

SportMedBC Presents:



CONCUSSION MANAGEMENT WORKSHOP

Tuesday, October 1st, 2013
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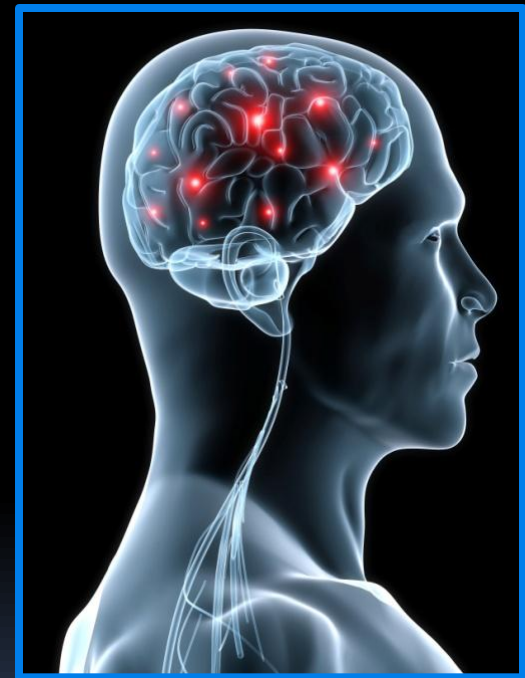


Concussion Challenges

1. Recognizing a concussion when it happens
2. Returning to Play safely

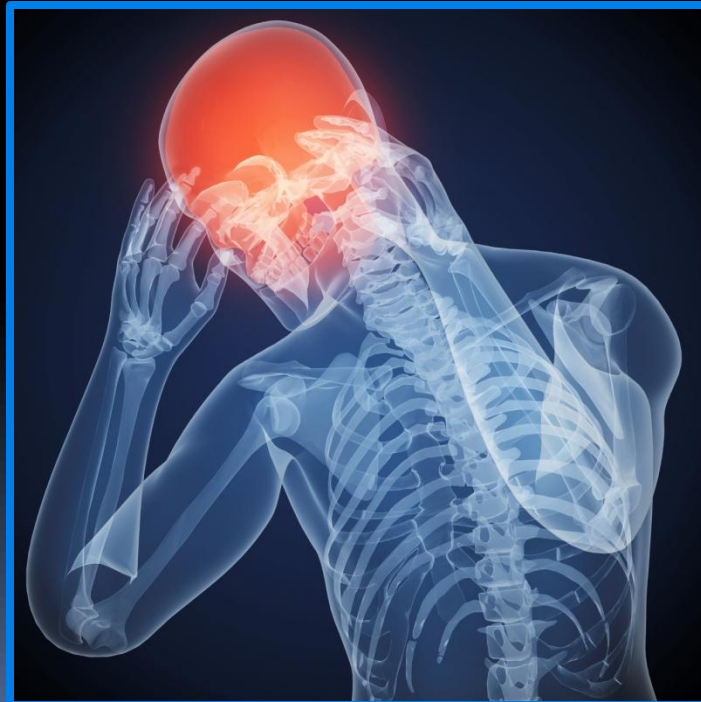
Outline

- Defining Concussions
- Recovery
- Mechanisms of Injury
- Signs and Symptoms
- Second Impact Syndrome
- Suspecting a Concussion
- Concussion Management
- Red Flags
- Return to Play Protocol
- Conclusion



What is a Concussion?

- A pathophysiological process affecting the brain, induced by traumatic biomechanical forces



(Concussion in Sport Consensus, Zurich, 2009)

Defining Concussions

- **Concussions are injuries to the BRAIN**
 - Should not be dismissed as “getting your bell rung” or “getting dinged” injuries
 - Typically result in rapid onset of neurological impairment (signs & symptoms)
 - Appearance of symptoms might be delayed several hours - up to 72 hours
 - Day after effect
 - Adrenaline wears off



Defining Concussions_(cont.)

- **May NOT** include Loss of consciousness
- Concussions are cumulative
- If not managed properly, concussions can lead to prolonged complications



Recovery

- **Adults:** 80-90% resolve in a short period (7-10 days) - *IF managed properly*
- **Children & Teens:** more cautious approach – 2-3 weeks minimum.



Mechanisms of Injury

How Concussions Occur:

- **Direct Blow**
 - To the head, face, neck, chest or anywhere that causes enough force to transmit to the brain
- **Fall**
- **Whiplash**



What are the Effects?

