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GRIPP

Groin-Related Injury
Prevention Program



Keeping you in the game.™

Our EPA clinics are conveniently located with today's busy schedules in mind. Our professional, friendly team will welcome you to the clinic and assist you in the following ways:

- billing inquiries and payment options
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- collecting new patient information
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- specialized programs for shoulder, back and knee pain
- post-surgical rehabilitation
- acupuncture
- specialized programs designed for the prevention and treatment of sports injuries
- massage therapy
- motor vehicle accident injuries
- work-related injuries
- several sites offer women's health programs for breast cancer and osteoporosis
- Fit to Move™ Lifestyle Assessment for the prevention of heart disease, diabetes and stroke
- several sites offer custom brace fitting and other braces and support

References

1. Brumitt, J. (2002). Hip adductor injury prevention. *Performance Training Journal*, 5, 24-26.
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3. Emery C.A., Meeuwisse, W.H., and Powell, J.W. (1999) Groin and abdominal strain injuries in the National Hockey League. *Clinical Journal of Sports Medicine*, 9, 151-156.
4. Jansen, J.A.C.G., Mens, J.M.A., Backx, F.J.G., Kolfshoten, N., and Stam, H.J. (2008) Treatment of longstanding groin pain in athletes: A systematic review. *Scandinavian Journal of Medicine and Science in Sports*, 18, 263-274.
5. Tyler, T.F., Nicholas, S.J., Campbell, R.J., Donellan, S., and McHugh, M.P. (2002). The effectiveness of a preseason exercise program to prevent adductor muscle strains in professional ice hockey players. *The American Journal of Sports Medicine*, 30, 680-683.

The cool down should take approximately 10 minutes. Begin with a slow jog to allow the heart rate to gradually decrease. Follow this with some light strength training, and then finish the cool-down with some gentle stretching. For your convenience, a sample routine with focus on the adductor group and core musculature has been included.

C

Abdominal Crunches (3 x 30 reps):

Purpose: Strengthen the core region (rectus abdominus and obliques).

Instruction: Lie on your back with your knees bent and your feet flat on the ground. Place your hands on the back of your neck for support. *Do not use your hands to pull your head up; they are only for neck support.* Take a deep breath in and slowly contract your abdominal muscles as you exhale. Repeat 30 times. Drop your legs off to the right side. Slowly crunch up with your elbows out wide. You should feel your oblique muscles working on the side of your waist. Repeat 30 times and switch to the left side.



D

Standing Inner Thigh Stretch (2 x 30 seconds):

Purpose: Elongate muscles of the inner thigh.

Instruction: Stand tall so your back is straight, with your right knee bent and the left leg straight out to the side in a stride position. Lean your body over to your right side until a stretch is felt on the left inner thigh. Hold for 30 seconds and repeat on the other side.



Cool Down

We all know how important a cool-down is. Please don't skip it. It allows the muscles that have been working hard throughout the training session to elongate and deters the onset of muscle soreness. Adequate fluid intake is important in the cool down period. Athletes should have a water bottle by their side during the cool-down.

A Kneeling Pelvic Tilts (2 x 20 reps):

Purpose: Strengthen inner thigh and core muscles.

Instruction: Sit on your knees with your hips straight and directly above your knees. Tilt your pelvis forward, curving through your lower back by sticking out your buttocks. Hold this position for 2 seconds. Now tilt pelvis backwards by tightening the front abdominal muscles and tucking in your buttocks. Hold for 2 seconds, then return to start position.



B Figure Four Stretch (2 x 30 seconds):

Purpose: Elongate muscles of the abductor group.

Instruction: Lie on your back and bend both knees. Fold your right ankle over your left knee. Place your hands around your left thigh and pull towards your chest. You should feel a stretch in the right buttocks region. Hold for 30 seconds and repeat on the other side.



GRIPP

Groin-Related Injury Prevention Program

Hockey is a fast paced, intense sport that requires quick bursts of acceleration, deceleration and sudden changes in direction. These dynamic movements place a considerable amount of tension on the adductor (groin) muscle groups^{1,3}. Groin strains are one of the most common ice-hockey injuries^{1,2,3,5} and the majority of groin injuries do not result from contact³. Extensive research has been conducted over the past several years to identify risk factors related to groin injuries as well as preventative measures to reduce the risk of groin strains. The most common factors that increase the risk of a groin injury are an **adductor to abductor (inner thigh to buttocks/outer thigh) ratio** less than 80 percent^{3,5} and **low levels of off-season training**^{2,5}. Low levels of off-season training leave players 5 times more likely to suffer a groin injury **in preseason play** compared to regular season. They are also **20 times more** likely to have a strain in preseason compared to playoffs^{4,5}, when the adductor groups are in top condition.

