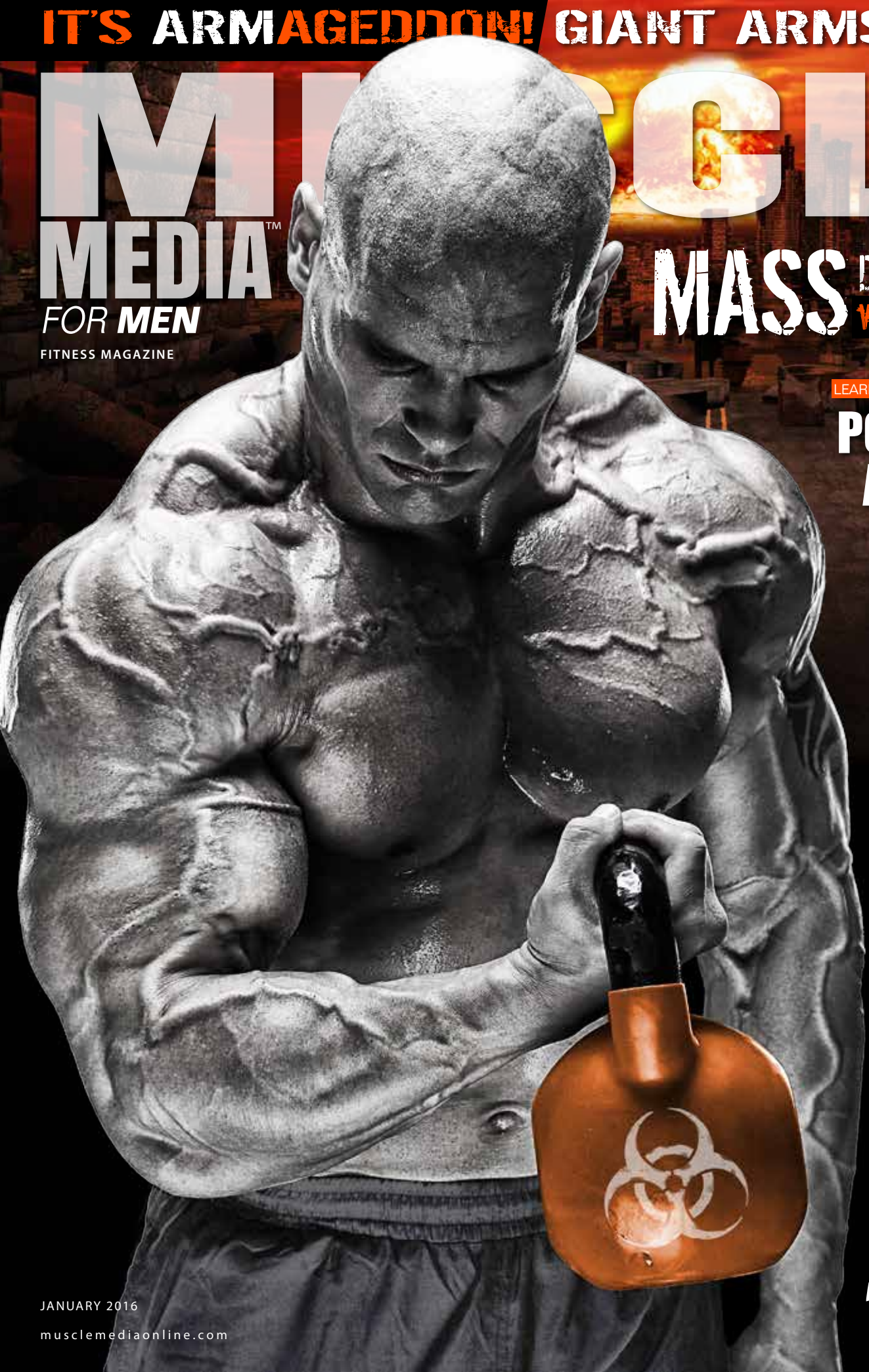
IT'S ARMAGEDDON! GIANT ARMS ISSUE

MUSCLE MEDIA™ FOR MEN

FITNESS MAGAZINE



MASS DESTRUCTION WITH 100 REP SETS!

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BRING OUT THE BIG GUNS

BICEP BLASTING WORKOUT

BLOW UP YOUR ARMS

JANUARY 2016

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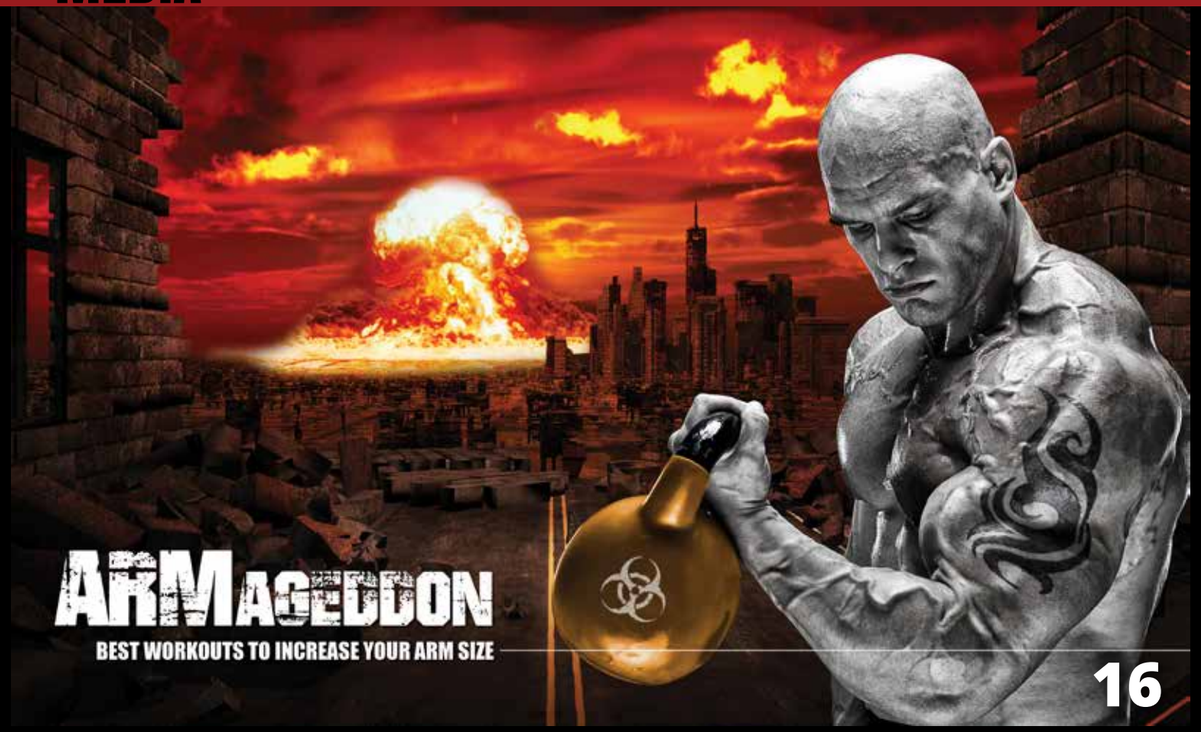

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Happy 2016 to all the readers of Muscle Media for Men. I want to personally thank each and every one of our fans for making Muscle Media one of the fastest growing free digital fitness magazines of the year. Your continued support and rapid growth of the Muscle Media for Men Facebook page throughout this past year has also inspired me to make the magazine better than ever before, so get ready for the best information on training and nutrition a free digital magazine can offer!

2015 was an extremely busy year for me, mostly because I have been working with Dr. Marvin Heuer on a revolutionary product line— I am very excited to announce the new Elevate Series, scientifically developed in partnership by Infinite Labs and Heuer M.D. Research. The Elevate Series is the newest edition of premium supplements that utilize clinically accredited ingredients backed by years of scientific research and systematic findings. Two products that I am particularly excited to introduce to all of those individuals looking to shed off some of that holiday weight is the Elevate Series Final Cutz and CLA stack. Throughout this past year, I have to admit, I got caught up in all the projects I was working on, and consequently I neglected my diet and training. I have always believed in living by example to my friends, family and customers. Infinite Labs represents health and fitness, and I was determined to get back in shape. I started this fat loss stack about two months ago, and I am amazed at the results I have had with the Elevate Series Final Cutz and CLA stack, combined with high-intensity exercise, and a reduced carb diet. I wanted my story to be an example for all those individuals who find themselves juggling a multitude of tasks every day while simultaneously trying to maintain a healthy balance between family, work and overall health. Remember—It's never too late to get in shape. For more information about the product line that I used for my fat loss, visit infinitelabs.com/shop/elevate-series/.

In a recent poll, researchers asked men what their favorite body part was to train: The winner was overwhelming, arms! As such, this issue is dedicated to strengthening and toning the arms. Be sure to check out the Armageddon feature on page 16. Also, if you're looking for a killer arm workout, check out the 100 Rep Workout feature by IFBB Pro Joe Palumbo on page 12. Until next month, stay focused on your goals for 2016, and all the best for this upcoming year.

In Good Health,

SiaMack Alavi
CEO and Editor in Chief
Muscle Media Magazine

BEFORE

AFTER

MAXIMUM STRENGTH

PRE WORKOUT

JUGGERNAUT®X is the ideal pre-workout supplement to support your training intensity, strength, muscular endurance and stamina. Specifically designed to support more oxygen and blood flow to the working muscles, **JUGGERNAUT®X** includes ingredients such as **Citrulline, Agmatine Sulfate, CarnoSyn®, Malic Acid, Caffeine, Tyrosine, and Creapure®**.

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Ask Gustavo

How Often Should I Train My Arms?

By Gustavo Badell, IFBB Professional Bodybuilder

One of the most frequent questions I get in my personal training business is about how frequently should I train each body part. During my competitive years on stage as an IFBB Pro, I trained each body part once per week. Some of the smaller bodyparts such as abs, calves, and arms, every once and a while I would train them twice a week, but only the small body parts, never large muscle groups. Many bodybuilders make the mistake of training a lagging body parts twice a week to make it grow; this is a mistake.

The key to making weak body parts grow is to change your training regimen, either with more sets, heavier weight, change your rest period, change the muscle angles you are performing the exercise, etc. In the words of Eight Time Mr. Olympia, Lee Haney, "Stimulate, Don't Annihilate." Training a body part twice a week can lead to overtraining, here is a study published in the Scandinavian Journal of Medicine and Science in Sports to support my theory on once a week training.

