- Work set: 200 lbs. x as many reps as possible to failure, followed by 2 forced reps and then 2 negative-only reps
- Immediately drop to 140 lbs. x as many reps as possible to failure, followed by 2 forced reps and then 2 negative-only reps
- Immediately drop to 90 lbs. x as many reps as possible to failure, followed by 2 forced reps and then 2 negative-only reps
- Immediately drop to 60 lbs. x as many reps as possible to failure, followed by 2 forced reps and then 2 negative-only reps

Alternate Dumbbell Curls: 1 "running the rack" work set

- Start with 75 lbs. x as many reps as possible until failure
- Immediately drop to 65 lbs. x as many reps as possible to failure
- Immediately drop to 55 lbs. x as many reps as possible to failure
- Immediately drop to 45 lbs. x as many reps as possible to failure
- Immediately drop to 35 lbs. x as many reps as possible to failure
- Immediately drop to 20 lbs. x as many reps as possible to failure

Barbell Curls: 1 work drop set

- Start with 205 lbs. x as many reps as possible until failure
- Immediately drop to 165 lbs. x as many reps as possible to failure
- Immediately drop to 125 lbs. x as many reps as possible to failure
- Immediately drop to 85 lbs. x as many reps as possible to failure
- Immediately drop to 45 lbs. x as many reps as possible to failure

That set of preacher curls is intense, and that's just the first exercise for biceps! It's then on to standing dumbbell curls, and I opt to "run the rack." "Running the rack" is a single set where you start with a heavy dumbbell and then drop to lighter dumbbells until you reach the end of the dumbbell rack. I just pump out rep after painful rep until my arms can no longer rise up and complete another repetition.

**By now, my biceps are on fire.
I am talking about a multiple-alarm,
all-out, torturous pump!**

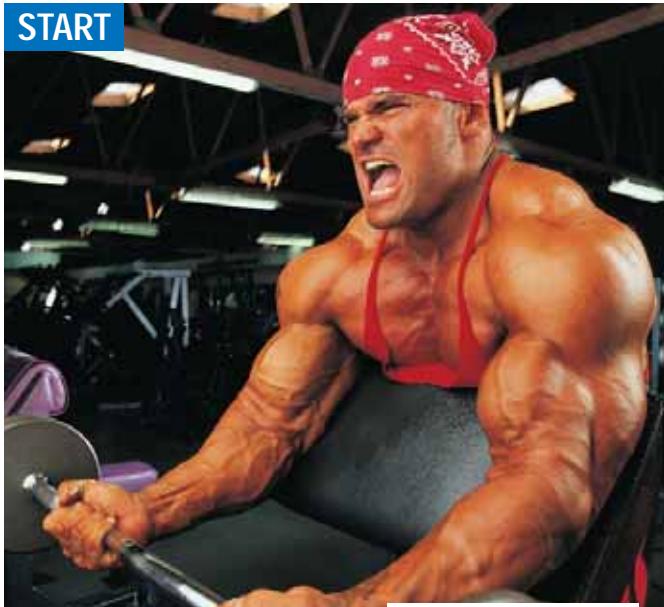
By now, my biceps are on fire. I am talking about a multiple-alarm, all-out, torturous pump! I then finish my arms off with a final exercise that requires only one working set – the barbell curl. It might only be one set, but trust me, this exercise will leave you on the floor unable to use your arms as anything more than paperweights!

I load a barbell with enough plates to bring the total weight up to 205 pounds. I complete as many strict reps as I can and then proceed to drop one or two plates off the end, repeating the process until there is nothing left on the bar.

**Once you try this workout,
you'll know it's intense enough
to cause growth!**

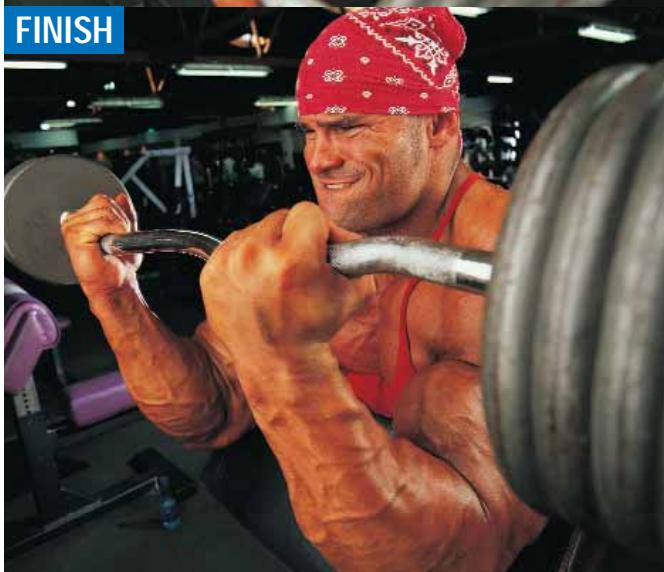
Many people might look at this and think that the workout lacks the intensity required to cause growth. But once you're in the gym and you try it, you'll know better.

