



Highly Commended

Science Writing

Year 5-6

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Injuries In Sport



Concussions

What are concussions and how are they diagnosed?

Concussions are traumatic brain injuries that occur when there is a blow or jolt to the head, or if the brain bounces and twists in the skull. It keeps the brain from functionally working, it causes brain cell damage and thinking problems. Concussions are classified as a mild brain injury and not life threatening. Concussions can be diagnosed by Magnetic Resonance Imaging (MRI): They can sense structural changes to the brain or a doctor's examination. Concussions can increase numbers in Dementia (CTE) and Alzheimers Disease.

Diseases from Concussions

What can concussions cause?

Chronic Traumatic Dementia - CTE is a type of dementia that is caused by multiple head injuries. A cure does not exist but there are treatments and support teams to help you live your normal life.

Alzheimers Disease - Alzheimers firstly damages the connections in the part of the brain that remembers memories. It will later affect the cerebral cortex responsible for language, social study and behaviour. After a longer period of time, more parts of the brain will become damaged. A person with Alzheimers will have a lot of trouble with functioning and living.

Symptoms and Signs of Concussion

Signs can include:

- *Confusion*
- *Disorientation*
- *Memory loss*

- Muffled speech

Symptoms can include:

- Headaches or dizziness
- High pitch ringing in ears
- Difficulty with concentration
- Severe fatigue
- Sensitivity to light and screens
- Nausea

After a concussion, signs may not appear at first. It could take up to a week for symptoms to show and spread in the body. Athletes are most likely to experience a maximum 4 - 5 symptoms, which can last weeks, months or even years!

Action

What should you do if someone you know or if you experience a concussion?

As soon as someone experiences a knock to the ground, immediately stop time and make sure they come off the court/field safely. If they have back or neck pain, do not move them, immediately call an ambulance. For a bleeding wound, wet a towel and compress to stop the bleeding. Seek a medical doctor for an examination and if they confirm the player does not have a concussion they are then allowed to play the rest of the game. However, if they do have a concussion, they will not be able to continue the game or play future games until they have clearance from their Doctor. If an athlete continues to play with a concussion, there is a greater risk they will have another concussion or head knock. If they do play with a concussion, it will cause lifelong damage to their brain and body.

Recovery

How do you recover from a concussion?

Depending on how you are affected from the concussion, athletes can feel better within a fortnight, while others can up to a few months to fully recover.. When recovering it is best to:

- Have good rest / sleep at night
- Stay hydrated, avoiding any alcohol
- Eat healthy foods and
- Avoid TV screens, iPad, phones and bright lights.

If needed, sleeping tablets or anti-inflammatory tablets can help. Meanwhile, the brain will temporarily recover itself over a period of time.

Long Term Effect

As mentioned before, if a player continues to play with a concussion and has another a head knock, it will cause long term effects to the brain

or body. Some long term effects can include:

- Memory loss
- Lack of focus
- Hearing or sight loss and
- Poor coordination

Experiencing one concussion will not cause long term effects, however 3 or more concussions are likely to cause long-term effects and diseases.

Prevention

Unfortunately there is not a great deal that can prevent concussions but there is one thing that people can try - head gear. It is used to protect the skull and brain from damage but it does not prevent the brain from moving in the skull. Head gear is commonly used in cycling, motor racing, football, rugby and cricket. Research shows that head gear prevents 60% of concussions from happening and reducing death rates.

Returning to School and Sport

When a doctor has completed their assessment and given you clearance to play sport again, it is best to start with a few training sessions then build up each week, until you can do a full game without any symptoms or signs of concussion. This timeframe will be different for each athlete because it depends on the severity of the concussion, their individual body and health, and how well they have been following recovery advice. For athletes returning to school or university after a concussion, start with a half-day and build up slowly, similar to the approach for returning to sport.

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