



Concussion

What is concussion?

Concussion is a brain injury. That might sound quite dramatic, but that is what it is & why it is being talked about in sporting circles. For most people who are concussed, it is a self-limiting problem which will resolve with a short period of rest. The most important thing is to identify the fact someone is concussed and look after them properly. We hope this document will help you to achieve that.

This document includes:

1. A general introduction (this one)
2. How to identify someone with concussion
3. How to look after someone who is / has been concussed
4. Complications of concussion & summary

Do you have to be knocked out to be concussed?

It is a common fallacy that you have to be knocked out to be concussed. This is not true. Concussion can follow an injury with loss of consciousness, but can also follow injury where the victim has remained conscious throughout. It is therefore probably a lot commoner than you might suspect, but because in most cases you will recover with some rest, you may not appreciate that you have been concussed. If you have ever fallen off, hit your head & felt a bit woolly for a few hours afterwards that will probably be a mild form of concussion.

How will my body react to being concussed?

After a blow to the head (or landing on your head when falling off!) any feeling of being dazed or confused could indicate concussion. Dizziness, loss of balance, memory loss, difficulty concentrating are also symptoms of concussion, as are clumsiness & slurred speech. Some people complain of visual disturbances – like seeing stars or lights.

Some of these could be a real issue if you are planning on getting back on a horse – having good balance is pretty useful if you are jumping!

The good news is that a period of rest – proper rest of both body & brain – will usually allow the symptoms to go away and a return to activity.

Why should I be concerned about having concussion?

The main thing is to admit to yourself that you have a problem and not to try to do too much too soon. Remember that symptoms of concussion include balance problems, clumsiness, delayed reaction times and visual disturbances. None of these are things you want to have whilst riding. If you do try to ride out while you have persistent symptoms you are putting yourself at risk of further injury. There is also a very rare thing called second impact syndrome, where a second (often very minor) concussion before the first one has properly resolved can have a catastrophic, even fatal outcome.

Remember that concussion does indicate a brain injury. Repeated concussions are thought to lead to the old idea of the 'punch drunk' boxer. Muhammed Ali, who died recently, suffered from Parkinson's disease, and this was thought to be due to repeated head injuries – although if riding is leading to that many head injuries for you it may be time to consider a different hobby!

How to identify someone with concussion

Recognising concussion can be extremely difficult, so much so that much has been written in medical journals about it. Even in high profile top level sports concussion is sometimes not recognized. There was much discussion in the newspapers about a Welsh rugby player being allowed to carry on in a match a couple of years ago, and similar discussions have been had surrounding footballers.

Ultimately, concussion will be a medical diagnosis, so getting someone who might be concussed seen by a doctor should be made a priority. Probably the most important thing is to be suspicious – almost taking the attitude that after a smack on the head someone is concussed until they have demonstrated they aren't! If you don't think of it, you will probably miss it. You should also be aware that concussion is more common in young people (under 18s).

There is a new screening tool which was published in the British Journal of Sports Medicine in 2013 (McCrory et. al, Consensus Statement on Concussion in Sport. Br J Sports Med 47 (5), 2013) – it's called the pocket concussion recognition tool (or pocket CRT) and is endorsed by FEI among other organisations. The full CRT can be freely downloaded from the internet. These are the principles it covers.

Visible Clues

- Someone is conscious or unresponsive
- The rider who doesn't get up or is slow to get up
- Being unsteady on feet, problems with balance or co-ordination or falling over
- Holding the head
- Dazed, blank or vacant look
- Confusion / lack of awareness of event

Signs & symptoms

The presence of any of these may indicate concussion:

Loss of consciousness	Fatigued	Blurred vision
Seizure or fitting	Nervous / anxious	Light sensitivity
Balance problems	'not feeling right'	Memory loss
Being / feeling sick	Difficulty remembering	Feeling 'in a fog'
Drowsiness	Headache	Neck pain
More emotional	Confusion	Sensitivity to noise
Irritability	Feeling 'slow'	Difficulty concentrating
sadness	'pressure in the head'	

Memory Function

Ask some questions about where they are & what they have done – for example:

- What venue is this?
- What is the name of the horse & who owns it?
- Which fence did you fall off at?
- Which class are you doing?
- What was the last competition you went to?
- Failure to answer any of these correctly may indicate concussion.

Red Flags

There are some particular symptoms which must be taken seriously, and if any of these are present then medical attention is required:

Neck Pain	Decreasing consciousness
Increasing confusion or irritability	Severe or worsening headache
Repeated vomiting	Unusual behaviour change
Fitting	Double vision
Weakness / tingling / burning in arms or legs	

You may well have looked at these signs & symptoms and thought they are very vague - or that is how you feel right now (hopefully not having just fallen off the horse!). That is one of the reasons why the diagnosis is so difficult.

There is a much more complicated concussion screen that the doctor may do called a SCAT3 (Sports Concussion Assessment Tool 3). It takes about 20 minutes to do a full SCAT3, but even this is based on similar things to the pocket CRT. Where it starts to become really useful is if someone has already done a SCAT3 at an earlier date - that makes comparison of the results before & after injury possible which is much more useful. Perhaps one day having a baseline SCAT3 assessment (or similar) will be a requirement for competitions?

