

Sports Concussions

Understanding the risk of
sports concussion and
traumatic brain injury



WEST PENN ALLEGHENY
HEALTH SYSTEM



ALLEGHENY
SPORTS
MEDICINE

Allegheny General Hospital | AlleghenySportsMedicine.com

Edward Snell, MD
AGH Sports Concussion Clinic
Concussion Committee MLB
PIAA Sports Advisory Committee
Joseph Dougherty, MD, MS
Missy Bauer, MS, ATC, LAT

Objectives

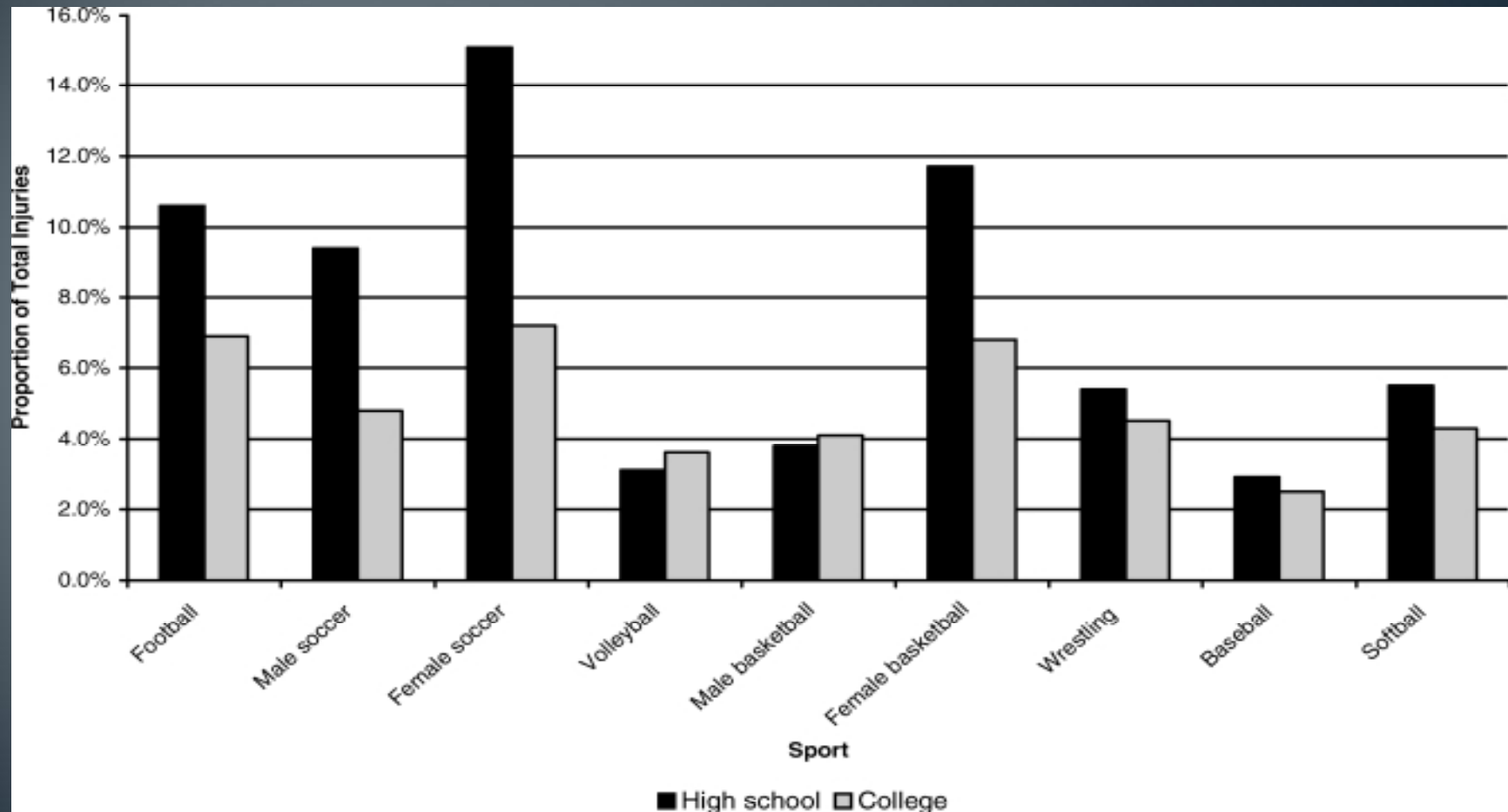
- To explain the definition of a concussion
- To identify the signs and symptoms of a concussion
- To identify proper treatment and care of an individual experiencing concussion like symptoms
- Proper return to play following a concussion