In the 2011 study, researchers had eight men perform two exercise bouts (with 48 hours rest in between training sessions) consisting of three sets leg extensions until exhaustion with 40% load.
The researchers were examining anabolic hormone responses in response to training a body part 48 hours after a previous training session. One would think that the twice a week program would lead to an enhanced anabolic response, but it did just the opposite.

After the first training session, the subjects reported muscle soreness, but after the second training session, the subjects had reduced muscle strength but more importantly a reduced anabolic response to the second training session.

The production of growth hormone decreased by 45 percent less than after the first training session and also adrenal hormones adrenaline and nor-adrenaline were lower as well. This means the men have not recovered the first session and the second training session resulted in a blunted anabolic hormone response that is not good for muscle growth.

In order to make consistent gains, I think training each body part such as the chest, legs, back, and shoulders once per week, because they need at least one week to recover fully but some of the smaller body parts such as arms, legs, abs, and calves can be trained twice a week.

Pullinen T, Mero A, Huttunen P, Pakarinen A, Komi PV. Resistance exercise-induced hormonal response under the influence of delayed onset muscle soreness in men and boys. Scand J Med Sci Sports. 2011 Dec;21(6):e184-94.

TRY 5 ROPE EXERCISES TO BOOST YOUR TRAINING SESSIONS

By Gabriel Rivera

It's a Monday, and it happens to be a cardio day. You've been lacking the zest needed to produce quality results. This could be because you're tired of the same routine---a treadmill cardio workout. Though you know you need a change from the same old rut, you aren't sure how to approach it. You may have reached a level of boredom that you never thought was possible. This may be attributed to the inability to engage in a diverse exercise.

Research shows that the more likely you are to enjoy your exercise activities, the more likely you are to continue your workout routine for the long haul. As a bodybuilder, you have no time to waste. To become a lean muscle machine, an effective cardio routine is crucial. Finding a diverse and engaging cardio workout can be a challenge, so let's take a look at 5 powerful rope exercises for muscle-building success.

1 Shoulder Circles

Stand with your feet 6 inches apart, and with your knees partially bent, grabbed the rope, lift your arms above your shoulders, and move your hands and arms in circles. You will do this for 45 seconds, and then reverse the rotation for 45 more seconds. This hardcore resistance training exercise will impact shoulder strength and lean muscle so you can quickly enhance your physique.

2 Alternating Arm Tidal Waves

Another rope exercise involves one-arm alternative arm tidal waves for optimal strength and muscle results. Simply stand with ropes on each hand on the end of each rope, and make sure your knees are partially bent, and begin to swing your arms back and forth. This will generate a motion similar to a wave. It is important to execute the movement on each side for 45 seconds each for optimal results.

3 Rope thrusts

As a bodybuilder, power movements are a great way to build muscle quickly, and rope thrusts are an ideal exercise to intensify your training sessions. You can start by having your feet 6 inches apart, grabbing the ropes, then putting your hands and arms over your head, and powerfully crashing the ropes to the floor, while lowering your body as if performing a squat. You can repeat the process until fatigue sets in.

4 Single-Arm Rope thrusts

As with rope thrusts, you can also try single-arm rope thrusts, which utilizes the same type of motion. The only difference is that with the single-arm thrusts, you'll only use one arm. You would just alternate sets and repetitions with each arm. For instance, you could do 4 sets of 20 reps on each arm, or perform 45 seconds with each arm.

5 Rotating Wave Squat Jumps

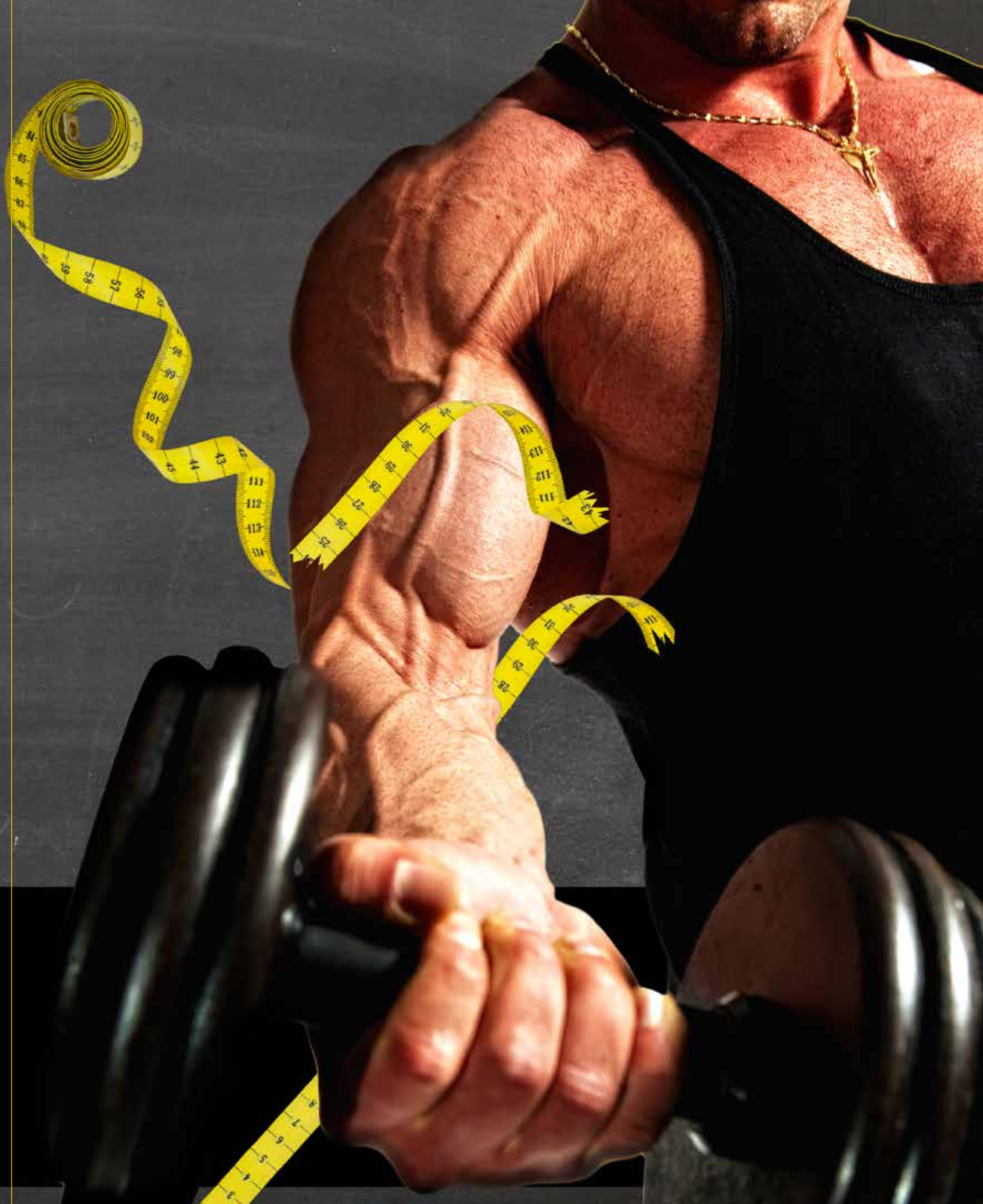
To diversify your workout, try to incorporate rope leg exercises such as rotating wave squat jumps. Start by alternating waves, then when you feel the rope is at an appropriate height, jump and squat forcefully. You can do this repeatedly as you try to keep the wave going consistently. This not only works your legs, but it also works your entire body, providing you with a full-body workout.

These powerful rope exercises are a great resistance training workout as well as a beneficial cardio exercise. As a fitness guru and bodybuilder, diversifying your training is crucial for optimal results. According to a 2013 study by the Journal of Strength and Conditioning Research, rope exercises bring forth higher metabolic demands. After intense strength training, rope exercises will help provide a calorie-burning workout to complete a powerful exercise session. You will be able to combine stamina with upper-body strength, so you can increase lean body mass quickly and effectively. By being creative during training bouts, you'll be able to keep your workouts fresh, innovative, but most importantly, you'll maintain quality workouts for the long haul. As a bodybuilder, that means bigger muscles and faster results. ■

Sources:
http://greatist.com/move/effective-battle-rope-exercises

ADD AN INCH TO YOUR ARMS WITH 100S

BY JOE PALUMBO, IFBB PROFESSIONAL BODYBUILDER



"Back in the early 80's when I first started out training, I would see pro athletes training in this hardcore gym, occupationally they would do this 100 rep training method, I can tell you ...it was insane to see these guys go through this type of training..Yelling, screaming as if they were in agony, then when they finish the set, they collapsed to the floor with great joy of excitement on achieving the ultimate pump set. Wow, that was what I needed to experience".

One HUNDRED reps! It may sound crazy, but it's pretty simple: 1 set of a hundred reps, Simple and yet challenging. For decades, we have been taught 8-10 reps are the ticket to hugeness. This still holds true, but doing an occasional 100-rep workout achieves magnitude. The addition of lean muscle mass does not always come easy, especially if you have been lifting for awhile. Sometimes it's necessary to resort to more advanced training protocols to kick-start your body again and start seeing new gains. Some use the 100 reps as a shock to the system; others use it to bring a lagging muscle group up to speed. It can also be used as brutal Finishers to any workout.

BENEFITS FROM 100 REP'S

This workout is not for the faint of heart, but if you give it a try, you'll realize that it is one of the best plateau busters there is.

It pushes your mental pain barrier so you'll be capable of performing at a higher intensity during your other workouts.

High reps have the effect of increasing capillarization in muscle tissue (simply defined, capillaries are the tiny blood vessels where blood cells release there nutrients to the rest of the cells in the body.) When you perform a 100 reps, your body responds by increasing density in the target muscle that lays the groundwork for future muscle growth. So keeping the tiny blood vessels with better blood flow, will release better nutrient absorption into your muscle cells, to get the maximum out of your workouts.

It increases the glycogen reserves within your target muscle. Muscle glycogen is the storage form of carbohydrates in the body, and this is what powers you throughout your workouts. When it becomes depleted, you will not physically be able to continue, as the body will be exhausted however a larger glycogen reserve allows for a higher training volume going forward.

