

The Thighs

THE MUSCLES OF THE UPPER LEG

The **quadriceps** are the muscles at the front of the thigh which act as extensors of the leg. The four muscles involved are the rectus femoris, the vastus intermedius (these two muscles making up the central V-shape delineation of the middle front thigh), the vastus medialis of the inner thigh, and the vastus lateralis of the outer thigh.

BASIC FUNCTION: To extend and straighten the leg

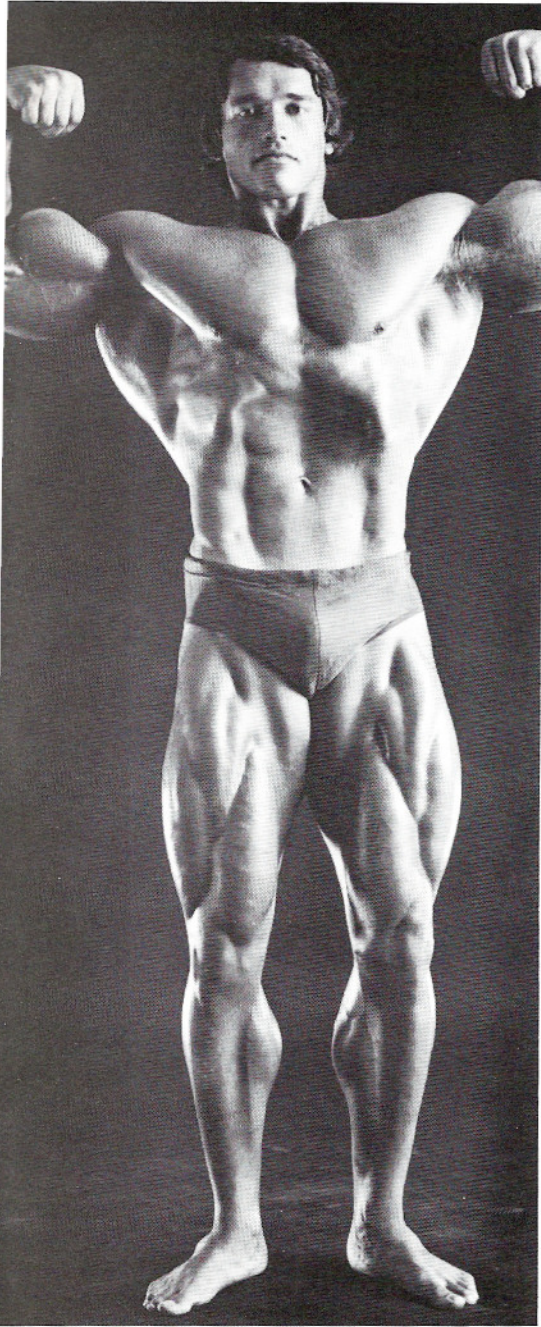
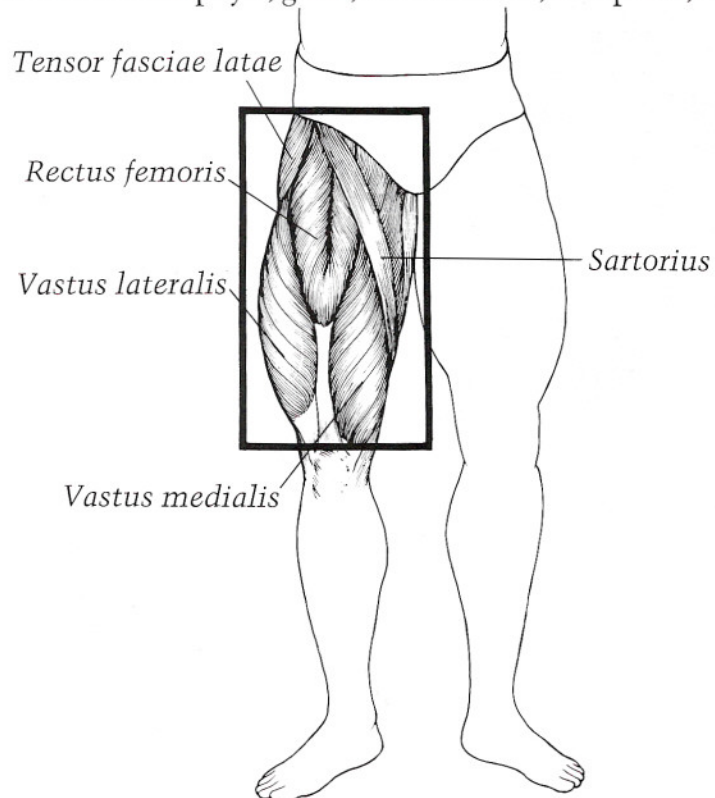
The **biceps femoris** and associated muscles—the thigh flexors at the rear of the leg

