

CONCUSSIONS

Recognition, Assessment,
Management, and Return to Play



What is a concussion?



- A concussion is a traumatic injury to the soft tissue of the brain as a result of a violent blow. The brain tissue is soft and the skull is hard
- Concussions were not always recognized as a serious trauma to the brain and nervous system. In the past, athletes were often returned to play before it was safe for them to do so.
- Specific training courses have increased awareness of signs and symptoms of concussion. Training is now mandated by the CIAC for coaches, athletes and parents.
- Presence of Athletic Trainers and Physicians on sidelines helps with early recognition and proper management.



“Are you alright?”

- Almost every athlete would answer yes to this question, even if they were walking over to the wrong sideline in a post hit stupor.
- Always check to rule out injury to c-spine, skull fracture, orbital fracture, lacerations
- Early recognition of concussion symptoms is key to proper management. Symptoms can develop and worsen over time. Continue to monitor for changes at 5 minute intervals.
- Teammates, coaches and parents can be critical in identifying when someone is acting out of character.

SIGNS OF CONCUSSION

- Change in level of consciousness
- Difficulty walking or balancing
- Unequal or unreactive pupils
- Vacant stare, stupor
- Difficulty with eye tracking (nystagmus)
- Personality changes (aggressive, nervous, emotional)
- Vomiting
- Memory and concentration issues
 - Anterograde or retrograde amnesia
 - Difficulty and/or Delay in answering questions
 - Loss of orientation to place/time etc.

