

ACL Injury Resource

Anterior Cruciate Ligament (ACL) injuries pose a significant concern in the realm of sports. However, women and girls exhibit a 3-6x higher susceptibility to these injuries compared to their male counterparts, prompting a closer examination of the factors contributing to these incidents. This resource will unravel details about ACL tears, explore why women are more prone to such injuries, delve into preventative strategies, and provide insights on maintaining a healthy, injury-free body.

How ACL Tears Happen?

Most ACL tears are non-contact injuries, meaning they occur without direct collision with another person or object. This can often happen during abrupt changes in direction, pivoting, or landing from a jump. Direct impact to the knee can also lead to ACL tears, although these instances are less common.

Sports with higher instances of ACL tears include soccer, basketball, and skiing. Sports and activities requiring sudden stops, starts, and changes in direction can elevate the risk of ACL injuries.

Why Women and Girls are more Susceptible to ACL Injuries?

Women often have wider hips and a smaller intercondylar notch, increasing stress on the ACL. Hormonal fluctuations, specifically estrogen, affects the ligaments laxity. Women and girls often exhibit greater joint laxity particularly during the menstrual cycle when hormonal fluctuations can affect ligament stability.

How to prevent ACL injuries?

Long thorough dynamic warm-up routines are very important in preventing injuries. Focusing on building strength in the quadriceps, hamstrings, and core as well as tailoring exercises to mimic sports-specific movements can help in reducing stress on the joint. Women and girls who have previously suffered an ACL injury are at a higher risk of re-tearing the ligament, even after rehabilitation. This highlights the importance of proper rehabilitation and ongoing injury prevention strategies.



Maintaining a healthy, injury-free body goes beyond the work that is done on the pitch. Athletes should consume a nutritionally balanced diet for muscle and ligament health. Staying adequately hydrated will also support overall bodily functions. Lastly, sleep plays a large role in the body's recovery processes. Rest days are encouraged to prevent overtraining and reduce injury risk.

Understanding the mechanics behind ACL tears, acknowledging the specific risk factors for women, and implementing preventive measures are pivotal steps in reducing the incidence of these injuries. By adopting a holistic approach to athletic well-being, including targeted training, proper nutrition, and sufficient recovery, athletes can significantly contribute to the preservation of their joint health and longevity of their sports careers. This proactive mindset not only minimizes the risk of ACL tears but also fosters a culture of enduring athleticism and overall health.

A coach can play a critical role in the prevention of ACL injuries. Coaches and players must be educated on the unique risk factors faced by girls and are encouraged to have open communication between coaches and players to ensure a holistic approach to injury prevention. Coaches should also work with players to manage training loads to prevent overuse and promote adequate recovery.

To Keep Girls in Sport, we must maintain healthy athletes by advocating for the inclusion of ACL injury prevention programs as a standard part of training regimens. Regular health assessments are encouraged to identify and address risk factors early on.

By comprehensively addressing the factors contributing to the increased prevalence of ACL injuries in women and girls, implementing effective preventive measures, and fostering collaboration between athletes, coaches, and medical professionals, we can work towards creating a safer sports environment. This resource serves as a guide for stakeholders to collectively contribute to the well-being and longevity of female athletes, reducing the incidence of ACL injuries and ensuring their continued success in sports.

Top 5 Tips to Preventing ACL Injuries:

Preventing ACL injuries involves a combination of targeted exercises, proper technique, and awareness of movement patterns. Here are the top five tips to help reduce the risk of ACL injuries:

1. Neuromuscular training:

- Incorporate exercises that improve balance and proprioception, enhancing the body's awareness of its position in space.
- Implement drills that mimic the quick directional changes and pivoting movements common in sports. This helps athletes develop better neuromuscular control, reducing the likelihood of awkward landings that can cause stress to the ACL.

2. Strength and conditioning:

- Emphasize strengthening the quadriceps and hamstrings to provide better support to the knee joint. Exercises such as squats, lunges, and leg curls can be beneficial.
- A strong core helps maintain proper body alignment and reduces the risk of compensatory movements that can lead to ACL injuries. Including exercises like planks, bridges, and rotational movements in training can support.

