

Patella VMO Training

I. Identification

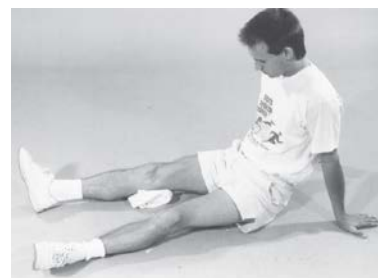
- A. Patella – knee cap
- B. Quadricep muscles – front thigh muscles, consisting of four muscles
- C. VMO (*vastus medialis oblique*) – inner most quadricep muscle
- D. Patella Tracking –
 - 1) Place fingers on patella, tighten quad.
 - 2) Identify where patella moves.
 - 3) Goal is for patella to move straight up.



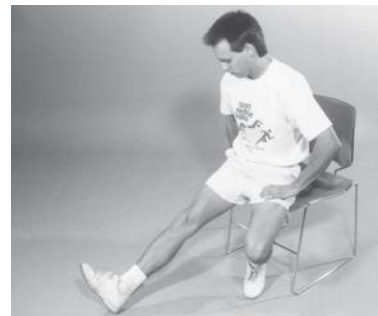
II. Quad set is for tightening (contraction) of the quadricep muscles

Positions for quad set VMO Training

- A. **Sit on Floor:** Place small towel roll under knee. Bend ankle, toes toward face. To help recruit VMO, place hand pressure on inner thigh and tighten buttocks. Contract quad by attempting to raise heel off of floor. Hold 5 seconds. Repeat _____ times.



- B. **Sit in Chair:** Sit toward edge of chair, bend ankle, tighten quad. Hold 5 seconds. Repeat _____ times.



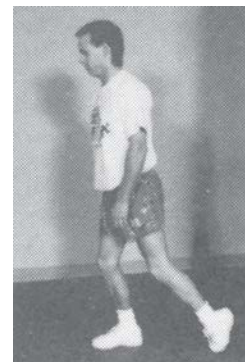
Progress by repeating this exercise with knee bent when able.

Advanced Variation

Sit in Chair: Place foot flat on floor, bend knee slightly. Tighten quad while maintaining bend in knee and keeping foot flat on floor.

Try also with knee bent to _____°.

- C. **Standing Mid Stance:** Place involved leg forward. Shift body weight onto forward leg, tighten buttock. Perform quad set working to tighten VMO first. Repeat _____ times.



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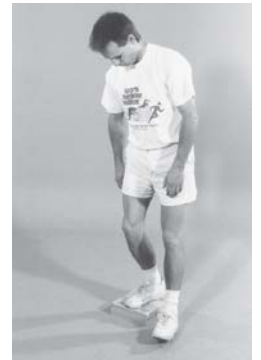
D. Mini Squat

1. **Both Legs** – Standing, feet shoulder-width apart, hand support as necessary. Align patella to be over second toe, tighten buttock, tighten quad attempting to tighten VMO first. Bend knees to approx. _____ degrees, maintaining VMO contraction. Return to knee straightened position. Repeat _____ times.

2. **Single Leg** – When ready as above.



- E. **Step Down:** Stand on step (telephone book). Squeeze buttock, tighten VMO, step down with opposite leg, letting heel touch floor. Return leg to step. Maintain VMO contraction throughout movement. Repeat to fatigue. When able to perform 3 sets of 20, progress by increasing height of step.



III. Wall Sit

Stand with your back against wall, feet shoulder-width apart 8- to 12-inches from wall, toes pointing forward. Slightly bend knees. Hold position 20 to 30 seconds. Perform 5 times. Progress to 1-minute holds.



IV. Single Leg Balance

- A. Stand on single leg with slight knee bend. Stand in front of chair to assist with balance. Position patella over 2nd toe. Hold position as long as possible, progress to 1 minute hold. Progress to single leg standing unassisted. Attempt to perform with eyes closed when ready.
- B. Balance with movement of opposite leg
 1. Stand on single leg, slight knee bend.
Move opposite leg: Forward, Out to Side, Backward.
Repeat 10 times in each direction.
Progress to 3 sets of 20 in each direction.
 2. Attach tubing to opposite leg. Perform in each direction as above, with 3-5 second hold at end of motion.
Repeat 10 times in each direction.
Progress to 3 sets of 20 in each direction.



Perform quick motion, maintain upright position.
Perform to fatigue.