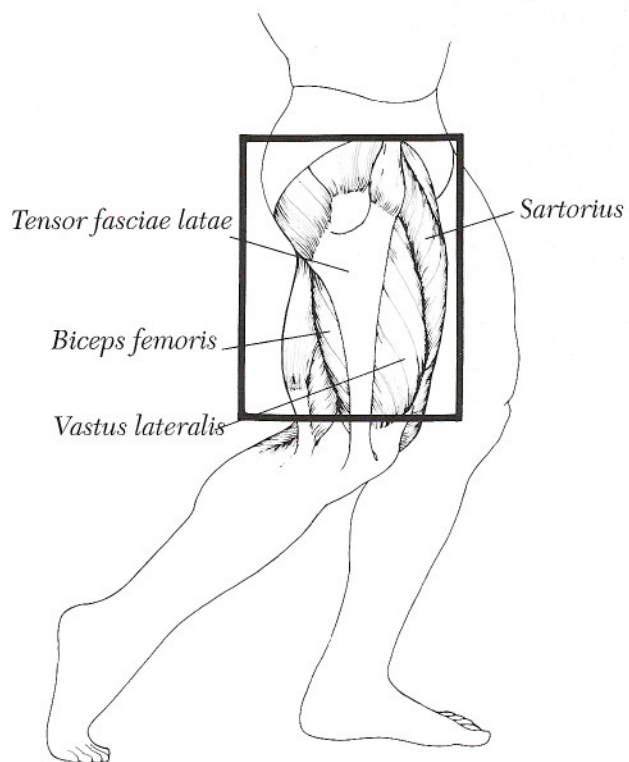
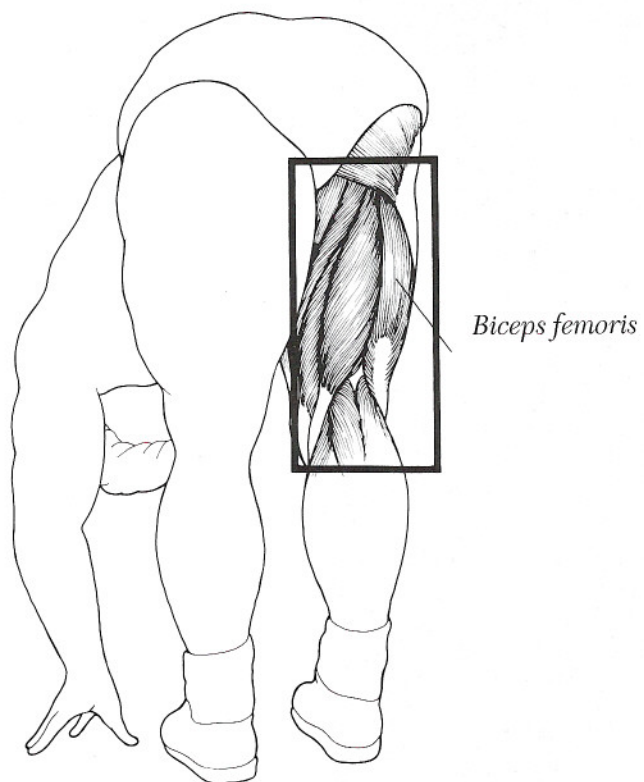
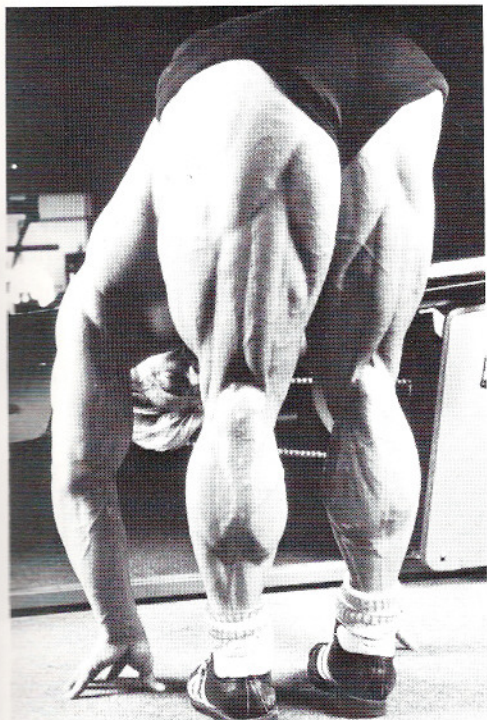
BASIC FUNCTION: To curl the leg back

Other important muscles of the upper leg include the tensor fasciae latae, coming down from the hip to the outer thigh; and the sartorius, the longest muscle in the body, which weaves diagonally across the front of the thigh.

THE IMPORTANCE OF THIGH TRAINING

The muscles of the upper leg are the largest and most powerful in the entire body. There are few movements in sports that do not involve intense leg effort. A baseball player, golfer, discus thrower, shot-putter, and boxer







Milos Sarcev's leg development is the result of a lot of hard training and use of the Priority Principle.

all begin their respective movements with a powerful leg drive. In weightlifting, most power moves like Power Cleans, Clean and Press, and Deadlifts involve a lot of leg effort, as do the lifts used in Olympic weightlifting competition.

However, there is no sport in which thigh development is as important as in bodybuilding. While contest judges have the shoulders, chest, arms, back, and abs to occupy their attention above a bodybuilder's waist, when they look at the lower body the single most compelling visual element is the thighs—the quadriceps and the hamstrings. Thighs are the most massive muscle group in the body and proportionately constitute almost half of your physique.

Can you imagine a Sergio Oliva with weak thighs? Or a Nasser El Sonbaty with skinny legs? What is the point of building your arms up to 21 inches or bigger if you display them on top of a physique with thighs that hardly measure any larger?

