

OrthoBethesda Therapy Services

ACL Prevention Program (Exercise Descriptions)

General Instructions: When performing each of these exercises, it is of utmost importance to pay close attention to knee positioning. Exercises performed incorrectly can cause more harm than good. Make sure that the knee stay in line with the hip and the 2nd/3rd toes, and does not collapse inward. Also, prevent the knee from traveling forward past the toes. All exercises performed for the first time should be performed under the careful supervision of a credentialed professional.

Dynamic Warm Up: Perform each exercise for 10-20 yards (or 10 repetitions if indicated).

1. **Jogging**
2. **Backwards Jogging**
3. **Butt Kicks**
4. **Heel Walking**
5. **Toe Walking**
6. **Reverse Lunge with Trunk Rotation → Single-Leg Balance (10x)**
 - Step backward into a lunge. As you return to the starting position, drive your back leg forward into the air with the hip and knee bent. At the same time, drive the opposite arm forward with the elbow bent. Hold this balanced position for 2-3 seconds before performing the next repetition.
7. **Lateral/Transverse Lunge with Toe Touch (10x)**
 - Lateral Lunge: Take a wide step out to the side. If stepping out toward the right, reach your left hand to your right foot. Your left knee will be straight and your right knee will be bent. After twisting your torso back to neutral, push back up to the starting position.
 - Transverse Lunge: Take a wide step out to the side, rotating both legs 90° to face the direction of your step. Allow both knees to bend as you lunge down. If stepping out toward the right, reach your left hand to your right foot. After twisting your torso back to neutral, push back up to the starting position.
8. **Medial/Lateral Leg Swings (10x)**
 - Using your hands, support yourself with a wall or sturdy surface in front of you. Standing on the toes of one foot, swing the other leg to the inside and outside of your body.
9. **A-Skips, B-Skips**
 - A-Skips: As you skip forward, drive one bent knee into the air as high as possible while keeping the other knee straight.
 - B-Skips: Same as the A-Skips, but straighten the front knee at the top of the knee drive.
10. **Monster Walk or Lateral Shuffle (perform in both directions)**
 - Monster Walk: Squat down into an athletic stance with your shoulders and elbows bent 90° and your arms out to the sides. Staying low throughout the movement, step to the side.
 - Lateral Shuffle: Same as the Monster Walk, but quickly shuffle rather than slowly stepping.

11. Bear Crawl or Spiderman Crawl

- Bear Crawl: Lower yourself onto your hands and feet with your hips raised in the air. Move one hand and the opposite forward ~6 inches, then repeat with the remaining limbs.
- Spiderman Crawl: Begin in a push-up position. Move one hand forward ~6 inches. At the same time, lift the opposite leg off of the ground, rotating the hip outward and aiming the knee toward the elbow on same side. Place the foot down at the top of the motion and then advance the remaining limbs in a similar manner.

12. Inchworm

- Begin in a push-up position. As you exhale, walk your feet forward as close to your hands as possible. Then, inhale as you walk your hands forward to the push-up position once again.

Strength: Perform one set of each exercise for 30 seconds.

1. Single-Leg Hip Bridge

- Lay on your back with one leg straight and the other knee bent ~100° so that the foot is flat on the ground, under the knee. Push up through the heel and ball of your foot, raising your hips until you form a straight line from your shoulder to knee. Make sure that the hips do not drop down toward the side of the straightened leg, and make sure that you bridge up from the hips rather than arching the low back.

2. Dead Bug or Alternating Arm/Leg Reaches

- Dead Bug: Lay on your back with your arms vertical and hips and knees both bent to 90°. Reach your hands as high as possible to engage the abdominal muscles
- Alternating Arm/Leg Reaches: Same as the Dead Bug, but slowly lower one arm and opposite leg down the ground. Return to the starting position then repeat with the remaining limbs.

3. Modified Superman or Bird Dog

- Superman: Lay on your stomach with your legs arms straight at your sides and palms facing the ground. Tighten your stomach, buttocks and thigh muscles, point your feet down away from you, tuck your chin down and back, squeeze your shoulder blades down and together, and then lift your upper chest and lower legs slightly off of the ground. Make sure that the chest motion comes from the mid back (no pain should be felt in the lower back).
- Bird Dog: Begin on your hands and knees. Rock your pelvis back and forth slightly to adjust the curve in your lower back so that there is a very slight natural arch. Maintaining this lower back positioning, raise one arm and the opposite leg into the air. Avoid rotating your torso and hips as much as possible. Return to the starting position before repeating the motion with the remaining limbs.

4. Clamshells

- Lay on your side with your hips bent ~45° and your knees bent 90°. Your top foot, hip and shoulder should rest directly over your bottom foot, hip and shoulder, respectively. Rotate your top knee up and back, without allowing your hip to rotate backwards or torso to rotate forward.

5. Plank/Side Plank combo

- Begin in a push-up position with your hands and feet both shoulder width apart. Begin to transfer your weight to one hand as you rotate onto the sides of your feet. Lift the arm of the side you are turning toward, so that it reaches up vertically. Return to the starting position before repeating on the other side.

6. Heel Raises

- Stand on both feet, with your knees straight but not locked out. Your toes should point straight forward. Slowly raise up onto the balls and toes of your feet, then slowly return to the starting position.