What is a concussion?

- A functional (as opposed to structural) brain deficits
- Caused by acceleration/deceleration of the brain against the inside of the skull
- Caused by a bump or blow to the head
- Changes the way that a brain normally works
- Can occur during sporting events or recreational activities
- Can occur even if you are not “knocked out” or lose consciousness
- Can be serious even if the athlete just “had their bell rung” or had a “ding”
- Affect your ability to do schoolwork and other activities

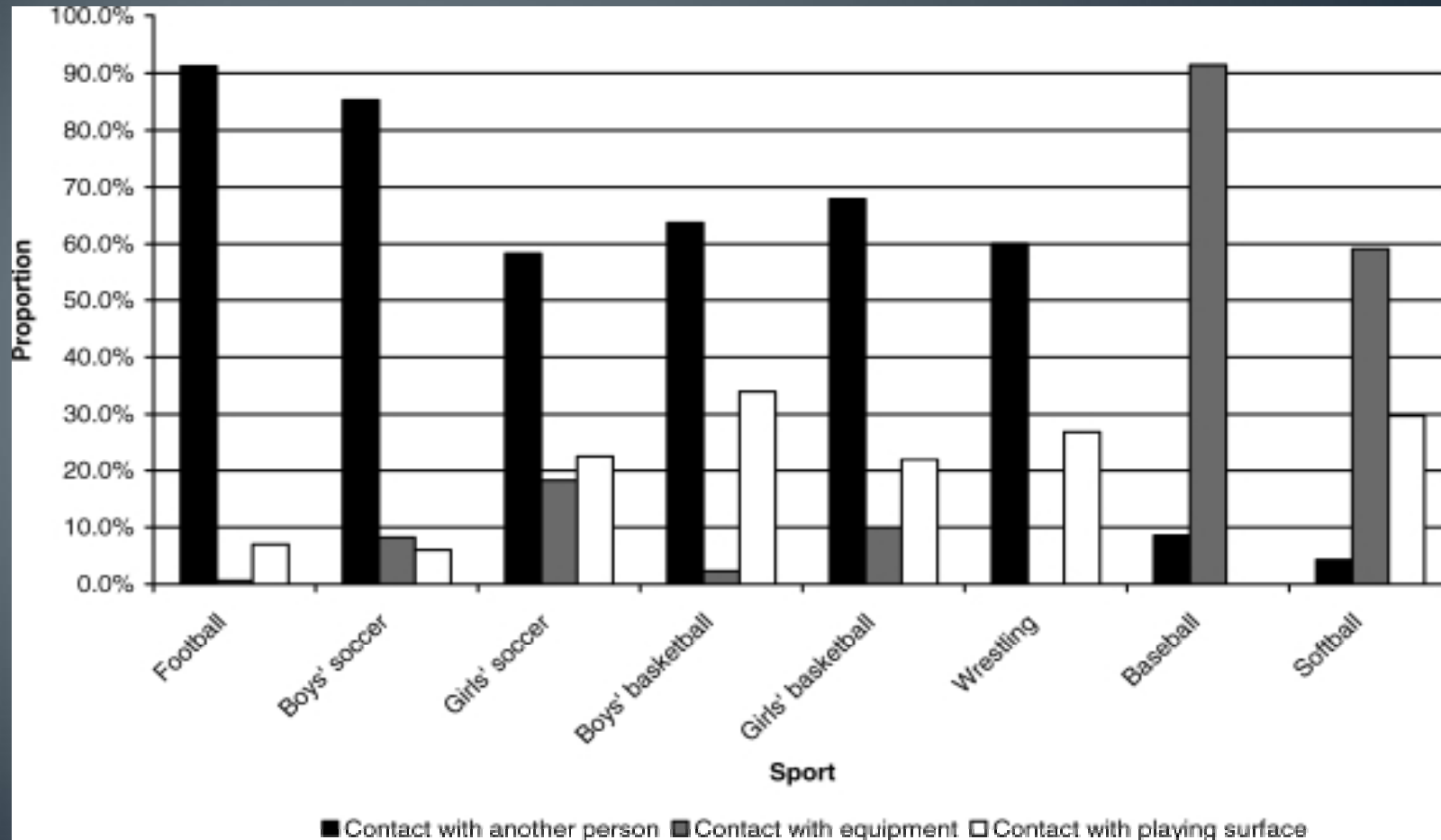


Concussion by Sport (high school/college)



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Concussions Among United States High School and Collegiate Athletics
J Athl Train. 2007 Oct-Dec

Concussion by sport and contact with



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Concussion Symptoms – Initial Evaluation

- Headache or “pressure” in head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Bothered by light or noise
- Answers questions slowly
- Feeling sluggish, hazy, foggy, or groggy
- Difficulty paying attention
- Memory problems
- Confusion
- Appears dazed
- Just not feeling right or feeling “foggy”

Emergency Symptoms of a Concussion

- If you're an athlete is experiencing any of the following symptoms, seek emergency care:
 - Changes in alertness or consciousness
 - Convulsions
 - Muscle weakness or numbness on one or both sides
 - Unsteady gait