When I was playing soccer and skiing as a teenager in Austria, the coaches urged us to do exercises like Squats, Lunges, and Calf Raises to strengthen our legs. This early training eventually led to my falling in love with the sport of bodybuilding. We were lucky in those days to have coaches who understood the need for leg strength and how to train for it. Nowadays, whenever I talk to athletic coaches around the world, virtually all of them agree that great leg strength is the foundation of athletic excellence and that weight training is the best way to develop that strength.

But the legs have another quality besides great strength—they are capable of great endurance. Capable of moving up to a ton of weight, the legs are also designed to carry you long distances without tiring. A person in good condition can walk for weeks through rugged terrain and run for 100 miles. No other muscles of the body can deliver this dual quality of great strength and great endurance.

This is why training the legs for bodybuilding is so demanding. It isn't enough just to subject the legs to heavy overload. You have to use heavy weights and sufficient volume of training that you stress the fibers involved and exhaust the endurance capacity of the leg muscles. Doing 5 sets of Barbell Curls for the biceps can be demanding, but doing 5 sets of Heavy Squats with 400 or 500 pounds on your shoulders is more like running a mini-marathon, with that kind of total exhaustion squeezed in 8 or 9 minutes of concentrated effort.

Like many young bodybuilders, I had a tendency to train my upper body harder than my thighs. Luckily, I realized in time how important this muscle group is to a championship physique, and I began to indulge in superhuman Squats and other thigh exercises to build up this muscle mass.

An exception to the tendency of young bodybuilders to overlook leg training was Tom Platz. Tom actually had the *opposite* problem. He got heavily into leg training, then found himself with Olympia-level legs that

outclassed his upper body. Since then, he has made great strides in creating a totally proportioned body, but his unbelievable leg development has set new standards for bodybuilders to strive for.

THE DEMANDS OF LEG TRAINING

Because upper leg training is so strenuous and demanding, a lot of bodybuilders find their leg development lagging behind simply because they don't put an all-out effort into it. They look in the mirror and are disap-



When Lee Priest hits a leg shot you can clearly see that the quadriceps is composed of four separate muscles—along with the adductor muscles at the inside of the leg.

pointed in how their legs look, but they don't realize the kind of total concentration of effort it takes to make those huge muscles respond.

For many years, I did only 5 sets of Squats when I really should have been doing 8 sets. I did not include enough Front Squats and, I now realize, I did not put enough weight on the Leg Press machine.

Once I realized my mistakes and corrected them, my thighs began to grow thick and massive. I accepted the fact that leg workouts simply have to be brutal to be effective. This involves a mental effort almost as much as a physical one. It's easy to be intimidated by 400 or 500 pounds on a Squat bar (or even 200 or 300 when you are a beginner). It is difficult to gear yourself up to loading up the Leg Press machine and grinding out rep after rep, set after set.

Normal workouts are hard enough, but if thighs happen to be a weak point in your physique, you have to be prepared to push yourself even more. That means forcing yourself to break down any inhibition or barrier, blasting your thighs to create total development.

Many bodybuilders have trouble going to total failure in leg training. After all, going to exhaustion with 400 pounds across the back of your neck can be scary. This is why having a training partner to spot you is especially important for leg training. When you have forced out all the reps you can for your Squats, stand there holding the weight for a moment, then try for one more rep. Push your body to its limit. But make sure somebody is standing by to spot you when you do this. Also, when doing Leg Presses try to push yourself to this same degree, forcing the legs to exhaustion just the way you would any other body part.

If you want to build gigantic thighs and shapely glutes, you must always ask yourself this question: Is it true that I really cannot do another rep? In my experience, whenever I challenged anyone this way, he usually could force out one more.

However, as important as hard and heavy training is for thigh and glute development, don't make the mistake of confusing sheer effort with effective effort. As in any bodybuilding training, you have to use the correct technique if you want the maximum results. Besides going for maximum intensity in all of your thigh exercises, pay close attention to how the movement is supposed to be executed and try to master the technique involved. That way, your efforts will not be wasted and your thigh development will never lag behind.

Of course, your own physical proportions may dictate variations in your training. Certain bodybuilders with short legs, like Casey Viator, Mike Mentzer, and Franco Columbu, find Squats easy and rewarding. Their physical proportions give a mechanical and leverage advantage that makes it easier to execute Squats properly using very heavy weight. A taller bodybuilder like myself usually finds that the lower back becomes much more involved in this exercise than would be true for a shorter man. But I always did a lot of work on my lower back, so it was strong enough

to enable me to squat with very heavy weight in spite of my proportions. In fact, I have often thought that Squats were my best lower back exercise. Doing Front Squats—a movement in which you must keep your back straight—in addition to regular Squats, is the best way of getting the most out of your leg workouts when you have proportions like mine.

Incidentally, by trial and error I found that I was able to stay in a much better groove doing Squats by putting a low block under my heels. You can try this yourself to see if this improves your balance and the feel of the exercise. Just be careful not to use too high a block, which throws you too far onto your toes and tends to make you fall forward. Another variation that can prove useful is doing Squats on a Smith machine, where the bar slides along a fixed track and you don't have to worry about the weight sliding off your shoulders.

