

Growth Protocol Application of the Posterior Thigh Part II: Gluteal Musculature



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Abstract

The Gluteus maximus, the broad superficial muscle in the gluteal expanse, is a well-built and thick fleshy mass of a quadrilateral shape. Its sizeable magnitude is one of the most characteristic features of the muscular system, connected with the power one has of maintaining the trunk in the erect posture.

Aesthetically correlated to the gluteus maximus is the gluteus medius, an expansive radiating muscle, situated on the outer surface of the pelvis. Also interrelated is the gluteus minimus, the smallest of the three Glutei, placed immediately beneath the former. This muscle is fan-shaped, arising from the outer surface of the ilium, flanked by the anterior and inferior gluteal lines (7).

Combined these three muscle make up the Muscles of the Gluteal Region.

Imperative to the sport of bodybuilding is the symmetrical shape of the gluteal locality in relation to the trunk and thigh regions.

Exercises utilizing each of the three compartments of the gluteal region will be combined to create a hypertrophic/hyperplastic precise protocol. A span of eight sessions will be prescribed with the specified goals characteristic of the sport of bodybuilding (mass, symmetry, detail) as the accomplished goal.

Guideline of this Precedence Program:

This curriculum is designed distinctively to induce biomechanical molding properties to the gluteal region. Using detailed goal specific applications via hypertrophy repetition conduits and angular momentum, each athlete can tailor the routine for their specific needs, whether it is primarily mass, or shape.

The gluteus musculature is composed of both fast and slow twitch muscle fibers.

The large gluteus maximus is made up of 52.4% type I fibers and 47.6% type II fibers, while the gluteus medius and minimus are composed primarily of slow twitch tonic fibers (see: [Muscle Fibers Part One](#)). To understand how to apply these ratios for the goal specific purposes see, [Muscle Fibers Part Two](#) and [Monumental Masterpiece - Creating A Cerebral Portrait](#).

The hamstring region ties directly into the gluteal locality. As such, it is recommended a growth program specifically tailored to this vital tie in follow this program.

For such a program see: [Growth Protocol Application of the Posterior Thigh: Phase Strategy Covering 8 Sessions](#)

The Hamstrings tie directly into the gluteal zone.

Another vital draw-in is the spinal erector. Emphasized erector work is recommended in conjunction with this program. See: [Anatomy of The Back VI - DeepMuscles of The Back Part II](#).

Collectively, these three regions built to their maximal potential construct a monumental tower of might. The gluteal region is the focal power point of the physique from posterior inspection. Indentured together with the hamstring and erectors, the illusion of prodigious potency is exemplified.

This program will make full application of the [Priority Training Principle](#).

Proper warm up procedure is highly recommended preceding all sessions, see: [Mobility Training and the Application of Proper Warm-Up for Bodybuilders](#)

Recommended Split Prioritization for the Gluteal Region:

Three to Five Day Split	Train Gluteal Region First in Leg Routine
Six Day Split	Train Gluteal Region on a Day of its Own
AM/PM Split	Train Gluteal Region in the AM

Session One:

Cable or Plate Hip Extension- 2 sets per leg

Figure One

Figure Two

Exercise one will utilize hip extension for the purpose of pre-exhausting the gluteal locality. Several variations are available for this exercise. Figure one shows the finished position of the leg when full extension is acquired. Using this option, body weight or added resistance via a low cable are variations of this theme. Begin this movement by standing erect facing the cable post. Grip a stationary frame with both hands for support.

Kick the working leg straight back at the hip joint to the extent of the hips range of motion. Return with control and emphasize a slow descent. Keep the knee straight throughout the movement and squeeze the gluteus complex hard at the top of the plane of movement for a peak contraction.

Figure two illustrates a lying variant. These can be done with, or without weight. To utilize this variation with added resistance, attach an ankle strap around one ankle. Lie flat with the leg to be trained positioned off one side of the table. Keeping the leg straight, slowly raise the leg, keeping the stomach fixed on the surface.

This exercise will isolate the gluteal region and is intended for pre-exhausting the complex. It is important a strong eccentric contraction is achieved. A higher repetition range of 10-15 is desired for exercise one. On the last repetition of each set, contract the gluteal region statically for ten to thirty seconds.

Deep Leg Press- 3 sets

Deep [Legg Presses](#) will summon the gluteus zone heavily into play. Moreover, utilization of the Pyramid Rest-Pause principle will further enhance this already mind-numbing intensity. Compounded with the coupling of the pre-exhaustion in the previous exercise, the agony of the exhausted gluteus maximus will sear deep into its fibrous roots until every muscle cell feels as though it were being torn asunder.