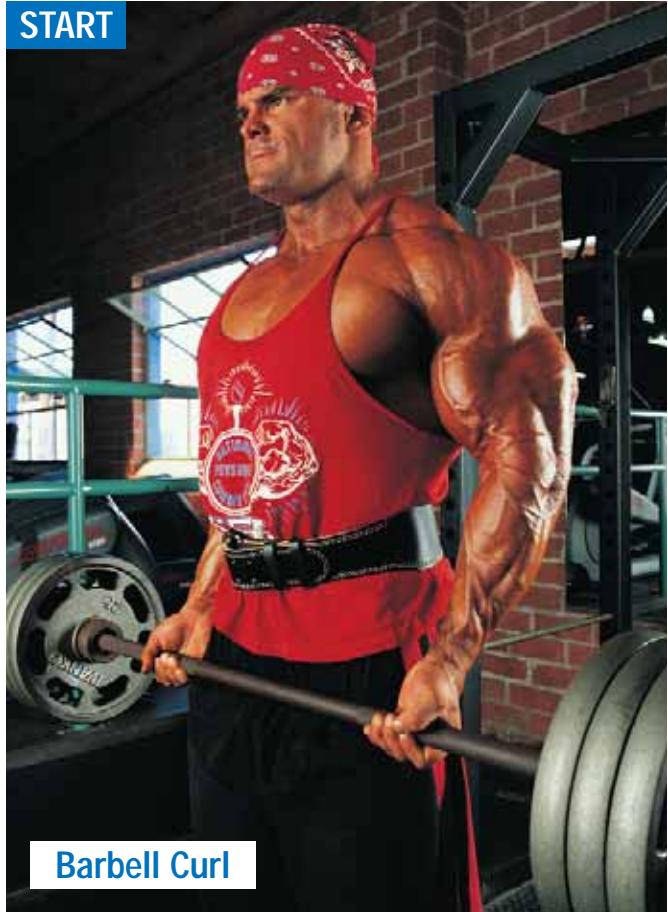
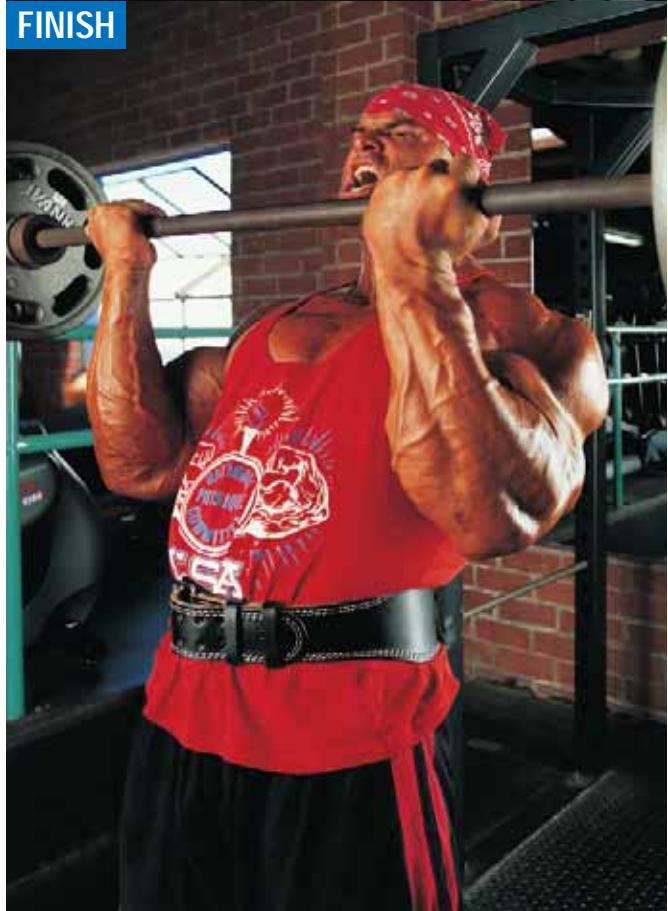
START



Preacher Curl

FINISH



START**Alternate Dumbbell Curl****FINISH****START****Barbell Curl****FINISH**

PUMPING THE TRICEPS

Triceps training is actually more rewarding for me than biceps training. The triceps account for 75 percent of the upper arm. With more space comes the ability to pump more blood into that area of the arm. Here's how my triceps training is structured:

Two-Arm Cable Overhead Extensions: 4 total sets

(3 warm-up sets, followed by 1 work drop set)

- Work set: 150 lbs. x 8 reps
- Immediately drop to 100 lbs. x 10 reps
- Immediately drop to 70 lbs. x 15 reps
- Immediately drop to 50 lbs. x as many reps as possible to failure

One-Arm Seated Dumbbell Overhead Extensions: 4 total sets

- Work Set: 40 lbs. x 15 reps per arm
- Work Set: 50 lbs. x 12 reps per arm
- Work Set: 60 lbs. x 10 reps per arm
- Work Set: 60 lbs. x 8 reps per arm

Two-Arm Lying Dumbbell Extensions: 4 total sets

- Work Set: 20 reps with a 25 lb. dumbbell in each hand
- Work Set: 15 reps with a 30 lb. dumbbell in each hand
- Work Set: 12 reps with a 35 lb. dumbbell in each hand
- Work Set: 20 reps with a 25 lb. dumbbell in each hand

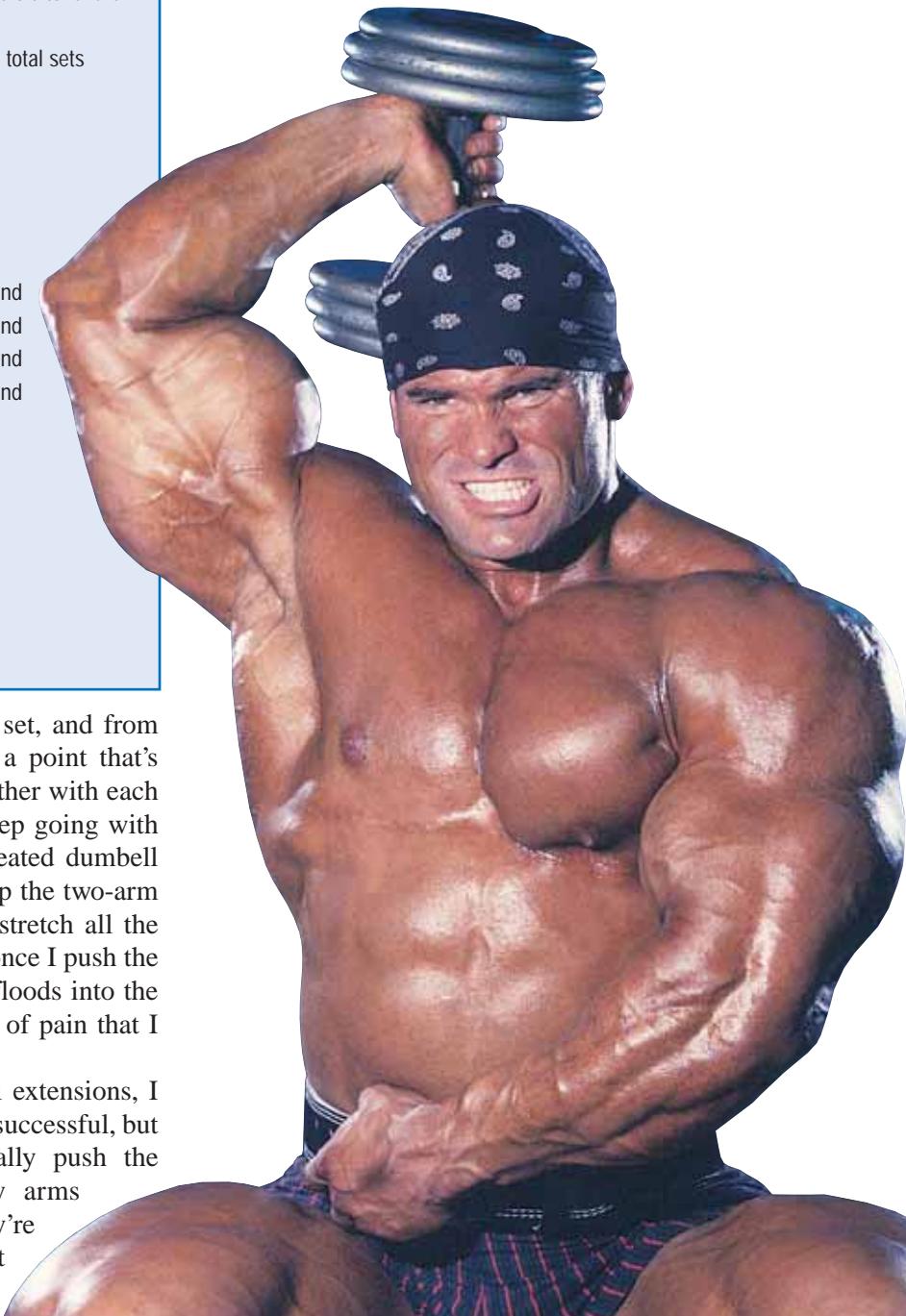
Pushdowns: 1 work drop set.