My ultimate model for leg development has to be Tom Platz. Tom not only worked as hard as any bodybuilder in the gym—to the point where he didn't believe he had really done anything until the pain started—but he also executed all of the exercises to perfection. You see bodybuilders all the time doing Squats by sticking out their rear ends, bending over too far, spreading their legs way out to the side—but not Tom. His form was perfect, his efforts all-out intense, and his mental concentration complete. So it is obviously more than just genes that produced his fantastic leg development.

BUILDING THE QUADRICEPS

For great thighs you need mass, shape, and separation between each of the important quadriceps muscles: the rectus femoris, vastus intermedius, vastus medialis, and vastus lateralis. You need to develop the overall mass of your thighs to bring them up to where they are proportionate with your upper body. Great size comes about only by lifting heavy weight, especially with exercises like Squats and Leg Presses.

But modern bodybuilders need more than just size to win contests. They need to develop legs that show as much quality as quantity:

1. Full development and shape of each of the separate muscles of the quadriceps; a full and satisfying sweep of muscle on the outside of the thigh from hip to knee; the central V-shaped delineation of the middle front thigh; fullness and thickness where the quadriceps insert into the knee; and a fully developed and defined leg biceps.

2. Clear and evident definition in the thigh area, with striations and cross striations standing out as if revealed in an anatomy chart.

3. Full, rounded development of the thigh as seen from the side, almost as if you were looking at a pair of parentheses (), with a distinct separation between the front of the thigh and the leg biceps.



The thighs are the most massive muscle group in the body. There are a number of exercises that produce thigh shape and separation, but for building mass there is no substitute for heavy Squats.

Nobody has achieved more fullness and thickness of the quadriceps than Tom Platz, especially in the lower area where the thigh muscles insert into the knee.



Successful bodybuilders know that you have to flex all your muscles when you hit a pose onstage. In this pose, although Kevin Levrone is showing off the muscularity of his upper body, he has made sure to pose and flex his legs as well.

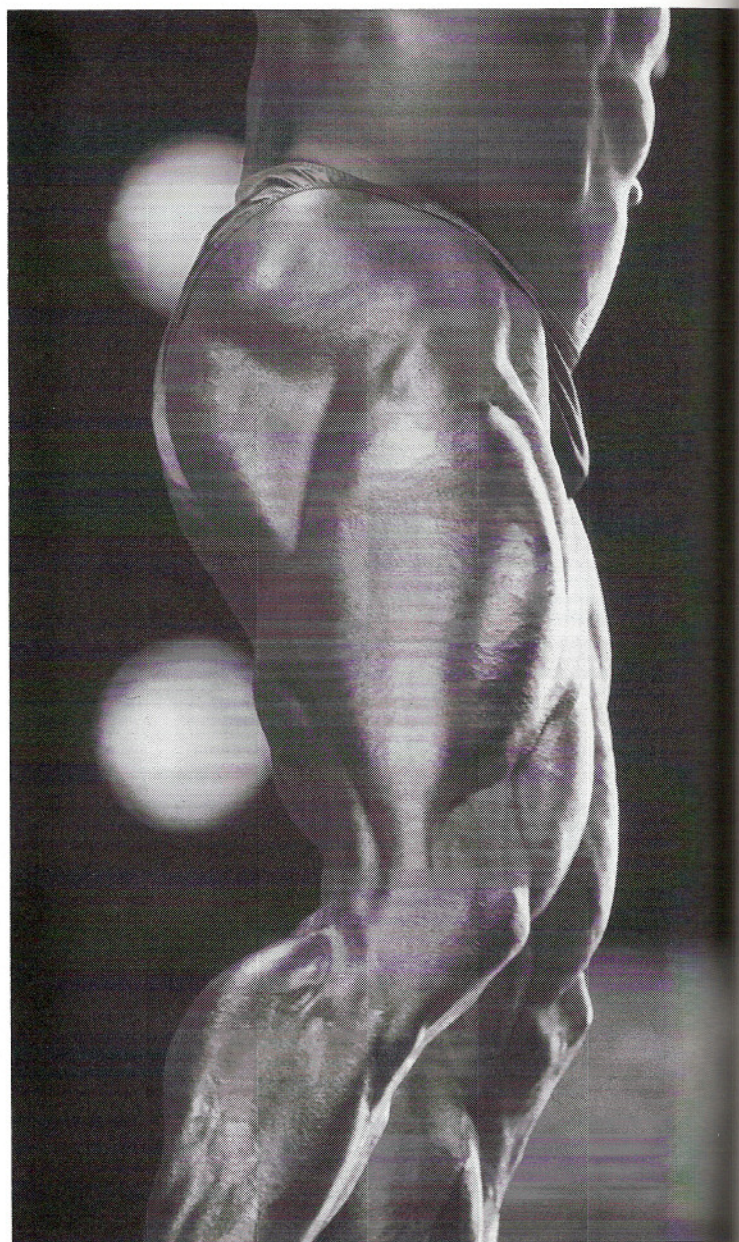


Bodybuilders try to develop a split between the thigh and the leg biceps—the split on Flex Wheeler's leg is so prominent that it looks as if it were achieved by the slash of a sword!





Lee Priest is a great fan of the legendary Tom Platz and has done his best to create a development of the upper leg that, like his idol, is so massive it doesn't look as if it quite belongs on a human being.



Another bodybuilder whose quads are both massive and highly detailed is Flex Wheeler.

