CONCUSSION: WHAT YOU NEED TO KNOW

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TALKING POINTS

- Concussion – what, who, and how...
- Know the signs & symptoms
- Return to learn
- Return to pay
TRACY’S STORY

- Age 16, sophomore year in high school
- Injured during lacrosse practice – accidentally hit on the head with lacrosse stick
- Coaches recognize the hit and signs/symptoms of concussion, and remove her from practice; mother called
- Taken to ER; advised to go home and rest – no activity restrictions or education; told to follow up with physician in a few days
- Returns to school the next day and is re-injured in gym when soccer ball hits her in the head; symptoms become exacerbated and recovery is prolonged

ZACK’S STORY

- Age 13, middle school
- Injured tackling another player when his head hits the ground
- Removed from play for a few plays but returns to the field
- Collapses on the field and airlifted to the hospital where he undergoes emergency surgery to relieve pressure from swelling
- 3 months in a coma; 3 years before walking on his own again; lives with the consequences of a catastrophic brain injury
- Prompts the first Concussion Law in the country – now all 50 states have a concussion law
ZACK’S STORY

DEFINITION OF CONCUSSION

- Type of traumatic brain injury – mild but serious
- Caused by a bump, blow, or jolt to the head OR a blow to the body which causes the brain to move inside the skull, damaging the brain cells and creating chemical changes in the brain - causing short-lived impairment of neurofunction
- Usually resolves over several days or weeks
FACTS

- Many concussions are misdiagnosed or not diagnosed
- Focus may be on other (physical) injuries other than concussion symptoms
- May not show up on CT scan or MRI

FACTS

- Not just from contact sports
- You do not need to hit your head to get a concussion
- You do not need to lose consciousness
FACTS

- There is NO set recovery time
- There is a cumulative effect of multiple concussions
- The brain requires adequate time to heal
- You may not be OK to return to normal activities just because your headache is gone

HOW DO PEOPLE SUSTAIN CONCUSSIONS?

- Falls
- Sports injuries
- Motor vehicle crashes
- Abuse/Assaults
DO THESE PREVENT CONCUSSIONS?

- Don’t lose consciousness as easily as adults
- Longer recovery time than adults
- A child’s brain not fully developed until mid 20’s
- Concern that symptoms can add up over time and cause permanent problems

HOW IS CONCUSSION DIFFERENT FOR CHILDREN & ADOLESCENTS?
CHILDREN/ADOLESCENTS

- One child every three minutes sustains a concussion
- 47% of these concussions occur in children 12-15 years old
- Girls - one and a half times more likely to be diagnosed with sports related concussion
- Girls take longer to recover than boys

THE 3 RS

RECOGNIZE

REPORT

REST
IMMEDIATE SIGNS & SYMPTOMS

- Confusion
- Dizzy or lightheaded
- Loss of balance
- Foggy
- Disoriented to time and place
- Glassy-eyed
- Slurred speech
- Loss of consciousness

PHYSICAL SYMPTOMS

- Headache
- Loss of Balance
- Blurry vision
- Difficulty sleeping
- Ringing in the ears
- Fatigue/exhaustion
- Sensitivity to light and sound
- Numbness or tingling sensations
- Vomiting
COGNITIVE SYMPTOMS

- Confusion & disorientation
- Memory impairment
- Difficulty focusing/concentrating
- Slower rate to process information
- Slowed reaction time

EMOTIONAL SYMPTOMS

- Irritability
- Anxiety
- Easily saddened or upset
- Depression
Concussion affects mental stamina...
- The injured brain must work harder
- Gets tired more easily
- Temporary worsening of post-concussion symptoms

Every concussion is unique, and may present differently with each person
Recovery is not necessarily predictable nor linear can include a few steps forward and sometimes backward
May be able to engage in light physical activity/exercise but may still have difficulty academically in classroom
FACTORS WHICH MAY IMPACT RECOVERY

- History of...
  - Past concussion(s)
  - History of migraines
  - History of ADHD
  - History of learning disabilities
  - History of depression
  - History of mental health issues
  - History of sleep disorders

MANAGING CONCUSSION

Rest
- Cognitive Rest
- Physical Rest
- Sleeping

Immediately Following - Avoid
- Video games
- Driving
- Movies in theaters
- Concerts
- Sports
- Amusement parks
- Texting
- Surfing the internet

The same way you would rest a broken ankle, you need to rest your brain and allow it to recover.
WHAT DO WE MEAN BY REST?