- Work set: 150 lbs. x 20 reps
- Immediately drop to 100 lbs. x 15 reps
- Immediately drop to 70 lbs. x 12 reps
- Immediately drop to 50 lbs. x 15 reps
- Immediately drop to 35 lbs. x as many reps as possible to failure

Squeezing through the pushdown exercise, each rep hurts more and more. The shirt I'm wearing in the gym will usually feel like it's being pulled apart at the seams!

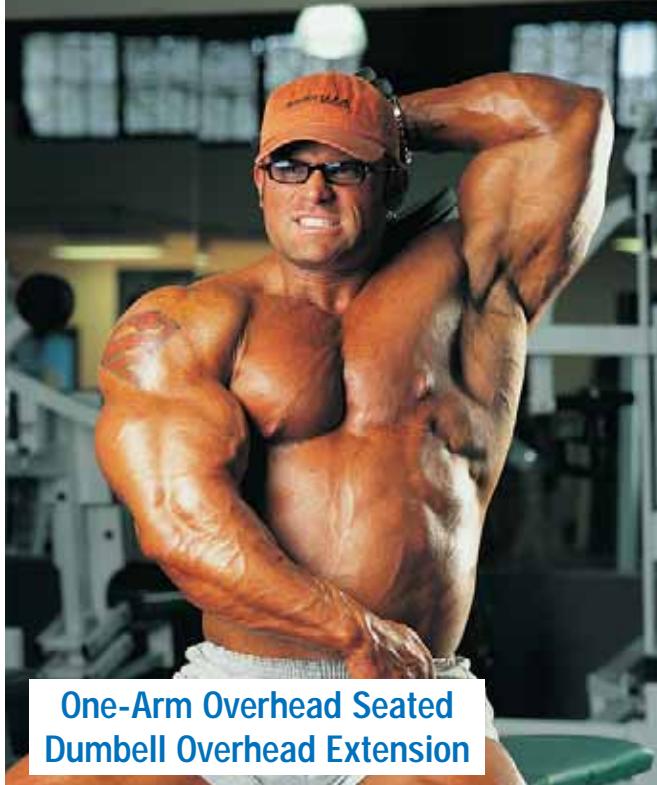
You can pump more blood into the larger triceps muscle.

When the drop set is over, I can't lift my arms anymore. I can't even extend my arm all the way into a straight position! What a great feeling! This is training, and this is what the pump is all about!

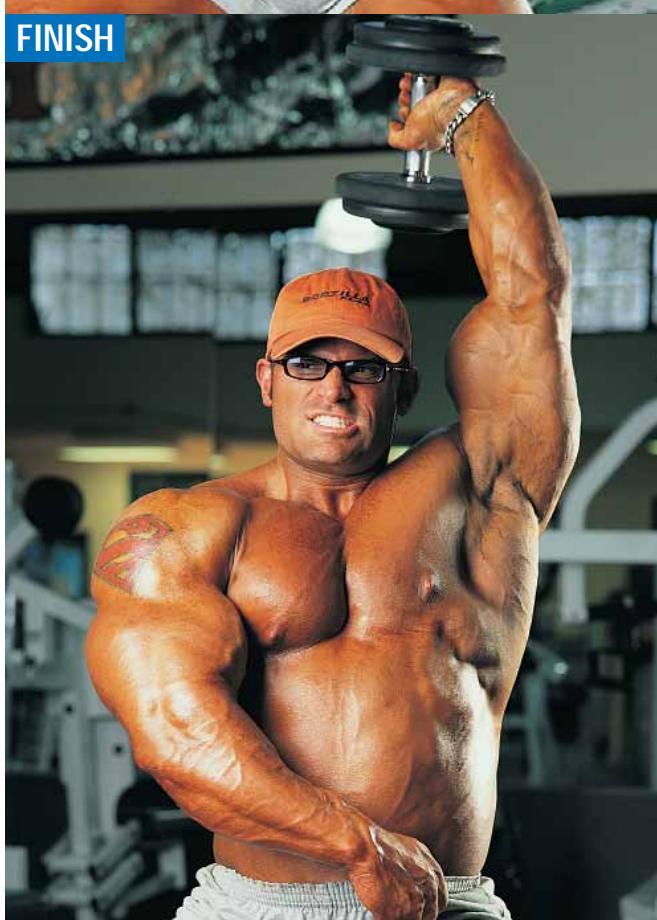
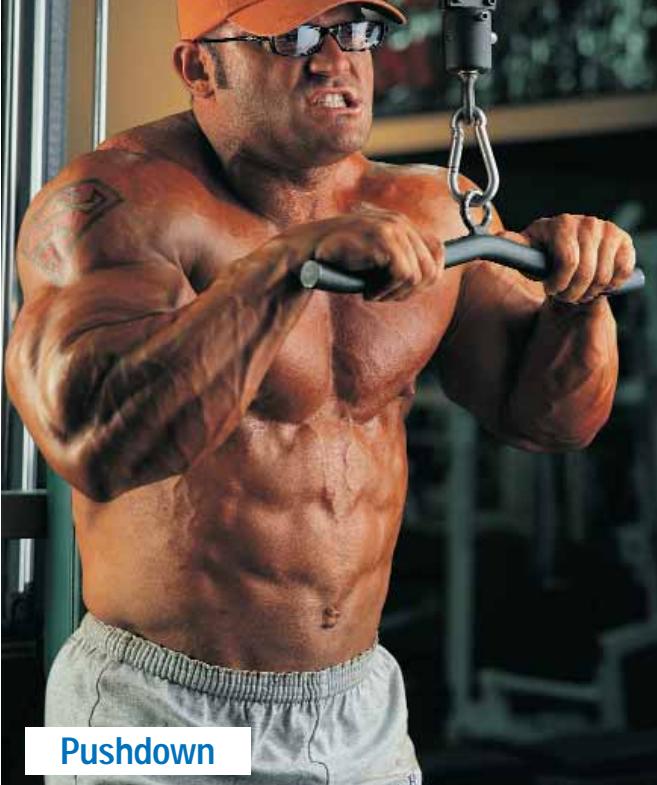