 - Slurred speech
 - Unusual behavior
 - Repeated vomiting
 - Unequal pupils
 - Unusual eye movements
 - Seizure activity

Concussion Symptoms – Post Injury Evaluation

- Headache
- Nausea
- Vomiting
- Balance problems
- Dizziness / light-headedness
- Fatigue
- Trouble falling asleep
- Sleeping too little
- Sleeping too much
- Drowsiness
- Sensitivity to light
- Sensitivity to noise
- Irritability
- Sadness
- Nervousness
- Feeling more emotional
- Numbness / tingling
- Feeling slowed down or “mentally foggy”
- Difficulty concentrations / remembering
- Visual problems (double vision, blurriness)
- Amnesia to the event inability to remember before or after the injury)
- A seizure immediately after sustaining the concussion is not uncommon and is not worrisome

Don't hide it. Report it.

- Athlete should tell their coach and/or Licensed Athletic Trainer, or a parent if they are experiencing any of the mentioned symptoms
- Removal from play or practice immediately
- NO RETURN to play the same day as the injury
- Evaluation by Licensed Athletic Trainer
- Evaluation by either a licensed physician familiar with current concussion management

Immediate Treatment

- Immediate removal from game upon report or observation of symptoms
- Evaluation on field and or the sidelines by a medical professional trained in the recognition of a concussion
- ANY SIGN OR SYMPTOM OF A CONCUSSION IS A MANDATORY REMOVAL FROM EVENT OR PRACTICE AND NO RETURN SAME DAY

