the brain injury association

Concussion in sport

This publication has been written to give information on concussion (mild head injury) sustained through sport. It explains what concussion is, what to do in the event of a sports-related concussion, recovering from a sports-related concussion and long-term impacts of sports-related concussion.

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Introduction

Sport plays an important role in keeping us healthy and fit. Every week, millions of us enjoy playing sport, whether professionally or recreationally. At Headway, we want to make sure that everyone is able to enjoy sport while being aware of concussion and clear on what to do if a concussion is sustained.

This publication explains what a concussion is, how it can be sustained through sport, key symptoms to look out for and what to do if you or someone you know experienced one. This information does not replace clinical guidance.

What is concussion?

A concussion is a type of brain injury caused by a blow to the head. It is sometimes called mild brain injury or mild traumatic brain injury.

In sports, a concussion can be caused by...

- an object such as a ball striking the head with force
- players knocking into one another
- falling over, or falling from a height (e.g. falling off a horse)

In some cases, there may be a blow elsewhere to the body, but the force of it travels to the head to cause concussion.

Regardless of the cause, when there is a blow to the head, the nerve tissue of the brain is subjected to forces that cause damage to nerve cells, causing temporary disturbance in brain functioning. There can be both immediate and longer-term symptoms, such as problems with thinking and remembering, headaches and emotional issues. More detail on symptoms is available in the next section.

It is important for anyone taking part in sports to be concussion aware. Remember that while there are rules in place to protect sports players from such injuries, collisions are inevitable in contact sports and these can have potentially serious consequences. It is therefore important for everyone to be aware of how to spot concussion and what to do if one occurs.

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Key points - what is concussion?

- A concussion is a type of mild brain injury caused by a blow to the head
- Concussions can commonly occur in sports
- It is important for everyone involved in sports to be concussion aware

What are the symptoms of concussion?

Following a blow to the head, symptoms can be either immediate or delayed. Common symptoms of concussion are listed below; however, it is also important to be aware of the symptoms that require urgent medical attention as they could suggest that a more serious injury has taken place - these are listed on page 4.

Immediate symptoms

First symptoms of concussion typically appear immediately or within minutes of the injury. Key symptoms to look out for include:

- Confusion
- Dizziness
- Feeling like 'in a fog'
- Balance problems
- Headaches
- Loss of muscle tone (limpness)
- Sensitivity to noise or light
- Feeling unusually emotional, nervous or sad

Loss of consciousness can also occur following a blow to the head. However, this only occurs in around 10% of cases, so should never be relied on as a sole indicator of concussion.

The person who has sustained the injury might report these issues, or others around might notice them. It is important that a player with any suspicion of concussion should be immediately removed from play and assessed by a medical professional - more detail on this is in the section *Immediate actions for suspected or confirmed concussion*.

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Delayed symptoms

In the hours or days after a concussion, there may be issues such as…

Physical

- Headaches
- Dizziness
- Visual problems
- Nausea
- Sensitivity to light and sound
- Sleep problems
- Balance problems
- Fatigue

Cognitive

- Poor concentration
- Forgetfulness
- Difficulty with processing information
- Slowed reaction times

Emotional

- Irritability
- Low mood
- Anxiety
- Feeling more emotional than usual

These are normal symptoms to experience after a concussion and in most cases will improve by themselves within 2 - 4 weeks.

If any of the symptoms become problematic or continue for longer than 28 days, the person with the concussion should speak to their GP about any further assessment or support that might be needed.

Key points - symptoms of concussion

- A concussion can cause a range of physical, emotional and cognitive symptoms
- Symptoms can present themselves immediately, within minutes, or over the next few days
- Loss of consciousness only occurs in around 10% of concussion cases
- It is important to be familiar with the ‘red flag’ symptoms of concussion

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‘Red flag’ symptoms

If any of the following symptoms develop or are reported following a blow to the head, the person should be urgently medically assessed by an appropriate healthcare professional onsite, or immediately taken to a hospital Accident and Emergency (A&E) department.

