Squat Variations

By Tom Cross 1994 NSCA College Coach of the Year

While many sport and strength coaches will agree that the back squat is the best total body exercise to produce growth, strength and power, there is a growing tendency to include more squat variations in the workout. I have come to the belief that the back squat has no equal in developing the organism, but the front squat and the extended, or snatch squat, are more productive in developing athletic qualities. In fact, we now teach the front squat to beginners before teaching the back squat because of the balance, flexibility and torso control which the exercise promotes. Also, variations with special emphasis on single leg training are extremely athletic and are widely used in many world class training programs.

We have found the following variations to be valuable in promoting specific qualities and we use them regularly in our training based on individual needs and the phase of the training cycle.

DOUBLE LEG TRAINING

1.**FRONT SQUAT** (fig.1)

Barbell resting on deltoids with the elbows held high

WHY?1.promotes torso strength 2.promotes shoulder, forearm, hip and ankle flexibility 3.promotes balance

HOW? 1.From the starting position, take a huge breath to lift and expand the chest. 2.Keep the neck an extension of the back with the chin tucked in, not down. 3.Slowly descend as sitting in a chair while keeping feet flat on floor and elbows up. 4.Go to a depth slightly below parallel and return to the standing position pushing the elbows out and up first. 5.Because of stress to the upper extremities, we use sets of not more than 8 repetitions.

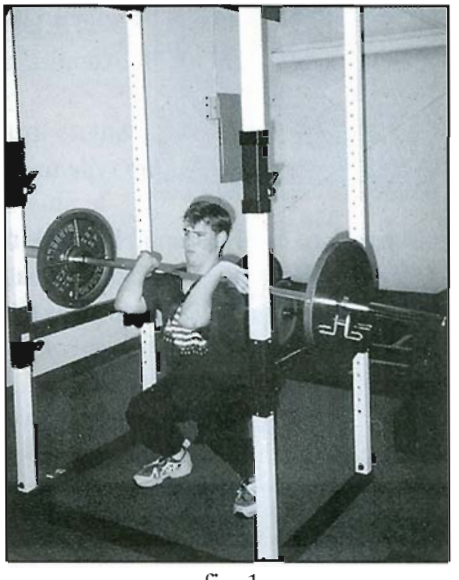

fig.1

2.**EXTENDED OR SNATCH SQUAT** (fig.2)

Barbell overhead, wide grip, elbows locked, pull (stretch) the bar

WHY? —Hip, groin, back strength and flexibility with total body balance and control.

HOW? — 1.From the starting position, breathe and set the back 2.Roll elbows out and shrug shoulders. 3.Descend as sitting in chair keeping torso as erect as possible 4.Keep heels flat with the bar over the ankles 5.Return to standing position 6.Limit sets to 4 repetitions

NOTE: In the previous 2 squat variations, we allow the knees to move forward. In all other squat variations, we insist upon the knee being over the ankle with the lower leg straight up and down.

fig.2

3.**SPEED SQUAT**

Body weight only, hands held at back of head (prisoner squat)

WHY? —Explosive hip and knee extension training, speed and balance

HOW? —1.Keep feet flat on floor and descend rapidly but in control, maintaining good posture. 2.Explode up as fast as possible. 3.Goal is 20 reps in 20 seconds—-must get 20 reps. 4.Do 3 sets with one minute rest between sets

4.**DUMBBELL SQUAT PRESS** (fig.3)

Dumbbells held at the shoulders, feet flat

WHY? —Explosive training with additional balance challenges

HOW? — 1.From starting position, descend as in speed squat.
2.Explode up as fast as possible, pressing the dumbbells as the ankles extend and the heels leave the ground. 3.Get feet flat again before starting the next rep.
4.Goal is 8 full good reps in 15 seconds.

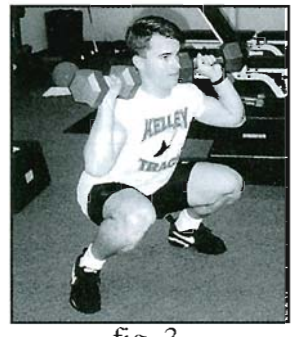

fig. 3

SINGLE LEG TRAINING

1.**LUNGE EXERCISES**

Stick, barbell, dumbbell, extended above head, explosive, walking, out and back, lateral