HOW TO

Choose your body part or parts and pick your exercises, do one set (100 reps) per exercise. Throughout the years, I have personally engaged in the 100 reps program more than several times each year. Because have I achieved a higher level of muscle duration and endurance; I like to use two body parts at a time such as chest and triceps doing 1 set (100 reps) per each section of the muscle.

How much you accomplish depends on your level of experience with weight lifting. If this is your first time trying this technique, start out slow by only training 1- 2 body parts and only do 1 exercise per body part, choose a weight light enough to hopefully get you through one hundred full range repetitions. You may increase the intensity (weight) only when you can complete one hundred full range repetitions.

There is no magic number of weeks to this type of training, use it for as long as it feels right to you. If you have to stop and rest, do so. Keep the rest periods short and sweet. I always suggest having a training partner; it's always good when someone's got your back, Especially when you want to force out the last couple of reps!

Fortunately, there are tools in the training toolbox that will sharpen up your training, and the 100 reps is a key tool. If you want to get the most out of your training, you need to work hard, and you need to work smart. By training on both ends of the neural-metabolic continuum and incorporating undulating waves of intensity into your training cycle, you will see better results. ■

Train safe, Train smart

This is a sample of exercises that I use to hit every section of the muscles, I will complete 100 rep set for chest and triceps, and then about a month later I will hit the 100 rep set routine for back and biceps.

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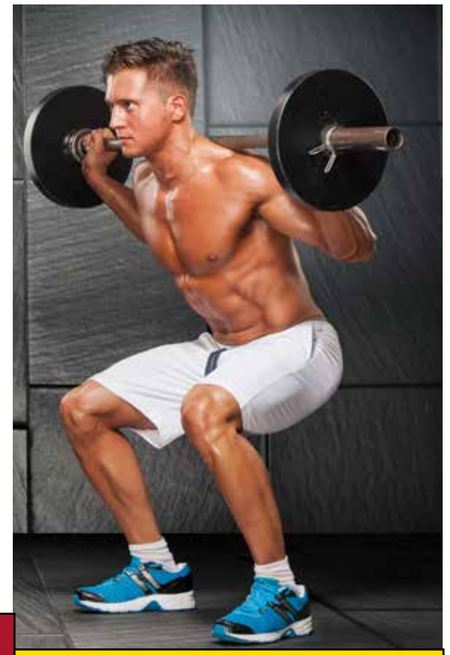


1X 100 REPS

BICEP
BARBELL CURLS
PREACHER CURLS
ALTERNATING DUMBBELL CURLS

TRICEPS
CABLE PUSH DOWN
SKULL CRUSHER
MACHINE DIPS

CHEST
INCLINE BENCH PRESS
FLAT BENCH PRESSES
DECLINE PRESSES
CABLE FLY'S

BACK
PULL DOWN (OR PULL UPS)
ROWS
T-BAR ROWS
CLOSE GRIP PULLEYS

BICEP
BARBELL CURLS
PREACHER CURLS
ALTERNATING DUMBBELL CURLS

FOREARMS
REVERSE CURLS
HAMMER CURLS

SHOULDERS
FRONT MILITARY PRESSES
SIDE LATERALS
BENT OVER REAR LATERALS
SHRUGS

QUADS
SQUATS
LEG PRESS
HACK SQUAT
LEG EXTENSION

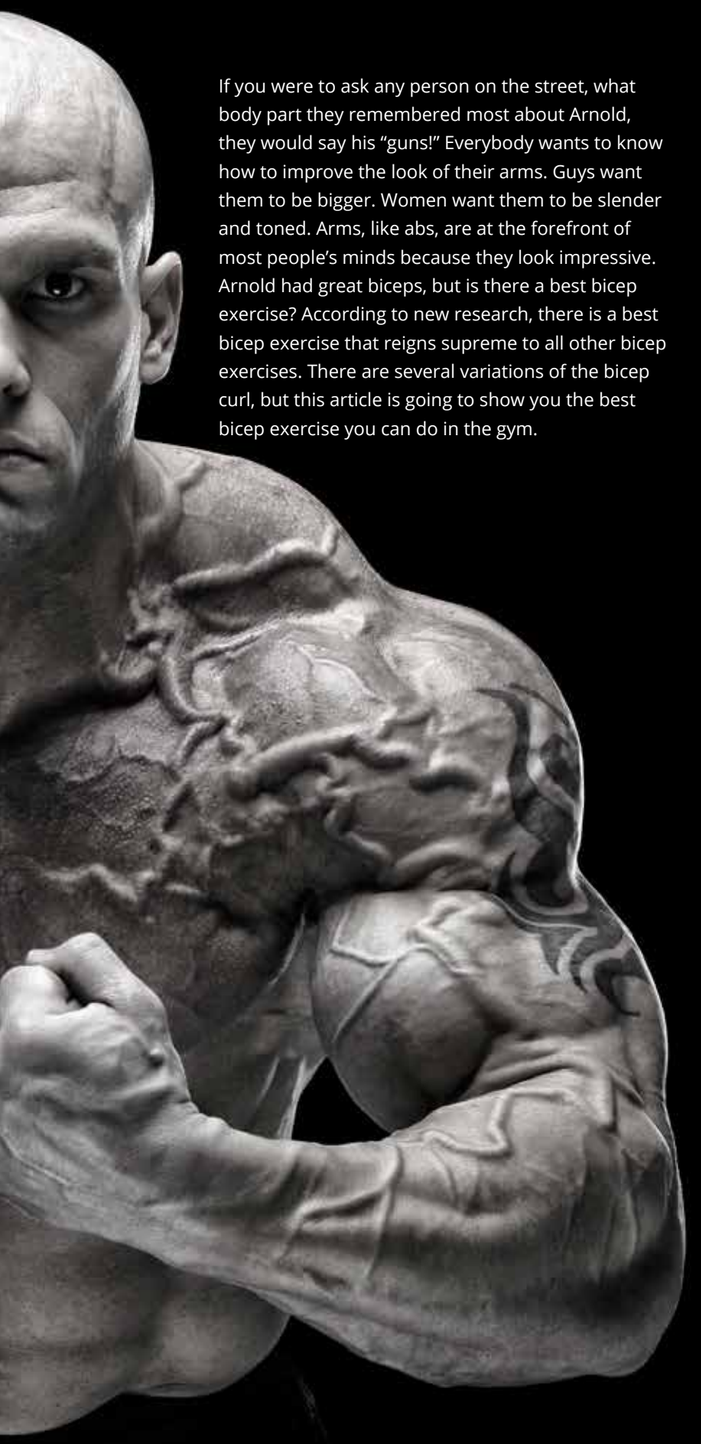
HAMSTRINGS
LEG CURLS
STANDING SINGLE LEG CURL
STRAIGHT LEGGED DEAD LIFTS

CALVES
STANDING CALF RAISES
SEATED CALF RAISES
SINGLE LEG CALF RAISES

ABS
LEG RAISES
CRUNCHES
SIT-UPS BENT KNEES
OBLIQUE SIDE TO SIDE CABLE CRUNCHES
PLANKS (100 SECONDS)

ARMAGEDDON

BEST WORKOUTS TO INCREASE YOUR ARM SIZE



If you were to ask any person on the street, what body part they remembered most about Arnold, they would say his "guns!" Everybody wants to know how to improve the look of their arms. Guys want them to be bigger. Women want them to be slender and toned. Arms, like abs, are at the forefront of most people's minds because they look impressive. Arnold had great biceps, but is there a best bicep exercise? According to new research, there is a best bicep exercise that reigns supreme to all other bicep exercises. There are several variations of the bicep curl, but this article is going to show you the best bicep exercise you can do in the gym.

Incline Dumbbell Curl and Dumbbell Preacher Curl are two variations of the standard Dumbbell Biceps Curl, generally applied to optimize biceps brachii contribution for elbow flexion by fixing shoulder at a specific angle. The aim of this study is to identify changes in the neuromuscular activity of biceps brachii long head for Incline Dumbbell Curl, Dumbbell Preacher Curl and Dumbbell exercises, by taking into account the changes in load moment arm and muscle length elicited by each dumbbell curl protocol.

Here are the three dumbbell exercises that the researchers examined:

-DUMBBELL CURL
-INCLINE DUMBBELL CURL
-DUMBBELL PREACHER CURL

They selected 22 male weight-trained subjects (doing resistance training for at least a year). These men were made to perform three different types of curls. Electrodes were attached to their biceps to measure how hard the biceps worked with each exercise. The Incline Dumbbell Curl and the classical Dumbbell Biceps Curl resulted in similar patterns of biceps brachii activation for the whole range of motion, whereas Dumbbell Preacher Curl elicited high muscle activation only for a short range of elbow joint angle. The researchers concluded that the Incline Dumbbell Curl and the Dumbbell Biceps Curl resulted in a considerable neuromuscular effort throughout the whole elbow range of motion. The Incline Dumbbell Curl and the Dumbbell Biceps Curl may be preferable for the improvement of biceps brachii force in training programs.

So what the researchers found was that the dumbbell curls and incline dumbbell curl are superior exercises for activating the entire bicep whereas the dumbbell preacher curl activated the bicep for a short range of motion. Be sure to make dumbbell and incline dumbbell curls a core part of your bicep training routine for the best arm growth.

BEST TRICEP EXERCISE FOR MASS

Gustavo Badell was known for having some of the biggest guns in the sport, but having a good bicep needs to be in conjunction with great horseshoe triceps.

If you check out any of Gustavo's training videos, he loved doing dips off the bench with added weights. You may want to check out the previous article published on Infinite Labs website: *Best Bicep Exercise*. This is the next installment of the series being the *Best Tricep Exercise.*

This study was sponsored by the American Counsel of Exercise, so hats off to the organization for funding this research. On the initial day of testing, researchers determined each subject's one-repetition max (1 RM) for each of the following exercises:

-TRICEPS KICKBACKS
-OVERHEAD TRICEPS EXTENSIONS
-BAR PUSH-DOWNS
-ROPE PUSH-DOWNS
-CLOSED-GRIP BENCH PRESS
-LYING BARBELL TRICEPS EXTENSIONS
-DIPS
-TRIANGLE PUSH-UPS

Researchers applied two sets of electromyographic electrodes on the long and lateral heads of each subject's triceps brachii (the back of the upper arm) to record real-time muscle activity. The exercises were completed in random order with a five-minute rest between each exercise to ensure proper muscle recovery. Subjects lifted 70 percent of their previously determined 1 RM for the bulk of exercises; body weight was used for the dips and triangle push-ups.

