

Robina Physiotherapy IPEP program

Injury Prevention

Enhanced Performance program

The IPEP program has been created to decrease muscular and ligamentous joint injuries in soccer players. It is based on the latest medical research and the Santa Monica Orthopaedic and Sports Medicine Research program. Adding neuromuscular and proprioceptive exercises to training regimes notably reduces the number of knee and ankle injuries in soccer players. Implementation of programs involving warm-up, stretching, strengthening, plyometrics, and sport specific agility training have been shown to significantly decrease injuries and to enhance performance in athletes. The IPEP program is a highly specific 15-minute training session should be performed at least 2 times per week. It is important to use proper technique during jumping moves (jump straight up and down jumps without excessive side-to-side movement), and aim for soft landings.

SOCCKER WARM-UP

Warming up and cooling down are a crucial part of a training program. The purpose of the warm-up section is to allow the athlete to prepare for activity. By warming up your muscles first, you greatly reduce the risk of injury.



1. Straight Line

- Purpose: Allows the athletes to slowly prepare themselves for the training session while minimizing the risk for injury.
- 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.
- Instruction: Complete a slow jog from near to far sideline

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2. Side to Side Shuttle Run (Carioca)

- Purpose: engage hip muscles (inner and outer thigh). This exercise will promote increased speed. Discourage inward caving of the knee joint.
- Instruction: 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. Switch sides at half field.



3. Backward Running

- Purpose: continued warm-up; engage hip extensors/hamstrings. Make sure the athlete lands on her toes. Be sure to watch for locking of the knee joint. As the athlete brings her foot back, make sure she maintains a slight bend to the knee.
- Instruction: Run backwards from sideline to sideline. Land on your toes without snapping the knee back. Stay on your toes and keep the knees slightly bent at all times.



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STRETCHING

Warming up before stretching at training or playing is very important to decrease the risk of injury. The following exercises help improve range of motion, reduce stiffness, reduce post-exercise soreness, reduce the risk of injury and improve overall mobility and performance.

Don't bounce or jerk but gently stretch to a point of tension and hold. Hold the stretch for 5-10 seconds (repeat twice) prior to training or a game. If you have short muscles then you should stretch the muscle with a hold for 30-60 seconds after training or during the day. Repeat twice. Only stretch using longer holds the particular muscles that are short. If you have muscles that are long compared to normal then you should not perform a stretching program with long holds.

Children and teenagers go through different growth spurts and may find that their muscles are suddenly short for the length of their bones. If this occurs then a daily stretching program should be implemented to prevent injury.

1. Iliopsoas stretch



Place your leg with your knee bent on the ground. Activate your core and make sure that your pelvis remains in a posteriorly tilted position as you lunge forward. The stretch should be felt in the front of the hip region.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.



2. Quadriceps stretch

Stand in an upright position. Maintain your lumbar lordosis as you pull your foot up behind you. You should feel the stretch in your front thigh muscle.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

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3. Hamstring stretch

a) Standing hamstring stretch



Place your leg forward with your knee straight. Keep your ankle in neutral (don't bend your foot upwards). The stretch should be felt in your hamstrings, not in the calf or foot. Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

b) Seated hamstring stretch

Bend your leg upwards and outwards while keeping your leg to be stretched straight out to the front. Bend forwards over the straight leg. Bend from your hips whilst maintaining your back in a neutral position. Do not bend your toes up towards you or you will sensitise the sciatic nerve. Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.



c) Lying hamstring stretch



Lie on your back with your leg bent and your hands holding the leg behind the knee. Straighten the leg until you feel a stretch in your hamstring. Do not bend your toes up towards you or you will sensitise the sciatic nerve.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

4. Piriformis Stretch



Lie on your back with your legs bent. Place one leg bent upwards and outwards with the foot placed on the other leg's knee. Place your hands behind the bent knee and pull your knee up towards you. Do not lift your head up. Make sure your neck remains in a neutral position (you may need to use a pillow).

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

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4. Calf stretches



a) Gastrocnemius

Place your leg behind you with your knee straight as you lunge forward. Make sure your rear foot does not turn outwards.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

b) Soleus

Place your leg behind you. Bend your knee as you move your body weight back over the rear foot.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.



5. Adductors



a) Seated

i) Sitting up straight and bend your knees with your feet together. Let your knee fall outwards until you feel a stretch in your inner thighs.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.



ii) Bend your leg upwards and outwards while keeping your leg to be stretched straight out to the side. Bend forwards over the bent leg. Bend from your hips whilst maintaining your back in a neutral position.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

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b) Standing adductor stretch

Lunge to the side to stretch the muscles on your inner thigh.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

6. TFL/ITB stretch



a) Stand with your leg to be stretched behind your other leg. Bend your non-affected to about 15°. Lean your body away from the wall.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.

b) Lie on your side. Activate your core as you extend your affected leg behind you and let it drop down toward the ground. Perform at 15° or 90° as indicated by your therapist.

Hold for 5-10 seconds or 30-60 seconds. Repeat 2 times.



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STRENGTHENING

The strengthening phase of the program focuses on increasing leg strength. This will lead to increased leg strength and a more stable knee joint. Technique is everything; close attention must be paid to the performance of these exercises in order to avoid injury.

