

# SPORT RELATED CONCUSSION IN FEMALE ATHLETES

## Athlete Information Sheet

### What is concussion?

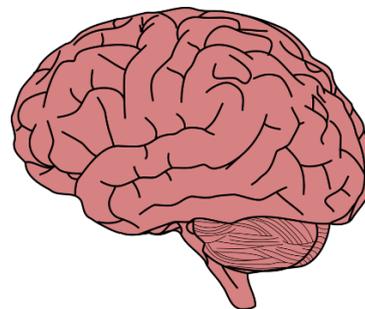
- Concussion is a mild traumatic brain injury which affects the way the brain functions.
- Concussion is caused by either a blow to the head or blow to the body that transmits forces to the brain.
- In New Zealand sport related concussion makes up about 20% of all concussions with the highest risk found in rugby, cycling and equestrian.
- Concussion can happen in any sport.
- New Zealand research shows that 45% of concussions resolve within 2 weeks of injury, increasing to 77% by 4 weeks, and 94% by 8 weeks.

### Is Concussion different in Female Athletes?

- There is growing evidence that female athletes experience concussion differently to male athletes
- In sports where males and females play by similar rules (Football, Rugby) females appear to have higher rates of concussion.
- Female athletes may also have different and more severe symptoms and take longer to recover than their male counterparts.
- Concussion may also cause disruption to the menstrual cycle.

### What happens to the brain when it is 'concussed'?

- Concussion results in chemical changes to the brain that affects the way the brain functions, rather than any structural changes to the brain itself.
- Concussion can affect many brain activities, including memory, concentration, balance and visual (vestibulo-ocular) functions.



### How to recognise concussion?

- Concussion can cause a range of symptoms, and they may not appear immediately. It can take up to 24-48 hours after a head injury for symptoms to develop.
- Common symptoms include headaches, dizziness, and nausea (feeling sick), fatigue, disrupted sleep patterns, difficulty concentrating, change in mood (for example being more irritable or emotional) and reduced balance.

- It is common for athletes with concussion to describe 'just not feeling right'.
- Neck pain is also common, and sometimes may not present until 7 – 10 days following the initial injury.
- With any new symptom or change in behaviour after a head injury, concussion should be considered, and a Doctor consulted. If in doubt, check it out.

## Managing Concussion in Female Athletes

If a concussion is suspected athletes should be immediately removed from activity and referred to a medical doctor for assessment, diagnosis, and a treatment plan.

Athletes suspected of concussion should never return to sport on the same day. If there is any doubt 'sit them out'.

Immediate recognition and treatment for concussion has been shown to improve outcomes and decrease recovery time.

Treatment of concussion should be individualised, and involve regular medical assessment, however, general principles of concussion treatment include:

### Initial Management

- The brain needs chance to recover; as such it is important to reduce all physical and 'brain related' activities and take more rest than normal.
- Avoid using screens as much as possible (e.g. TV, mobile and computer) as this is hard work for the brain. Limit screen time to simple tasks and for short periods of time (e.g. texting and emails)

### Subsequent Management

- Typically, once symptoms have resolved, a gradual return to mental (brain) activity is required before starting a graduated return to physical activity. Sport specific training follows once both brain and physical activity have successfully re-started.

Specific rehabilitation exercises for neck pain, vision or balance problems from physiotherapists are often helpful.

- All activities should be guided by an appropriate practitioner, with the goal being a graduated, symptom free return to sport. Ensuring adequate sleep, good nutrition, and looking after mental health is really important.

Athletes should only return to sport when a medical professional has confirmed they have recovered from the concussion and have been cleared for a progression back to training and then competition.

### Preventing Concussion

All sport carries some risk of injury, and we encourage all women who participate in sport to be adequately prepared.

### Primary prevention for concussion includes:

- Play by the rules – the rules are there to protect athletes.
- Develop good skills and technique – this will minimise the chances of getting into a high-risk position or situation.
- Physical conditioning to prepare for the general demands of your sports, by increasing the ability to withstand a given impact.
- Paying attention to hydration, nutrition and good sleep will help minimise fatigue and potentially reduce the risk of any injury.

For further information, speak with your HPSNZ health team or health care specialist.

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