Concussion

Concussion is a form of mild traumatic brain injury affecting the brains ability to acquire and process information[2]. In sport it is commonly caused by collisions during contact sport that result in an impulsive force being transmitted to the brain. Concussion can occur even without a hit to the head.

An athlete with a suspected or confirmed concussion should be immediately taken to the nearest emergency department if the following signs and symptoms develop[4,5]:

- Dazed appearance
- Seizure/Convulsion
- Headache
- Repeated vomiting
- Dizziness/Double vision
- Altered consciousness
- Confusion and/or memory loss
- Neck pain

Children are especially susceptible to concussions and often present with varied symptoms due to physiological differences in their brains. Knowledge of receiving a concussion is often low in all athletes, parents, coaches and teachers[4]. This is due to an inability to recognise the signs and symptoms of concussion or symptoms not presenting themselves until several hours after the event.

A concussion can occur in any sport and without a loss of consciousness.

Sustaining a concussion

If a child is suspected of sustaining a concussion, they should be removed from play immediately and seek medical attention. A CRT6 (Concussion Recognition Tool) can also be used to help identify if a child or adolescent has sustained a concussion.

"If in doubt, sit them out"[4]

Similar to adults, children may experience a reduction in the speed of information processing, poor attention and impaired executive functioning following a concussion[5]. As a result, many children may need to take time off from school to recover.

A child who has sustained a concussion should be closely monitored for 24 hours following the injury and should seek medical attention[2]. If symptoms don't resolve or worsen, further medical attention and monitoring are required[4].

For more assistance, the HeadCheck app can be downloaded to help identify if a concussion is present. To download, search the Apple App Store or Google Play.

Recovery

To assist in the recovery of a concussion, it is recommended that children REST and AVOID the following:

- Physical activity
- Computer
- Television
- Video games
- Reading
- Loud noises
- Bright lights
- Anything that exacerbates symptoms

Children may take longer to recover from a concussion in comparison to adults[2]. With a trained medical professional, a return to learning plan should be created not to exacerbate any concussion symptoms

that may still be present[1].

Return to play

- Premature return to play following a concussion can lead to an increased risk of re-injury and higher severity of symptoms[6]
- Children should not return to play if suspected of sustaining a concussion[4]
- Children should not return to contact training until at least 14 days symptom free[7]
- All children who suffer a concussion should also have medical clearance before returning to physical activity[6]
- Children should not return to contact/collision sport until a minimum of 21 days symptom free[7]

General practitioners

All children who sustain a concussion should see a general practitioner with experience in managing concussion[2]. On the first visit, a general practitioner should conduct a neurological examination and document the child's symptoms. A general practitioner should be seen on a number of occasions to assess the recovery process.

The Child SCAT 6 is a standardised tool for medical professionals to evaluate concussion in children under 12 years.

It is available online from Sports Medicine Australia at: https://sma.org.au/resources/concussion/

Prevention

To minimise the risk of concussion, consider the following:

- Ensure coaches and athletes adhere to the rules and equipment modifications for younger athletes
- Identify at-risk athletes, including those with pre-existing medical conditions and those who have previously suffered a concussion
- Wear appropriate protective equipment for your sport. Helmets and mouth guards are not designed to prevent concussion, however they are important in the prevention of skull fractures and dental injuries
- All key personnel, including athletes, parents, coaches, teachers, sports trainers, and any others involved in junior sport should be educated about concussions and how to recognise them. Focus should be put on the increased risk of secondary concussions following an initial concussion

For more information visit Sports Medicine Australia at: https://sma.org.au/

References:

1. Complete Concussions. (2022). *Concussion in Children: Part* ||. Retrieved from https://completeconcussions.com/concussion-tips-information/concussion-in-children-part-ii/
2. Concussion in Sport (n.d.). *What is Concussion*. Retrieved from https://www.concussioninsport.gov.au/parents_and_teachers#what_is_concussion
3. Davis, G. A. (2013). Management Issues in Paediatric Sports Concussion. *Sports Health*, 31(1), 28-32.
4. Elkington, L., Manzanero, S., Hughes, D. (2019). Concussion in Sport Australia Position Statement. Retrieved from https://www.ama.com.au/position-statement/concussion-in-sport-2019
5. Halstead, M. E., Walter, K. D. & The Council of Sports Medicine and Fitness. (2010). Sports-Related Concussion in Children and Adolescents. *Pediatrics*, 126(3), 597-615. DOI: 10.1542/peds.2018-3074
6. Kohler, R. (2013). An Introduction to Concussion in Sport. Sport Health, 31(1), 15-21. https://search.informit.org/doi/abs/10.3316/informit.359283507815488
7. Australian Sports Comission. (2024). *Australian Concussion Guidelines for Youth and Community Sports.* Retrieved from https://www.concussioninsport.gov.au/__data/assets/pdf_file/0003/1133994/37382_Concussion-Guidelines-for-community-and-youth-FA-acc.pdf

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