The following program has been designed specifically toward the prevention of **initial and recurrent groin injuries** and has been shown to **significantly reduce groin injuries**^{4,5}. It consists of a warm-up, stretching, strengthening, plyometric (ballistic) movement, agility training and a cool-down. It focuses on general strengthening as well as functional strengthening of the adductor muscle group.

It is important that proper technique is used during all of the exercises. Coaches and trainers need to emphasize correct posture, control of movements, and proper landing mechanics. The program should be **completed 3-5 times a week and should take approximately 20 minutes to complete**. Alongside each exercise, a box has been provided showing the appropriate amount of time that should be spent on each activity.

Warm up

Warming up and cooling down are a crucial part of any 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.

A

Forward Jog:

0-30 seconds

Purpose: Allows the athletes to slowly warm-up and prepare themselves for the training session while minimizing the risk for injury.

Instruction: Jog in a straight line, making sure knees are aligned and feet aren't whipping out to the side.



B

Side Shuffle:

30 seconds - 1 minute

Purpose: Continued warm-up; Engage inner and outer thigh muscles.

Instruction: Stand with feet shoulder width apart, with a slight bend at the knee. Leading with the right foot, sidestep pushing with the left foot. As you push off with the back leg, ensure that the hip, knee and ankle are in a straight line. Discourage inward caving of the knee. Return to start leading with the opposite leg.



C

Crossover Jumps (2 x 20 seconds):

17-18 minutes

Purpose: Increase quickness and power of crossover.

Instruction: Start with your feet shoulder width apart and knees slightly bent. Explode into a jump and land with the left foot crossed in front of the right foot. Explode into another jump and land with feet shoulder width apart. Explode into a third jump and land with your right foot crossed in front of the left foot. Continue this pattern for 20 seconds, and then repeat.



Plyometrics

These exercises help develop your 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 the weight on the balls of your feet while rolling back to the heel with a bent knee and hips equally weighted. It is critical to perform these exercises correctly. Please take the time to ensure safe and correct completion of the exercises.

A

Stride Leaps (2 x 20 reps):

15 – 16 minutes

Purpose: Increase explosiveness and power of initial stride.

Instruction: Stand on the left foot with your hip, knee and ankle flexed. Explode off your left foot on a 45 degree angle and land on the right foot. Maintain your balance and explode back toward the left foot pushing off at a 45 degree angle. Repeat this pattern for 2 sets of 20 reps.



B

Sumo Squat Jumps (2 x 15 reps):

17 – 18 minutes

Purpose: Increase leg quickness and explosive power.

Instruction: Standing in sumo squat position as previously described in the strengthening section, explode into a vertical jump. Bring your knees up toward your chest while in the air. Land softly, returning to the sumo squat position. Complete 15 as quick as possible while maintaining good technique and balance, and then repeat.



C

Crossovers (½ speed):

1 – 1½ minutes

Purpose: Continued warm-up; engage the inner/outer hip muscles in a sport specific function.

Instruction: Stand with feet shoulder width apart, with a slight bend in both knees. Leading with the back leg, step over the front leg and continue this pattern across the floor. Ensure hips stay facing the front as you move sideways. Repeat with the other foot crossing over.



Stretching

It is important to incorporate a short warm-up prior to stretching. Never stretch a “cold” muscle. By doing the exercises outlined here, you can improve and maintain your range of motion, reduce stiffness in your joints, reduce post-exercise muscle soreness, reduce the risk of injury and improve your overall mobility and performance.

A Butterfly Stretch (2 x 30seconds):

1½ – 2½ minutes

Purpose: Elongate the muscles of the inner thigh (Adductor group).
Instruction: Sit tall so your back is straight, with your knees bent and the soles of your feet touching. Bring your feet in towards your body as you press down on your knees with your elbows. Push down until a stretch is felt. Hold for 30 seconds and repeat.



B Quadriceps Stretch (2 x 30seconds):

2½ – 3½ minutes

Purpose: Elongate the anterior thigh muscles (Quadriceps group).
Instruction: While standing, reach back and grab your right foot with your right hand. Bring your foot towards your buttocks until a stretch in the front of your thigh is felt. Ensure that the right knee is parallel with the left knee and it is pointing towards the ground. Hold for 30 seconds. Switch sides and repeat.



Agilities

These exercises focus on challenging your balance, power, speed, and muscle coordination. When performing these exercises, ensure proper form. When landing, stay on the ball of your foot and pop off your toes on the push off.

A Carioca- (2 x 10 seconds):

13½ – 14 minutes

Purpose: Increase foot speed and power.
Instruction: Start with feet shoulder width apart, and knees slightly bent. Step across your right foot with your left foot. Then, bring your right foot back to shoulder width apart. Repeat, this time with your left foot crossing behind the right foot. Continue this grapevine pattern across the room. Repeat this pattern coming back, starting with the right foot crossing over the left.