The following is an exert employing rest-pause pyramiding on the leg press machine from:

[How To Shock Your Body Out Of The Comfort Zone Part Two:](#)

"Begin by selecting a weight that will make you go to failure at around 10-12 reps. Lets say this week you are going to focus your leg training around your quadriceps. This can better be achieved by placing your feet low and close together on the leg

press' footplate. Now, press off and go for good form and squeeze your quads hard at the top.

Once you reach failure of the initial weight, re-rack the load and count to 10(This should be roughly 10 seconds-so a medium paced 10 count). As soon as you reach a 10 count lift off again, and go to failure once more. Don't count reps anymore. You need to totally focus on breaking the pain barrier. Go to failure, re-rack the weight, and rest again. This time count to 15 and then un-rack the weight right away and proceed to go to failure again. This is when the pain will really start setting in. Only a true warrior will be able to go further! Re-rack and repeat in this manner until you reach the final mini-set in which you rest 30 seconds, then proceed to go to failure a final time. It's a simple concept, but if you put all your intensity in it, you will be moaning in pain, and will have tears coming out of your eyes and sweat running out of every pore in your body!

In summary, rest-pause pyramiding utilizes the same concept as rest pausing, except instead of just the normal 5-10 seconds you are pyramiding the rest time up. The rest scheme looks like this: 10-15-20-25-30. In which you will take each mini-set to utter and total failure! This pyramid scheme completed in its totality constitutes one total set."

In 2002 Abelbeck (1) published significant finds in his journal entry, "Biomechanical Model and Evaluation of a Linear Motion Squat Type Exercise" in which he determined:

For more specific training such as in the hypertrophy and strength phases in athletic programs, bodybuilding programs and rehabilitation where more specific muscle groups are targeted, it is vitally important to control relative joint loading and therefore stress in specific muscle groups. A higher movement about the knee will result in more stress on the quadriceps group and less stress on the glutes and hamstrings. The reverse is true for greater hip moments. Placement of the user's feet closer under the body results in greater stress on the quadriceps and more work done by these muscles. **Placement of the feet farther in front of the body generates more stress on, and work done by the glutes and hamstrings.** In addition, regardless of the foot placement, the depth of the squat is also relevant to the joint loading. From the low position to the extended position, the knee moment decreases rapidly. By contrast, the hip moment drops and then plateaus at roughly the midpoint in the upward stroke of the squat. Therefore the depth of the squat should also be considered when targeting specific muscle groups.

This information allows scientific access to the best foot positioning for maximizing stress on the target zone. In this case, for the purpose of targeting the gluteus region, foot positioning should be high with feet farther apart.

In addition to better optimization of targeting the desired region, wider foot positioning will also allow deeper eccentric contractions, further honing in on the gluteus region.

Later in this training routing deeper leg presses and deeper squats for maximizing gluteus recruitment will be explained.

This exercise of phase one prescribes three rest pause pyramid sets, exploiting deep repetitions with feet high and spread apart on the footplate. Rep range is recommended to start each rest pause set with initial failure of the first "mini-set" in mind at approximately eight to ten repetitions.

Dumbbell lunge- 2 sets
per leg

[Three Pump Lunges](#) (17)
will integrate strong concentric and eccentric contractions in the objective target zone. A longer lunge will focus the energy of the exercise on the gluteus. Moreover, the knee should not extend past the toe during the lunge.

Focus mental concentration on flexation the gluteus as the pump is executed at the bottom of the range of motion.

As the exercise reaches its bottom plane of action, "...inhale and come up two inches, pause and go back down two inches, contracting your muscles in each position and concentrating on working the glutes and hamstrings. Repeat the "pump" three times."

Machine abduction- 3 sets

Abduction protocols emphasize direct usage of both the anterior and posterior fibers of the Gluteus Minimus along with the Gluteus Medius.

Movements, such as abduction specific exercises, cannot be ignored. Often time's abduction movements are mistakenly not emphasized as seriously as other glute movements. Bodybuilding requires specificity that will mark the athlete as a phenomenon worthy of uncanny observation. These detailed movements need to be taken as seriously as all other movements with all the intensity the bodybuilder can muster. Use of the [Priority Training Principle](#) can aid in keeping power at its maximum peak throughout the workout.

Exercise Four, machine abduction, will utilize two to three drop sets to better ensure proper targeting for the large portion of slow twitch fibers that make up this region.

Between sets, stretching of the gluteus region is highly recommended.

Lie on a flat surface with the knees bent at 90 degrees. Put one foot across the other knee. If this motion was mimicked in a sitting position, it would resemble a crossed legged state. Use the bottom leg to push up and back, feeling a strong stretch across the gluteal region.