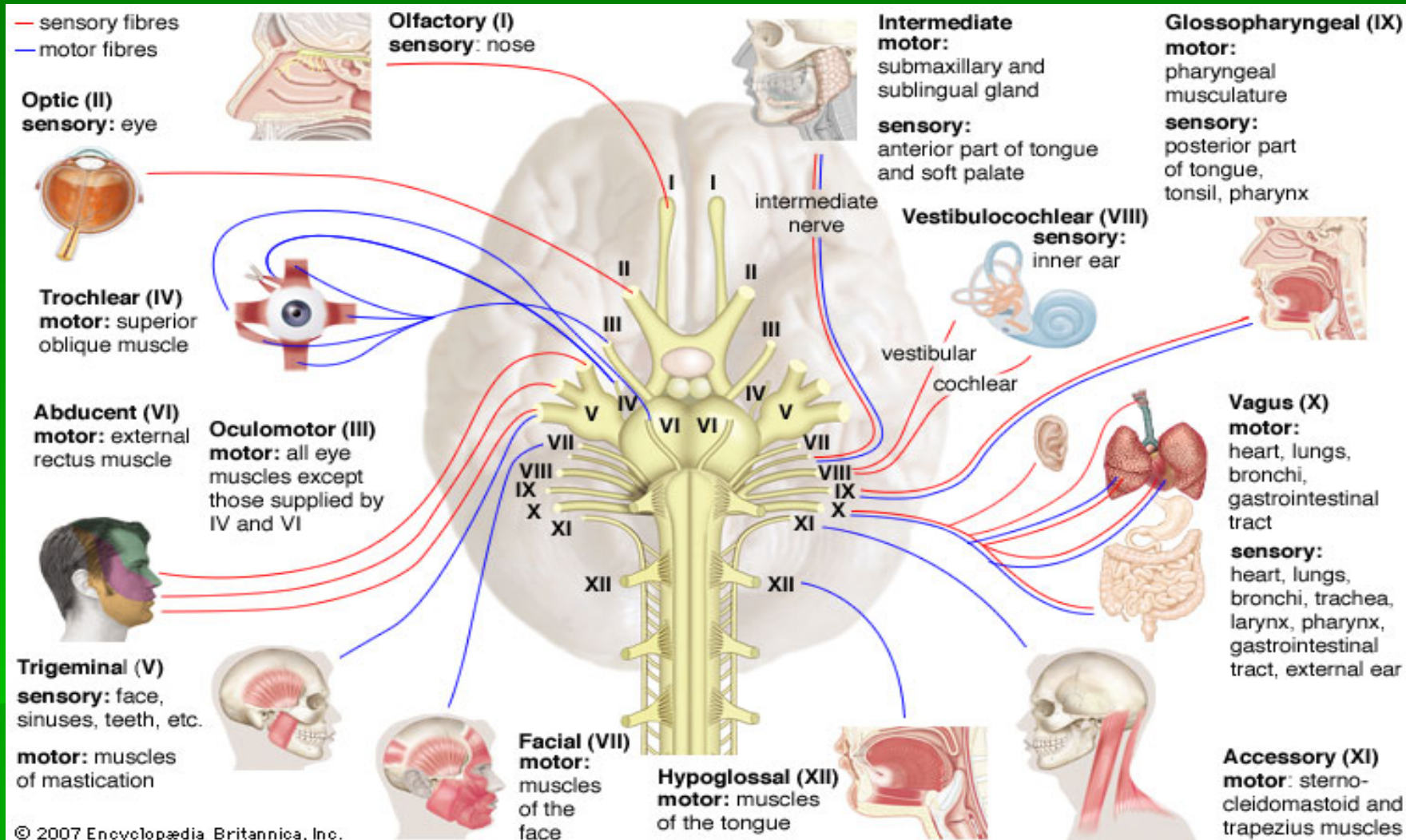
SYMPTOMS

- Headache
- Difficulty concentrating
- Dizziness
- Nausea, change in appetite
- Inappropriately emotional and/or irritable
- Ringing in the ears, hearing changes, noise sensitivity
- Blurred vision, double vision, peripheral vision changes, trouble adjusting near/far focus, seeing stars, “blacking out vision”, light sensitivity
- Drowsiness/fatigue/excessive sleep/insomnia
- Feeling “foggy” or “slow”, loss of orientation



Cranial Nerve Assessment

- Sense of smell and taste changes
- Snap fingers near ears
- Facial sensation
- Facial expression (smile, frown, raise eyebrows, puff cheeks, purse lips)
- Stick out tongue and move side to side
- Ability to swallow, shrug shoulders, rotate head, deltoid and bicep strength
- Vision near, far, near again (accommodation), double vision, blurry vision, eye tracking, pupil appearance and response to light



The Cranial Nerves Control lots of muscles and organs, concussion can cause changes to any of these branches

Management

- Immediate reporting of symptoms, removal from sports and protection from contact if concussion is suspected
- Continued monitoring of signs and symptoms every five minutes
- Three or more concussions should consider temporary or permanent disqualification from contact sports.

Same Day Referral

- Referral to MD same day if: (appendix B)
 - Any Loss Of Consciousness
 - Signs/Symptoms are worsening markedly
 - Deterioration of: neurological function, respiration, pulse, blood pressure, pupil changes
 - Amnesia lasting longer than 15 minutes
 - Cranial Nerve deficits
 - S/S of associated injuries - spine or skull fractures, intracranial bleeding, blowout fracture
 - Deterioration of mental status – lethargy, difficulty maintaining consciousness

Delayed Referral

- Any of same day referral s/s occur (previous slide)
- Postconcussion symptoms worsen or do not improve over time
- Increase in number of post concussion symptoms reported
- Post concussion symptoms begin to interfere with the activities of daily living (especially sleep or cognitive problems)

Home Instructions

- Avoid taking medications (risk of masking s/s, worsening bleeding, returning to soon due to false sense of recovery)
- Avoid alcohol, drugs, or other substances that interfere with neurological function
- Avoid aggravating symptoms (reading, TV, video games, loud or bright environment, no lifting or other cardio exercise)
- Rest, resume normal daily activities as tolerated (including school, homework)
- Rest from sports until 48 hours continuously asymptomatic, then may begin RTP protocol under care of MD, ATC, etc.
- Eat a well balanced diet and stay hydrated
- Waking for symptom monitoring is only necessary if s/s were worsening and level of consciousness or intracranial bleed is a concern.