The number one exercise was the triangle push ups, followed by dips and dumbbell kickbacks.

Now that you know what exercises are the best at activating the biceps and triceps, here are a few other tips to increase your arm size.

1.) TRAIN ARMS FIRST FOR BIGGER ARMS

Legendary bodybuilder Arnold Schwarzenegger mentioned in his book the Encyclopedia of Bodybuilding that once he had weak calves in his earlier years of bodybuilding and then he switched from training calves at the end of his workout to the beginning. Other bodybuilders have made substantial gains in arm growth by breaking their arm training up into two days to focus on biceps on one day and triceps on the other day. The Journal of Strength and Conditioning Research reports that exercise order has a definite impact on muscle growth.

Participants were randomly assigned into two groups.

- One group began performing large muscle group exercises and progressed to small muscle group exercises (LG-SM).
- Another group started with small muscle group exercises and advanced to large muscle group exercises (SM-LG).

The exercise order for large muscle group to small exercise group was bench press, machine lat pull down, triceps extension, and biceps curl. The order for the small exercise group first to large muscle groups was biceps curl, triceps extension, machine lat pull-down, and bench press. At the end of twelve weeks, both training groups demonstrated greater strength improvements than the control group, but only bench press strength increased to a greater magnitude in the large muscle group to small exercise group group as compared with the mall exercise group first to large muscle groups. Triceps muscle volume increased in the mall exercise group first to large muscle groups group. So based on this study, whichever muscle group you train first is going to get the most gains in strength and muscle mass compared to last! So if you want bigger arms...train them first!!

2.) TRY 100 REPS

Tom Platz used to recommend regular sets of 100 reps to stimulate muscle growth. Researchers reported that when subject's trained at 30% of a 1-RM and 90% of a 1-RM that both training protocols stimulated muscle protein synthesis but shockingly, the researchers reported that training with the lighter weight and more reps and volume led to greater increases in protein synthesis than training heavier.

Specifically, the 30% of a 1-RM to failure protocol induced similar increases in muscle protein synthesis to that produced by the 90% of a 1-RM to failure protocol at four hours post-exercise but this response was sustained for 24 hours only in 30% of a 1-RM. This means that the high volume exercise had sustained increases in protein synthesis above and beyond the high-intensity protocol. In the past, most researchers speculated that muscle protein synthesis was entirely weight or load dependent, meaning the more weight you lifted, the greater the increases in protein synthesis, but this is not the case. Another interesting finding was genes for muscle hypertrophy (i.e. the expression of MyoD mRNA, which is associated with satellite cell activation) tended to be greater than the value at rest at 24 hours post-exercise in the 30% of a 1-RM. condition. In conclusion, the researchers demonstrated that low-load high volume resistance exercise has a potent stimulatory effect on anabolic signaling molecules, MyoD and myogenin mRNA expression and muscle protein synthesis.

HIGH VOLUME EXERCISE FOR BIGGER ARMS

Lee Haney was also eight-time Mr. Olympia but his workout philosophy was much different. Lee Haney trained by the motto of, “Stimulate, Don’t Annihilate.” Haney believed in using proper form and advocated, “Quality not Quantity.”

Haney and Coleman both won eight Olympias with very different training strategies. One trained extremely heavy while the other promoted high volume with lighter weights. Noteworthy is the research of Professor Fry back in 2004 which analyzed numerous studies on muscle growth of both type I and II fibers and found that there was a dose-dependent response to intensity (i.e. amount of weight lifted) and muscle growth. The data suggested that maximal hypertrophy occurs with loads from 80-95% 1RM. However, there appeared to be a range where most benefits were observed around 80-85 % maximal intensity or about 8-12 repetitions. Since this time, some studies have come out which suggest that muscle growth can occur with light weight as with the case of tourniquet training or training with low oxygen can trigger muscle growth.

A collection of studies published last year in the European Journal of Sports Science found substantial increases in muscle strength and hypertrophy following low-load training. However, the magnitude of increases were not as great as that associated with using heavier loads, and a trend for superior gains was in fact shown when lifting weights >65% 1RM. So that leaves the question if you want to pack on size, is it better to use a heavier weight like eight-time Mr. Olympia Ronnie Coleman or revert to the days of Haney where lighter weight with more of any emphasis on volume? A new study by one of the leading experts in the field of hypertrophy, Brad Schoenfeld has shed some light on this age-old question, and his finding may surprise you.

Researchers compare the effect of low- versus high-load resistance training on muscular adaptations in well-trained subjects. Eighteen young men experienced in resistance training were matched according to baseline strength, and then randomly assigned to 1 of 2 experimental groups: a low-load resistance training routine where 25-35 repetitions were performed per set per exercise or a high-load resistance training routine where 8-12 repetitions were performed per set per exercise. During each session, subjects in both groups performed three sets of 7 different exercises representing all the main muscles. Training was carried out three times per week on non-consecutive days, for eight total weeks.

At the end of the study, Both high-load resistance training and low-load resistance exercise conditions produced significant increases in thickness of the elbow flexors (5.3 vs. 8.6%, respectively), elbow extensors (6.0 vs. 5.2%, respectively), and quadriceps femoris (9.3 vs. 9.5%, respectively), with no significant differences noted between groups.

Improvements in back squat strength were significantly greater for high-load resistance training compared to low-load resistance exercise (19.6 vs. 8.8%, respectively) and there was a trend for greater increases in 1RM bench press (6.5 vs. 2.0%, respectively). Upper body muscle endurance (assessed by the bench press at 50% 1RM to failure) improved to a greater extent in low-load resistance exercise compared to high-load resistance training (16.6% vs. -1.2%, respectively).

These findings indicate that both high-load resistance training and low-load resistance exercise training to failure can elicit significant increases in muscle hypertrophy among well-trained young men; however, high-load resistance training is superior for maximizing strength adaptations. In sum, this study is quite revolutionary because it shows that you can build muscle with high reps of 25-35 repetitions just as well as using a heavier weight with 8-12 repetitions, although strength gains were greater using heavier weights.

The primary take-home points from the study are as follows:

- Gains in muscle mass are about the same regardless of repetition range provided training is carried out to muscle failure.
- In order to build maximal strength requires the use of heavy loading
- Muscle endurance is best obtained from the use of light loads

ADD SIZE TO YOUR ARMS WITH ECCENTRIC EXERCISES

Back in the early 90’s, there was a book called Bigger Muscles in 42 Days by Dr. Elliot Darden. The book took a revolutionary approach to training by advocating that people needed to spend less time in the gym but more importantly to emphasize eccentric contractions. If you look at most people training in the gym lifting, they pay very little attention to the eccentric or lowering phase of the lift. Lowering the weight under control brings gravity into play in another fashion. During positive work or concentric contractions, muscle fibers are shortening. During negative work or eccentric contractions, the same fibers are lengthening. Although lifting and lowering may seem like a very simple process, the physiological differences to muscle adaption are much different.

Emphasizing the eccentric contraction is associated with positive changes in strength and lean muscle mass. Eccentric contractions are so important that if you remove the eccentric contraction from the lift, strength gains are reduced.

In one study, researchers compared a concentric only strength training program to a concentric and eccentric program for five weeks. Subjects who performed the concentric/eccentric training had nearly twice the strength gains as those who only trained only with a concentric contraction only exercise regimen. Another study found that placing an emphasis on the eccentric overload experienced a 46 percent increase in strength in just 1 week! Also, eccentric exercise primarily activates the fast twitch muscle fibers are more likely to lead to greater muscle soreness and muscle growth.

3.) ECCENTRIC EXERCISE INCREASES MUSCLE DAMAGE

If you look at muscles under a microscope after an intense bout of eccentric exercise, it would seem like a bomb exploded in the muscles. The muscle fibers are pulled apart, and the fibers have increased growth factors at the site of injury repairing the muscle fibers.

Researchers have long been aware that maximal eccentric contractions result in more muscle damage and more muscle fiber growth, but researchers wanted to compare the differences between maximal concentric contractions and maximal eccentric contractions and how they affected satellite cells. Satellite cells are essential for muscle growth and repair, without the activation of satellite cells, muscle won’t grow. Satellite cells are so important for muscle growth that if you prevent satellite cells from being activated after an intense muscle overload, there is no muscle growth despite being damaged by tension overload. Optimal repair and adaptation of skeletal muscle is facilitated by resident stem cells (satellite cells). To understand how different exercise modes influence satellite cell dynamics, researchers measured satellite cell activity in conjunction with markers of muscle damage and inflammation in human skeletal muscle following a single work- and an intensity-matched bout of eccentric or concentric contractions.

Participants completed a single bout of eccentric or concentric of the knee extensors. A muscle biopsy was obtained before and 24 h after exercise. At the end of the study, peak torque decreased following eccentric exercise but not concentric exercise. The researchers observed no significant changes in muscle soreness in the concentric group, but they did find significant increases in the eccentric group both immediately post-exercise and at 24-hours post- exercise. The researchers found that levels of the inflammatory cytokines interferon gamma-induced protein 10 (IP-10) and monocyte chemotactic protein 1 (MCP-1) were significantly increased in the eccentric condition, but not in the concentric condition.

This means the body activated more immune factors to rush to the site of muscle injury from eccentric exercise to repair the muscle fibers. The researchers found that in the eccentric group, satellite cell content per muscle fiber increased significantly (by 27%), but there was no significant increase in the concentric group. In conclusion, eccentric but not concentric results in functional and histological evidence of muscle damage that is accompanied by increased satellite cell activity 24 hours post-exercise.
The research study should be a real wake-up call for those athletes that want to grow, to emphasize eccentric contractions during their weight training by lowering the weight slowly with the heaviest weight possible.

The newest article on eccentric training was just published in the Journal of Strength and Conditioning Research. The researchers wanted to see what type of squat training program elicited the biggest change in the neuromuscular fatigue. In Exercise Physiology, neuromuscular fatigue is a decrease in muscular performance usually perceived as a failure to maintain or develop an individual's force or power. Researchers analyze neuromuscular, physiological and perceptual responses to a single bout of five different dynamic squat exercise protocols.

In a randomized and counterbalanced order, fifteen male resistance-trained athletes completed:

- A multiple traditional sets protocol (4 sets x 6 repetitions at 85% 1 Repetition Maximum)
- Eccentric overload protocol(EO: 4 x 6, 70% 1RM concentric, 100% 1RM eccentric),
- Flywheel YoYo Squat (FW: 4 x 6, all-out),
- and a plyometric jump protocol (PJ: 4 x 15, all-out).