Session Two:

Drop-Level Barbell Squats- 3 sets

This program will focus heavily on deep squat and leg press shock techniques. It has been demonstrated in many EMG experiments (9,11,16) that deep squats call the Gluteus Maximus into the greatest participation.

In 2002, Caterisano A, Moss RF, Pellingier TK, Woodruff K, Lewis VC, Booth W, Khadra T. published their journal entry, "*The effect of back squat depth on the EMG activity of 4 superficial hip and thigh muscles.*" (2)

The purpose of this study was to measure the relative contributions of 4 hip and thigh muscles while performing squats at 3 depths. Ten experienced lifters performed randomized trials of squats at partial, parallel, and full depths, using 100–125% of body weight as resistance.

The following chart (2) samplings explore the full potential of the back squat:

Table 1. Percent contribution (mean \pm SD) of each thigh muscle during the upward (concentric) phase of the squat for mean integrated electromyographic analysis data.

Table 2. Percent contribution (mean \pm *SD*) of each thigh muscle during the downward (eccentric) phase of the squat for mean integrated electromyographic analysis data

Table 3. Contribution (mean \pm *SD*) of each thigh muscle during the upward (concentric) phase of the squat for peak integrated EMG analysis.

Table 4. Percent contribution (mean \pm *SD*) of each thigh muscle during the downward (eccentric) phase of the squat for peak integrated EMG analysis.

The analysis of this periodical found (2):

The results suggest that the GM, rather than the BF, the VMO, or the VL, becomes more active in concentric contraction as squat depth increases. It appears to be the **GM rather than the BF that becomes progressively more active as squatting depth increases from partial to full.**

Drop-level barbell back [Squats](#) are a nauseating exercise designed to induce distress that will traumatize the gluteal musculature to strain well beyond its current brink of anguish.

For safety a power rack is recommended.

Implementation: With (18) the barbell on a rack, walk under the weight so it rests across the back of your shoulders, grip the bar to balance it, stand up straight to lift the barbell off the rack, and step back.

- Keep head up and back straight, bend the knees and lower until the thighs are at their bottom range of motion. Attempt to touch the glutes to the ankles.
- From this point ascend from the lowest portion of the range of motion to parallel (50% of the full range of motion).
- From the parallel position, descend back down to the position of the lowest range of motion.
- Commencing from this location ascend to the region of the range of activity that lies between parallel and full lockout (75% of the full range of motion).
- Once more descend down to the bottom range of motion and ascend to full lockout (100% full range of motion)
- This entire series of dropping levels constitutes one full repetition.

Do not allow the hips to drift backward or the torso to lean forward. The weight should remain over the middle of the feet. Contract the targeted muscles evenly throughout the transfer of weight. Use a slower, controlled movement and avoid bursting up at the top of the ascent.

When the legs are beginning to get exhausted the hips will have a tendency to drift. Keep focus on the legs at all times. This requires deep concentration specifically when the pain begins to burn deep in the thigh region. The tension release accompanying the returning of the bar to the safety racks is nothing short of endorphin-induced bliss.

Swiss Ball Squats- 3 sets

This exercise allows for perfect execution of the squat movement along with emphasizing dynamic stabilizers with unwieldy leg positioning that would be impossible with a standard barbell.

Do not underestimate the effectiveness of this movement's barbarity. The presence of the swiss ball apparatus should not deter from the perception of the searing agony this exercise commands when performed intensely.

For added resistance dumbbells can be used, hanging at the sides of the torso. Additionally a plate could be held across the chest.

As has been demonstrated subterranean level squatting keeps the glutes under their uttermost prospective tension. The feet should be positioned out as far as possible while still being able to maintain a full range of motion.

As such, go deep with each repetition. From the bottom of the extent of action, push off with the power of the gluteal complex, contracting hard on the upward concentric path.

Upon failure, set the extra weight down, and perform [Power Partial!](#)

Commence with power partials for the first two sets. The power partials should be performed at the bottom of the range of motion, where the glutes are summoned more heavily into play.

On the third set go to failure as prescribed, but instead of executing power partials, ascend to the parallel marker of the range of movement, and hold that condition statically to exhaustion.

Barbell or Dumbbell Step-ups- 2 sets

For this exercise, use a box, step, or bench that is sixteen to twenty four inches high (the more advanced the higher the platform should be). Step up onto a platform with the first leg, and then bring the second leg up. Step down in the same order. Repeat the sequence, starting with the second leg this time, to complete one rep.

A farther distance from the platform will emphasize a more stalwart contraction of the glutes, over the quadriceps.

The method of added resistance is optional. One advantage of dumbbells, aside from easier balance, is that upon failure they can be quickly set down and the set continued with either lighter dumbbells or simply bodyweight.