My triceps start to inflate after the first set, and from there, they wind up getting pumped to a point that's actually painful! My shirt will stretch further with each set, which gives me the inspiration to keep going with the session. When I start the one-arm seated dumbbell overhead extensions after I've wrapped up the two-arm cable overhead extensions, I can barely stretch all the way down into the starting position. But once I push the weight back up and flex my arm, blood floods into the muscle. It starts to hurt, but it's the kind of pain that I like, that any bodybuilder should love!

Going into the two-arm lying dumbbell extensions, I usually feel like I could stop and still feel successful, but I also know that I really need to really push the limits. With each rep, I can feel my arms blowing up. They really feel like they're going to explode! And I'm still not finished yet.

START

One-Arm Overhead Seated Dumbbell Overhead Extension

FINISH**START**

Pushdown

FINISH

MY DIET PLAN TO BUILD THE PUMP

Training hard is a staple ingredient of growth. But lest we forget, the other key ingredient is nutrition. So many times I run into trainees who are willing to suffer and go through any amount of torture in the gym, only to fall way short nutritionally. I tell these individuals they may as well bang their heads against the wall, as the gains will just not come when they are not even trying to ingest enough protein, carbohydrates, and essential fats.

Feed your body the nutrients it needs to grow and to fuel those hellacious pumps in the gym.

Meals consumed before and after training are important, but the rest of the day as well as days before training are just as important in your quest for size and the ultimate pump!

Here is a meal and supplement plan to follow on a daily basis that will insure your body is getting the essential nutrients necessary.



Leading into the 2003 Nationals, my first and last protein serving of the day was a NITRO-TECH shake. NITRO-TECH played a huge role!



When I'm dieting for a show, my favorite diet food is steak. If I get extra-hungry, I'll just eat more of the right foods. If I was supposed to have 12 oz. of steak, sometimes I'll bump it up to 13 oz. instead.

Meal #1

- Four scoops of NITRO-TECH® supplying 80 g of protein
- Oatmeal: ½ cup (measured after cooking) with banana and sliced apples

Meal #2

- 12 oz. of steak, chicken, or fish (weighed after cooking)
- 12 oz. of baked potato (weighed after cooking)

Meal #3 (repeat Meal #2)

Meal #4 (pre-training meal)

- Four scoops of NITRO-TECH supplying 80 g of protein
- Mixed fruit (some melon, cantaloupe, watermelon, and strawberries)
- 12 oz. of baked potato (weighed after cooking) with brown sugar

Pre-Workout Supplementation (20 minutes prior to training)

- One scoop of CELL-TECH™
- A serving of branched-chain amino acids
- Eight caplets of PUMP-TECH™

Post-Workout Supplementation (immediately post-workout)

- One scoop of CELL-TECH
- A serving of branched-chain amino acids
- Four scoops of NITRO-TECH supplying 80 g of protein
- Eight caplets of PUMP-TECH

Meal #5 (repeat Meal #2)

Before Bed

- Four scoops of NITRO-TECH supplying 80 g of protein
- Three tbsp. of peanut butter

Mat Duvall is an athlete whose nutrition and supplementation requirements are extraordinary. Carefully read the entire label before use.

This basic plan should provide your body with the nutrients it needs not only to grow, but also to fuel those hellacious pumps you seek in the gym.

MY INSIDE TIPS FOR BETTER PUMPS

Athletes are always asking me what the secrets are to building size and getting crazy pumps in the gym. They want to feel that pump I spoke of – when you think your arms (or any body part, for that matter) might explode! Here are some things you can do to intensify the pumps you get.

Supplementing your diet is a very important part of getting pumped, and I would definitely recommend you do it. I use PUMP-TECH.

When training, I will flex the muscle being worked in between sets. This not only keeps blood in the muscle, but also actually pushes more into the muscle while you're waiting to do another set. A lot of athletes neglect to do this and wonder why they start to lose their pump between sets. I never do. First, I rest very little, if at all, while training. Furthermore, when I am resting, I keep flexing until I'm ready for the next set. You don't have to go through a whole posing routine; just keep the muscle group being trained tight while you go through the training session at hand.

After training, another good thing to do is stretch. Stretching pulls those muscle fibers apart and allows more blood into the muscle. Stretching will not only help the pump last longer, but will also involve more fibers, leading to better gains. It is a simple thing to do, and it does not require a great deal of time.