- Any loss of consciousness
- Drowsiness or deteriorating consciousness
- Loss of memory for events before or after the injury
- Confusion or irritability out of character, or unusual behaviour
- Problems with understanding information or communicating
- Loss of balance or problems with walking
- Decreased sensation, or pins and needles down arms/ legs
- Blurred or double vision
- Weakness
- Any fits (collapsing or passing out suddenly)
- Severe and increasing headache not relieved by painkillers such as paracetamol
- Repeated vomiting
- Reduced neck movement or severe neck pain
- Deafness in one or both ears that was not present before
- Clear fluid coming out of the ears or nose
- Inability to be woken
- Bleeding from one or both ears

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Immediate actions for suspected or confirmed concussion

The most important and immediate advice to follow if either you or someone else has a suspected concussion is *If in doubt, sit it out!* Do not take risks with concussion, and follow the steps below.

If the person is displaying symptoms in the 'Red flag' symptoms listed on page 5...

The person must be given an urgent medical assessment onsite. If this is not available, they must be taken to a hospital Accident and Emergency (A&E) Department, as they might have a more serious brain injury that needs urgent care. Call 999 to use ambulance transfer if necessary.

If the person is displaying symptoms in the Immediate symptoms and Delayed symptoms *lists on pages 3 and 4...*

The person must be immediately removed from play and assessed by an appropriate medical professional onsite. If this is not available, the player should be kept away from play and NHS should be contacted by calling 111 within 24 hours of the injury.

The person with a suspected concussion should not return to the game, event, training or physical education (P.E.) lessons within 24 hours of the suspected concussion. They should not be pressured by a coach, other team players or their own expectations to return to play. The decision on whether they return to play must be made by a medical professional following a proper medical assessment.

The person should not be left alone for 24 hours after the initial injury, as symptoms can evolve and may worsen. It is also important that they not drive a vehicle, ride a bicycle, operate machinery or drink alcohol within 24 hours of the suspected concussion - they should therefore be driven back home instead of driving themselves.

Key points - what to do for suspected/ confirmed concussion

- If the person with concussion is displaying 'red flag' symptoms (see page 4), immediate medical care should be arranged
- A person with either suspected or confirmed concussion should be immediately removed from play and medical attention sought - *if in doubt, sit it out!*
- A person with either suspected or confirmed concussion should not be left alone or allowed to drive, operate machinery or drink alcohol for 24 hours after the concussion.

Diagnosing concussion

Diagnosing a concussion (especially in non-medical settings such as sports fields) is notoriously difficult. Only suitably qualified medical professionals should attempt to diagnose concussion, and even then a cautious approach should always be taken.

There are some sideline assessment tools available such as the Sports Concussion Assessment Tool (SCAT5); however, it is important to note that these should only be used by trained professionals.

Recovering from concussion

In the first 24-48 hours of the concussion, it is important to rest and sleep as needed to give the brain time to recover. 'Resting' includes reducing screen time, such as watching TV or scrolling through social media. The person should also reduce stress where possible and avoid situations where they may feel overstimulated, for example being in busy environments.

Easy activities of daily living and gentle exercise such as walking can continue, and can be helpful with recovery. Once symptoms have reduced, the

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person can progress through the graduated return to activity (education/ work) and sport guidance produced by the UK Government and Sport + Recreation Alliance (SRA), available at www.sportandrecreation.org.uk/policy/research-publications/concussion-guidelines.

Further suggestions of what to do in the weeks that follow are...

Do...

- Do get rest and gentle exercise such as walking for the first 24-48 hours of the concussion being sustained. Avoid intense exercise.
- Do stay within reach of a telephone in case you need medical help over the next few days
- Do share this information with a relative or friend who can keep an eye on your condition
- Do follow the UK government/ SRA returning to activity (education/ work) and sport guidance

Don't...

- Don't stay at home alone for 24 hours after the injury
- Don't play or train for contact sports for at least 14 days without consulting an appropriate healthcare professional
- Don't drink alcohol for 24 hours after injury and until symptoms improve
- Don't return to driving for 24 hours after injury and until your symptoms improve. If in doubt, consult your GP. Commercial drivers should be reviewed by an appropriate medical professional before returning to driving.
- Don't return to competition before 21 days from injury and without consulting an appropriate healthcare professional
- Don't return to work until you feel ready to
- Don't take aspirin or sleeping tablets without consulting a doctor

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Post-concussion syndrome

The majority of people recover from concussion within 2 - 4 weeks if they follow the correct steps. However, some people continue to have ongoing problems following concussion, known as post-concussion syndrome. This can be a very frustrating and distressing experience, but there are things you can do to help yourself. For more information, refer to our publication *Mild head injury and concussion.*

Frequently asked questions

I had a brain scan after my concussion, but it came back clear. Does that mean I don't have concussion after all?

