



# WOMEN & GIRLS HEALTH & WELFARE

WOMENS INJURY PREVENTION & TRAINING

# WOMEN & GIRLS SPECIFIC INJURY PREVENTION

Research has demonstrated that women are more at risk of certain type of injuries. Anterior cruciate ligament (ACL) injuries particularly receive a lot of focus, unsurprisingly so given that they often lead to a lengthy time away from rugby. Women are also more at risk of breast injuries, stress urinary incontinence and other gynaecological conditions. Research has also shown women and girls may experience prolonged recovery from concussion.

Research has also shown women & girls are twice as likely to suffer a concussion and may have more severe symptoms with longer recovery times. The exact reasons for this are still being researched but could be due to women & girls having lighter heads and weaker necks, with poorer falling/landing techniques, resulting in whiplash type events on the pitch.

## Risk Factors for lower limb injuries

Risk factors for injury are often multifactorial and can be modifiable (things we can't change such as our anatomy) and modifiable (meaning we can take measures to change them). The good news is that the majority of risk factors for ACL injuries are modifiable. It is important to understand why ACL injury rates may be higher for females to then embark upon prevention strategies to help minimise the risk and keep you on the pitch!!

**Anatomy:** Women have a greater Q angle compare with men (the angle between the hip and knee) which increases the angular stress on the knee joint. This is often referred to as a 'valgus' position which is seen during cutting and landing, and is a risky position for injury

**Strength:** Women & girls frequently have stronger, more dominant quadriceps compared to their hamstrings leading to increased strain on the ACL. This balance is known as the quadriceps:hamstring ratio.

**Skill or conditioning error:** Poor technique or excessive fatigue can increase the risk of injury.

**Landing & Cutting technique:** Poor movement strategies such as cutting or decelerating with your body too upright, with a widely planted foot, knee falling in (valgus) and poor trunk control can all increase the risk of lower limb injury.

**Age:** The greatest age risk is typically 15-25 year olds, most likely due to a lower training history and developing strength. Implementing prevention programmes as early as possible has been shown to reduce injuries in females.

**Hormones:** There is a small amount of evidence to show that there is an increased risk of ligament injury during ovulation. However it is important to remember that not everyone gets injured around ovulation. Some females ask about taking the oral contraceptive pill to mitigate this risk, which has proven ineffective. If we maximise strength, stability and coordination this small risk can be mitigated. Other females find specific trends throughout their cycle such as low back pain during the pre menstrual phase or hamstring tightness at other stages. Therefore it is vital to track your cycle to identify these patterns and put strategies in place such as extra mobility and strength exercises during these times to mitigate ht risk.

**REDS:** Relative energy deficiency in sport is defined as a syndrome of impaired physiological and/ or psychological functioning. It is broadly caused by underrating or overtraining (or most likely a combination of the two) which can result in low energy availability which can have profound health and performance implications The outcomes can effect on all our bodily systems but muscuolskeletally can compromise bone health and increase the risk of stress fractures. This may be further compounded by sudden increases in training intensity.

**Footwear:** The majority of footwear has been designed and tailored to men. Broadly speaking women have narrower heels, higher arches and wider balls of feet and therefore the same footwear may not fit appropriately. There is not definitive research around footwear and injury risk but what is advised that women try numerous boots that result in a good fit and are uncomfortable.

**Surface:** The literature around surface and injury risk is also mixed. Not everyone injures on the same surface so again it is important that the correct footwear is worn taking into account the weather and surface.

**Training error/load:** Evidence suggests that poor load management is a risk factor for injury. Load broadly refers to all the events and stressors a person experiences over a period such as match and training frequency (sessions per week), volume (minutes), intensity (rate of perceived exertion – RPE) and type of training (gym, conditioning, rugby etc). Sudden changes in this load can affect your injury risk. It also important to consider your personal “life loads” such as studies, young children, difficult personal circumstances, and travel.

## Anterior cruciate ligament injuries

### Statistics

- Women athletes are 6-8 times more likely to rupture their ACL compared with men.
- 80% of ACL injuries are typically from non-contact events and 20% re-injure within two years
- The greatest age risk is 15-25 years. Those with less training history may also be at a higher risk.
- Injuries usually occur with a sudden forced deceleration or change of direction

### Injury prevention strategies

The good news is that many injuries can be prevented with strength and conditioning programmes. World rugby's ACTIVATE programme has been shown to reduce ACL risk Incorporating injury prevention exercises into warm ups or training sessions for 10 minutes, 3 times per week, can reduce injury risk in girls by 30%.

### All programmes should include:

- Plyometrics
- Neuromuscular training
- Strength training for key muscle groups (quadriceps, hamstrings, gluteals) - give examples with videos and pictures
- Encouraging balanced muscle development to avoid quadricep dominance
- Landing mechanics
- Improve core strength and stability
- Improve movement skills like agility and coordination
- Correct poor landing and movement mechanics- understand poor technique

## **Other factors to help mitigate your overall injury risk include:**

**Warm up:** Compete an effective warm up to prepare you for the rugby tasks.

**Load management:** Try to avoid sudden increases in loads (spikes). All increases in load need to be controlled from day to day and week to week.

**Recovery:** Make dedicated time for and plan your recovery which will mean you are better able to tolerate load and perform better as well. Recovery includes not only immediate post-exercise recovery methods but also adequate sleep, hydration, and nutrition. For more advise on training load go to: <https://www.world.rugby/the-game/player-welfare/medical/player-load/coaches-guidance> and <https://passport.world.rugby/injury-prevention-and-risk-management/activate-injury-prevention-exercise-programme/>

# **TRAINING AS A WOMAN AND INJURY PREVENTION**

We know there are differences between men and women, from anatomy, to hormones and our physiology which changes through potential phases of life including puberty, pregnancy, post partum , peri and post menopause. It is important we talk about these differences and all aspects of female health, breaking down the taboos and myths that currently exist. We can use these difference to our advantage to allow us to feel at our best during day to day life and on the rugby pitch! We will cover the following areas throughout our WRU female toolkits

## **1. KNOW THE FUNDAMENTALS OF BEING FEMALE**

Get to know your body, what different parts are called and where they are such as the pelvic floor. Understand what is normal for you and tune into what your experience of your body feels like, which means we can intervene if you experience symptoms that are effecting you.

## **2. TRACK AND UNDERSTAND YOUR CYCLE**

Make tracking your cycle a habit. Get to know what symptoms you experience and start to put strategies in place to minimise these. Understand the different types of contraception options for you and have informed discussions with your GP if this is relevant for you. Tracking is still important on contraception and strategies to minimise these should still be employed.

## **3. BREAST HEALTH AND SPORTS BRAS**

Breast health is often overlooked and wrongly so given the contact nature of rugby and potential for breast injury. Similarly large numbers of women are wearing the wrong size sports bras which will limit performance and comfort. Get to know the right type of bra for your size and shape

## **4. PELVIC HEALTH**

Learn about the function of your pelvic floor and signs and symptoms to not ignore such as leaking. Find out how to minimise these symptoms with pelvic floor training programmes.

## **5. INJURY AND ILLNESS PREVENTION**

Understand the increased risk to women of certain injuries and take a proactive approach in mitigating your injury risk.



DIOLCH