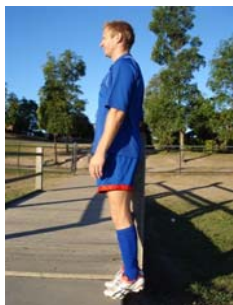
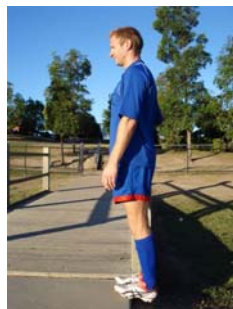
1. Walking Lunges (3 sets x 10 reps)

- Purpose: Strengthen the thigh (quadriceps) muscle.
- Lunge forward leading with your right leg.
- Push off with your right leg and lunge forward with your left leg.
- 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 can't see your toes on your leading leg, you are doing the exercise incorrectly.



1. Eccentric Calf Drop downs and Toe (20 reps x 1-2 reps)

- Purpose: This exercise strengthens the calf muscle and increases balance.
- Stand with the front half of your foot on a step.
- Drop your ankle down off the back of a step. Do not allow your toes to claw.
- Slowly rise up on your toes with good balance.
- Slowly repeat 20 times.
- As you get stronger, you may need to add additional repetitions or sets to this exercise to continue the strengthening effect of the exercise.
- Progression to one leg will further strengthen the calf muscle through range and increase balance.



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PLYOMETRICS

Plyometrics exercises are explosive and help to build, power, strength and speed. The most important element when considering performance technique is the landing. It must be soft. When you land from a jump, you want to softly accept your weight on the balls of your feet slowly rolling back to the heel with a bent knee and a straight hip. These exercises are basic, however, it is critical to perform them correctly. Please take the time to ensure safe and correct completion of these exercises

1. Lateral Hops over Cone (10-20 reps)

- Stand with a 6" cone to your left.
- Hop to the left over the cone softly landing on the balls of your feet land bending at the knee.
- Repeat this exercise hopping to the right.



2. Forward/Backward Hops over cone (10-20 reps)

- Hop over the cone/ball softly landing on the balls of your feet and bending at the knee.
- Now, hop backwards over the ball using the same landing technique.
- Be careful not to snap your knee back to straighten it.
- You want to maintain a slight bend at the knee.



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3. Single Leg hops over cone (10-20 reps)

- Hop over the cone/ball landing on the ball of your foot bending at the knee.
- Now, hop backwards over the ball using the same landing technique.
- Be careful not to snap your knee back to straighten it.
- You want to maintain a slight bend to the knee.
- Now, stand on the left leg and repeat the exercise.
- Increase the number of repetitions as needed.



4. Vertical Jumps with headers (10-20 reps)

- 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 at the knee.



5. Scissors Jump (10-20 reps)

- 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 at the knee.



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AGILITY SKILLS

Agility skill exercises are designed to improve the power and strength in the muscles.

1. Shuttle run with forward/backward running

- Purpose: Increase dynamic stability of the ankle/knee/hip complex.
- Place 4 cones 8m apart along a straight line.
- Starting at the first cone, sprint forward to the second cone, run backward to the third cone, sprint forward to the fourth cone (etc.).



2. Diagonal runs (3 passes)

- Purpose: To encourage proper technique/stabilization of the outside planted foot to deter the position from occurring.
- Face forward and run to the first cone on the left.
- 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.



3. Bounding run/ High Skip (40m)

- Purpose: To increase hip flexion strength/increase power/speed.
- Starting on the near sideline, run to the far side with knees up toward chest.
- Bring your knees up high.
- Land on the ball of your foot with a slight bend at the knee and a straight hip.
- Increase the distance as this exercise gets easy



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4. Bottom Flicks

- Purpose: To increase hamstring power/speed through range.
- Flick the heel of your foot up toward your bottom as you run forwards at moderate pace.
- Land on the ball of your foot with a slight bend at the knee.
- Increase the distance as this exercise gets easy.



5. Backward Kick Outs

- Purpose: To increase gluteal and hamstring multidirectional control/strength/speed.
- Accentuate the backward kicking motion whilst running backwards.
- Make sure the backward kicking motion is well controlled.
- Land on the ball of your foot with a slight bend at the knee.
- Increase the distance as this exercise gets easy.



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CORE STRENGTH

1. Prone Bridge

- Lie face down supporting yourself on your elbows (which should directly under your shoulders) and on your feet.
- Keep your body in a straight line with your hips straight and your tummy held in. Hold for 20-30 seconds and repeat 3 times.
- Progress to alternatively lifting one leg to be in line with your body for 2 seconds. Alternate to the other leg and repeat 10-20 times.



2. Side Bridge

- Lie on your side with your hips straight and your tummy held in.
- Lift your pelvis off the ground. Hold for 20-30 seconds. Repeat 3 times.

3. Nordic Eccentric Hamstring Curl

- Kneel on a soft surface and have your partner hold your legs firmly down.
- Keep your body completely straight during the exercise. Lean forward as far as possible keeping your hips straight and using your hamstrings and gluteals as you lower yourself.
- When unable to hold the position gently fall onto your hands.
- Repeat 3-5 times.
- Progress by doing 2-3 sets.