7. Single-Leg Deadlift Reverse Walking

- Stand on one leg with your hands on your hips. Hinge forward at your hip, keeping your trunk and raised leg in a straight line. As you begin to return to a vertical position, place the raised leg down behind you. Repeat on the other side.

8. Russian Hamstring Curls* (if partner available)

- Kneel on the ground with a partner supporting your lower legs against the ground. Begin to lean forward by straightening your knees. Lower yourself as far down as you are able to control and then raise back up. Make sure that you do not try to lift up from your lower back.
 - *This exercise is very important for reducing strain on the ACL*

Balance: Choose at least one variation of each of the two exercises. Perform each exercise for 30-60 seconds. Rest for 30 seconds after performing one set on each side. Perform 2 sets of each exercise.

1. Single-Leg Stance

a. Leg Reaches (3-way)

- Forward, Side, Backward

b. Reciprocal Arm/Leg Reaches (3-way)

- Forward, Side, Backward
 - Reach arm and opposite leg in different directions, simultaneously

a. Hip Rotation

- Stand on one foot. Slightly bend the knee of your stance leg and raise the knee of your other leg up toward your chest. Keep your hands on your hips and begin to rotate inward and outward. *Make sure that the rotation occurs at the stance hip and not the trunk or knee!*

b. Eyes Closed

c. Sport-Specific "Ball" Pass

- While balancing on one foot, perform a movement that is relevant to your sport, such as a socker kick, overhead soccer throw, basketball pass/shot, volleyball "bump", etc.

2. Single-Leg Squat

a. Normal

b. Multi-Directional Arm Reach

- As you squat down, reach your hands forward toward the ground in front of you. Return to the starting position, then reach your hands diagonally left or diagonally right. Repeat in the remaining direction.

Plyometrics: Choose 3 exercises per session. Progress in order of difficulty, starting with the first exercise on the list. Incorporate single-leg hops once all double-leg hops can be performed with perfect form. Perform one set of 10 repetitions for each exercise. Rest for 60-90 seconds in between in each exercise. Rest is not needed between sides when performing single-leg hops.

1. Double-Leg Hops

a. Wall Jumps/Ankle Bounces

- Stand with your arms raised overhead. Jump up by straightening your ankles quickly. The rest of your body should remain relatively motionless.

- b. **Compass Hops** (clockwise & counter clockwise)
 - o Hop both feet forward at the same time, then hop back to the starting position. If hopping clockwise, next hop diagonally forward and to the right. Hop back to the starting position after each hop. Continue this sequence in 8 directions until you complete the full circle
 - Imagine jumping in the 8 major directions of a compass
 - (N, NE, E, SE, S, SW, W, NW)
 - c. **Rotational Hops**
 - i. 90°: Jump up, performing a quarter-turn in the air before landing. Repeat in the opposite direction.
 - ii. 180°: Jump up, performing a half-turn in the air before landing. Repeat in the opposite direction.
 - d. **Lunge Jumps**
 - o Begin with one of your feet in front of you, in a shallow lunge position. Jump up, switching your feet in the air so that the opposite leg is now in front. Repeat.
 - e. **Jump with Sport-Specific Activity** (catch, header, shoot)
 - o At the top of the jump, perform a movement that is relevant to your sport, such as a ball catch, overhead throw, soccer "header", basketball shot, volleyball spike, etc.
2. **Single-Leg Hops** (for those that have progressed through all double-leg hops)
- a. **Bounding**
 - i. Stand on one leg and hop forward as far as possible, landing on the opposite leg.
 - b. **Speed Skaters**
 - i. Stand on one leg. If standing on your right leg, use the muscles on the outside of your right hip to propel yourself over toward the left. As you land, your right leg should remain in the air, and can cross behind your left leg. However, do not let your right knee cross behind the left knee. Repeat the motion in the opposite direction.
 - c. **Compass Hops** (clockwise and counterclockwise)
 - i. Same as the compass hops described above (plyometric exercise **1b**), but performed on only one leg at a time.
 - d. **Rotational Hops (90°)**
 - i. Same as the 90° rotational hops described above (plyometric exercise **1ci**), but performed on only one leg at a time.

Agility: Perform each exercise once in each direction.

- 1. **Box Drill** (clockwise and counterclockwise)
 - o Clockwise: Sprint forward 10 yards, side shuffle to the right 10 yards, sprint backwards 10 yards, then finally side shuffle to the left 10 yards.
 - o Counterclockwise: Sprint forward 10 yards, side shuffle to the left 10 yards, sprint backwards 10 yards, then finally side shuffle to the right 10 yards.
- 2. **T-Drill** (first side shuffle to left or right)
 - o Left: Sprint forward 10 yards, side shuffle to the left 5 yards, side shuffle to the right 10 yards, side shuffle back to the left 5 yards, then finally sprint backwards 10 yards.
 - o Right: Sprint forward 10 yards, side shuffle to the right 5 yards, side shuffle to the left 10 yards, side shuffle back to the right 5 yards, then finally sprint backwards 10 yards.
- 3. **Shuttle Run**
 - o Sprint forward 10 yards and touch the ground, sprint back to the start and touch the ground, and repeat the sequence once more.