3. Plyometric training:

- Gradually introduce and progress through plyometric exercises that involve jumping and landing. Focus on proper landing mechanics, including bending the knees and hips upon landing to absorb shock and reduce stress on the ACL.
- Teach athletes the correct landing techniques – to land softly with a slight bend in the knees, ensuring the knees are aligned with the toes. Emphasize proper body positioning to reduce the risk of ACL injuries during dynamic movements.

4. Proper technique + safety protocols:

- Incorporate drills that mimic the movements and demands of the specific sport. This helps athletes develop sport-specific techniques and movement patterns, reducing the risk of injury during competition.
- Ensure there are no safety hazards on the training facility that can increase the risk of injury.

5. Individualized training programs

- Recognize that each athlete is unique, and their training programs should be tailored to their specific strengths, weaknesses, and injury history. Consider individual factors such as biomechanics, previous injuries, and physical condition.
- Adapt individual training program based on each athlete's menses schedule as ACL injuries occur most frequently on days 1 and 2 of menses.
- Implement proper periodization in training programs to allow for adequate rest and recovery. Overtraining can be led to fatigue and compromise neuromuscular control, increasing the risk of ACL injuries.

By implementing these tips into training routines, athletes can significantly reduce the risk of ACL injuries. Coaches, trainers, and athletes themselves play crucial roles in creating and adhering to injury prevention programs. Consistent implementation of these strategies not only enhances athletic performance but also promotes long-term joint health and overall well-being.

Top 5-Post ACL Injury Rehab Exercises:

Rehabilitation after an ACL injury is a crucial phase for rebuilding strength, stability, and flexibility in the knee joint. However, it's essential to consult with a healthcare professional or a qualified physical therapist before starting any post-ACL injury rehab exercises. Here are five recommended exercises for post-ACL injury rehabilitation:

1. **Quad sets** help activate and strengthen the quadriceps muscles, which are crucial for knee stability.

Execution:

- Sit or lie down with the affected leg extended
- Tighten the quadriceps by pressing the back of the knee into the floor or another surface
- Hold the contraction for a few seconds, then relax
- Repeat for several sets, gradually increasing the duration of the contraction
- [Video](#)

2. **Straight leg raises** target the quadriceps and hip flexor muscles, promoting strength and stability in the entire leg.

Execution:

- Lie on your back with the affected leg straight and the other leg bent
- Lift the affected leg a few inches off the ground, keeping it straight.
- Hold for a few seconds, then lower it back down.
- Perform several repetitions, gradually increasing the height of the leg lift.
- [Video](#)

3. **Hamstring Curls** target the muscles at the bottom of the thigh, promoting balance and stability around the knee joint.

- Lie face down on a flat surface with the knee of the affected leg bent.
- Lift the lower leg towards the buttocks, keeping the knee bent.
- Hold for a moment, then lower the leg back down
- Perform several sets, gradually increasing the range of motion.
- [Video](#)

4. **Mini squats** help regain strength in the quadriceps, hamstrings, and gluteal muscles while improving overall stability.

Execution:

- Stand with feet shoulder-width apart.
- Bend the knees slightly, as if sitting back in a chair
- Keep the weight on the heels and ensure the knees do not go past the toes.
- Rise back up to the starting position
- Perform controlled, shallow squats, gradually increasing depth as strength improves.
- [Video](#)

5. **Balancing exercises** enhance proprioception and stability, crucial for preventing future injuries.

Execution:

- Stand on the affected leg with the knee slightly bent.
- Lift the opposite leg off the ground, holding the position
- Challenge balance further by closing your eyes or performing the exercise on the unstable surface.
- Gradually increase the duration and complexity of balancing exercises.
- [Video](#)

Remember, the intensity and progression of these exercises should be individualized based on the specific needs and progress of the athlete. Always follow the guidelines of a healthcare professional or physical therapist during the rehabilitation process. Additionally, maintaining open communication with the healthcare team is essential for monitoring progress and adjusting the rehab program accordingly.

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