- Concussion Signs and Symptoms can be broken down into 3 categories:
 - **Somatic**
 - **Cognitive**
 - **Neurobehavioral**

Signs and Symptoms

- **Somatic (relating to the body):**
 - Headache
 - Nausea/Vomiting
 - Sensitivity to light
 - Sensitivity to sound/noise
 - Numbing or tingling
 - Balance and/or coordination problems



Signs and Symptoms

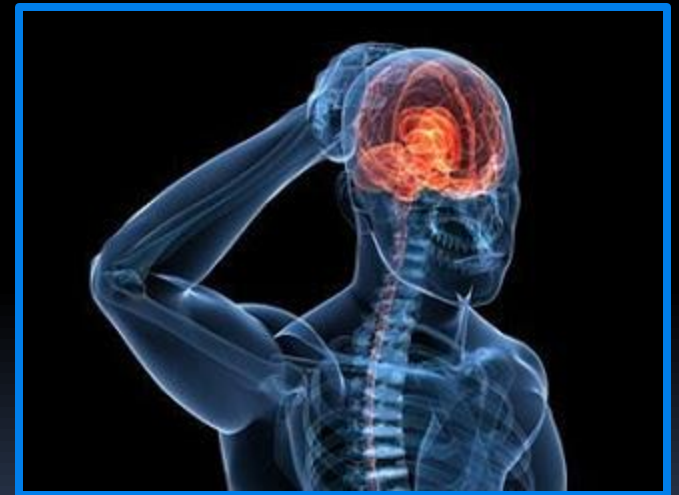
- **Cognitive (mental):**
 - Feeling slowed down
 - Feeling in a fog
 - Difficulty concentrating
 - Difficulty remembering



Signs and Symptoms

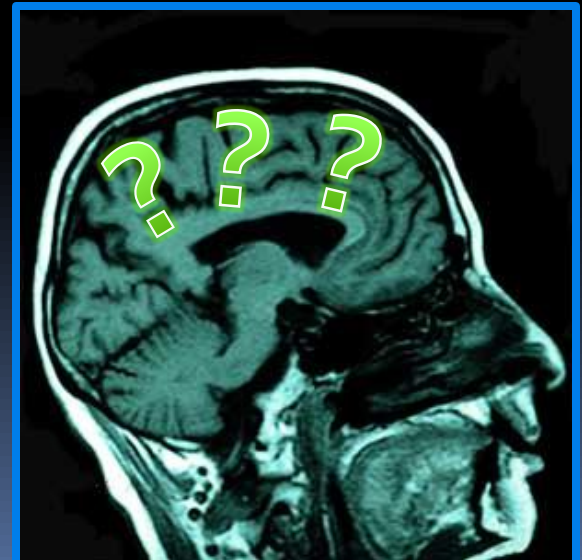
- **Neurobehavioral**

- ▣ Sleeping more or trouble sleeping
- ▣ Drowsiness
- ▣ Fatigue
- ▣ Sadness/depression
- ▣ Nervousness
- ▣ Irritable



Diagnostic Imaging

- No standard structural Neuro-imaging
 - CT, MRI, XRAY
- Research is ongoing to discover ways to see concussions:
 - Dye injected MRI
 - Others



Injury Reporting

- **Issue:** athletes not reporting their symptoms
- A few reasons include:
 -
 -
 - They want to keep playing
 - Want to appear tough
 - **Do not know enough about concussions**

Second Impact Syndrome

- **SIS:** individual suffers a concussion while still suffering from a previous concussion
- Varying results can be catastrophic:
 - ▣ Increased symptom severity
 - ▣ Permanent brain damage
 - ▣ Paralysis
 - ▣ Death
- The second injury can result from even the mildest concussive forces

Suspecting a Concussion

A concussion should be suspected:

One(1) Mechanism of Injury (MOI) + one (1) sign /symptom of a concussion are present

- ▣ Severity of S&S does not matter
- ▣ Onset of S&S can be delayed several hours
- ▣ Athlete is removed from play immediately
- ▣ Initiate concussion treatment (explained later)
- ▣ Day after effect – delayed recognition

Suspecting a Concussion_(cont.)

- Signs observed by **Coaching/Training staff:**
 - ▣ Appears dazed or stunned
 - ▣ Is confused about assignment (In match or training)
 - ▣ Is unsure of score or opponent
 - ▣ Moves clumsily
 - ▣ Answers questions slowly
 - ▣ Loses consciousness (even briefly)
 - ▣ Shows behavior or personality changes
 - ▣ Can't recall events prior to incident
 - ▣ Can't recall events after the incident

Suspecting a Concussion(cont.)

- Symptoms reported by **Athlete**
 - ▣ Headache or “pressure” in head
 - ▣ Nausea or vomiting
 - ▣ Balance problems or dizziness
 - ▣ Double or blurry vision
 - ▣ Sensitivity to light
 - ▣ Sensitivity to noise
 - ▣ Feeling sluggish, hazy, foggy, or groggy
 - ▣ Concentration or memory problems
 - ▣ Confusion
 - ▣ Does not “feel right”

Concussion Management

1. Athlete is removed from activity. If necessary, take away a vital piece of equipment).
2. Check and treat any tissue injury (i.e. cuts, deformities)
3. If possible, put the athlete in a quiet room.
4. Give the athlete ear plugs if it is loud
5. Give the athlete a facemask, eye cover/patch or sunglasses if it is too bright
6. Arrange for a ride home or to the hotel and have someone keep an eye on them and available to them.
7. Give athlete and guardian/coach/parent instructions
8. Follow up with a doctor
9. Injury report form is filled out