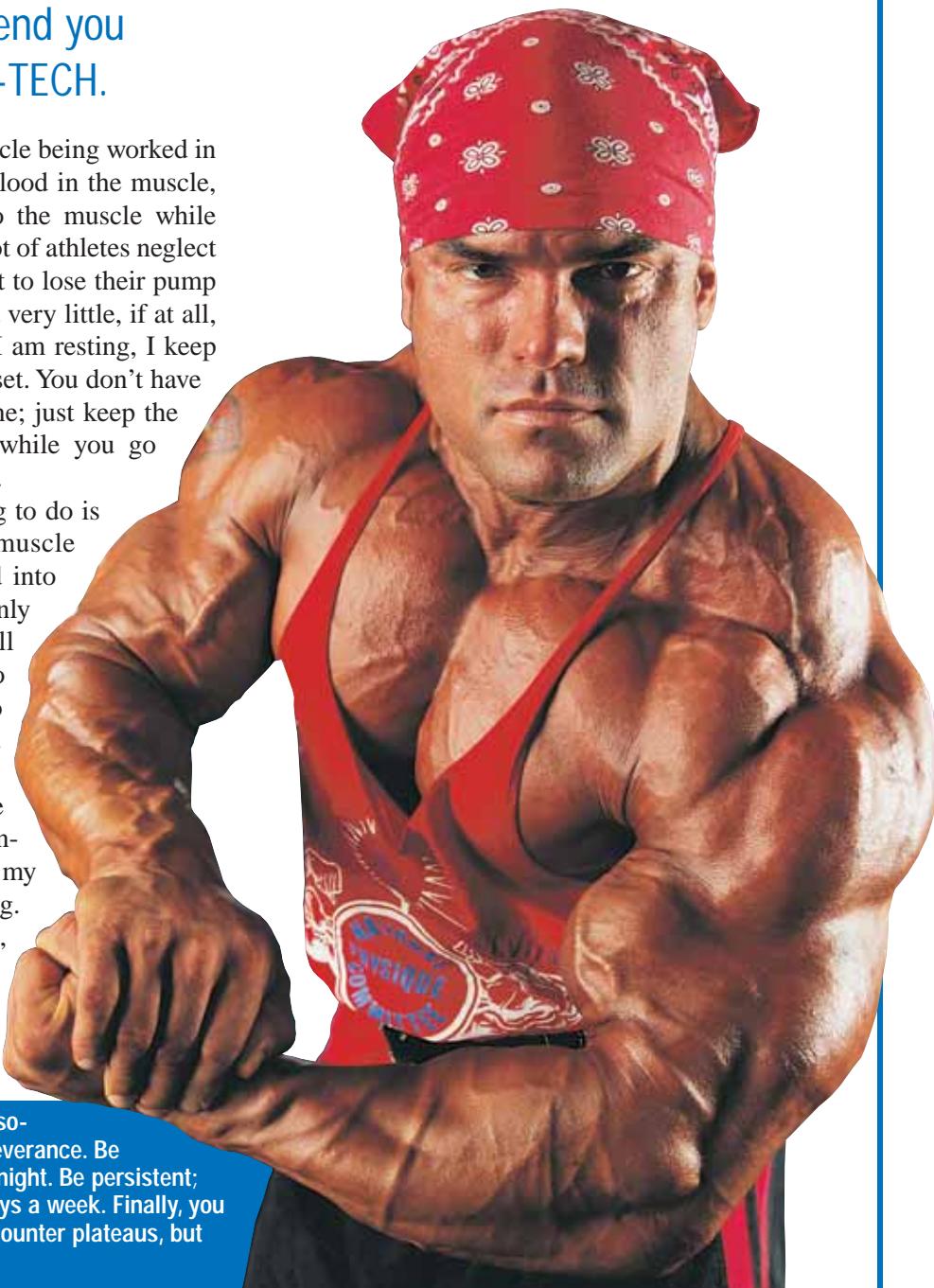
I love PUMP-TECH! When I use PUMP-TECH during and after training, I get a very vascular look to my physique. I feel better while training. When I started using PUMP-TECH, I hadn't changed anything in my diet, so I knew it was PUMP-TECH that was making the difference in my training. The pumps I was get-

I've always followed a "three P" philosophy – patience, persistence, and perseverance. Be patient; you're not going to grow overnight. Be persistent; you need to get into the gym 4 to 5 days a week. Finally, you need to persevere. You're going to encounter plateaus, but you've got to battle through it.

ting in the gym were stronger and there was more blood getting into my muscles. After my workouts, the pumps lasted longer than usual. I have definitely seen the physical benefits of using PUMP-TECH.

WRAPPING IT UP

The plan is easy. But it's applying this information that presents the real task. This yields benefits – namely, big arms! Be willing to hurt; be willing to do what you have to in order to get through the first stages. Will it get easier? No. But you will at least know what to expect day after day, through battle after battle in the gym.





The Team Doctor

SING

KAMALI

PUMP UP Your BACK

– King Kamali

There are two factors in achieving a pump, and the principle of mind-muscle connection is the first. You've heard this many times before: Somebody will be training his arms, saying, "I don't feel it." That's because a lot of people don't have the mind-muscle connection.

The pump actually tells you that what you're doing in the gym is working. It's a very gratifying feeling when your muscles are full!

The second factor is time. It takes a long time for a person to develop that mind-muscle connection. I'm still learning, after 15 years, what works for me and what doesn't. It's a lifelong journey. But the more time you put into it, the higher the quality you're going to get out of it.