The basic mass-building exercise for quadriceps and gluteals is Squats—an exercise you will find in every program from Beginning to Competition and one which every great bodybuilder has learned to rely on. Squats have a complicated mechanical effect on the body.

As you begin the Squat, the thighs bear most of the effort; the farther down you go, the more the stress is transferred to the hamstrings; at the bottom of the movement, the buttocks take up a larger proportion of the strain. However, as I explained earlier, Squats may be more or less effective depending on an individual's particular proportions. Sometimes exercises like Front Squats are also needed to more directly work the quadriceps and lessen the involvement of the lower back muscles.

Heavy Leg Presses also contribute to building massive thighs and glutes. Leg Extensions, which isolate the quadriceps themselves, are not considered a mass-building movement.

Good muscle separation and definition obviously cannot be achieved unless you diet to severely reduce your body fat. But it takes more than just diet—you also need to work your thighs with exercises like Leg Extensions, Lunges, and Leg Curls. Including Hack Squats in your workouts also helps give you ultimate hardness and definition. (Incidentally, Squats and Lunges actually work the hamstrings to some degree, too—along with the exercises described in the next section.)

THE HAMSTRINGS

Even though many bodybuilders a few years ago had well-developed upper legs in both the front and the back, there wasn't all that much emphasis put on the leg biceps in competition. Now they have become enormously important thanks to bodybuilders like Tom Platz, Sergio Oliva, and Robby Robinson, who are great examples of how much this area can be developed.

Like triceps, the leg biceps play a major part in a wide variety of poses. When you do a side chest or triceps shot, the sweep of the leg biceps is very evident. In any back shot, powerful and defined rear delts, traps, and lats will not compensate for underdeveloped leg biceps. Seen from the back, development of the distinct heads of the leg biceps, along with ripped and developed calves, is needed to create a balance to muscularity of the back, shoulders, and arms displayed in poses like a rear double-biceps or rear lat spread. Also, we are seeing more and more examples of striated and even cross-striated leg biceps, something that almost didn't exist ten or fifteen years ago. And, just as in auto racing or virtually any other sport, as soon as somebody achieves something new, everybody else dives in and pursues the same achievement. So, fabulously muscular, striated, and vascular leg biceps are likely to be the norm rather than the exception in the future.

Shown here at the 1974 Mr. Olympia, even though I am standing relaxed, I am consciously keeping my hamstrings tight and flexed. I was very glad that I had made an extra effort that year to really work this area hard.



The more developed the leg biceps are, the more your legs are going to meet in the middle and touch each other, even though your legs are held some distance apart. A properly developed leg biceps leaves a distinct line separating the back of the leg from the front of the thigh when seen from the side, and is a sure indication of a bodybuilder who has really succeeded in achieving quality leg training.

The primary exercises for developing the hamstrings are Leg Curls. These can be done lying down (usually using both legs at the same time) or standing (getting extra isolation using one leg at a time). But this muscle also comes into play in Squats and Lunges, especially as you work through the lower half of the range of motion.

To get a full stretch in the leg biceps, I recommend doing Straight-Leg Deadlifts and Good Mornings, exercises that are primarily for the lower back, but which also help develop the back of the thighs and glutes.

Don't forget that leg biceps also respond extremely well to various

Shocking Principles like the Stripping Method, partial and forced reps, and supersetting. The more you can shock this important muscle, the more development you can expect to see.

BEGINNING AND ADVANCED PROGRAMS

In the Beginning Program, I have included just basic exercises designed to work each important area of the leg: Squats, Lunges, and Leg Curls. The first two exercises work well in combination to build up the size and strength of the frontal thighs and glutes, and the last is the most direct way of developing the back of the thighs.

But don't make the mistake of believing that these exercises are merely for beginners simply because they are included in the Beginning Program. No matter how advanced you become, these exercises are still vital to building and maintaining great thighs. Except for very specialized training in which you are working only on certain weak points, you will always need to rely on these basic movements.

In Advanced Training you need to do Squats in different ways. Front Squats, for example, force you to keep your back straight, which works the muscles differently. In Hack Squats you go all the way down, which works the lower thighs and helps separate the quadriceps from the leg biceps. The various kinds of Squats attack the leg from different directions; exercises for leg biceps, such as Straight-Leg Deadlifts, allow you to continue to escalate the intensity of effort you impose on these muscles.

Because leg training is so demanding, conditioning is an important factor. In the beginning, you will find the few leg exercises included to be difficult enough. But after a while, when you have become stronger and more conditioned, the total efforts of the Advanced and Competition Programs, as difficult as they are, will be well within your increased capabilities.

COMPETITION PROGRAM

Once you begin to train for competition, you have to be conscious of many more aspects of leg development—full muscle shape, greater striations, cross striations, complete muscle separation, the mass of the thighs developed in proportion to the rest of the body. To achieve this you need to demand even more from your leg training, making already difficult workouts *almost impossible by using every one of the Shocking Principles you can.*

Supersetting leg training, for example, can really deplete you. The thighs are the biggest muscles in the body and when you start doing two or more sets without resting you can easily drive yourself to total exhaustion unless you are in great condition. You can superset within the same muscle—Squats and Leg Extensions, for example—or back to front with

Lunges and Leg Curls. But all of this intensity is for a purpose: to do everything possible to develop every part of the thigh.