Immediately post-exercise, RPE (i.e. how hard exercise felt), lactate concentrations were significantly higher in flywheel YoYo Squat and lower in plyometric jump protocol compared to multiple sets, drop sets and eccentric overload, accompanied by similar RPE responses. At the end of the study, metabolic and perceptual demands were higher in flywheel YoYo Squat and eccentric overload compared to multiple sets, drop sets and plyometric jump protocols and eccentric overload induced the greatest neuromuscular fatigue.

So incorporating eccentric exercise can be used to shock your system into growth, but using them can be a drain on your neuromuscular system, therefore, use them sparingly in your workouts. The severity of muscle damage and drain on your neuromuscular system means that maximal eccentric exercise can only be performed for a week or two at a time, eccentric overload should be incorporated in the off-season when muscle recuperation is at its maximum.

4.) USE A FULL RANGE OF MOTION

Guys in the gym love to load up the biceps machine and do quarter reps and half reps!! Not doing a full range of motion is detrimental for stimulating muscle growth. Researchers from Italy examined the effect of range of motion at different loads on the electromyographic activity during military press.

Six experienced lifters performed three sets of 10 repetitions, each one with a different ROM:

- The first one with a final elbow angle of 90°; Partial Rep
- The second with 135°, Almost Locked Out Position and
- The last one with a final elbow angle of 180°, Full Range of Motion.

Not surprisingly, the execution of a complete range of motion elicited the greatest deltoid muscle activity together with the trapezius showing their synergic activation. So the based on this study, using partial or intermediate reps is not going to fully activate the deltoids and trapezius muscle like doing a full range of motion. Using a full range of motion is going to activate more muscle fibers and lead to better muscle growth. ■

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BEGINNER NO MORE

IF YOU'VE BEEN IN YOUR ROOKIE YEAR OF TRAINING, IT'S TIME TO STEP UP YOUR PROGRAM.

BY: ROGER LOCKRIDGE

It's a new year and with the singing of "Auld Lang Syne" comes New Year resolutions, many centered around fitness. There will be many programs out there catered to people starting training programs for the first time. What many people don't consider is that a lot of these folks aren't doing this for the first time. Either they have failed and are starting again or they're moving up from those beginner programs. If you fall into either of these categories then keep reading because this is your program. If you're ready to step up from the beginner level then you will need to add some more advanced techniques to challenge yourself and push your muscles to new limits so you can see that new growth. This workout split will have a few of those techniques included in them and if you follow it for eight weeks, you should see progress that will motivate you to keep going long after the resolutionaries (yes, I made that up) have given up.

Pre-exhaust

It's one thing to do a warm before getting into your big lifts but this is a little more advanced than that. Let's say you're doing back and you normally start with pullups. Before you might've done a couple of light set of pulldowns or used the assistant. With pre-exhaust you actually do work sets with an isolation movement like straight arm pulldowns before doing pull ups. You're probably thinking "if I do that I won't be able to do as many pull ups." Exactly, that's the point. Well one of them. Think about it like this. If you normally do 12 pull ups but can only do 8 after three sets of straight arm pulldowns, then your goal should be to do 12 again with the pre-exhaust sets done beforehand. If you get to that point, obviously

you've gained strength and you should notice some size gains too. There are more benefits than that though. It will help you establish a great mind/muscle connection that can help you throughout the rest of your workout. It will also help pump some nutrient rich blood into the area that you're training which will make for a better pump.

Static Contraction

With your other programs you performed rep after rep after rep and very likely used a consistent cadence while doing so. There's nothing wrong with that but now it's time to try something new. Static contractions are periods where you hold the weight you're using in a contracted position for a certain period of time. This time, we'll focus on leg day as an example. You would go to the leg press and load more weight than you normally lift. I mean load more than even your max. You would then get on the position and prepare to do a set like you have many times in the past. However when you un-rack the weight you hold it for a count of five to ten seconds. After this period expires, you rack it. If it felt easy to you then load more weight and repeat after resting for a minute or so. You will need to experiment to find the weight that works for you. If you feel like you can't hold it for that long then you went heavy but if you could hold it there for an hour then you need to add more weight. It's a delicate balance to find that weight that will work for you but this comes with taking your training to this level. This can work with free weight movements like bench press in a safety rack or with curls. With this program, you'll perform the static contraction at the end of your set so if you need to go lighter, it will be okay but try to go as heavy as you can without sacrificing form.

The benefits of this include increasing static strength that could eventually lead to full range of motion strength increases, helping with muscle thickness and hardness, and hypertrophy. In other words, by simply holding heavy weight in one place, you can get bigger and stronger. Crazy, right?

Rest Pause Drop

If you've been reading Muscle Media for a while then you might be familiar with this already but there are some of you who may not be. Rest Pause Drop is a combination of two intensity boosting techniques: rest-pause training and drop sets. For this technique, we'll use barbell curls as an example. You would load a bar with weight that will allow you to get 6-8 reps. Once you reach failure, you count to five and try to get a couple of more reps (rest-pause). Upon reaching failure again, you reduce the weight by 20-25% (drop set). Once you remove this weight, you repeat the pattern. Lift to failure, count to five, lift to failure. You take the same amount of weight off that you took off last time and repeat the pattern one more time. This will be like doing six sets in one.

With Rest Pause Drop, you can go with heavy weight but also perform high volume since the weight decreases throughout the set. It will challenge your strength levels and your endurance which means you can be stronger longer.

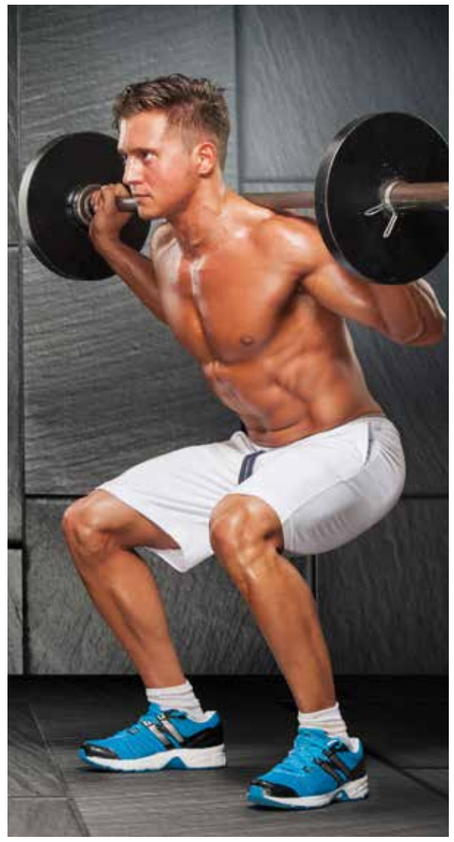
Cluster Sets

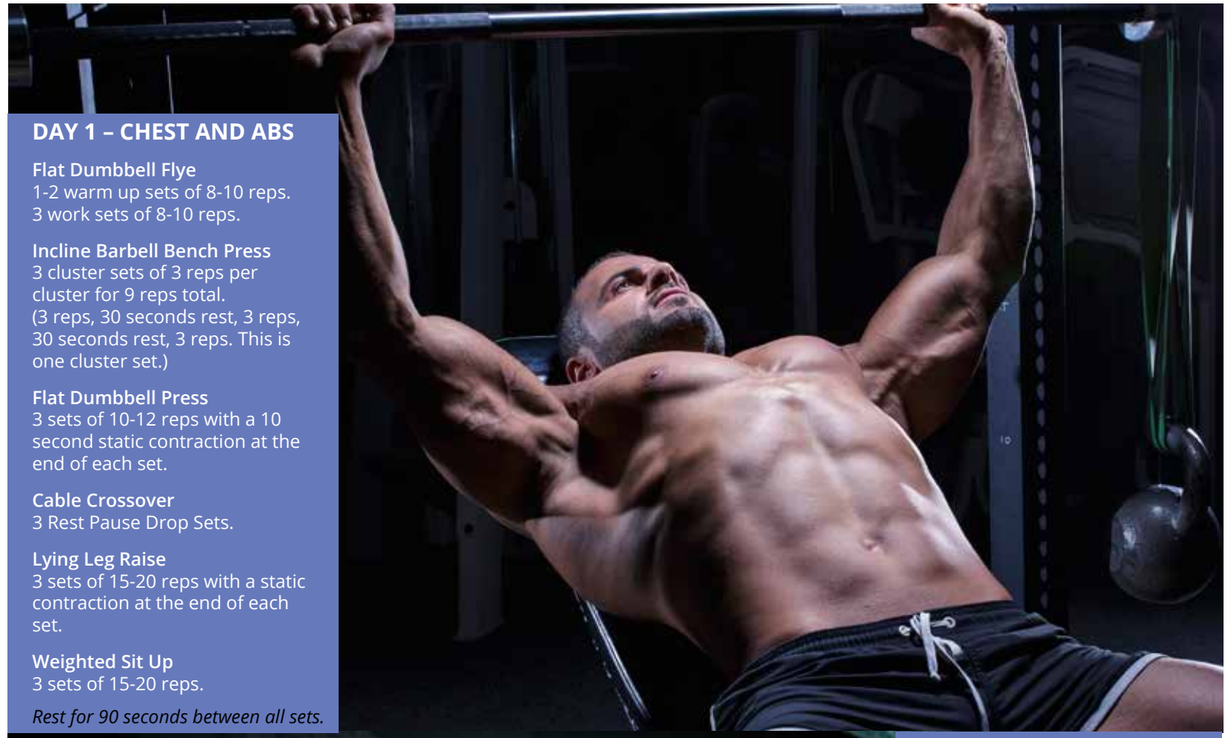
Have you been stuck with a certain weight on a big lift like deadlifts and can't seem to get any stronger? This might be your remedy. Cluster sets are a group of "mini-sets" with heavy weight. We'll use the deadlift as the example. Let's say you can lift 315 for 3 reps but that is it. You couldn't get a fourth rep if I was standing there with a million dollars. With cluster sets, you would do 315 for 3 reps but instead of taking a full 90 second to two minute rest, you would only rest for 30 seconds and then go for three more reps. Another 30 second rest followed by three more reps would finish it off for this cluster set. It's like extended rest-pause sets. Instead of 3 reps with that same 315, you did 9. That extra load with the short rest will help increase power over a period of time.