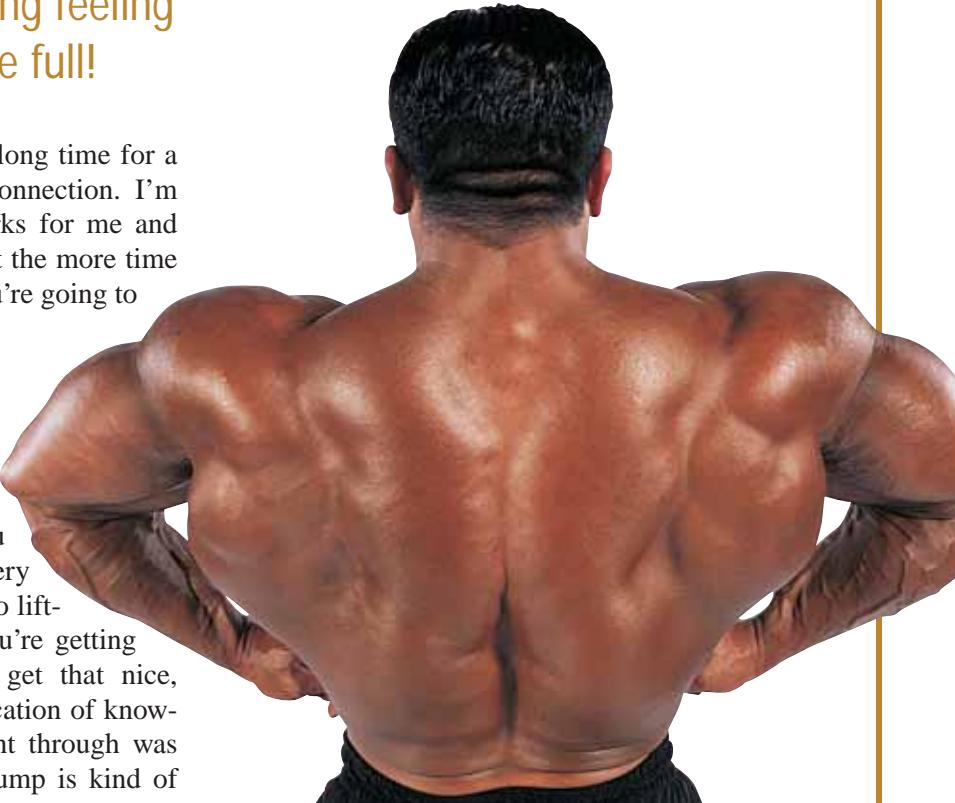
THE PUMP SIGNAL

It's very frustrating to do something when you don't know if it's working or not. It's like taking a headache pill; the label says the pill relieves pain, so you take it, and you get pain relief. It's very much the same concept when it comes to lifting weights. You want to know that you're getting something out of it. And when you get that nice, pumped feeling, it gives you the gratification of knowing that all that suffering you just went through was worth something. I think getting the pump is kind of addictive ... definitely, the results are!

I've learned over the years that the more intensely you train with heavier weights, the longer your pumps will

last. There's nothing like going 100 percent hard in the gym with heavy weights.

No surprise – the pump plays a big role in the musclebuilding process. The musclebuilding process is all about breaking down the muscle so it can regroup and grow bigger for the next time. Essentially, you need to work out to break down the muscle, and you need the pump to reload the nutrients into the muscle. Then, it's all about rest and recovery. That's what bodybuilding is about: breaking it down and rebuilding it bigger.



This is my rear lat spread pose. To this day, my back is still my favorite bodypart. I have a really strong mind-muscle connection there.

THE MOST INTENSE BACK-BUILDING PROGRAM

To this day, my back is still my favorite body part. I have a really strong mind-muscle connection there. The most important thing to do if you want to get a pump in your back is to pretend your hands are hooks when you grip the bar. Use wrist straps to help minimize the involvement of your grip. You will get a better pump that way.

**Have pictures taken of your back.
Seeing them helps you identify
weaknesses and visualize the
muscles growing.**

For almost every exercise that I do, I come down in a slow, controlled motion and I explode up and squeeze for a maximum contraction. Explosive movements build size. That's when the pump really comes on strong.

I always do my power movements after a proper warm-up – usually a few sets of pull-ups to get a nice stretch in my back and get the blood flowing. Then I move right into a power movement. I do my power movements first because that's when I'm strongest. I'll start with either the deadlift or the barbell row. Make no mistake about it – deadlifts are the key for building big slabs of beef on the back. In the off-season, I do my deadlifts off the floor. But, as a contest approaches, I do only quarter-range deadlifts in a power rack (lifting the bar from my knees to full lockout). I don't have time for injury. If I start with the barbell row, then I'll use an overhand wide grip on the bar and bend over at the waist so my torso makes a 45-degree angle with the floor.

**Whatever exercise I do, I squeeze
and really feel the muscle.**

Then I'll move to the pulldown machine, and I'll choose to do the exercise with either a close-handed reverse grip or a wide overhand grip. The wide-grip overhand pulldowns tend to concentrate on the upper lat muscle fibers, while the close-handed reverse-grip pull-down puts the stress onto the lower lats. Both of these exercises are great for building width through the back – top and bottom. Next, I'll move on to seated rows. Nothing new here – just pull the heavy weight.

Finally, I'll hit the lat pulldown machine again for a set of pulldowns behind my head. To hit the muscles in the upper back, I do my pulldowns behind my head. This gives the back musculature that nice, sharp detail. The

only way to get the detail in your upper back is to mimic the back double biceps shot, and the only way to get that is to do your pulldowns behind your head. It's all going back to the mind-muscle connection.

For the trapezius muscles, the shrugging exercises are best. All types of shrugs are great. It doesn't matter where you're positioning your hands on the bar – as long as you're going heavy. The key is to shrug straight up and straight down. You don't want to roll your shoulders, unless you want to destroy your rotator cuff muscles.

Power Rack Deadlifts: 4 total working sets.