WHY? —single leg jump type training

Lunges are easily adaptable to the facility, equipment, and most importantly, the needs of the athlete. They are great for beginners as well as world class competitors. The only limits are the imagination of the coach. These principles are basic to all types of lunge training:
1.Good posture - chest up, chin in, stand tall 2.Use a long full step
a.front leg with knee over ankle, weight on heel (full-foot)
b.rear leg with soft knee to just above floor and toe pointed ahead
3.Keep the weight over the center of gravity 4.maintain control of the eccentric contraction

STICK (Fig. 4)—great for beginners or those returning from injury BARBELL (Fig. 5)—for strength, hip and groin flexibility DUMBBELL (Fig. 6 & 7)—hanging for leg and hip strength; coordinate arm movement for runners EXTENDED (Fig. 8)—excellent for improving strength and balance in jumpers EXPLOSIVE (Fig. 9)—a modified skip motion for jumpers, power sports WALKING (Fig. 10)—best way for most sport athletes to develop the hamstrings, glutes, and low back muscles involved with running and jumping—out and back — only where space is limitedLATERAL (Fig. 11-12)—hip, groin and hamstring control and flexibility

fig. 4

fig. 5

fig. 6

2.**SPLIT SQUATS** (Fig. 13)

Split Squats are very similar in most respects to the lunge exercises. Split the feet front to back as with a lunge step and work down, up in a stationery position. This enables the athlete to place the muscle under more stress as it minimizes the rest factor. Switch feet after the prescribed number of reps. Also one may elevate either the front or the back leg to increase the range of motion for an area of weakness. Great exercise for improving balance and control of the hips. Soccer players seem to respond especially well to this training. Be sure to follow the principles outlined for lunges when doing split-squats.

fig. 7


fig. 8

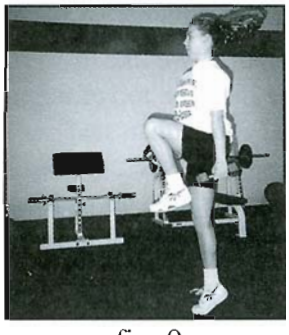
fig. 9


fig. 10


fig. 11


fig. 12

3.**STEP-UPS** (Fig. 14)

Barbell / Dumbbell / Medicine Ball

These exercises are another form of single leg jump type training that is similar in many ways to lunge exercises. The goals of the training determine both the type and amount of resistance.

We use between 6-12 repetitions each leg per set and keep the up leg in place while all reps are completed. This style provides less rest and greater intensity of training. All repetitions for each leg are to be completed without rest. This style also enables the athlete to do extra work to improve a weakness. With a barbell, we emphasize strength; with the dumbbells, speed and explosion; with a medicine ball, endurance and torso strength. We have the athlete hold the ball in front of the face at arms length and tighten their abdominal for this exercise. The step should be at a height to get the hip parallel to the floor. Always follow the lunge principles for step-up training.

Certain athletes continually remain out of control on the down phase of step-ups. To help correct this weakness, we do STEP-DOWNS (Fig. 15). Picture with one foot off the side of the box, lower the body slowly to the power position, hold for 3 seconds, then return. This exercise improves eccentric strength, ankle strength, and the all important factors of balance and body control. It is vital to keep the knee above the ankle and the full foot on the floor!

4.**ONE LEG SQUAT** (Fig. 16-17)

Body weight Only

WHY? —Hip and leg strength and flexibility...especially effective for the leg adductors.

HOW? — 1.From a box or step in power rack, the athlete squats on one leg while the other leg drops below the step toward the floor...using the arms for the amount of support needed. 2.Lower the hips until the upper leg touches the lower leg. 3.Keep the knee above the ankle! 4.As ability and strength improve, use only one arm for assistance. 5.Cycle the opposite arm with the leg in form running techniques. The ultimate goal is to do the exercise without any arm assistance. This is a daily exercise with a workout including 3 sets of 8 reps each leg.

The single leg variations are specific to running and jumping activities so vital in power sports. Most school athletes have a need to increase their speed and their vertical jump. I have found these exercises to be good for leg strength without placing undue stress on the back. Leg strength promotes stride length; hip and shoulder flexibility and stride frequency. As strength and flexibility increase in the low back, butt and hip, so does speed. There is a place for this type of training in your program.


fig. 13

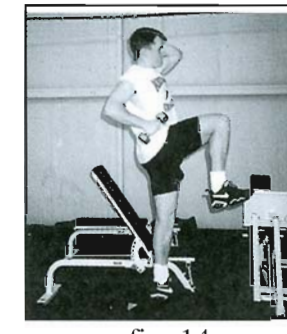
fig. 14


fig. 15


fig. 16


fig. 17