While Symptomatic

The following may irritate and slow down recovery:

- **Physical activity:**
 - Running, jogging, swimming, biking, rollerblading, working out, dancing
- **Mental activity:**
 - Texting, watching TV, listening to music, reading, video games, computers
- **Environmental:**
 - Loud and bright environments (Gymnasiums, arenas)
 - Staying in the hot and in the sun for prolonged periods of time

Red Flags

When to Seek Urgent Care:

- Headaches worsen
- Seizures
- Unusual behavior change
- Repeated vomiting
- Slurred speech
- Significant irritability
- Increasing confusion
- Weakness/Numbness in arms or legs
- Can't recognize people or places



Unconscious Athlete

If an athlete is knocked unconscious, ***DO NOT** move and active EMS immediately

- Cannot rule out a neck injury
- *Unless not breathing



Example of Return to Play Protocol (RTP)

- Once asymptomatic and cleared by a physician, athlete may begin graduated return to play protocol
- After each stage, have athlete rest and monitor for 15 minutes post exercise
- Must have at least 24 hours between each stage
- If ANY S&S appear, no matter the severity, athlete must rest at least 24 hours and athlete drops back to previous stage

RTP – Step 1

- No Activity
 - Complete mental and physical rest
 - Mental activity includes: reading, texting, watching tv, computers, video games, listening to music
 - Physical activity includes: Running, jogging, hiking, swimming, cycling, rollerbladding, skateboarding, working out, sex
 - Stage goal: Recovery

RTP – Step 2

- Light aerobic exercise
 - Keep effort to under 70% of Max heart rate
 - Estimated Max Heart Rate = $220 - \text{age}$
 - Conversational Pace
 - Example:
 - 20 minute stationary bike
 - 20 minute light run/walk
- Stage goal: Increase Heart Rate

RTP – Stage 3

- Sport Specific exercise/technique
- Low to moderate intensity activity
 - ▣ Absolutely no contact or head impact
- Ex: Throwing, catching, shooting.
- Stage Goal: Add movement

RTP – Stage 4

- Non-Contact training drills
 - Progress to more Sport drills – no head contact
 - May start progressive resistance training
- Participate in drills, combine movement and strategy
- Stage Goal: Exercise, coordination, and cognitive load

RTP – Stage 5

- Full Contact practice
 - ▣ Participate in normal training activities

- Stage goal: Restore confidence and assess function skills by coaching staff. Final on field tests.

RTP – stage 6

Return to play

- **Doctor clears athlete – written permission**
- Normal training and competition play
- No restrictions
- Continue to monitor and assess periodically

The Real First Step!

Return to School

- Before returning to sport, being symptom free during normal day activity is essential
- School environment can be very stimulating and overwhelming
- Work with school administration to help support the student-athlete
- Allow for full recovery before enforcing deadlines/tests/assignments



Injury Prevention

■ Equipment

- Proper fitting helmets – shoulder pads
 - In good quality as well
- Mouth guards
 - Debated but still has many benefits
 - Reduces dental injuries
 - Shock absorption – only with proper fit (not cut)



■ Technique

- How to tackle and be tackled



Injury Prevention

- Appropriate physical conditioning
 - Good general health and physical conditioning
 - Strength, power and endurance
 - Coordination, balance and proprioception
 - Flexibility, agility, etc.
 - Athletes are more at risk of injury when they are tired and/or out of shape
- Appropriate refereeing
 - Ensure qualified referees are monitoring the match
- Medical staff
 - CATA
 - SPC
 - CASM



Sideline Assessment Tools

- Sideline Concussion Assessment Tool 3 (SCAT3)
 - Includes: pocket/condensed version
- Standardized approach to concussion evaluation
- Good tool used by medical professionals

Baseline Testing

ImPACT, AXON

- Computer based programs used pre and post concussions for comparisons
- Good tool used by medical professionals
- Can be costly and complicated
- Not unanimously recommended



Myths & Mistakes

- I just got my bell rung – I don't have a concussion
- My symptoms aren't that bad, I can play through it
- It's just a headache
- I had a headache before the hit
- I can finish the match and rest after
- I'm sick and have a cold so that's why I feel this way
- He's just suffering from "Concussion-like symptoms"
- No longer need to wake up every couple hours – let sleep and promote rest

Conclusion

- When in doubt, sit them out!
- Err on the side of caution
- Patience is very important
- Any suspected concussion should be followed up with a doctor
- Be safe!

Resources

For up to date information, visit:

- **Sportmedbc.com**
- **Parachutecanada.org**
- **CDC website – Heads up training tool**
 - <http://www.cdc.gov/concussion/HeadsUp/Training/HeadsUpConcussion.html>
- **YouTube:** Concussions 101, a Primer for Kids and Parents

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