- 700 lbs. x 8 to 10 reps

OR

Overhand-Grip Barbell Row: 4 work sets

- 500 lbs. x 12 to 15 reps

Wide-Grip Overhand Pulldowns to the Front: 4 work sets

- 345 lbs. x 12 to 15 reps

OR

Close-Grip Underhand Pulldowns to the Front: 4 work sets

- 345 lbs. x 12 to 15 reps

Seated Rows: 4 work sets

- 345 lbs. x 12 to 15 reps

Wide-Grip Overhand Pulldowns to the Back: 4 work sets

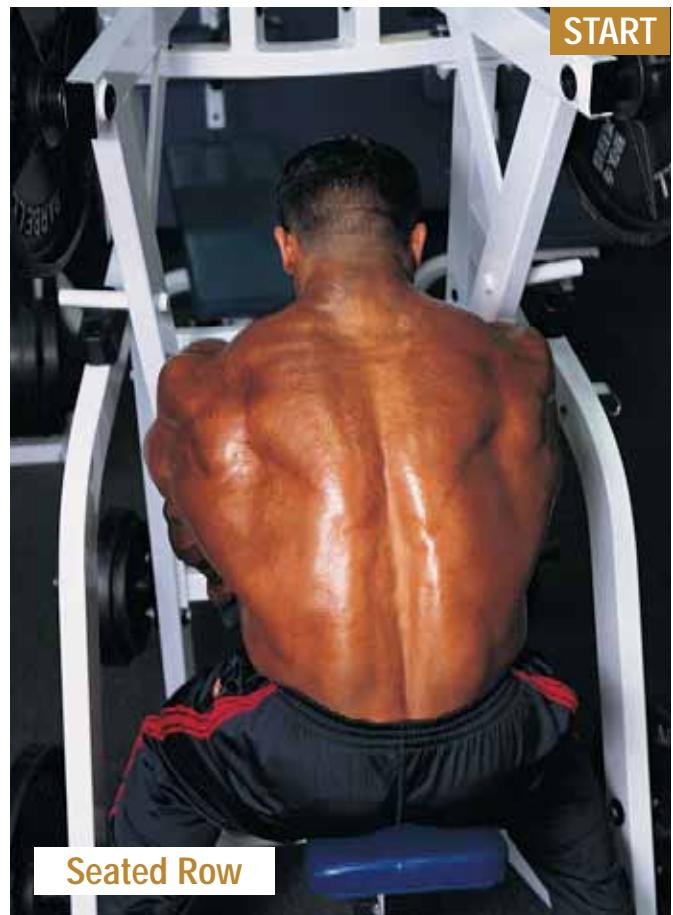
- 345 lbs. x 12 to 15 reps

Barbell Shrugs: 4 work sets

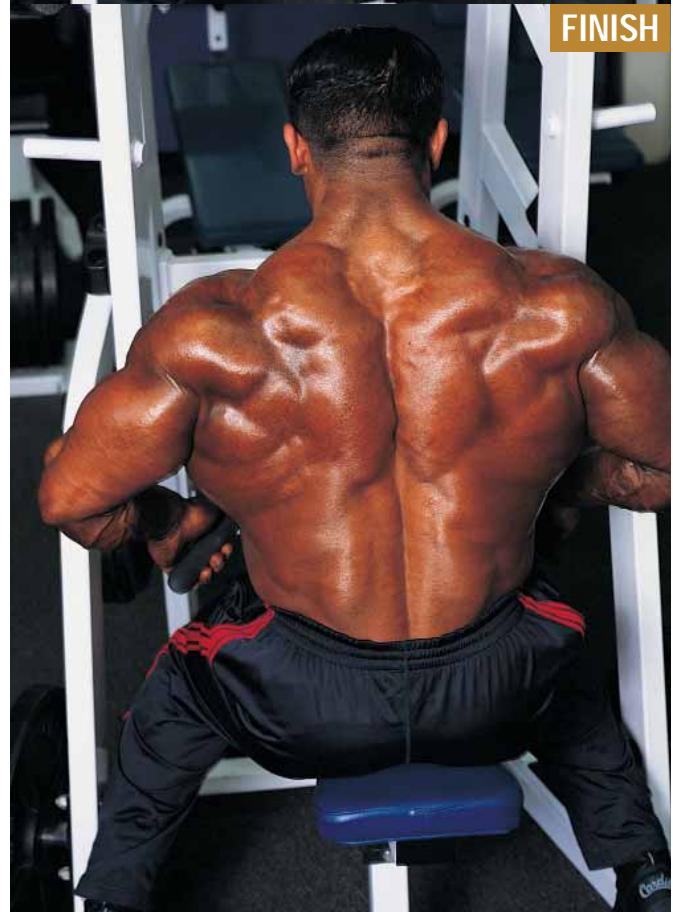
- 700 lbs. x 12 to 15 reps



Power Rack Deadlift



Seated Row



MY DIET PLAN TO BUILD THE PUMP

I can't emphasize enough how important nutrition can be in helping you successfully build muscle. Making sure you get proper nutrition is 90 percent of the battle. Eating right is to your body as gasoline is to a car. If you put the cheapest gas in a high-performance automobile, it's not going to run right. The same goes for your body.

If you eat garbage, you're going to end up looking like garbage. Eat like a champion to look like a champion.

If you eat garbage, you're going to end up looking like garbage. But if you eat like a champion, you're going to look like a champion. You'll notice my diet contains a lot of carbs. Frankly, it's all about the carbs. Carbs get you big and fill you out. The guys who make the big gains are the guys who are getting big in the off-season by eating lots of food, including carbs. You have to get big, and to do so, your body needs to get those nutrients to grow.

Here's what I eat to make sure I'm the champion on game day. (All meals are spaced evenly throughout the day from the time I wake up to the time I go to bed at night.)



You have to get big, and to do so, your body needs to get nutrients to grow.

Upon Waking Up (pre-training supplementation – I train twice a day)

- 8 free-form amino acid tablets
- 8 branched-chain amino acid tablets
- 8 PUMP-TECH™ caplets
- 3 HYDROXYCUT® capsules

Post-Workout Supplementation (immediately post-workout)

- 4 scoops of CELL-TECH™
- 3½ scoops of NITRO-TECH®

Meal #1

- 14 oz. filet mignon (measured before cooking)
- 2 cups white rice (measured after cooking)
- Small salad
- One piece of fruit (choice of a banana, an orange, or an apple)
- 1 serving of MESO-TECH®

Meal #2

- 14 oz. filet mignon (measured before cooking)
- 10 oz. potato (measured before cooking)
- 1 serving of MESO-TECH blended with a banana

Meal #3

- 1 McDonald's Big Mac® combo
- 1 Filet-O-Fish®
- 1 Quarter Pounder® with Cheese
- Large french fries
- 2 apple pies

Meal #4

- 14 oz. filet mignon (measured before cooking)
- 1 serving of steamed vegetables
- One piece of fruit

Pre-Workout Supplementation (before my second workout)

- 4 scoops of CELL-TECH
- 3½ scoops of NITRO-TECH
- 8 free-form amino acid tablets
- 8 branched-chain amino acid tablets
- 8 PUMP-TECH caplets
- 3 HYDROXYCUT capsules

Post-Workout Supplementation (immediately post-workout)

- 4 scoops of CELL-TECH
- 3½ scoops of NITRO-TECH

Meal #5

- My favorite Italian dish – whatever my wife Barbara makes that night!

Before Bed

- 1 serving of MESO-TECH
- 3½ scoops of NITRO-TECH

King Kamali is an athlete whose nutrition and supplementation requirements are extraordinary. Carefully read the entire label before use.

MY INSIDE TIPS FOR BETTER PUMPS

I go by “feel”... in other words, I listen to my body. If I’m tired at the gym and I start to yawn, I know that I’m not going to have a great workout. So rather than leave the gym, I’ll play a game with myself. I’ll use exercises and equipment that I don’t normally use. It keeps it fun. After I warm up, I’ll tell my partner, “Let’s go over there to that machine we’ve never tried before.” I don’t know how much weight I can use. So, it’s like a learning process, and it keeps it fun.

I tried nitric oxide stimulators in the past, and they were okay. But PUMP-TECH really does pump you up! It really works!