Barbell resistance offers a much more arduous feel to this movement as more profound stabilization is required.

Session Three:

Deep Leg Press Supersetted with Squat Sprint- 3 sets

Session three will again call for three sets of deep leg presses. As has been demonstrated this particular degree of momentum will call for maximal functionality of the posterior region.

However, upon concluding the deep leg presses, the gluteal musculature will soon be forced to enter into hypertrophic intensity.

[Squat Sprints](#) embody innovative hyperplastic technology. Implementing such formulas will provide the window for myoblast cell fusion!

Set a goal for lesser reps on the leg presses. Attain between six to nine full, deep repetitions.

Straight away upon failure of the deep leg presses, dismount a barbell from a squatting station and assume a position fixed at the bottom of the exercises range of motion.

Next execute just two-thirds of the regular squat movement, rising up only a few inches, and position up and down at a rapid pace, completing 10 reps in 10 seconds. Keep the glutes under constant contraction for the duration of the exercise.

Multi-Planar Lunges- 3 sets

Exercise two is going to implement reactive neuromuscular training. Also called Power Training, this type of application exercise is a progression that imposes proper levels of flexibility, core and balance. It is essential for daily functional activities as it primes the body to move at functionally applicable speeds.

Multi-Planar exercises involve the amalgamation of multiple joints and motions, as all activity is the result of three-dimensional movement. Multi-Planar lunges will integrate this principle in a hypertrophic manner.

A three-step succession of lunges will be induced in a variable combination series including front, reverse, and side positioning (3).

Step One:

[Front Lunges](#)

The first step of this series calls for forward dumbbell lunges. Recall a further lunge will more heavily affect the glutes.

Step two:

[Reverse Lunges](#)

The starting position for this exercise is just like that of the forward lunge.

While maintaining an upright position, take a step backwards (landing toe first then heel). Bend both knees and descend until the forward thigh is parallel to the floor. Push up and step back to the starting position.

Step three:

[Dumbbell Side Lunges](#)

Begin in the standing upright with your feet shoulder width apart.

Next, step to the side; the step should be long enough so that the back leg becomes almost straight.

Once the stepping foot is planted, the upper body and the side knee should not move forward during the lowering and rising of the body.

Keeping the upper body vertical, dip the lower body straight down until straight knee comes close to the ground.

Hold the tension in the side leg, then rise straight up and return to starting position.

The pattern of these three exercises should be sequential and executed one leg at a time:

- Forward lunge working right leg
- >
- Reverse lunge working right leg
- leg>
- Side lunge working right leg >
- All in one fluid action.
- Complete reps on right leg then switch to work the left leg.

Romanian Deadlift- 3 sets

The Romanian Deadlift will not only hone in on the gluteal muscularity, but will also profoundly emphasize the upper hamstring locality (10). This undertaking can aid in giving the illusion of fuller glutes by "pushing" the area "up".

In his journal entry, "*Teaching the Romanian Deadlift*", Greg Frounfelter (5) laid a solid foundation for application of this exercise (quoted in red).

Terminology

Proper foot width—For the RDL, the feet should ideally be about hip width apart. This position is a little narrower than shoulder width apart. However, some athletes prefer doing RDLs with their feet farther apart. I try to emphasize the hip-width distance and make accommodations as needed.

Arched back—This refers to the lordotic curve of the low back that should be used when performing any weightlifting movement.

Shoulders back/show off the chest—This refers to the shoulders being thrown back to help lock the low back in proper lifting position.

Starting Position

The athlete starts in an upright position, comfortably hanging onto the bar at arm's length. Knees should be slightly flexed. Feet should be about hip-width apart and pointing straight ahead. The head and eyes should be facing straight ahead. The shoulders should be thrown back and the back arched in a lordotic curve.

Bending Phase/Glutes to the rear

After the athlete assumes the proper starting position, he or she must bend forward at the hips. This must be done while keeping the back arched in its lordotic curve. Otherwise, one puts the low back at risk for injury and negates all the benefits of the RDL. We tell athletes to push their glutes posteriorly, with minimal emphasis placed on bending at the hips. This emphasis usually results in technically correct RDLs. However, it should be noted that flexibility may limit how far an athlete is actually able to lower the bar, but as time passes, his or her flexibility will increase, allowing performance of this exercise in textbook fashion.

Progressing the Exercise

After the athlete bends as far forward as is personally possible, he or she returns to the starting position by contracting the glutes, hamstrings, and low-back musculature

Common Problems

There are several common problems that may arise while training athletes in proper RDL technique. We have addressed some of them here.

Not maintaining the lordotic curve—Remember to have the athlete direct the glutes posteriorly to produce downward movement of the bar.