So – remember the principle that you need to be suspicious if you are going to spot mild cases of concussion. If someone is concussed they really do need proper attention – they should be assessed medically, and should not be left alone until that has been done. Someone who is concussed must not drive – they are putting themselves, their passengers & other road users at risk (and insurers may decline to cover any incident occurring in such circumstances).

What to do about concussion

As discussed in 'How to identify someone with concussion' above, recognizing concussion is the first step. Having decided that someone is concussed they should be medically assessed and guided on a path to recovery.

sportscotland produced an excellent guide to concussion called '[If in doubt, Sit them out](#)' which has been endorsed by many major organisations (Scottish Football Association, Scottish Rugby & the Scottish Government to name a few). As well as the information on how to recognize concussion, it also contains guidance on what to do after being diagnosed with concussion. It is an easy to read 7 page document - well worth a quick look.

So let's assume that someone has been identified as concussed - how should they behave / what should they do over the days & weeks post injury? Let's start with a few basic principles:

- as soon as someone is identified as concussed they do not participate any further in that day's competition
- they do not return to physical activity until all concussion symptoms have gone away
- return to work / education takes priority over return to riding.

The most important principle of recovery after concussion is rest. Rest the body, rest the brain. For adults there should be period of 7 days complete rest from physical activity (running, swimming, riding, mucking out boxes, shifting large bales etc) and from mental activities (this can include video games, watching TV, homework etc). For under 18s this should probably be 14 days. Good luck separating your 16 year old from the x-box for 2 weeks!

During this period someone who has been concussed should not drive or take alcohol until they have been cleared by a doctor or until all concussion symptoms have gone completely.

Once the initial 7 (or 14) day rest period is past and the concussion symptoms are all resolved a staged return to riding can be considered. The Sport Scotland guide describes a six stage 'Graduated Return to Play' (GRtP) program. For full details of this it is probably best to go to the original document. The principles are that each step introduces a little more physical activity, and providing the concussion symptoms do not return each day (or two days for under 18s) will see progression to the next level. There are 6 stages in the Sport Scotland GRtP program, and after a single concussion the minimum time to full return to play is 12 days (23 days for under 18s).

Complications of Concussion

Writing about complications is tricky. On the one hand it is important to make the point that if people don't take concussion seriously there are some potentially very serious things that can happen - and on the other hand, most cases of concussion will be completely resolved within a couple of weeks and never cause any long term problems. So when you read this do let it make you aware of some of the things that can happen but don't let it make you believe everyone who has concussion will die if they bump their head a second time!

As before, it is always good to start with a few principles.

- managing concussion properly leaves the victim less likely to have complications.
- following a proper Graduated Return to Play protocol gives the best protection you can have
- if there are persisting symptoms of concussion after 2 weeks seek further medical advice
- multiple concussions seem to be more likely to lead to complications than single events

There is increasing awareness of issues after concussion. There is a class action underway in the USA on behalf of American Footballers who have apparently have been damaged by multiple concussions. This is still making its way through the American legal system.

It is easy to get lost in discussing complications of concussion - so I am going to work through by the time after the original injury when the complications may be seen.

Second Impact Syndrome

This is very rarely seen in young people. May occur when a second concussion is sustained before a previous one has resolved - so maybe someone who is concussed without it being identified gets back on & then has a second fall later in the day. This is very rare but catastrophic - resulting in rapid swelling of the brain & death in most cases. Please now read the last sentence of the first paragraph again!

Post Concussion Syndrome

Unusual, but occurs. Basically seems to consist of similar symptoms to those seen in the early stages of concussion but persisting for much longer. There are a number of different treatments that may be used depending on which of the symptoms are more troublesome.

Post traumatic seizures

Very unusual. May come on months or years after the original injury (so it might be hard to make a connection between the two). Treatment is with standard medication for fits.

Chronic Traumatic Encephalopathy

There are a number of different long term brain disorders which have been linked with concussion. As they often occur 20-40 years later again it can be difficult to establish a definite link between the two. There are various different types which have been identified - some seem to be similar to a dementia like process, others more similar to Parkinson's disease with movement being more affected.

Summary

This document outlines what concussion is, how to recognise it, how to manage it and some of the complications that can be associated with it. The intention is that we raise the awareness of concussion amongst everyone involved with horse sports in Scotland. Some of the features

described may seem quite dramatic, but as with so many things if we get the basics right & look after someone with concussion properly it should never become a problem in the ways described here in the final instalment.

Please try to remember a couple of things to take away –

- If in doubt, sit them out. - Be suspicious, & if you think someone is concussed sit them out.
- Rest the body, rest the brain. - If someone is concussed, a full period of rest for body and brain until all symptoms have gone, then a Graduated Return to Play

Find out more

- <http://www.mayoclinic.org/diseases-conditions/concussion/basics/definition/con-20019272>
- <http://www.nhs.uk/Conditions/Concussion/Pages/Introduction.aspx>
- http://www.scottishrugby.org/sites/default/files/editor/docs/files/concussionreport_final.pdf
- <https://inside.fei.org/fei/your-role/medical-officer/concussion>
- <http://www.neurocogconcussion.co.uk/>

horsescotland would like to Thank Dr Andy Malyon for providing us with this information and support on Concussion to help educate the equestrian sector on concussion and how to deal with concussion.