At this level, you need to be extremely honest with yourself, looking at your thighs and accurately assessing where your development is merely adequate, outstanding, or simply unsatisfactory. The key to winning is to detect weak points early on and begin to correct them as soon as possible rather than waiting until it may be too late.

The Competition Program is designed to teach you total control over your own development. You will need to understand your own body structure more completely, and to fully comprehend which movements are designed to emphasize the various areas of the legs—the upper or lower thighs, the inside or outside, the insertion, origin, or thickness of the leg biceps. You will need to learn to feel precisely where Squats, Front Squats, Leg Presses, and Hack Squats are having their effect, and how to alter your program to include a greater proportion of those exercises that work best for you. Knowing all this enables you to achieve the comprehensive development that it takes to win titles.

Remember, all the exercises detailed in these programs are important. Even if you vary the program, it is not a good idea to leave out the fundamental exercises entirely. Squats may build mass and Leg Extensions create shape and definition, but the combination of these two movements, plus the other important exercises, is what gives you total quality development.

The Competition Program is not so much a matter of doing more or different exercises as of increasing the “time intensity” of the training with a lot of supersets. For competition, it is extremely important that the thighs be super-defined, with tremendous muscle separation. I have found that the way to achieve that look is by doing a lot of supersets: Leg Extensions and Squats, Front Squats and Leg Curls, Hack Squats and Leg Curls. Using these methods, which will intensify the burn so greatly that your desire for success will be tested on each and every set, is the best way to achieve your goals.

I wouldn't use the Stripping Method in thigh training all the time, but it really works well when you are preparing for competition. Years ago when I was looking for extra thigh definition, I experimented on a sliding Hack Squat machine—I put on enough weight to allow me to just do 6 reps, took a little off, and did 6 more. Eventually I did 5 sets this way for a total of 30 reps, which gave me a tremendous burn in the quadriceps muscles. I also found this method worked great with Leg Extensions.

Since legs have a tremendous capacity for endurance, continuing your set with the Stripping Method helps you totally exhaust all the muscle fiber available. Some machines are very useful when you train this way because you can strip off weight quickly by just changing the pin, and can continue working your legs to total failure without fear of being unable to control the weight at the end. You can do the same thing with Squats by

pulling plates off the bar, although you may find this the most grueling exercise you have ever done.

The biggest progress I made in thigh training was in 1971 when, in addition to sheer size, what I needed most was deeper definition and separation. So I began leg training with a superset of Leg Extensions followed by Squats. I hit the Leg Extensions hard, so I was very weak and tired when I got to the Squats. My thighs felt dead, and I found that I could hardly move 315 pounds. But I kept trying and soon was able to do Heavy Squats immediately after Leg Extensions, and my thighs responded tremendously to this new shock. Another superset that worked well for me was Front Squats immediately followed by Leg Curls.

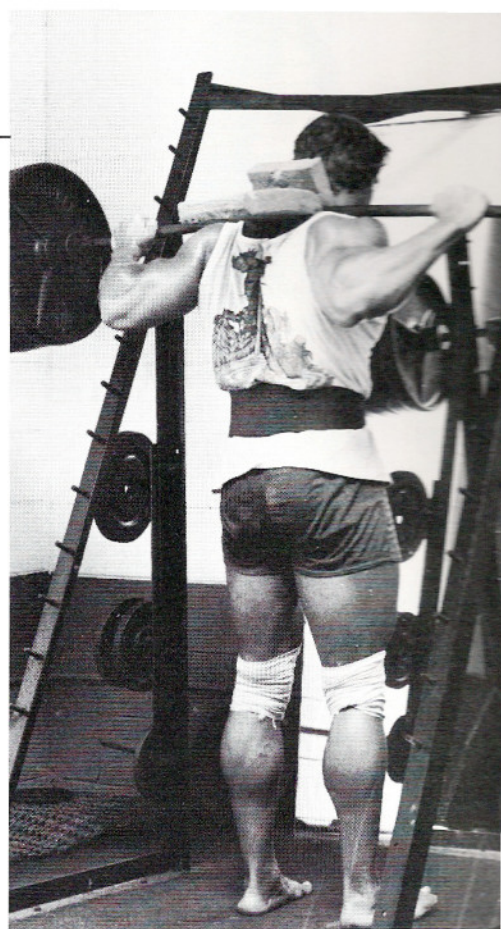
For emphasizing the thigh muscles above the knee I've always relied on Hack Squats, especially for competition training. Hack Squats produce maximum hardness, definition, and separation. I discovered the merits of this exercise through Steve Reeves, who found it really beneficial when getting his legs into competition shape.

Tom Platz had a method of exhausting the endurance capacity of the legs as well as blasting the muscles. When he was doing Leg Extensions, for example, he would do as many full reps as he could. Then, as he began to tire and couldn't do full-range movements anymore, he continued the set, moving the weight just as far as he could—three-quarter reps, half reps, quarter reps. Finally, he ended up lying back on the machine, totally spent, but you could see his legs still contracting, moving the weight only inches at a time. He didn't stop until his quadriceps were so literally exhausted that he couldn't move the weight even a fraction of an inch. This was how he used partial reps, a method in which Tom cut down on the range of motion rather than lightening up on the weight.

