



# PowerStep



A Knee Injury Program designed by Dr Christopher Vertullo, Mr Bruce Rawson, and Mr Hardy Sattler.

A strategic warm-up program designed to enhance performance and decrease the number of ACL injuries incurred by young athletes.

This program is a highly specific 15-minute dynamic warm-up session that consists of dynamic stretching, strengthening, plyometrics, and sport specific agility exercises aimed at addressing potential deficits in the strength and coordination of the stabilizing muscles around the knee joint.

It is important to use proper technique during all exercises. Coaches need to emphasize correct posture and reinforce soft landings (land on a bent knee rather than a straight leg - this reduces the load through the knee). This program should be completed 2 to 3 times a week at a minimum.

The PowerStep program involves completing a series of "run throughs" between markers 25m apart, where the athlete gradually builds up speed through the 2 repetitions. Before the athlete completes the 12 steps they must perform at least 2 laps of the field as a general warm up and may perform this at a variable place.

## The 12 PowerSteps : Perform at least 2 repetitions of each PowerStep, the second faster than the first.



**1 Straight Line run through Jog forward and backward**

Complete a jog between markers. Educate athletes on good running technique; keep the hip/knee/ankle in straight alignment without the knee caving in or the feet whipping out to the side.



**2 Side Steps - Side to side**

Start in an athletic stance with a slight bend at the knee. Leading with the right foot, sidestep pushing off with the left foot (back leg). When you drive off with the back leg, be sure the hip/knee/ankle are in a straight line.



**3 Walking Lunges**

Lunge forward and drop the back knee straight down. Make sure that you keep your front knee over your ankle. Control the motion and try to avoid your front knee from caving inward. If you cannot see your toes on your leading leg, you are doing the exercise incorrectly.



**4 Carioca**

Alternate bringing the one leg in front and then behind the body. Ensure the athlete is on their toes with this criss/cross motion. Instruct the athlete to bring their knee up to 90 degrees as they bring it across their body.



**5. High Skips**

Perform a high skipping motion between the markers; ensure the athlete is pushing off in a vertical motion, with alternating arm movements. Bring your knees up high; land on the ball of your foot with a slight bend at the knee and a straight hip.



**6. Bum Flicks**

Repetitively flick your heels up towards your bum as you move between the markers; again emphasis landing on the ball of their foot.



**7 Ground Touches**

While running in a straight line, alternate touching the ground with your hand. Try to avoid your front knee from caving inward and maintain speed through the ground touches.



**8 Backward Kick Outs**

While running backwards, accentuate a backward kicking motion. Emphasis landing on their toes, while controlling the kicking motion.

**9 Diagonal runs**

Face forward and run to the first cone on the left. Touch the ground and pivot off the left foot and run to the second cone. Now pivot off the right leg and continue onto the third cone. Make sure that the outside leg does not cave in. Keep a slight bend to the knee and make sure the knee stays over the ankle joint.



**10 Single Leg hops over cone - Forward/Backward/Lateral**

Hop over the cone landing on the ball of your foot, bending at the knee. Now, hop backwards over the cone using the same landing technique. Now perform the same action laterally and repeat on the other leg. Be careful not to snap your knee back to straighten it. You need to maintain a slight bend to the knee.

Perform 2 sets x 5 landings on each leg

**11 Vertical Jumps with Soft Landing**

Stand forward with hands at your side. Slightly bend the knees and push off jumping straight up. Remember the proper landing technique; accept the weight on the ball of your foot with a slight bend to the knee. Perform 3 sets x 5 jumps



**12 Jumping Split Squat**

Lunge forward leading with your right leg. Keep your knee over your ankle. Now, push off with your right foot and propel your left leg forward into a lunge position. Be sure your knee does not cave in or out. It should be stable and directly over the ankle. Remember the proper landing technique; accept the weight on the ball of your foot with a slight bend to the knee.

Perform 2 sets x 6 jumps



**While each PowerStep is basic, it is critical to perform them correctly. Please take the time to ensure safe and correct completion of these exercises. If you feel uncomfortable with any of the exercises, please leave it out of the warm up.**