Putting It All Together

This full body weekly split implements all of the training techniques listed above at various points. Try this program for eight weeks and you should notice serious gains in both your strength and size. This program is for anyone whether you're trying to lose bodyfat or gain size.

Day 1	**Chest and Abs**
Day 2	**Back**
Day 3	**Off**
Day 4	**Shoulders and Traps**
Day 5	**Arms**
Day 6	**Legs**
Day 7	**Off**





DAY 1 – CHEST AND ABS

Flat Dumbbell Flye
1-2 warm up sets of 8-10 reps.
3 work sets of 8-10 reps.

Incline Barbell Bench Press
3 cluster sets of 3 reps per cluster for 9 reps total.
(3 reps, 30 seconds rest, 3 reps, 30 seconds rest, 3 reps. This is one cluster set.)

Flat Dumbbell Press
3 sets of 10-12 reps with a 10 second static contraction at the end of each set.

Cable Crossover
3 Rest Pause Drop Sets.

Lying Leg Raise
3 sets of 15-20 reps with a static contraction at the end of each set.

Weighted Sit Up
3 sets of 15-20 reps.

Rest for 90 seconds between all sets.

DAY 2 – BACK

Hyperextension
1-2 warm up sets. 3 work sets of 10 reps while holding a weight on your chest.

Deadlift
3 cluster sets of 3 reps for 9 reps total.

One Arm Row
3 sets of 10-12 reps per side with a 10 second static contraction at the end of each set.

Straight Arm Pulldown
3 Rest Pause Drop Sets.

Rest for 90 seconds between all sets.

DAY 4 – SHOULDERS AND TRAPS

Front Dumbbell Raise
1-2 warm up sets. 3 work sets of 12 reps.

Standing Barbell Press
3 cluster sets of 3 reps for 9 reps total.

Seated Lateral Raise
3 sets of 10-12 reps with a 10 second static contraction at the end of each set.

Wide Grip Upright Row
3 Rest Pause Drop Sets.

Barbell Shrugs
3 sets of 20 reps.

Rest for 90 seconds between all sets.

DAY 5 – ARMS

One Arm Preacher Curl
1-2 warm up sets. 2 work sets of 10 reps.

Barbell Curl
2 cluster sets of 3 reps for 9 reps total.

Incline Dumbbell Curl
2 sets of 10-12 reps per side with a 10 second static contraction at the end of each set.

Cable Bar Curl
2 Rest Pause Drop Sets.

Single Arm Cable Pushdown
1-2 warm up sets. 2 work sets of 10 reps.

Close Grip Bench Press
2 cluster sets of 3 reps for 9 reps total.

Rope Pressdown
2 sets of 10-12 reps per side with a 10 second static contraction at the end of each set.

Overhead Cable Extension
2 Rest Pause Drop Sets.

Rest for 90 seconds between all sets.

HOW OFTEN SHOULD YOU TRAIN EACH MUSCLE TO MAKE IT GROW?

After several years of hard training behind you, the gains are coming more slowly than ever. You've tried switching things up and doing different exercises. You've tried blasting and bombing each muscle group into total submission. But nothing seems to be working. If you haven't gained any new muscle since the last "Bourne Identity" film, here's something to experiment with - try increasing your training frequency so that each muscle group gets hit 3-4 times a week.

Routines that involve working each muscle three times a week are often as seen as programs for beginners. But there's a growing body of research to show that they could be one of the best ways to build muscle even in advanced trainees.

Consider, for example, the results of a recent study that compared two different training routines over an 8-week period - a split routine and a full-body workout[1]. A group of men who had been training for an average of 4.5 years took part in the study – not the typical "untrained beginners" often used in this type of research. The split routine group trained chest and back on Monday, legs on Wednesday, and shoulders and arms on Friday. The full-body group trained their whole body in each workout, using the same exercises as the split routine group. Sets were done in the 8-12 rep range, with all sets taken to concentric muscular failure. Although the weekly training volume (i.e. the number of sets per muscle group) was identical in both groups, it was just distributed differently. One group did nine sets per muscle group once a week, while the second did three sets per muscle group three times a week.

The result?

There was a clear trend towards faster gains in the group hitting each muscle group three times a week. The differences between the groups weren't dramatic – a millimeter or two here and there. But remember that this study lasted just eight weeks. Over months and years, those small differences are going to add up. Research conducted at the University of Alabama, which also used subjects with several years of lifting behind them, shows similar results[4]. Both training programs involved three sets of nine different exercises covering the whole body. The only difference was in the frequency of training. The three-day group performed one set of each exercise three times each week, while the one-day group performed three sets of each exercise once per week. Both training programs were followed for a total of three months. Even though the total weekly training volume was the same, increasing the frequency led to superior gains in both muscle strength and size.

But that's not all.

A study dubbed The Frekvensprosjektet (Norwegian for Frequency Project), looked at two different training programs in a group of Norwegian powerlifters. The lifters were assigned to one of two groups. Both groups followed exactly the same training program, with one key difference.

The first group trained three times per week. Group two split each workout into two sessions, performing six shorter workouts over the course of the week. Put another way, lifters in both the 3-day and 6-day groups did exactly the same amount of work. It was just distributed differently throughout the week. To keep total training volume the same, the group training three times a week performed twice as many sets in each workout.

After 15 weeks, it was the 6-day group who saw the greatest improvements. In fact, strength gains in the squat, deadlift and bench press were roughly double those seen in the 3-day group. Hitting a muscle group more frequently was also popular with many bodybuilders and strength athletes in the 1940's and 50's, before anabolic steroid use became so widespread.

Ben Sorenson was the manager of Vic Tanny's Gym from 1947 to 1949. At the time, Tanny's gym was the largest bodybuilding facility in the world. Just half a mile from California's Muscle Beach, it was popular with many of the top bodybuilders and strongmen from the 1940's and 50's. In The New Bodybuilding for Old-School Results, Sorensen describes the routines of some of the bodybuilders he mixed with at the time: *"Sure, some of the younger bodybuilders were into split routines and all kinds of crazy sets, reps, and novelty routines. But with the best guys — Steve Reeves (1947 Mr. America), Eric Pedersen (1947 Mr. California), George Eiferman (1948 Mr. America), and John Farbotnik (1950 Mr. America) — their serious, get-big-and-strong training was done with whole-body routines, three times per week."*

So why are advanced lifters better served by an increase in training frequency? One of the reasons is that you're able to do more work. If you train each muscle group once a week, using multiple exercises, that muscle group is usually fried by the time you reach exercise three or four. But if you're training each muscle group when it's fresh, you'll be able to do more reps with the same amount of weight, or more weight for the same number of reps. An increase in the amount of work done for each muscle is at least part of the explanation for the accelerated rate of growth.

We also know that muscle protein is being built at a faster rate for a day or two after a workout. However, as you become more advanced, the rise in protein synthesis after training peaks earlier and returns to normal more quickly[2].

The upshot of which is that there's a smaller overall change in muscle protein synthesis in advanced lifters. Doing more sets and exercises will increase the amount of muscle damage you create. But this doesn't seem to affect the amount of new muscle protein that gets built after training[3]. All it does is extend your recovery time, meaning that you have to wait longer before you're able to train that muscle group "all out" again. In short, leaving an entire week between training each muscle group means that you're missing out on several additional opportunities to stimulate growth.

If you want to develop a lagging muscle group, build muscle across your entire body, or even just experiment with a different style of training, high frequency training is worth a shot.

Christian Finn holds a master's degree with distinction in exercise science, is a former personal trainer and has been featured on BBC TV and radio.

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BLOOD OCCLUSION TRAINING

By Noah Bryant

Have your arms stopped growing? Are you stuck in a rut, doing the same old bicep exercises over and over and not seeing results? If you answered yes to these questions, then listen up, I am going to tell you about a technique that could be the key to kick starting your muscle growth. This training protocol is called blood occlusion training, or blood flow restriction training.

What is blood occlusion training?

Blood occlusion training is not new, it has been around for a couple of decades and the science behind it has been well researched. Blood occlusion training involves restricting the venous flow of blood from the muscle, while still allowing arterial flow to the muscle (remember venous flow returns blood to the heart and arterial flow takes blood from the heart to the muscles). Basically, you want the blood to pool in the muscle and not be able to escape. To achieve this blood occlusion, we simply wrap above the muscle we want to work with some type of band or wrap (knee wraps seem to be the easiest to use).

The beauty of this type of training is that you can use much lighter weights and receive the same hypertrophic benefits as lifting traditionally with heavier weights. Studies have shown significant increases in muscle development when low-load lifting (in the 20-30% of 1RM range) is used in conjunction with blood occlusion. Why is this finding important? Well, using lighter weights is much easier on your joints and ligaments. So, you are making gains while also giving your joints a much needed reprieve from constant pounding that can lead to injury.

How to do it?

There are many different ways to wrap your arm for blood occlusion training, the easiest way I have found is to use a pair of knee wraps. You want to wrap as high as possible on the bicep to get the full benefit. The wrap should be long enough to circle the arm a couple of times.

Now the tricky part, how tight should you wrap? Like I said before, you want to cut off the venous flow but not the arterial flow. This means you want it tight, but not too tight. For bicep occlusion try to wrap at about 70% of maximum tightness. In the beginning you should error on the side of too loose rather than too tight. With a little bit of trial and error you will be able to find that sweet spot.

Sample Bicep Workout

First you want to go through your compound and heavier movements for the day.

- Load up the EZ-Curl bar with 30% of your 1RM. Wrap up those arms like I described above, as high on the bicep as possible.
- Perform the first set of seated preacher curls for 30 reps.
- Rest 45 seconds.
- Perform 15-20 reps.
- Rest 45 seconds.
- Lift until muscular failure
- Rest 45 seconds.
- Lift until muscular failure.

When to do it?

Blood occlusion training is most effective in single-joint, isolation movements. So go through your normal exercises and use the occlusion training as a finisher. You want to use a very light weight, in the 20-30% 1RM range. Really, that light. You are going to have to suck up your pride a little bit and grab the pink dumbbells at the end of the rack.

For this type of training we want the reps to be high. The first set should be in the 25-30 rep range. Because of the occlusion and the short rest periods, the subsequent sets will consist of lower reps. The last two sets should be performed until muscular failure. Aim for a total of 3-5 sets with 45 seconds rest in between each set. It is important that you do not unwrap in between sets, keep your arm wrapped up for the entire 3-5 sets!