Platz demanded more of his legs, which is why he got so much more than other people. For example, he would do as many as 35 reps of Squats with 315 on the bar, another 25 reps after less than 60 seconds' rest, several sets of total-exhaustion Leg Extensions and Leg Curls, Hack Squats and Leg Presses, brutal calf work—and then go out and ride his bicycle for 20 miles to finish off his leg workout.

These are just some of the methods the champions have used to develop their thighs. Developing really top-quality legs is a matter of hard work, good knowledge of technique, and application of all the Shocking Principles to create the maximum level of training intensity—for example, forced negatives with Leg Extension, Leg Curls, Hack Squats, or Machine Squats, all of which are done on machines, allowing the techniques to be done in safety; or Staggered Sets with an exercise like Squats, doing 8, 10, or even more sets over the course of a workout; or pre-fatiguing the quadriceps with Leg Extensions and immediately trying to do Squats with your thigh muscles screaming in pain. Pushing the legs to their ultimate development requires a mixture of courage, technique, and imagination.

The one basic need shared by all bodybuilders is, of course, simply the

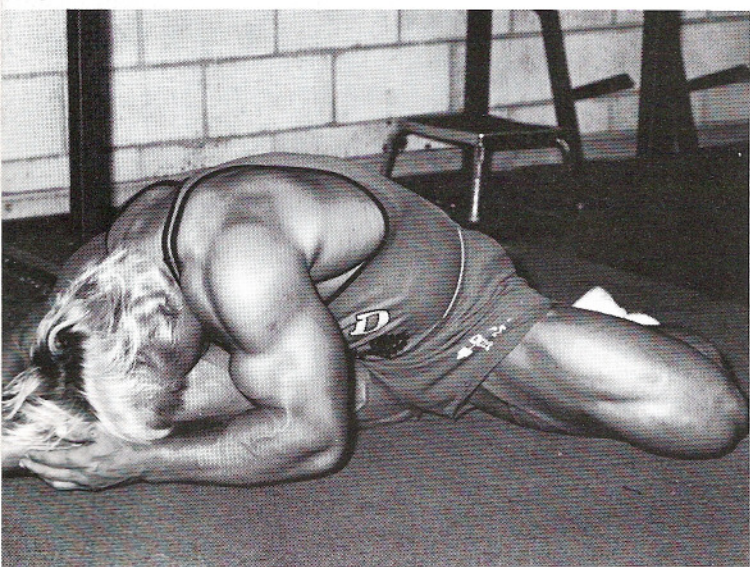


To build big muscles, you need to train with heavy weight. At one point, simply to put an extra inch on my thighs, I concentrated on doing Squats with 500 pounds for reps.



I was perfectly happy this day to flex for photographer John Balik's camera, but I always welcome any excuse to flex during a workout. After every set, I like to stand in front of the mirror and tense the muscles I'm training. Flexing them as hard as I can brings out maximum definition, especially in the thighs.

Muscle-bound? Look at Tom Platz's incredible flexibility.



development of mass in the upper leg. I remember when I had pretty good overall development, but simply lacked size. To build up the mass I needed, I included a lot of very Heavy Squats in my leg routine, especially Half Squats. Half Squats let you use an enormous amount of weight, really make the legs work intensely, but with no real danger of injury to the knees. Whenever you are trying to build mass, you need to train according to basic power principles—fewer reps and sets, more rest between sets, but with increased poundage, Full Squats, Half Squats, and Front Squats done with a barbell or on a machine are the principal power exercises. You can also do Leg Presses on a machine as a power exercise by using very heavy weight.

FLEXING AND STRETCHING

Whenever you see body builders cramping up from fatigue in a contest, it is usually the leg muscles that go first. These are huge, strong muscles and it takes a lot of practice to develop the kind of endurance needed to pose the legs for hour after hour.

Hard posing practice and flexing the legs constantly during your workout help create maximum muscle separation and the cross striations that modern bodybuilders are now achieving. However, the more you contract these large muscles, the more they tend to shorten up, so it is equally important to lengthen them again with stretching movements. Virtually all the top champions use a lot of stretching in order to develop their fantastic legs. Again, using Tom Platz as an example, he would spend 15 minutes stretching before doing a leg workout, and then stretch again after he finished.

But you can also stretch during a workout by including the right exercises—for example, doing Straight-Leg Deadlifts or Good Mornings to stretch the leg biceps right after you do your Leg Curls, being sure to go all the way down when doing Squats and Hack Squats, and bringing your knees all the way to your chest when doing Leg Presses.

WEAK POINT TRAINING

Because the leg muscles are so large and complex, almost any bodybuilder is going to discover some weak points at some stage in his career. It is necessary to analyze what the problem is and to understand what exercises and techniques can be used to correct it.

In general, I recommend training legs according to the Priority Principle. Leg training is so demanding that, if you want to get the most out of it, you had better train them when you are fresh and strong. It is also important to have a good workout partner to push you to your limits and to be there when you need spotting.

For specific problem areas I recommend the following leg exercises:



When I first began competing, my legs were considered a weak point, but a lot of hard work, training my thighs according to the Priority Principle and every Shock Principle I could learn or invent, made the difference, so by the early 1970s my thigh development was no longer a problem.

LOWER THIGH DEVELOPMENT

Since the lower thigh works hardest when the knee is fully bent, I recommend the following exercises with a three-quarter movement in which you go all the way down but come up only about three-quarters of the way.