Return to Play Protocol

- Symptoms can last hours, weeks or months
- Day 1 – REST (first day no symptoms)
- Day 2 – REST (second day no symptoms)
- Day 3 – Light aerobic (15-20 min, 25-50% exertion, no contact)
- Day 4 – Sport Specific (30-40 min, 50-75% exertion, pushups/sit-ups, non contact)
- Day 5 – High level (45-75 min, 75-100% exertion, several sets pushups/sit-ups, non contact)
- Day 6 – Controlled Contact (participation in PRACTICE setting, No Live contact/game play, shoulder to shoulder (soccer), diving for balls (volleyball), bags/sleds (football), tumbling (cheer))
- Day 7 – Full Participation
- ***If at any point in protocol symptoms were to return, rest immediately and see ATC/MD***

Second Impact Syndrome

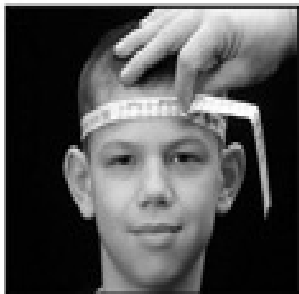
- Staying in a game with symptoms and/or returning to contact sports before signs and symptoms have completely resolved puts an athlete at risk for Second Impact Syndrome (SIS).
- Almost all reported cases of SIS are in young athletes
- Athletes with prior concussions are at a greater risk of getting a repeat concussion, and for slower recovery from subsequent injuries.
- The brain cannot tolerate even mild injury when not fully healed after a concussion and this takes time! Second hit doesn't have to be a big one!
- The brain's ability to self-regulate the amount of blood volume to the brain is damaged resulting in increased cerebral blood volume which can result in brainstem herniation and death in as little as 3-5 minutes.
- High fatality rate – if this happens, likely to die
- If you survive you have lifelong disability

Post Concussion Syndrome

- In most people, post-concussion syndrome symptoms occur within the first seven to 10 days and go away within three months, although they can persist for a year or more.
- Post-concussion symptoms include:
 - Headaches
 - Dizziness
 - Fatigue
 - Irritability
 - Anxiety
 - Insomnia
 - Loss of concentration and memory
 - Noise and light sensitivity

Helmet Fitting

- Helmets meet NOCSAE or ASTM standards and are in good condition and are properly fitted.
- Amount of air in bladder needs to be properly adjusted and should not be too hard or soft



Proper fit is essential for the most effective performance of any helmet system. The helmet functions as a system and must be properly fit for optimum performance. The player must be made aware of the importance of a proper fit.

1. Measure the player's head as shown (1" above the eyebrows around the widest part of the head), using the chart on this page for size guideline.



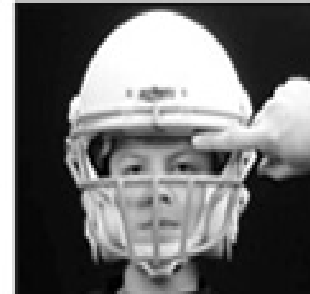
2. These helmets feature a standard 4-Point High chin strap. The chin strap should be attached to the helmet underneath the faceguard, not above it. Tighten the chin strap so that it is snug and centered on the player's chin. The ear holes should still be centered over the player's ears.



3. These helmets also feature SUREFIT™ slots. See the bottom of this sheet for instructions on how to use SUREFIT™ slots.

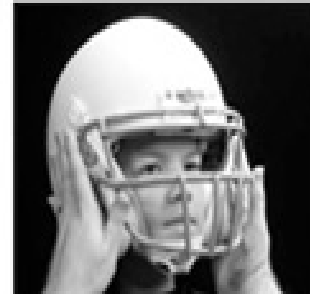


4. Jaw pads are another key component to properly fitting the helmet. The jaw pads should be snug against the player's face, flush with his jaw, without pushing too forcefully into his cheeks. Jaw pads are measured in thicknesses. These youth helmets come standard with a 1 1/8" soft universal jaw pad. Other sizes and styles are also available.



5. Properly fitted on a player, the helmet's front edge and nose bumper should be approximately 1" above the player's eyebrows.

It is the interaction between the player and the person fitting the helmet that ensures proper fit and optimum helmet performance.



6. To ensure the helmet fits properly, try rotating the helmet on the player's head. It should not slip. The player's hair and skin on the forehead should move with the helmet as it's rotated, but the helmet should not move independently.

When in Doubt...

Hold them out!!

Thank you!