Sample Tricep Workout

- Pick a light weight (20-30% 1RM) for tricep rope pushdowns.
- Wrap up those arms as high on the bicep as possible.
- Perform the first set of tricep pushdowns for 30 reps.
- Rest 45 seconds.
- Perform 15-20 reps.
- Rest 45 seconds.
- Lift until muscular failure
- Rest 45 seconds.
- Lift until muscular failure.

If your routine is stale and your arms just don't seem to grow, give blood occlusion training a try!

Eric Broser: Magician of Physique Transformation

By Ruth Silverman
Photos by C.J. Jolliff

Careers in the physique industry take many roads, although they usually start on a bodybuilding stage. Eric Broser's right turn into coaching occurred early, as he was winning shows like the Natural Eastern USA and others competitors started asking him for advice. Being someone who claims his "always running 1,000 miles per hour," he took it to the limit and beyond, earning pro status in two natural organizations and becoming a judge even as he was picking up training certifications and delving into program design. Twenty some years later he's a globally popular online and in-the-flesh personal trainer, working at the Mecca of Bodybuilding, Gold's Venice, California, as well as the developer of intricate training systems that keep the gains coming for his clients and the thousands who have used his methods.

Broser is big on long, descriptive names for his tremendously tough techniques, and he's big on acronyms. P/RR/S, FD/FS—it sounds like abracadabra. No wonder his clients call him "Merlin."

So which is it? Is Eric Broser a magician of physique transformation or just good intuitive trainer who's got the knowledge, experience and smarts to figure out some things. You be the judge.

Muscle Media Magazine
When did you first pick up a barbell and why?

Eric Broser
I first picked up a barbell at age 16 simply because I was sick and tired of being so skinny. At 5'11 1/2" and 125 pounds, nobody was mistaking me for the Incredible Hulk. In addition, I had always admired the muscular physiques of certain cartoon characters and athletes.

Muscle Media Magazine
Briefly, describe your journey from competitor to coach. When did you know this was going to be your life?

Eric Broser
The funny thing is that people approached me about coaching them early on. At age 21 I earned my natural pro card, and all of a sudden other competitors wanted me to assist with their stage presentation, posing and diet. Soon after came training. As time went on, I started writing for magazines like Iron Man, Muscle Mag International and Muscular Development, and more inquiries started coming; however, it wasn't until I began to use the Internet, that my career as a coach fully manifested. Promoting my theories on diet and training via bodybuilding discussion forums helped me make a name for myself on a global scale. Competitors and athletes from dozens of countries began to email me, which prompted me to start my "online distance coaching/training" business.

Muscle Media Magazine
What led you to start developing training programs?

Eric Broser
By nature I am both an artist and scientist, especially when it comes to transforming the human body. While I read hundreds of articles by pro bodybuilders, coaches and gurus, I still always forged my own path. I kept meticulous records about my training and looked for patterns where more or less progress occurred. I did the same with dozens of my clients, trying to discover what methods were best for igniting hypertrophy. It was not until my late 20s, when my own progress seemed to stall, howver, that I dug deeper into human physiology and began formulating a specific strategy for continuous muscle growth.

Muscle Media Magazine
Looking for one word to describe your programs, I come up with "variety"—changing things up frequently, hitting every muscle every possible way. Is that about right?

Eric Broser
Yes, you hit the nail on the head. The body is a complex organism that is built to adapt to almost anything thrown its way. If you feed it the same thing too often, it will no longer see any need to respond (i.e., build muscle). You must constantly force your muscles and central nervous to deal with novel stimuli in order to force anabolism. Additionally, there are multiple pathways that can lead to larger muscles, and if they are not all addressed, progress will be less than optimal.

Muscle Media Magazine
You must get bored easily.

Eric Broser
In some respects yes—and in others, no. I am actually a very regimented creature, living each day similarly to the last. But I am also a thinker. My mind gets bored if it is not creating new, better and more progressive concepts—and not just about bodybuilding.

Muscle Media Magazine
Let's talk about the evolution of your training systems.

Eric Broser
P/RR/S was my first fully realized program. It took me about two years of research and experimentation before I felt it ready to present to the bodybuilding industry.

Muscle Media Magazine
Where did you start, with science or in-the-trenches gym research?

Eric Broser
I started first by looking through my workout journals to determine at what points I'd made my best gains. I studied the specific exercises, rep tempos, rep ranges, times under tension, rests between sets, sets per muscle, and training frequencies. Then I began looking to science in order to discover if there was research that coincided with what I had been seeing. This allowed me to refine my experimentation in the gym and make ongoing tweaks until I was satisfied that I had struck gold.

Muscle Media Magazine
With P/RR/S the program changes every week, correct? What are the different approaches?

Eric Broser
The basic P/RR/S protocol works in three-week cycles. Power emphasizes basic movements; heavier weight; very slow, eccentric contractions and explosive positives. Rep Range takes you through four exercises and four rep ranges per body part. For the first movement the range is

7-9, the second is 10-12, the third is 13-15 and the fourth is 16-20. The tempo varies but will fall around 2/1/2/1 for most movements.

The third week of the cycle is called Shock, and the goal is to annihilate every muscle with intensity techniques such as super sets, drop sets, rest/pause, add-on-sets, 1 ½ reps, pre-exhaustion, post-activation and more. You use a controlled tempo and try to keep constant tension on the muscle.

Muscle Media Magazine
There's a rest week too, correct?

Eric Broser
For most trainees I recommend one week off of training after three full P/RR/S cycles.

Muscle Media Magazine
Fiber Damage/Fiber Saturation training kicks it up a notch. Talk a little about FD/FS and the science behind it.

Eric Broser
Although P/RR/S was bringing fantastic results, I felt I needed an even more challenging protocol that could be used for short bursts throughout the year, when a specific muscle is lagging or simply to press the gas pedal to the floor.

The goal behind every workout is to cause as much muscle fiber trauma as possible—the main stimulus behind igniting the anabolic process—via a three-pronged attack. It begins with sets done with weights that will only allow 3-4 perfect reps. Next are sets including eccentric—negative—contractions of at least 5-8 seconds. Last are sets of an exercise that has a strong stretch component, such as dumbbell flyes, with the stretch held for 3-5 seconds on every rep. That's the Fiber Damage part of the equation. It's followed by Fiber Saturation, which calls for very high repetition (25-50), constant-tension sets so that an enormous influx of blood infuses the damaged tissue with oxygen, hormones and nutrients.

Muscle Media Magazine
This is advanced training and not for the fainthearted. Can regular trainees benefit from your systems?

Eric Broser
FD/FS is only for advanced bodybuilders and athletes. It is too intense for beginners and intermediates, and certainly not necessary for the basic fitness enthusiast. With P/RR/S, while I initially developed it for advanced trainees, I was forced to modify it for beginners and intermediates because I was receiving so many inquiries. Because they don't need as much variety, I may have beginners do three Power weeks followed by three Rep Range weeks and then one Shock week for six months to a year to start.

Muscle Media Magazine
How do you approach a client who's seriously out of shape and needs to start from the beginning?

Eric Broser
It always starts with a long conversation about the client's short-term and long-term goals, level of experience, medical condition, injuries and limitations, lifestyle, stress levels, time available to commit, mind-set and more. My university degree is in psychology, and much of my study focused on the mind/body connection, which is so vital. I try to learn as much as I can about every new client, because it allows me to work more effectively as a coach and motivator.

MM: Your latest incarnation is FTX2. More initials—but what does it mean?

EB: I certainly love acronyms huh? FTX2 stands for "Fast Twitch X 2." Basically, we are looking to stimulate the fast-twitch muscle fibers more effectively—the ones most responsible for hypertrophy. Here's a sample chest workout to outline the mechanics behind it.

Sample FTX2 Chest Workout

1. Cable crossovers 2-3 x 26-30
2/0/1 tempo
The goal is to exhaust the slow-twitch fibers first so that more fast-twitch fibers engage throughout the set.

2. Bench presses 2-3 x 3-5
4/0/X tempo
The goal is to use heavy weight with a slow negative followed immediately with an explosive positive—X—which excites the central nervous system, making the next two exercises even more effective for growth

3. Hammer Strength Incline Press machine 3 x 7-9
3/1/2 tempo
The goal is a time under tension of about 42-54 seconds, which is the sweet spot for igniting hypertrophy.

4. Incline dumbbell flyes 3 x 7-9
3/2/1 tempo
Again it's a TUT of about 42-54 seconds.

Muscle Media Magazine
A couple of years ago, you moved your base of operations to Southern California and the Mecca of Bodybuilding, Gold's, Venice. How has it influenced your methods and your career?

Eric Broser
Because I am now located in the hotbed of the physique sports, I have had the opportunity to work with some of the best in the world. Some of the men and women I coach make a living off of their body, which means I have an even greater responsibility to them. I also feel quite blessed to be surrounded every day by so many icons in the sport, some of whom I looked up to as a teenager. I do want to mention a gentleman I met a couple of years ago when he filmed me taking my client, IFBB Pro, Abbas Khatami, through a workout. David Bourlet has been greatly responsible for helping me take my career as a coach, mentor and teacher to the next level via my weekly online show, "B Built By Broser," which we have been doing for more than a year on YouTube in conjunction with Muscle Insider magazine. Meeting Dave has been one of my greatest blessings—and because of him I will forever be known as "Merlin."

Muscle Media Magazine
Any plans to compete again? You know what they say about bodybuilders never really retiring?

Eric Broser
The last show I did was Lonnie Teper's NPC Iron Man Naturally in 2011, where I won the open heavyweights. I was very happy to have reached my best ever condition at age 43 and felt satisfied to call it a day. However, training at The Mecca has begun fostering that "itch" to get back onstage once again. With the new classic physique division being implemented this year, you may see me jump back in the fire!

Muscle Media Magazine
Readers can find ebooks and DVDs about P/RR/S and FD/FS training, as well as your training services, at BroserBuilt.com. Is that the best place to contact you?

Eric Broser
To order any of my ebooks, it is best to contact me at bodyfx2@aol.com. To check out my pricing and programs for online coaching/training, please visit my Website first and then email me.