- Physical and cognitive levels should be limited in the first few days
- Progressive activity up to tolerance level – if symptoms get worse at all, pull back a step
- Ongoing full avoidance of all activity = isolation, depression, etc.

RETURN TO LEARN

While it is true that athletes should be 100% symptom-free before returning to play, they do NOT need to be 100% symptom-free to return to the classroom
RETURN TO LEARN

- A set of protocols and guidelines for schools to follow
- Goal RTL – minimize disruptions in student’s life, manage symptoms, and return to school ASAP
- Need to find balance with rest and activity/learning
- Monitor use of cognitive energy in a school day
- An over stimulating school environment can activate symptoms
  Too much too soon = a longer recovery time

RETURN TO LEARN

Common school problems reported after concussion:

- Headaches
- Attention & focus difficulties
- Fatigue / physical & cognitive
- Homework taking much longer
- Difficulty understanding material
- Difficulty studying for tests
- Difficulty taking notes
- Interpersonal relationships
ACADEMIC ACCOMMODATIONS

- Reduce assignments
- Build in rest periods
- Give additional time to complete work
- Outline and order steps for big tasks
- “To Do” lists
- Written directions
- Written schedules
- Meet one-on-one with teachers

RETURN TO PLAY

- Progressive, step by step slow return to sport & physical activity following concussion
- International consensus statement (Berlin Oct.2016) – Best practice guidelines for RTP
- Brief period of rest during acute phase (24-48 hrs), gradual/progressive activity
GRADUATED RETURN-TO-PLAY

<table>
<thead>
<tr>
<th>Rehabilitation stage</th>
<th>Functional exercise at each stage of rehabilitation</th>
<th>Objective of each stage</th>
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<tbody>
<tr>
<td>1. No activity</td>
<td>Symptom limited physical and cognitive rest.</td>
<td>Recovery</td>
</tr>
<tr>
<td>2. Light aerobic exercise</td>
<td>Walking, swimming or stationary cycling keeping intensity &lt; 70% MPHR No resistance training.</td>
<td>Increase HR</td>
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<tr>
<td>3. Sport-specific exercise</td>
<td>Skating drills in ice hockey, running drills in soccer. No head impact activities.</td>
<td>Add movement</td>
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<td>4. Non-contact training drills</td>
<td>Progression to more complex training drills e.g. passing drills in football and ice hockey. May start progressive resistance training</td>
<td>Exercise, coordination, and cognitive load</td>
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<tr>
<td>5. Full contact practice</td>
<td>Following medical clearance participate in normal training activities</td>
<td>Restore confidence and assess functional skills by coaching staff</td>
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<tr>
<td>6. Return to play</td>
<td>Normal game play</td>
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WHY IS GRADUATED RETURN TO PLAY IMPORTANT?

- Post Concussion Syndrome
  - Prolonged recovery and residual symptoms
- Cumulative effects of multiple concussions
- Second Impact Syndrome
  - Loss of cerebrovascular autoregulation causing brain swelling, herniation, death
SECOND IMPACT SYNDROME

- Happens when a second concussion occurs before a prior concussion has completely healed
- An adolescent phenomenon
- The force of the impact does not seem to matter
- Consequences are lifelong disability or death

WHAT TO DO?

- Talk to the school
- Talk to the coaches
- Talk to the doctors
- Talk to your child
  - What would they do if they got a concussion?
  - What would they do if they saw a teammate get a concussion?
WHAT TO DO AFTER CONCUSSION?

- Ask medical staff for guidelines for return to play and learn
- Let the school know the concussion occurred, and the return to learn guidelines, including restrictions
- Make sure the coach and athletic trainer are following return to play guidelines
- Monitor for symptoms – academic and physical
- Follow up with medical staff

Thank You!

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