

Reducing ACL Injuries in Women

Orthopaedic surgeons from the Department of Orthopaedics and Rehabilitation at Yale University. Karen M. Sutton, MD, and James Montgomery Bullock, MD. Anterior Cruciate Ligament Rupture: Differences Between Males and Females. In Journal of the American Academy of Orthopaedic Surgeons. January 2013.

Setting the scene:

The aim of this study is to review the risk factors and biomechanical differences between men and women in the ACL injuries. They also provide a treatment protocol for successful prevention of this problem and the authors do mention the role of surgery (type of surgery, potential complications of surgery, and expected outcomes with surgery). But the main focus of their review was on identifying and preventing intrinsic and extrinsic risk factors with conservative (non operative) care.

What did they do?

There are two types of risk factors that contribute to the sex differences in rates of ACL injuries between men and women. The first is intrinsic, meaning things inside the body that affect the ACL. Intrinsic risk factors include anatomic and biomechanic variables. For ACL injuries, research has shown that the number of degrees of the Q-angle, the geometry of the intercondylar notch, the size of the ACL, and the slope of the tibia are contributing factors.

Hormone differences between men and women and genetic predisposition may be two additional risk factors. But data collected from studies so far has been insufficient to prove or disprove the role of either one in ACL injuries.

Extrinsic risk factors remain under investigation, too. One thing we know that does NOT seem to bear any influence on ACL injuries is the lack of playing experience among women. The rate of ACL injuries among women hasn't changed in the last 15 years. The number of females participating in sports HAS increased and along with that increase has come more injuries (not less as you might expect with increased experience).

Other extrinsic factors under consideration include shoe-to-playing surface interaction (increased friction) and shoe construction. Shoes with larger cleats

and more cleats seem to increase torsional force on the knee (transferred up to the knee from the foot-to-surface effect). There is even evidence that turf surface and climate (dryer climate) can increase the shoe-playing torsional factor.

Takeaway message:

There are many factors that make differences between the females and males as the females have more laxity in all ligaments than males, also due to mechanical factors presents females have wider pelvis than males, so we should create the suitable environment for them to Dec. No. of injuries.