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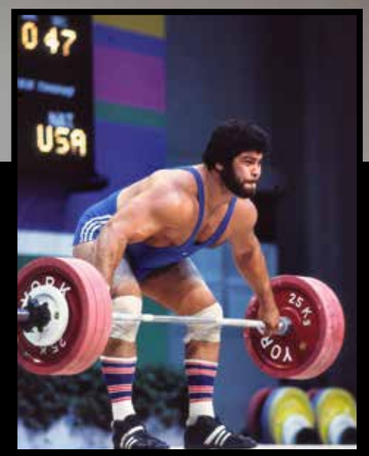
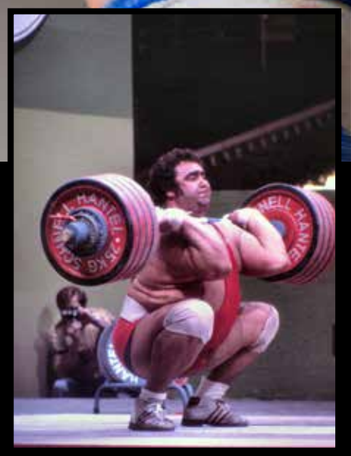
HOW CHAMPION RUSSIAN WEIGHTLIFTERS TRAIN

WHAT YOU CAN LEARN FROM THE MOST POWERFUL ATHLETES IN THE WORLD

BY KIM GOSS, MS, POLIQUIN GROUP™





In the world of weightlifting, many countries have produced champions over the past half century. In recent years China, Kazakhstan, Iran, and North Korea have been fielding strong teams and mining plenty of gold internationally. One country that has always been powerful, however, is Russia. Vlasov, Alexeev, Rigert, Vardanyan, Kurlovich – these are names that have become legend.

In 2015 the World Weightlifting Championships were held in the United States, for the first time in 40 years, and the Russian champions did not disappoint. The Russian men's team captured the team title, their women earned the silver, and the star of the show was Aleksei Lovchev. The powerful super heavyweight shocked the world when he broke the absolute world record in the clean and jerk with 582 pounds.

After witnessing the Russians' perennial show of strength, we have to ask: "How did they do it?" "How have their training methods evolved over the past century?" And, more specifically, "What can they teach us?" One person who can provide some answers is Sergey Bondarenko.
Bondarenko was a member of the Russian National Weightlifting Team and won the Championships of Moscow 11 times. He would often compete against Lovchev and share the same training facilities in the final days before international competitions. Bondarenko started training consistently at age 11. Because his father and grandfather were weightlifters, Bondarenko says "there was no question which sport I would choose."

Bondarenko had several coaches in his athletic career but achieved his best results in his peak years when he designed his own programs. His best official lifts are a **434**-pound snatch and a **507** clean and jerk. In training he has hit **440** and **518**, respectively, at a bodyweight of **286**, a relatively light bodyweight for a super heavyweight. As for absolute leg power, Bondarenko's best results include **551 x 3** in the front squat and **661 x 5** in the back squat. Bondarenko is still training hard but has expanded his involvement in the sport with part-time coaching and offering online coaching services *[contact info: s.bondarenko1989@gmail.com].*

Although Russia is currently back on top in weightlifting, China has been dominating the sport for the past two Olympic cycles. Bondarenko attributes China's success to sound training methodology, which has its roots in Russian sports science, but even more so to the fact that the Chinese government "invests in results." More specifically, the Chinese have an abundance of weightlifting gyms, use proven recovery methods, have access to modern Western sports medicine equipment, and use a motivational system that includes financial rewards. This provides their coaches with a large pool of genetically gifted lifters, and, as Bondarenko says, "when they find these talented individuals they make them work really hard."
In the 1970s and '80s the Bulgarians were a dominant force in weightlifting, and their workouts included workouts of exceptionally high intensity that focused primarily on the two competition lifts. The Bulgarians' demanding methods, created and taught by head coach Ivan Abadjiev, were not embraced by the Soviet school, although Bondarenko says some of their lifters may have tried certain aspects of it. One of the key differences between the two schools of training is that the Russians use preparation periods that include a variety of training methods, whereas the Bulgarians remain in a heavy competition period year-round.

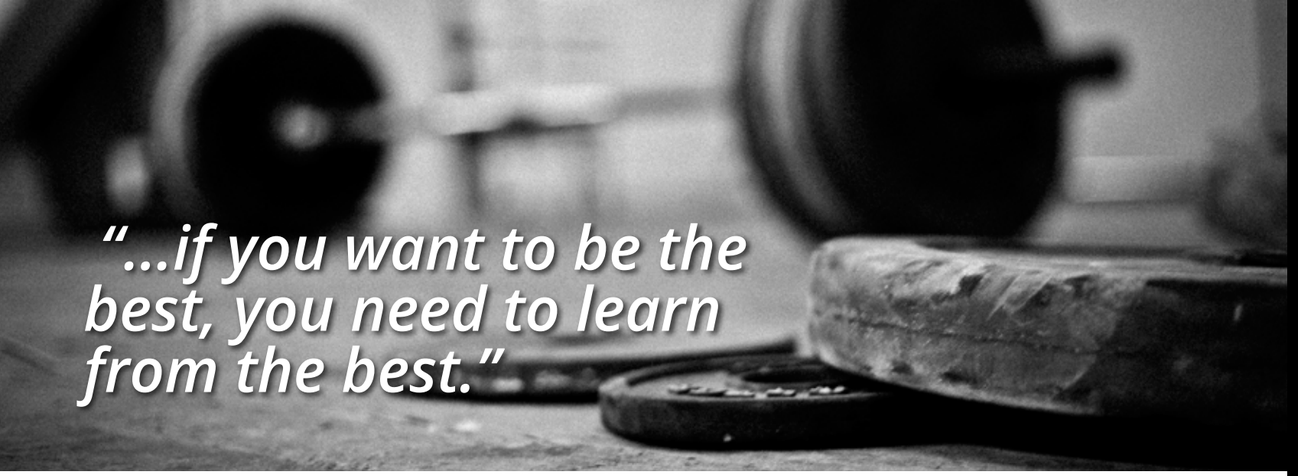
"No doubt the Bulgarians had success with their methods, but their success occurred at the same time that Russia was also winning and setting records," says Bondarenko. "That Russian system was successful, so there was no reason to adopt anything from the Bulgarians' system. I should also say that as a coach, I am not a big fan of the Bulgarian method because it puts young athletes using maximal loads too frequently – only genetically gifted athletes could survive it without any injuries."

In the United States, recently CrossFit has created a surge of interest in the sport of weightlifting. Membership in the sport has tripled in just a few years, and now there are over 5,000 coaches who have become certified as weightlifting coaches by Weightlifting USA. Bondarenko says that CrossFit is becoming extremely popular and he sees new CrossFit affiliates opening every year. Bondarenko coaches out of a CrossFit gym in Moscow, and sees many parallels with how CrossFit has influenced the interest in the sport.

"More and more young women are attracted to the sport of weightlifting in Russia because of CrossFit," says Bondarenko. "Many come to fitness gyms to get a better shape with this type of training, then find themselves obsessed with weightlifting. Also, the Russian qualification requirements for designated sports ranking in weightlifting are much more feasible for women, and the women's weightlifting records in Russia are easier to break. These two factors encourage them to train harder and compete."

In both Russia and the US, many weightlifters come from physical fitness programs that perform Olympic lifting exercises for higher reps as a form of conditioning – for example, sets of 10 reps in the snatch or power clean. Bondarenko says that although the techniques that are used to perform high reps with light or moderate weights are different from those used for low reps and maximal weights, there are some technique flaws that must be addressed. One is the way in which the barbell makes contact with the upper thighs in the pull.

One of the most common errors Bondarenko sees among those who perform high reps in the Olympic lifts is a tendency to bump the bar off the thighs, which causes the bar to "launch forward," resulting in an inefficient bar path. "The bar must always be close to the body during the pull," Bondarenko says. "With light weights it is not going to affect performance as much, but with heavy weights it will show itself." He adds that if errors in technique are not corrected early, and later the athlete decides to focus on weightlifting, it will be especially hard for that athlete to achieve optimal technique. One example of this problem is Mario Martinez, a three-time Olympian for the US who won a silver medal in the 1984 Olympics. When Martinez began lifting, he coached himself and got into the habit of pulling the



bar with bent arms; by the time he teamed up with an experienced coach, the technique was so ingrained in his nervous system it could not be corrected.

In regards to strength, the back squat poundages of many world record holders from Russia were not much higher than their best clean and jerks. Among these were Olympic champions Vasily Alexeev, the first lifter to clean and jerk 500 pounds, and Yuri Vardanyan, an Olympic champion who broke world records in three weight divisions. To this, Bondarenko responds, "These champions are definitely the exception – we squat a lot in Russia. I have seen Lovchev – whose triumph we witnessed in Houston breaking the world record in the clean and jerk and total – back squat perhaps as much as 815 pounds for three reps. Also, many Russian lifters have squatted 880 pounds or close to it."

What is the ratio of back squats to front squats in Russian workouts? Bondarenko says it depends on what period of training the athlete is in. In the early preparation period, just after a competition, more back squats are usually performed. As the competition gets closer, the front squat should have priority since it has more to do with competition cleans. As for reps, Bondarenko says he achieved his best results by focusing on sets of two-to-three reps in the front squat and five-to-seven reps in the back squat.

At the 2015 World Weightlifting Championships, the US women placed 13th in the team competition while the men placed 27th. Based upon the International Weightlifting Federation qualifying standards, the US will be able to send three women to the 2016 Olympics but the men have not yet earned any slots. Bondarenko has some ideas about what US lifters and their coaches need to do to improve:

"I do not intend to offend coaches and athletes from the US, but most of their developments in weightlifting were used in USSR in '60s, techniques and methods already long forgotten and replaced. As bodybuilding emerged, it appears that most of the financing for research was diverted away from weightlifting. What I mean is that there was little real science in the sport in the US, especially in the area of programming. As a general observation, US coaches and athletes lack perception of the full picture – the ability to think in advance for months and years."

"I am sure that there are a lot of talented lifters in the US who have access to well-equipped facilities and well-educated coaches, but to succeed in this sport you need a system. It is not like a strong man in Siberia is born, finds a barbell, and surprisingly breaks records – every athlete who became champion in Russia had access to a complete training system designed to forge champions. Likewise with the recent success of China. They have a large population, clubs everywhere, and coaches continually surfing the schools for talent. This is their system."

Sergey Bondarenko believes that if you want to be the best, you need to learn from the best. The Russians know how to get weightlifters strong and powerful, so if you're serious about training, study their methods. ■

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