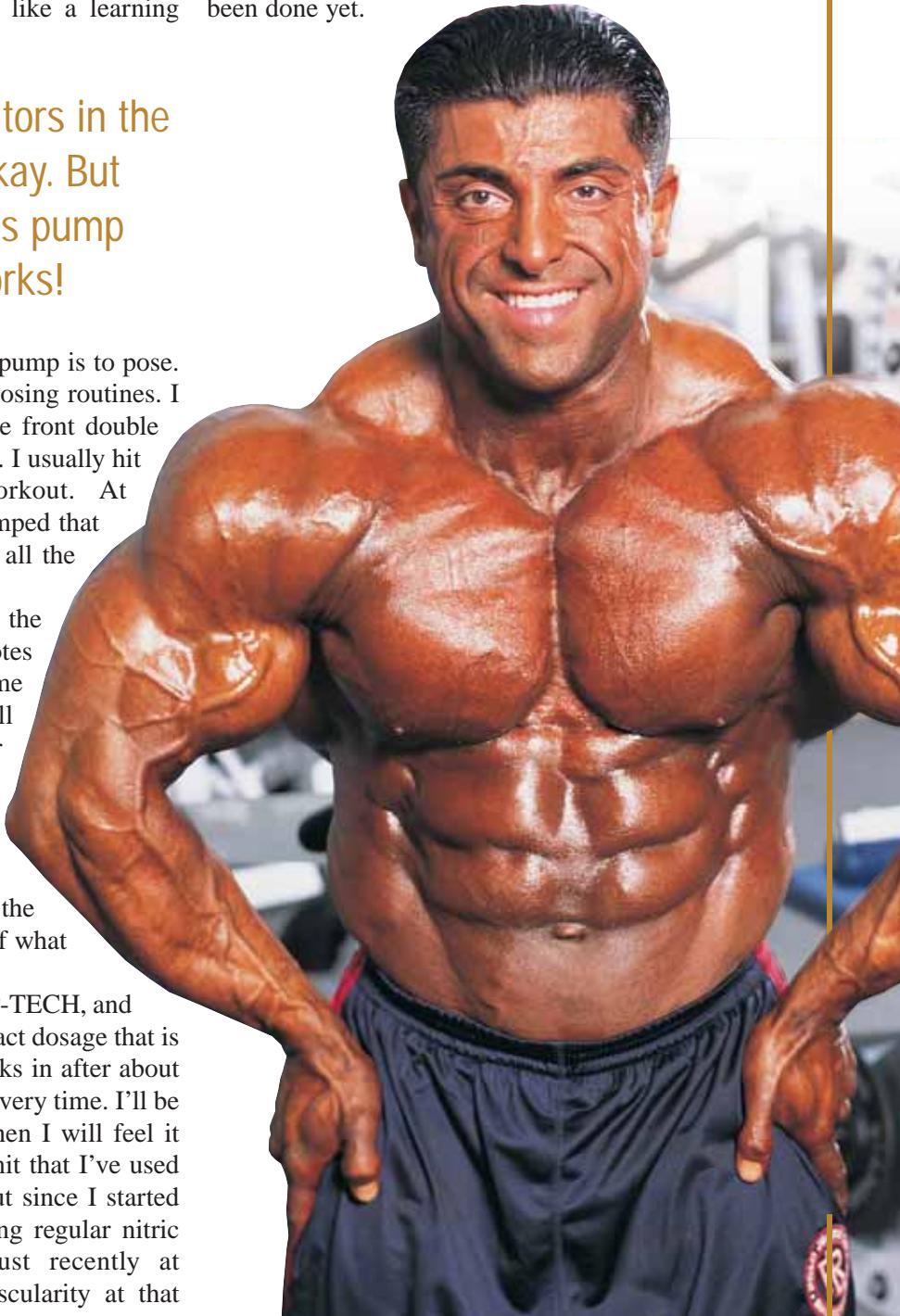
Another thing I do to maximize the pump is to pose. I pose every day, but I don’t practice posing routines. I just hit the mandatory poses – like the front double biceps pose or the lat spread, and so on. I usually hit my poses at the end of a workout. At this point, my back muscles are so pumped that posing is uncomfortable, but it makes all the difference.

I also buy a desktop calendar for the year, and every day, I’ll write down notes of positive things that happened to me that day. At the end of every month, I’ll look at those notes and try to discover trends of what happened to me on those days. I’ll then take those trends and apply them to my next month and see what happens. Focus on the positives and the positive trends, and by the end, you’ll have a nice little program of what works for you.

I also use a supplement called PUMP-TECH, and it does pump you up! I’m taking the exact dosage that is on the label, and it really works! It kicks in after about 20 minutes, and I feel it the same way every time. I’ll be on my second exercise, and that is when I will feel it kick in. You get this full feeling. I admit that I’ve used nitric oxide stimulators in the past. But since I started using PUMP-TECH, I’ve stopped using regular nitric oxide stimulators. I weighed in just recently at 300 pounds, and for me to have vascularity at that weight, there has to be something working. It’s not like I’m dieting and restricting my water, so it must be the PUMP-TECH.

WRAPPING IT UP

When I train, I train hard. I think I’m probably one of the hardest trainers out there. My goal this year is to move into the first tier of bodybuilders – the top six in the world – and win my first pro show. Five years down the road, I want to be known as someone who has made a difference in the sport of bodybuilding. I want to take this sport to the next level with something that hasn’t been done yet.



I weighed in just recently at 300 pounds, and for me to have vascularity at that weight, there has to be something working. It must be the PUMP-TECH!



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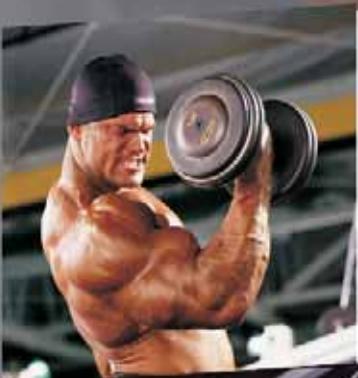
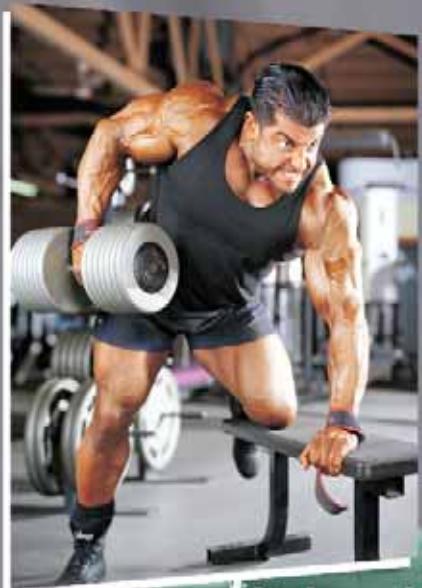
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DEDICATION

This book is dedicated to you – the bodybuilder.
Your discipline, passion, and dedication to bodybuilding
served as the inspiration we drew upon
to create the best book we could.