Athlete cannot lower the bar very low—This is probably because of a lack of flexibility in the athlete's hamstrings. With time this will correct itself, as the athlete becomes more flexible. This is addressed through the warm-up.

Extending the knees during the lift—Remind the athlete that knees must be bent to reduce back strain. Movement of the bar should be produced by the hips, not with the legs (as in the traditional deadlift).

There are a few prominent variations between the Stiff-legged Deadlift (SLDL) and the Romanian Deadlift (RDL) that will contribute to transferring the primary workload to the target object of this series. (For an anatomical breakdown of the SDL see, [Analysis of the Posterior Thigh Part I.](#))

J. Piper (14) demonstrates these differences and proper execution of RDL technique in his journal entry, "[Variations of the Deadlift](#)":

The Romanian DL (RDL) is primarily used for the strengthening of the lower back, gluteus and hamstring muscles with decreased low back stress than the SLDL because of the technique.

- The stance is similar to that of a conventional DL with an overhand grip or alternating grip.
- The spine is fixed in a naturally arched position both at the beginning and throughout the entire lift.
- The RDL is similar to the SLDL, with the exception of the 15° of knee flexion that is employed. All movement is achieved via rotation at the hip joint.
- The bar descends slowly and closely to the thighs instead of being directly underneath the shoulders. This reduces the torque on the upper body by placing the load closer to axis of rotation and over the base of support.
- The bar descends until it is inferior to the knee joint, the lifter feels the need to round the back, he/she has the urge to further bend the knees, or they have reached their maximal range of motion without compromising lifting posture. The key is to focus on rotation about the hip joint as you push your gluteus back, while holding the knees at about 15° of flexion.
- When ascending, hip and knee extension should occur simultaneously while maintaining some shoulder retraction and the spine's natural curvature.

Common mistakes during the RDL are not flexing the knees or extending the knees prior to hip extension during the ascent. Many of our athletes and clients actually comment that they can feel stress is placed higher in the hamstrings if the knees are kept flexed to 15°, whereas they feel more stress at the hamstring insertion if the knees are straightened during the lift. Other errors include allowing the lower back to round, kyphosis to occur, pulling the bar against the thighs, and excessive extension of the back when completing the lift.

So in review the chief differences between the SDL and RDL are:

- Hips move backward after initiation of the exercise.
- The bar will stay close to the thighs at all times.

Bodybuilding is an art form that highly emphasizes creating symmetrical impressions. (See: [The Essence of Bodybuilding, " The Art Of Illusion! "](#))

Exercises that can accentuate tie-ins between muscle groups can play off these illusionary assets.

Observation of the picture to the immediate left clearly demonstrates how developed upper hamstrings can accentuate the curves on the lower gluteus maximus. RDL's are a vital instrument to help stress this curvature.

By utilizing full prospective of their symbiotic relationship, the potential of this aesthetical anatomical draw-in can be fully exploited.

Cable or Plate Hip Abduction- 3 sets

Abduction exercises involve lateral movements away from the midline of the body. Shown above are two popular variations of this theme; both potent to the target zone, the gluteus medius and minimus.

While the gluteus maximus works to activate hip extension, the primary purpose of the gluteus medius is abduction of the hip.

The gluteus minimus is a smaller muscle located deep and slightly anterior to the gluteus medius muscle. It arises from the external aspect of the ilium, but slightly more inferior and anterior than gluteus medius. It serves to abduct the hip as well.

Utilize either standing cable or lying plate abduction for a total of three sets, to finish session three. Between sets utilize stretching protocols.

Session Four:

Single Legged Squat- 2 sets per leg

The single, or uni, legged squat combines neuromuscular stabilization and strength training decorum.

Muscle recruitment differences subsist between USEs (unilateral support exercises) and BSEs (bilateral support exercises) (12).

For example (8), the hip and knee extensors are recruited during both single, and double-leg squats; however, the single-leg squat necessitates greater recruitment from the hip abductors (gluteus medius, gluteus minimus, and tensor fasciae latae).

During a resisted single-leg stance, the hip abductors provide the essential force to stabilize the pelvis in the frontal plane (15), thereby preventing the flaccidity of the pelvis toward the non-weight-bearing leg. The contra-lateral leg in the double-leg squat provides this frontal plane pelvic stabilization because of the side-to-side foot position, thus reducing the demand from the hip abductors.

During the uni-leg squat (12), the resistance must be balanced on a small base of support (established by the perimeter of the single foot) relative to the base of support of the bilateral squat (forms a rectangle around the length of the feet and the outer-edge width of the stance).

During a resistance exercise supported by two legs (8), the line of gravity of the resistance can shift a relatively large distance without moving near the edge or outside the base of support.

