

## LEVELING THE PLAYING FIELD:

# Knee Injury Prevention Strategies for Female Athletes

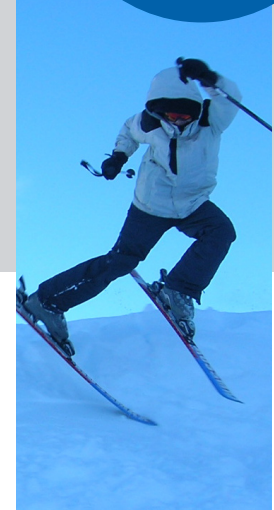


**DID YOU KNOW?**  
1 in 10 female collegiate athletes suffer a knee injury each year

## Women are at greater risk for Anterior Cruciate Ligament (ACL) knee injuries than men.



**DID YOU KNOW?**  
Female athlete knee injuries are from non-contact activities such as cutting, planting, pivoting and changing direction



### Why?

- Women have more lax ligaments
- Women typically have a wider pelvis, resulting in more pressure applied to the inside aspect of the knee



**DID YOU KNOW?**  
Females experience 4 to 8 times more knee injuries than their male counterparts?

### What else puts a woman at risk?

- Poor running, stopping and jumping techniques
- Poor leg and core strength
- Lack of focus on agility, balance and speed training



### Reduce your risk of injury!

- Identify sports programs with good coaching, access to experienced trainers, and focus on injury prevention
- Participate in off-field strengthening programs that focus on building muscle in the quadriceps, hamstrings and core (especially lower abs, hips and glutes).
- Quality training programs should also address agility, balance, staying lower to the ground, proper jumping and landing, slowing, stopping and pivoting techniques.
- **See the reverse of this laminated card for seven exercises that address strength, agility, balance and jumping technique.**



**DID YOU KNOW?**  
1 in 100 female high school athletes suffer a knee injury each year

### If injury does occur...

- Seek out a sports medicine physician with significant experience treating athletes from your particular sport
- Ask questions regarding the timeframe for rehabilitation, return to play, and the rehabilitation team



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# Strengthening Exercises

## On the Ball

The exercise ball is a great tool for strengthening the abs, but it also helps you reach hard-to-get-to muscles and improve your balance and overall coordination.

- When first trying these exercises, you may want to hold onto a wall or prop the ball against something sturdy for added stability.
- Perform 1-3 sets of 10-16 reps of each exercise, taking care to perfect your form before increasing sets or reps.
- Avoid any moves that cause pain or that you're not clear how to do correctly.
- Always see your doctor before exercising if you have any existing injuries or conditions.

1. **BUTT LIFT** — Lie on ball with head, neck and shoulders supported, knees bent and body in a tabletop position. Pressing through heels and not toes, lower hips towards floor without rolling on ball. Squeeze glutes to raise hips until body is in a straight line like a bridge. Hold weights on hips for added intensity.
2. **HIP EXTENSION** — Lie down with feet heels propped on ball. Keeping abs tight, slowly lift hips off the floor (squeezing glutes) until body is in a straight line. Hold for a few seconds and lower. For added intensity, lift hips and then take one leg off ball, hold for a moment and lower. Repeat, lifting other leg off ball.
3. **PLANK PRESS** — Kneel in front of ball with forearms on ball. Keep back straight as you press toes into floor and push body into a plank position. Hold this position for 15 seconds and repeat 10 times.
4. **BALL ROTATION** — Lie with ball under shoulders and lower back, arms straight up over chest, palms together. Hold body in a straight line from hips to knees. With tight glutes and abs, slowly twist body to left, sweeping arms parallel to floor, then twist back up. Repeat on other side. Use abs — try not to collapse body or roll too far.

## Plyometrics

Plyometrics exercises are explosive and help build power, strength and speed. It is critical to perform these exercises safely and correctly. When landing from a jump, it is important to softly accept weight on the balls of the feet, then slowly roll back to the heel with a bent knee and a straight hip. Complete 20 reps of each.

5. **LATERAL HOPS OVER CONE** — Stand with 6-inch cone to the left. Hop left over cone, softly landing on balls of feet and bending at knee. Repeat exercise to right.
6. **FORWARD/BACKWARD HOPS OVER CONE** — Stand with 6-inch cone ahead. Hop forward over cone, softly landing on balls of feet and bending at knee. Hop backwards over ball using same landing technique. Maintain a slight bend to knee throughout. Do not snap knee back to straighten it.
7. **BOX JUMPS** — Stand arm's length away from a box that is knee height with arms at side. Swing both arms behind and flex at the knees and hips, keeping torso flat and chest up. Fully extend at hips and knees and lift body, aiming to land on top of box. Prepare to land by flexing hips and knees, and keeping toes up. Land softly on box.

If you have any questions about these exercises or questions regarding the ACL, please email us at [info@neuro-ortho.org](mailto:info@neuro-ortho.org).

