# concussion pocket guide

#### for riders



Sport-related concussion is among one of the most common injuries in sport. Concussion is a type of mild traumatic brain injury (mTBI) that temporarily affects brain function, as a result of a direct, or indirect, blow to the head. A lack of concussion recognition can result in a lack of appropriate care, and there is a period of increased vulnerability in the first few days that increases the risk of future injury. A subsequent concussion before symptoms of a prior concussion have resolved is associated with worse outcomes, and repeated concussion may increase the risk of longer-term health consequences. Hence, education and awareness of sport-related concussion are key, and recognition and return to play decision making is important during the first 10 days after a sport related concussion has occurred.



### concussion injury red flags

If a rider displays ANY of the following symptoms they should be safely and immediately withdrawn from racing/riding and should be transported for medical attention to a hospital.

Loss of consciousness/deteriorating conscious state

Lying motionless on the ground

Confusion/unusual behaviour change

Increasing confusion or irritability

Severe or increasing headache

Severe neck pain/tenderness\*

**Repeated vomiting** 

Double vision

Seizure or convulsion

Weakness, tingling or burning in the arms or legs

\*NB: if a neck injury is suspected the rider should only be removed by a healthcare professional



# visible signs of concussion for riders/riding buddies/support staff

The presence or development of any one or more of the following visible signs may indicate a concussion injury has occurred. If concussion is confirmed or suspected the rider should stop riding/racing immediately and not return to riding for the rest of that day.

Changing level of consciousness or responsiveness

Slow to get up after a direct or indirect hit to the head

Unsteady on feet/ balance problems or falling over/incoordination

Grabbing/clutching of head

Dazed, blank or vacant look

Obvious facial injury and/or head trauma

Disorientation or confusion and an inability to respond appropriately to questions



### symptoms of concussion

While often those with concussion injury will present symptoms straight away, for some there may be a delay in presentation, with concussion symptoms developing over time (up to 48 hours post injury).

#### Headache

Dizziness

"Pressure in head"

Mental clouding, confusion, or feeling slowed down

Drowsiness/ feeling like "in a fog"

Fatigue

**Balance problems** 

**Visual problems** 

Sensitivity to light

Nausea or vomiting



#### memory assessment

Failure to answer any of the following questions correctly may indicate a concussion injury (read as appropriate for racing or general riding).

If racing:

What race event venue are we at today?

What stage are we on now?

Where did you finish on the stage before this one?

What race event did you do before this here in \_\_?

Where did you finish in that race event in \_\_?

If general riding:

What trail centre are we at today?

What trail are we on now?

What trail did you ride before this one?

What trail centre did you ride before this here in \_?

What day was that ride at\_\_?



#### what to do

Most individuals recover gradually over the course of a few days, but a few (around 15%) experience time loss for up to 30 days or more. After a concussion is diagnosed a period of rest for a few days is recommended until the acute symptoms resolve. Riders with concussion should:

#### Stop riding

Seek medical advice early

Not be sent home by themselves

Not drive until cleared by a medical professional

Not to be left alone (for the first 24 hours)

Take complete rest for the first 24-48 hours

Avoid excessive phone/tablet screen time, or tv stimulation

Avoid recreational/prescription drugs

Not drink alcohol

Avoid exercise

Not undertake air travel

When acute symptoms have resolved, follow a graduated return play protocol



# graduated return to riding protocol

Return to riding should only occur when the rider is symptom free, and this should be done in a gradual, step by step manner. The purpose of a graduated return to riding protocol is for the rider to progress from one stage to the next while remaining symptom free. If symptoms re-occur at any stage the rider should return to the previous stage.

Stage 1 – rest. This mean no riding or other exercise. When the rider is symptom free go to the next level

Stage 2 – light aerobic exercise such as on a static bike trainer or walking. This should involve no impact or vibration. If the rider remains symptom free go to the next level

Stage 3 – mountain bike riding easy trails, at a low to moderate intensity. If the rider remains symptom free go to the next level

Stage 4 – return to riding moderate to hard technical trails. Rides should be of short to medium duration. If the rider remains symptom free go to the next level

Stage 5 - Full mountain bike riding/training without restrictions. If the rider remains symptom free go to the next level

Stage 6 - Return to sport (racing)



## additional information

Any athlete diagnosed or suspected with a concussion should not return to riding or exercise until they are assessed by a medical professional, even if their symptoms have resolved.

A history of previous concussion increases the risk of further concussion. Any subsequent concussion may need longer to recover.

During recovery from concussion injury riders may at an increased risk of musculoskeletal injury for a period of time.

For more detailed information on concussion recognition, treatment and return to normal daily living and sport protocols please refer to the Scottish Sports Concussion Guidance website (https://sportscotland.org.uk/-clubs/scottish-sports-concussion-guidance/)

#### References

Concussion recognition tool 5<sup>®</sup> British Journal of Sports Medicine 2017;51:872 https://sportscotland.org.uk/clubs/scottish-sports-concussion-guidance/ http://www.parachutecanada.org/injury-topics/item/canadian-guideline-on-concussion-in-sport Kerr ZY, Zuckerman SL, Wasserman EB, et al. Concussion symptoms and return to play time in youth, high school, and college American football Athletes. JAMA Pediatr 2016;170:647 McCrea M, Guskiewicz K, Randolph C, et al. Effects of a symptom-free waiting period on clinical outcome and risk of reinjury after sport-related concussion. Neurosurgery 2009 65:876–83

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