

Step-Ups

... Sports Performance Bulletin

Muscles involved: quadriceps (thigh), hamstrings, hip flexors, gastrocnemius, soleus (upper and lower calf muscles)

Joint motion: hip, knee and ankle extension

Sports applicability: all sports, particularly those involving running ... Conditioning benefits:

General: The step-up is a great exercise for all the leg muscles, although it is often overlooked in favour of the squat. It is an advanced exercise when heavy weights are used and should then be performed only by well-conditioned athletes. However, when performed with light weights or **simply using body weight** it is suitable for virtually all sportsmen and women.

Sport specific: There is a school of thought that crowns the step-up as the king of compound leg weight training exercises. This is based on the fact that the exercise uses an independent leg action which closely resembles the movement pattern of the leg muscles when running and jumping.

Start position: Take the bar from the squat rack (which should be set up to allow the bar to be removed at shoulder height). Position the bar so that it is supported evenly across the back of your shoulders, using a pad or towel for cushioning if necessary. Hold the bar with an evenly-spaced over-grasp grip;

Stand tall and keep your back in neutral alignment – ie. not arched or rounded – with your feet shoulder-width apart and toes pointing straight ahead or slightly turned out;

Keep your ankles, knees and hips in alignment.

Action

- 1 Step up onto a suitably strong bench by placing the foot of your lead (stepping) leg flat onto it;
- 2 At the same time, remove your non-stepping leg from the floor and bring it up to place the foot parallel to – and shoulder-width apart from – the stepping foot on the bench;
- 3 Step back down with your lead foot and bring the other foot back down to join it to complete one repetition.

Training tips: Do look straight ahead throughout the exercise and keep your back in neutral. Make sure you step up and down in a straight line without wobbling from side to side, which can place strain on the ankle, knee, hips and back.

Don't use a padded bench as this will provide an unstable base. The bench should be high enough to allow you to step up from a maximum 90° angle at the knee when the stepping leg is on the bench. A lower bench will result in a shallower knee angle and the ensuing action will recruit less buttock and hamstring musculature.

Don't perform step-ups with heavy weights if you have a back problem.

Start with 4 x 10 repetitions on each leg at 50% of 1 repetition maximum (1RM), to a 'one-up, one-down' count to condition yourself safely to the exercise. Take 90 seconds to recover between the 8 sets.

Variations and sport specific exercise progression

Step-up drive (with or without barbell): This variation can make the exercise more sport specific and is particularly relevant to those engaged in dynamic running and jumping sports. This variation should be performed in one smooth movement. Begin as described above but, on stepping up onto the bench, 'drive' the non-stepping thigh up to a position parallel to the floor, while rising onto the toes of your stepping leg. Next, place the non-stepping foot back down onto the bench, then step back down to the floor as described above. Note: because this exercise should be performed at speed, only light weights should be used if using a barbell. However, speed should not be achieved at the expense of technique. Perform 3 x 10 repetitions on each leg, taking 90 seconds – 2 minutes recovery between your 6 sets.

Grounded foot step-up drive: This progression is great for developing power endurance in the quadriceps of the stepping leg. For this exercise you leave the stepping leg 'grounded' on the bench as you complete your reps. The drive is initiated from the extension of the thigh of the grounded leg and the upswing of the non-stepping thigh to a position parallel to the ground. Coordinate movement of arms with legs – ie opposite arm to leg. Perform 3 sets of 30 seconds on your right leg followed by the same on your left. Take 30 seconds' recovery between sets and while changing legs.