Throughout USEs (8, 12), small shifts in the resistance line of gravity can place it near or outside the base of support, which increases the muscle and joint proprioception activity required to maintain balance. Muscle activity of the hip, knee, and ankle consequently increases.

The lunge and the step-up are predominantly a partial USE with brief periods of complete unilateral support. The mechanics of stepping forward while flexing at the hip and knee modifies the muscle recruitment patterns at the hip joint.

Anterior and posterior directed forces differentiate these exercises from the one-legged and two-legged parallel squat. This energy is opposed by the contraction of the posterior fibers of the gluteus medius, primarily a hip abductor (13, 15).

As relatively 75% of the load is placed on the lead foot when the knee is flexed at 100° (8, 13), the hip abductors are also recruited to supply frontal plane stabilization for the purpose of preventing the lateral pelvic tilt to the side of the back leg.

This back leg goes through two phases (12) of unilateral support:

- When the lead leg initially steps forward
- And prior to the lead leg returning to the starting position.

Therefore, in one repetition the hip abductors are stimulated twice to provide pelvic stabilization of this unsupported leg (13).

The characteristically narrow width of the step generates a smaller medial/lateral base of support, thus increasing the demand on the lower extremity musculature for frontal plane stability. Stepping forward during the lunge also externally rotates and abducts the hip of the lead leg.

As this occurs, internal rotation and abduction occurs at the hip of the back leg. During hip and knee flexion in the lead leg, the hip internal rotators (gluteus medius, gluteus minimus, adductor magnus, and tensor fasciae latae) contract eccentrically during the external rotation (12).

These muscle clusters contract concentrically to produce internal rotation as the hip and knee extends to the starting position. The hip adductors (pectineus, gracilis, adductor longus, adductor brevis, and adductor magnus) are recruited eccentrically on the descending segment of the lead leg and concentrically during the upward phase of this exercise.

The hip adductors of the back leg contract eccentrically in the subjacent phase while abduction occurs and concentrically to produce adduction at the hip during the upward phase of the lunge and step-up.

The hip external rotators of the back leg (piriformis; superior and inferior gemellus; obturator internus and externus; quadratus femoris; gluteus maximus; and adductor longus, brevis, and magnus) contract eccentrically to control hip internal rotation as the knee is flexed toward the floor and are activated concentrically during the upward phase to the starting position (4).

With the inclusion of USEs with a forward step (12) into the resistance training program, the entire hip musculature, particularly the hip abductors, adductors, and internal and external rotators will develop with functional strength and power.

Uni-squats stalwartly develop the quadriceps and gluteals, with a complimentary enhancement to the hamstrings.

To implement one-leg squats stand with the left foot forward and the right foot back, with the feet about one shin-length apart (feet should be hip-width apart from side to side).

Situate the toes of the right foot on a platform, which measures approximately six to eight inches high. The weight is directed through the heel of the left foot.

Bend the left leg and lower the body until the left knee achieves an angle of 90 degrees between the thigh and lower leg.

Return to the starting position, being sure to focus power through on the target sector and reaching through the lowest depth of motion.

Barbell Lunge- 3 sets

Barbell lunges are a multi-joint exercise (6) that incorporates a plethora of muscles, including, predominantly, the Gluteus maximus, and also the iliopsoas, quadriceps (vastus lateralis, vastus intermedius, vastus medialis, rectus femoris), hamstrings (semimembranosus, semitendinosus, biceps femoris), soleus, and gastrocnemius.

However maximum assimilation of this movement to the objective region requires perfect execution of the advertised technique. This procedure takes time to master but will result in optimal recognition of this exercises' reputation.

Dr. John Graham (6) renders an excellent rendition of the composition of the exercise in his journal entry, "*Exercise Techniques: Barbell Lunge*":

Starting Position

- Position a standard Olympic bar at chest level in a squat or power rack.
- Load bar evenly on both sides, and secure weights with collars.
- Step underneath the bar, and position the base of the neck/upper-middle back and the hips and feet directly under the bar

- Grasp the bar using a pronated grip slightly wider than shoulder width.
- Place the bar evenly above the posterior deltoids at the base of the neck (high bar placement).
- Raise the elbows upward to provide a secure location for the bar to rest upon and to prevent the bar from sliding down the back during the execution of the lift.
- To lift the bar from the rack, extend the hips and knees to lift the bar off the rack and take a few (2–3) steps backward to clear the rack and allow adequate room to lunge forward.
- Feet should be between hip- and shoulder-width apart and pointing forward.
- Torso should remain erect
- Keep chest out and up.
- Shoulders are back.
- Keep head and neck straight, with eyes looking straight ahead.
- Before stepping forward, breathe in and hold it.

