Knee injuries at a young age can lead to Osteoarthritis (arthritis) of the knee later in life. In fact, up to half of all people with an anterior cruciate ligament (ACL) or meniscus (shock-absorbing cartilage or knee tissue) tear will get arthritis 10-20 years later. Youth that participate in sports like girls’ soccer, football, and girls’ basketball have an increased risk of knee injuries.

**What is Osteoarthritis?**

Osteoarthritis (OA) is the most common kind of arthritis, so it is frequently just called “arthritis”. It is defined by wearing down of a tissue in the joint called cartilage. Arthritis of the knee causes knee pain and difficulty climbing stairs. Over time, arthritis of the knee can make it difficult to walk.
**Exercises That Can Help Prevent Injury & OA**

Knee injuries, such as ACL injury, can lead to arthritis. A good training program can reduce the chance of knee injuries by up to 50% and may help prevent injury-related knee arthritis. It just takes 15 minutes, 2 to 3 times each week to do the following activities:

- **Warm-up exercises**
- **Balancing exercises**
- **Sports skills**
- **Strength training, including jumping exercises**

### Warm-up exercises

2 to 3 exercises to get your athlete moving, like side shuffle, high knee skipping, forward-backward jogging

### Balancing exercises

2 to 3 exercises to improve balance

### Sports skills

**Stretching**

3 to 4 exercises that stretch the leg muscles

**Strengthening**

2 to 3 exercises to strengthen muscles around the joints, like squats, planks, lunges, push-ups

**Jumping**

5 to 6 jumping exercises — or plyometrics — like single leg jumps or ladder drills

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**Athletes: Beat OA and Your Opponents**

The same exercises that help you prevent knee injuries and arthritis also improve your:

- vertical jump height
- hop distance and speed
- aerobic fitness
- sprint speed
- lower leg strength and balance

**Parents: Get Involved**

Parents and guardians can play an important role in preventing knee injuries.

- Ask the coach if injury prevention practices are incorporated into training plans
- Make sure the playing field is safe and rules are followed
- Ask if the team has access to an athletic trainer

**Coaches: Encourage Good Techniques**

Be sure to give your athlete regular feedback on form during their exercises. Remind your athlete to:

- Keep knees over toes
- Bend at knees and hips to land softly
- Keep toes pointing straight ahead
- Be sure to stay educated in proper technique and consult an athletic trainer with questions

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Some free training programs that have been studied by researchers include:

- **PEP Program**: [PEP Program](http://smsmf.org/smsf-programs/pep-program)
- **11+ Program**: [11+ Program](http://f-marc.com/11plus/home/)
- **PEAKc Program**: [PEAKc Program](http://www.unc.edu/depts/exercise/peak/Home.html)

For more information, visit [http://oaaction.unc.edu](http://oaaction.unc.edu)