B Lunge Walking with Twist (2 x 20 reps):

14 – 15 minutes

Purpose: Increase balance and strengthen thigh and core.
Instruction: Lunge forward with the left foot. As you land, bend through both knees so that they both make a 90 degree angle and twist your trunk toward the left. Now lunge forward with the right foot, twisting your trunk toward the left as you do so. Repeat this pattern while walking across the room for 2 sets of 20 reps. Ensure that your knee does not cave inward or move out past your toes while in the lunge position.



Strengthening

E

Resisted Stride (2 x 30 reps):

10½ – 11½ minutes

Purpose: Strengthen the abductor muscles of the thigh in a sport specific movement.

Instruction: Tie a resistance band around your left ankle and anchor the other end in front of you so that it travels across your midline. Stand on your right leg with a slight bend in the knee. Push your left leg back and out as if you were taking a long skating stride. Provide resistance against the band as it pulls your leg back to the starting position. Slowly repeat 30 times and switch to the other side.



F

Resisted Crossovers (2 x 30 reps):

11½ – 12½ minutes

Purpose: Strengthen inner thigh muscles in a sport specific movement.

Instruction: Tie a resistance band around your left ankle and anchor the other end behind you so that it travels away from your midline. Stand on your right leg with a slight bend in the knee. Pull your left leg over and step down into a crossover stance. Provide resistance as the band pulls your leg back to the start position. Slowly repeat 30 times and switch to the other side.



G

Kneeling Pull-Together – On-ice drill (2 x 20 reps):

12½ – 13½ minutes

Purpose: Strengthen inner thigh muscles and core.

Instruction: Sit on your knees with them out to the side. Using the inner thigh muscles, pull your knees back together so that they are aligned under your hips. Keep the core tight so that the back doesn't bend backward during the pull. Slowly slide your knees back out to the side. Repeat the exercise for 2 sets of 20, or a total of 40 reps.



- Do a large muscle warm-up before stretching.
- Do not bounce or jerk muscles while stretching. Gently stretch to a point of tension and hold.
- Hold the stretch for 30 seconds. Concentrate on lengthening the muscles when you are stretching.
- Breathe normally; do not hold your breath.

C

Side Lunge (2 x 30seconds):

3½ – 4½ minutes

Purpose: Elongate muscles of the inner thigh.

Instruction: Take a step to the side, ensuring both feet are pointing forward. Bend through the right knee while keeping the left leg straight. Lean down until a stretch is felt in the left inner thigh. Hold for 30 seconds. Switch sides and repeat.



D

Hip Flexor Stretch (2 x 30 seconds):

4½ – 5½ minutes

Purpose: Elongate the hip flexor muscles of the inner and front part of the thigh.

Instruction: Lunge forward with your right leg. Drop your left knee down to the floor. Keep your trunk upright and your hips square with your shoulders and lean forward until a stretch is felt in the upper part of the left thigh. Switch sides and repeat.



Strengthening

This portion of the program focuses on increasing leg strength and core stability. Several exercises strengthen the muscles in a functional movement to mimic skating. It is important to maintain proper technique during each exercise to avoid injury.

A

Ball Squeeze (3 x 20 seconds):

5½ – 6½ minutes

Purpose: Strengthen the inner thigh muscles (Adductors).

Instruction: Sit tall at the edge of a table with your knees bent to 90 degrees. Place a ball between your knees and squeeze it as tight as you can. Hold the squeeze for 20 seconds. To progress the exercise, straighten the knees and increase the size of the ball used during contraction. Repeat the exercise 3 times.



B

Sumo Squats (2 x 30seconds):

6½ – 7½ minutes

Purpose: Build muscle endurance and strengthen thigh muscles.

Instruction: Stand with feet wider than shoulder-width apart. Bend your knees as close to a right angle as possible, while keeping your buttocks back. Bend your trunk to keep the centre of gravity over your feet. Maintain this position for 30 seconds, and then repeat.



C

Side Lying Adduction (2 sets x 20 reps):

7½ – 8½ minutes

Purpose: Strengthen inner thigh muscles. (Adductors).

Instruction: Lying on your right side, cross your left leg over the right and bend at the knee so that the sole of the left foot is on the ground. Raise the right leg off the ground as high as you can while keeping it straight. Ensure that the hips remain stable and do not roll backward or forward. Slowly repeat 20 times and switch to the other side.



D

Plank (4 x 20 seconds):

8½ – 10½ minutes

Purpose: Strengthen core muscles.

Instruction: Lie on your stomach with your elbows shoulder-width apart and your toes pointing towards the ground. Contract your abdominals and lift your body off the ground supporting yourself on your elbows and toes. Do not allow the hips to drop, and keep your back straight. Hold for 20 seconds and lower back to ground. Repeat the exercise 4 times.