Descent (Forward Movement)

- Take an elongated step straight forward with 1 leg (lead leg).
- Keep the arms firm and the torso in an erect position as the lead foot goes forward and comes in contact with the floor.
- The rear leg (trail leg) should remain constant in the starting position, but as the lead leg moves forward, balance should shift to the ball of the foot of the trail leg as the trail leg begins to flex.
- Place the lead foot flat on the floor with the foot pointing straight forward.
- In order to maintain balance, ensure that the lead leg moves directly forward from its original starting position and that the lead ankle, knee, and hip remain in the same vertical plane. Avoid stepping to the right or left or allowing the knee to shift to one side or the other.
- Once balance is established on both feet, flex the lead knee to enable the trail leg to bend toward the floor. The trail leg should flex to a degree slightly less than the lead leg.
- The torso should remain erect with the shoulders kept directly above the hips, and the head should be erect facing forward.
- The lowest finish position of the ascent should occur when the trail leg is 1–2 in. from the floor, the lead leg is flexed to 90°, and the knee is directly above or slightly in front of the ankle
- To avoid potentially harmful shearing stress forces on the knee joint of the lead leg, it is critical that the lead knee does not extend past the lead foot.
- At the completion of the descent, a concentrated effort to “sit back” on the trailing leg should be made as if sitting on the front edge of a bench in the strength training facility.
- The depth of the barbell lunge depends upon the flexibility of the athlete's hip joint, particularly of the iliopsoas muscles.
- The lead foot should remain flat on the floor as the toes of the trail foot are extended and the ankle is dorsiflexed.
- Continue to hold breath throughout the descent.

Ascent (Backward Movement)

- While maintaining an erect torso, shift the balance forward to the lead foot, and forcefully push off the floor with the lead foot by plantar flexing the lead foot while extending the lead knee and hip joints.
- As the lead foot returns to the starting position, balance should shift to the trail foot resulting in the trail foot regaining full contact with the floor.
- The lead foot should be lifted back to its original starting position with feet between hip- and shoulder-width apart and pointing forward.
- Avoid touching the lead foot to the floor until the lead leg is returned to the finish position (unless balance is lost).
- Once the lead leg is returned to the starting position, divide the body weight equally over both feet.
- Torso should remain erect, similar to the beginning position.
- Exhale at the completion of the ascent.
- Pause momentarily to fully gain balance, switch lead legs, and repeat the procedure.

Returning the Weight to the Rack

- At the completion of the set, return the barbell back to the rack by slowly walking forward and returning the barbell to the support hooks of the rack.

In addition to the above protocol, an additional stage will be added to accentuate the gluteal musculature. A small platform will be placed in the location where the lead foot will land. This platform will allow for additional lowering of the trail leg, inducing a further stretch across the functioning glute.

It is imperative that the bodybuilder carry out the movement with precision, like a finely tuned machine.

Muscle Contraction Spectrum is used to rate the importance eccentric, isometric and concentric muscle actions.

With this particular application, emphasis on the eccentric contraction should be dramatized, as well as static contraction at the peak of the concentric abstraction.

Reverse Smith Machine Lunge- 3 sets

Reverse lunges are exceptional for increases power and shape to the gluteal locality. They are also notorious for creating deep striations in the glutes. Employing a smith machine will allow utilization of the S/NS principle (see: [24 Weeks To Battering Ram Pushing Strength Part I \(Pectoral Guideline \)](#)) in exercise three; allowing for maximal power in spite of exhausted stabilizers following the

preceding sets of barbell lunges.

- Feet should just be slightly in front body, in a stance that is just inside of shoulder width.
- Lunge the right leg to the rear by extending it back on its forefoot. Take a longer lunge to focus on the glutes.
- Lower the body on the left leg by flexing the hip and knee of right leg until knee of rear leg is almost in contact with floor. Allow the knee of the grounded leg (left leg) to bend at 90 degrees and do not allow knee to pass over the toes. The grounded leg is the working leg; the opposing leg is for balance.
- Rise back up to starting position using the left leg, i.e. the power of the gluteal musculature, by extending the hip and knee of the grounded leg. Do not use the leg that was used to step back with to push up (the right in this instance). Keep the body and head upright throughout the movement. And do not to let the working leg move far in front of your body, as a natural tendency is to step a bit further forward with each rep.
- Alternate reverse lunge with opposite leg.

Reverse Hyperextension- 3 sets

An excellent exercise for not only the glutes, but also the spinal erectors and hamstrings is the reverse hyperextension.

