

## Orthopaedists Research Female Knee Problems


Compared with males, female athletes in specific sports are three to four times more likely to injure their knees - a problem orthopaedic research is committed to solving.

### Women and ACL injuries

When you twist your knee or fall on it, you can tear a stabilizing ligament inside the knee joint (anterior cruciate ligament or ACL) that connects the thighbone to the shinbone. Although both men and women injure the ACL in non-contact situations (frequently in soccer, basketball and volleyball), orthopaedic research data collected since 1995 show a difference in ACL injury patterns:

- The incidence of ACL injuries among women basketball players is twice that for men. (Nearly 60 percent of ACL injuries in female basketball players occur when landing from a jump.)
- Female soccer players are four times more likely to suffer an ACL tear than their male counterparts.

The majority of ACL injuries occur in females aged 15-25, and orthopaedic researchers have long debated why. At a 1999 consensus meeting sponsored by the American Academy of Orthopaedic Surgeons (AAOS), researchers discussed factors that can explain the increase in ACL injuries among the female athletic population:



**EVERY FEMALE ATHLETE** *has an Achilles' heel.*

**HER KNEES.**

The statistics are startling: female athletes in specific sports are three to four times more likely to injure their knees than men — a problem orthopaedic research is committed to solving. For conditioning and knee-strengthening tips, visit [aaos.org](http://aaos.org). For more on how orthopaedic research has advanced arthroscopic procedures, total joint replacement, and treatment of osteoporosis — and how this research can improve the quality of your life — visit [oref.org](http://oref.org).

It all begins with research.

**AMERICAN ACADEMY OF ORTHOPAEDIC SURGEONS**  
1-800-824-BONES [www.aaos.org](http://www.aaos.org)

**ORTHOPAEDIC RESEARCH AND EDUCATION FOUNDATION**  
1-847-698-9980 [www.oref.org](http://www.oref.org)

- **Biomechanical.** Females tend to place more emphasis on quadriceps muscles, and this may be a significant reason for increased risk of ACL injuries. Orthopaedic researchers say females should learn to use their hamstring muscles more often. Also, females tend to land on a flat foot rather than their toes, which can contribute to increased injury rates.
- **Hormonal.** No modification of activity or restriction from sports is recommended at any time during the menstrual cycle. A woman's hormones do not increase the chance of ACL injury, but researchers say further investigation is warranted.
- **Environmental.** Functional knee braces do not prevent ACL injury. Although athletic shoes may improve performance by providing good traction on certain surfaces, they also increase injury risk.
- **Anatomic.** More data is needed to determine if ACL size is related to injury risk.

Researchers agree training programs that teach proper landing methods or basic injury prevention techniques should be adopted to help female athletes.

### **Orthopaedic research is vital**

Orthopaedic researchers continue to learn about female knee problems. AAOS and the Orthopaedic Research and Education Foundation (OREF) have partnered together to promote the need for preventing and treating injuries through continued advances in vital orthopaedic research.

### **Resources for more information**

For conditioning and knee-strengthening tips, visit the Web site of the American Academy of Orthopaedic Surgeons (<http://www.aaos.org>). Free, easy-to-read fact sheets include these titles:

[ACL reconstruction](#)

[Adolescent anterior knee pain](#)

[Exercises for young athletes](#)



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[Knee ligament injuries](#)

[Preventing ACL injuries in women](#)

[Women and ACL injuries](#)

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