Squats, Hack Squats, and Leg Presses

Leg Extensions, concentrating on letting the legs go all the way back and stretching out the thigh to the point where the lower thigh is working the hardest

OUTER THIGH DEVELOPMENT

Front Squats

Hack Squats

Any Squat or Leg Press with toes pointed straight and the feet close together

Abductor machines and movements

INNER THIGH DEVELOPMENT

Lots of Lunges—a very valuable inside thigh exercise

Straight-Leg Deadlifts

Any Squat or Press movement with the toes turned outward with a relatively wide foot stance

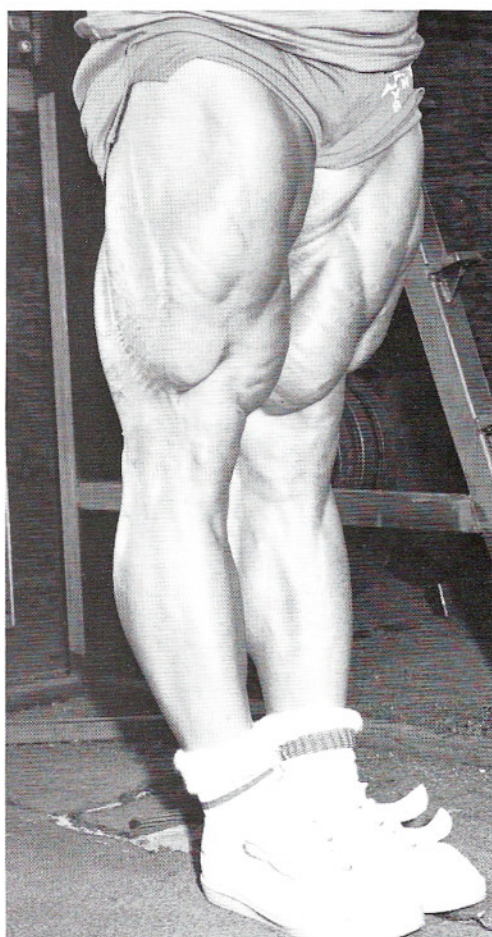
Adductor machines and movements

FRONT SWEEP OF THIGHS

Hack Squats with a block under the heels to further stress the quadriceps

Sissy Squats

In developing the thighs, it is helpful to vary your foot position when doing various thigh movements:



FOR OVERALL DEVELOPMENT

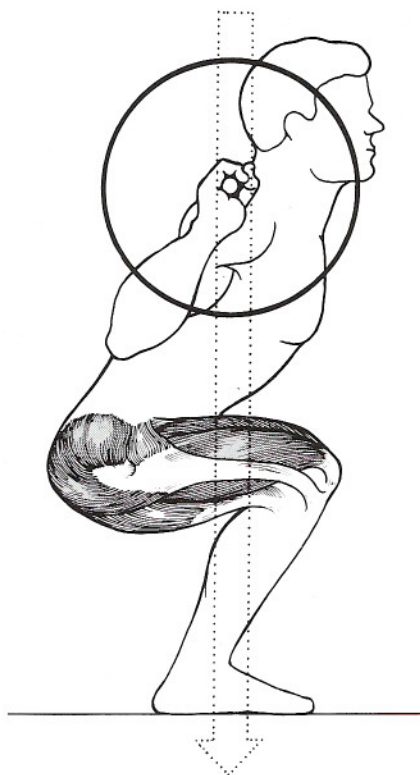
Feet shoulder-width apart
Toes pointed slightly out

FOR OUTER THIGH (VASTUS LATERALIS) EMPHASIS

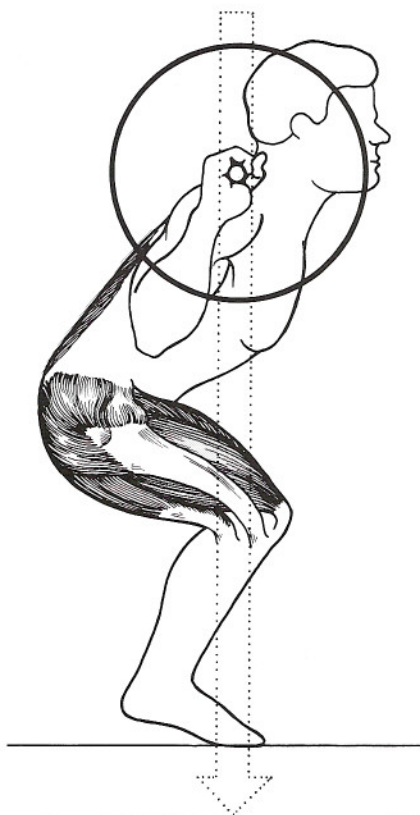
Feet close together
Toes pointed straight ahead

**FOR INNER THIGH (ADDUCTORS) AND FRONT THIGH (VASTUS MEDIALIS)
EMPHASIS**

Feet relatively wide apart
Toes pointed out at a wide angle



To get the most out of Squats, the bar should remain directly over your feet. As you bend your knees coming down, make sure your head is up and your back straight. This takes the lower back out of the movement and puts the stress on the leg and glute muscles where it belongs.



Allowing your head to lean forward, as shown here, puts additional stress on the lower back and less on the thighs, where you really want it. Bodybuilders with long legs tend to have this problem more than those with short legs.