Begin by lying face down on a flat bench with hips hanging off the end of a bench or table. Feet should be short of touching the floor and kept straight throughout the movement. Grasp the sides of the bench, or specialized reverse hyperextension machine handles, with both hands, to support the upper body. Slowly raise feet upward by extending the hips to their peak range of motion, contracting glutes at the top of the move. Next, reverse direction and return legs to the start position.

This movement can be done with just body weight, or added weight with resistance attached to the ankles.

Implementation of Subsequent Sessions, 5-8:

Session 5- Repeat Session 1

Session 6- Repeat Session 2

Session 7- Repeat Session 3

Session 8- Repeat Session 4

Conclusion

The eminent inventor Thomas Edison once said, *"We do not know a millionth of one percent about anything."*

Such a humbling quote stated by a man of such distinguished mentality reveals the innate truth of his declaration.

The intricacies of stimulating hypertrophy and hyperplasia are only now unveiling their shrouded secrets.

A kinetic chain profile provides a detailed infrastructure for meticulous program design.

In altering (7) the plane of motion, stabilization demands, extent of parameters, tempo of repetition, category of opposition, flexion of resistance and volume of criterion-demanding workouts, an increase in the need for recruitment of the target-focused muscles can be physical manipulated. Other factors of manual regimentation include mental predomination and spiritual regimentation.

In relation to the epitomized application to the sport of bodybuilding, multitudinous studies have revealed that appositeness of the kinetic chain profile entails forsaking habitual training methodologies and embodying the extreme.

The chief undertaking of [*The Journal of Hyperplasia Research*](#) has been to seek and employ designed programs that reflect upon the physiology of the human body and its inward workings. Although science has only lit a fading match in the dark

realm that is the complexity of the human body, **JHR** stands on the edge of its light, forsaking mythologies and embracing variability.

JHR will continue to be a *nonpareil* source of discovery and application of knowledge to the sport of bodybuilding.

This unrivaled rendition of truth has been the ravenous pursuit of great minds throughout the ages.

One such intellect was that of Leo the Great.

In a time when heresy was pandemic and all moral worth was endangered by barbarian invasions, Pope Leo I stood exposed as the resolute champion of the faith, abolisher of heresy, and defender of sacred doctrine.

In quest of seeking the undeniable truth of the sacred Word, he was appointed an esteemed doctor of the scriptures. In all his accomplishments he sought the sacrifice that made the undeniable truth a confirmed reality.

***"Contemplating the Lord's Passion" From a sermon by
Leo the Great, 5th century***

"True reverence for the Lord's passion means fixing the eyes of our heart on Jesus crucified and recognizing in him our own humanity.

The earth - our earthly nature - should tremble at the suffering of its Redeemer. The rocks - the hearts of unbelievers - should come forth, the massive stones now ripped apart. Foreshadowings of the future resurrection should appear in the holy city, the church of God: what is happen to our bodies should now take place in our hearts.

No one, however weak, is denied a share in the victory of the cross. No one is beyond the help of the prayer of Christ. His prayer brought benefit to the multitude that raged against him. How much more does it bring to those who turn to him in repentance.

Ignorance has been destroyed, obstinacy has been overcome. The sacred blood of Christ has quenched the flaming sword that barred access to the tree of life. The age-old night of sin has given place to the true light.

The Christian people are invited to share the riches of paradise. All who have been reborn have the way open before them to return to their native land, from which they had been exiled. Unless indeed they close off for themselves the path that could be opened before the faith of a thief.

The business of this life should not preoccupy us with its anxiety and pride, so that we no longer strive with all the love of our heart to be like our Redeemer, and to follow his example. Everything that he did or suffered was for our salvation: he wanted his body to share the goodness of its head.

First of all, in taking our human nature while remaining God, so that the Word became man, he left no member of the human race, the unbeliever excepted, without a share in his mercy. Who does not share a common nature with Christ if he has welcomed Christ, who took our nature, and is reborn in the Spirit through whom Christ was conceived?

Again, who cannot recognize in Christ his own infirmities? Who would not recognize that Christ's eating and sleeping, his sadness and his shedding tears of love are marks of the nature of a slave?

It was this nature of a slave that had to be healed of its ancient wounds and cleansed of the defilement of sin. For that reason the only- begotten Son of God became also the son of man. He was to have both the reality of human nature and the fullness of the Godhead.

*The body that lay lifeless in the tomb is ours. The body that rose again on the third day is ours. The body that ascended above all the heights of heaven to the right hand of the Father's glory is ours. If then we walk in the way of his commandments, and are not ashamed to acknowledge the price he paid for our salvation in a lowly body, we too are to rise to share his glory. The promise he made will be fulfilled in the sight of all:
Whoever acknowledges me before men, I too will acknowledge him before my Father who is in heaven."*

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