Brain scans such as computerised tomography (CT) and magnetic resonance imaging (MRI) are sometimes performed to check for damage in the brain, but they are not powerful enough to detect damage at a microscopic level. Therefore, most concussions will not show up on a brain scan. Symptoms such as those described earlier on (refer to page 2 onwards) can be a better indicator of concussion than relying on brain scans, but a person with suspected concussion should still always be assessed by an appropriate healthcare professional.

Can I still get a concussion while wearing a helmet/ head guard?

A concussion can be sustained even when wearing protective headgear. When there is a knock to the head, the brain moves around inside the skull, and it is this movement and subsequent shearing forces that can cause damage. While helmets can absorb some of the shock of this impact, they are not effective at reducing these rotational forces and therefore cannot completely prevent a concussion from happening. Headgear can, however, protect against cuts and bruises to the scalp and ears, and protect the skull.

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Can a concussion happen even if someone doesn't lose consciousness?

Only around 10% of concussions result in a loss of consciousness so this should never be relied on when trying to diagnose a concussion. Symptoms such as those listed on page 2 should be relied on as an indicator of possible concussion, followed by a medical assessment by an appropriate healthcare professional.

I don't want to let my teammates down by sitting out of a game if I have concussion. What should I do?

If you have a concussion, you may have slower reaction times, struggle to remember certain moves or plays and have blurred vision, among other symptoms. These are going to have a negative impact on your ability to play, so you will not be helping your teammates by carrying on.

More importantly, if a concussion is ignored and you continue to play while concussed, you could be putting your short and long-term health at risk, as a second blow to the head could result in a more serious injury, or in some rare cases could be fatal - this is known as second impact syndrome.

People with concussion are also at a higher risk of additional concussions and musculoskeletal injuries for several weeks.

Repeated concussions are also more serious, and associated with slower recovery and potentially longer-term symptoms.

What is Chronic Traumatic Encephalopathy?

Chronic Traumatic Encephalopathy (CTE) is a progressive condition of the brain, with symptoms similar to neurodegenerative conditions such as memory problems, confusion, mood swings and behavioural changes. It is suggested to be associated with repeated blows to the head and recurring concussions. People with a history of recurring head injuries, for example through sports such as boxing, may be most at risk of developing CTE. More information on CTE is available on the NHS website at www.nhs.uk/conditions/chronic-traumatic-encephalopathy.

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Is it my responsibility to look out for concussion?

It is **everyone's** responsibility to be aware of the signs of concussion, and to make sure that anyone with a suspected concussion is removed from play and the appropriate steps are taken (refer to section *Immediate actions for confirmed suspected or confirmed concussion* on page 5). This includes players, coaches, teachers, referees, spectators and families.

Where can I get help for coping with concussion?

The majority of people recover from concussion within 2 - 4 weeks if they follow the correct steps. However, despite being temporary symptoms in the majority of cases, living with concussion can still be very difficult. People who are frequent sports players might find it particularly difficult to be removed from play, and may struggle with resting if they are used to being active.

Concussion can also cause emotional disturbances such as depression and anxiety. **Help is available**. Contact our nurse-led helpline on 0808 800 2244 (Monday - Friday, 9am-5pm) or helpline@headway.org.uk for information, support and a listening ear . You can also contact Samaritans on 116 123.

You should speak to your GP if you are struggling with the symptoms of concussion, as they may be able to refer you to specialist support.

Headway's Concussion Aware campaign

Headway is passionate about raising awareness of concussion in sport. Our *Concussion Aware* campaign aims to educate sports players and others on how concussion can happen, the signs of concussion and what to do if a concussion has occurred. For more information on the campaign, visit www.headway.org.uk/news-and-campaigns/campaigns/concussion-aware.

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