

Female Football: A Rising Star or A Ticking Timebomb?

Professor Graham N Smith - Chairman of The Society of Sports Therapists

Football, for so long regarded as a male bastion, is now the fastest growing and number one female sport in England, recently overtaking netball. F.A. figures¹ now show that 1.4 million girls are taking part in some footballing activity on a regular basis and the figure is growing.

While female football is celebrating a major boom in popularity, the sport is developing a shadow, which should it remain unchecked, will have serious implications for its participants.

The problem identified

Female football is played in over fifty countries world-wide and evidence from the USA and Scandinavia, where it is a high profile sport for females suggest an alarming new medical trend. Statistics indicate that female players are anything between 2-6 times² more likely to sustain an anterior cruciate ligament (ACL)

injury than their male counterparts, statistics that are now supported by evidence from the UK³. With such high numbers participating in the sport, concern for this potentially alarming situation should be considered high among players, coaches and the football authorities - but is it? What is the reality?

Premier League Data

In a recent study undertaken by Rosemary Stevenson, a Sports Therapist from Kent and a former Sports Therapy student at London Metropolitan University and Professor Graham Smith, a questionnaire was sent to therapists at each of the 34 clubs within the Women's Premier League and profiled the incidence of ACL injuries across the 3 seasons from 1998-2001. Half of the clubs who responded to the questionnaire reported at least one incidence of an ACL tear during this time. Significantly, 83% of the injuries resulted from no direct contact and over 80% occurred in matches as opposed to training.

Examining the game

So what is happening during a game that doesn't occur during training?

Football is all about short bursts of speed, accelerating from a standing start, stopping suddenly or quickly changing direction to lose an opponent. Equally players are often involved in jumping and landing, going up to head a ball as an attacker or a defender. All of which are included, hopefully, within training as well as matches. Therefore, could there be an unexpected element in the competitive match that cannot be trained for but increases the risk of such an injury?

Low centre of Gravity Helps Male Players

Jumping and landing with bent knees is, of course, much safer than with straight legs. Males tend to naturally play with a lower centre of gravity than females which gives them a wider base of support. However, there is also evidence to show that as female players get tired they adopt a more upright posture than their male counterparts⁴ which gives them a higher centre of gravity. Consequently, when landing with the knee almost straight, the ACL ligaments are tight and an explosive, dynamic, muscular adjustment may be needed to retain balance. Thus putting the ACL at risk.

Age Profile Changing

Previous studies show the 15 to 18 age range as most vulnerable to this injury.⁵ Now results from the Stevenson and Smith study show a new trend developing in 19 to 25 year old players within the UK. Fifty eight per cent of the ACL injuries reported in this survey occurred in the older age bracket. Could this age difference be purely that other studies have looked at female collegiate players rather than professional/semi-professional league players. While much more research is needed from a medical standpoint, clubs, players and coaches can start helping themselves. It is vital that players play on good surfaces and are wearing the right footwear. Equally, coaches have a significant role to play. Most of the injuries are occurring in games and not during training. Females who train for perhaps just two nights a week may spend most of their time on skills work. But, maybe they need to be working on endurance and plyometrics which is explosive power training, to help them develop adequate levels of fitness to cope with the game.

However, whether this type of training will prevent ACL injuries is still open to debate, especially if most injuries occur during uncontrolled activities, whereas this type of training can be considered as controlled.

Intercondylar Notch Size

Intercondylar Notch size has also been recently quoted as a major factor in ACL injuries.⁶ However, research by Dr Donald Shelbourne in the USA has shown that a small notch width will be a major pre-disposing factor for potential ACL tears, regardless of gender. The fact that females have smaller Intercondylar Notch widths in general, could be a factor but should not be regarded as the main one.

Whatever, this topic is still one likely to provoke discussion and concern especially for any female footballer, coach or parent.

It is also one that will be addressed and expanded upon in a forthcoming Knee Symposium on Saturday May 15th featuring Dr Shelbourne. Professor Smith will also be revisiting the subject during the day.

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The Symposium entitled 'From Pain to Performance 2004' is being held at the London Heathrow Marriott Hotel on Saturday May 15th.

It is also going to be the first time that UK practitioners and specialists will have the opportunity to listen to and discuss with Dr Shelbourne his philosophies, concepts and research.

Dr Shelbourne is internationally regarded as one of the world's leading authorities on ACL reconstruction and has extensive research to support his work and programmes .His sessions will include:

'ACL Injuries: Mechanism of Injury and Factors Related to Injury'

'Prevention of Range of Motion Problems with ACL Reconstruction'

'10-20 year results after ACL Reconstruction'

' Meniscus Tears to Treat and Leave In Situ in Conjunction with ACL Reconstruction.

Professor Michael Cullen, Consultant in Sports Medicine will also be looking at Anterior Knee Pain from a Clinical Perspective.

1. <http://www.thefa.com>
2. **Arendt E. and Dick R.** (1995) Knee injury patterns among men and women in collegiate basketball and soccer. NCAA data and review of literature. American Journal of Sports Medicine 25 (2): 187-190
3. **Stevenson and Smith.** (2003) The Incidence of ACL injuries in Female Soccer within the UK. Presented at WCPT Conference Barcelona.
4. **Ireland M.L.** (2002) The female ACL: why is it more prone to injury. Orthopaedic Clinics of North America 33 (4): 637-51.
5. **Bjordal J.M., Arnly F., Hannestad B. and Strand T.** (1997) Epidemiology of anterior cruitate ligament injuries in soccer. American Journal of Sports Medicine 25 (3): 341-345.
6. **Shelbourne K.D., Davis T.J. and Klootwyk T.E.** (1998) The relationship between intercondylar notch width of the femur and the incidence of anterior cruciate ligament tears. American Journal of Sports Medicine 26 (3): 402 –8.

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