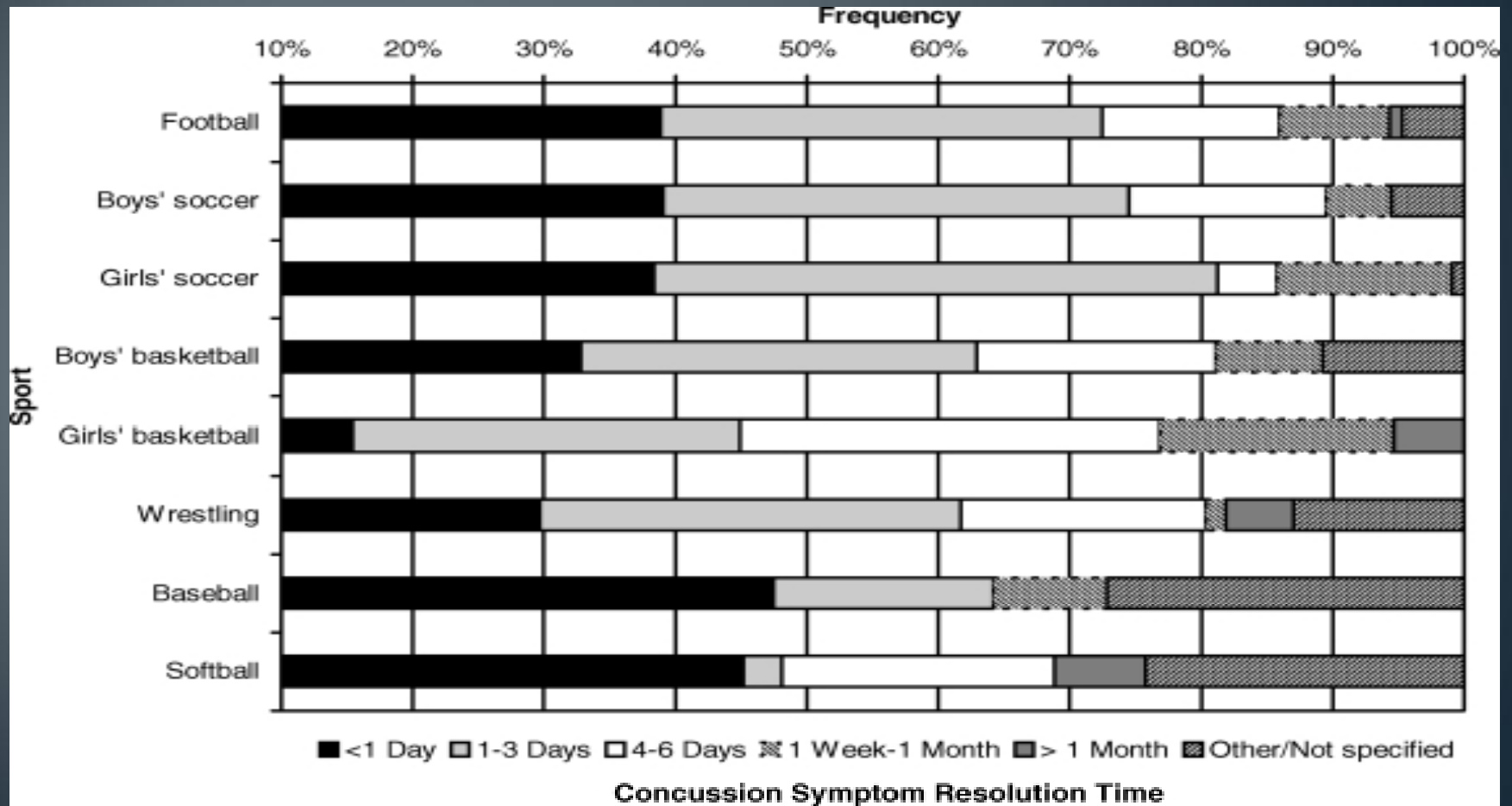
Sideline Evaluation

- Evaluation by a licensed physician or a licensed athletic trainer working under the direction of a licensed physician
- SCAT2, NFL SCAT or sideline evaluation tool of choice should be administered and appropriate action take for further follow-up
- Determination of emergency medical care is needed or if injury will be athlete will be observed on sidelines for remainder of game

Follow-up Treatment

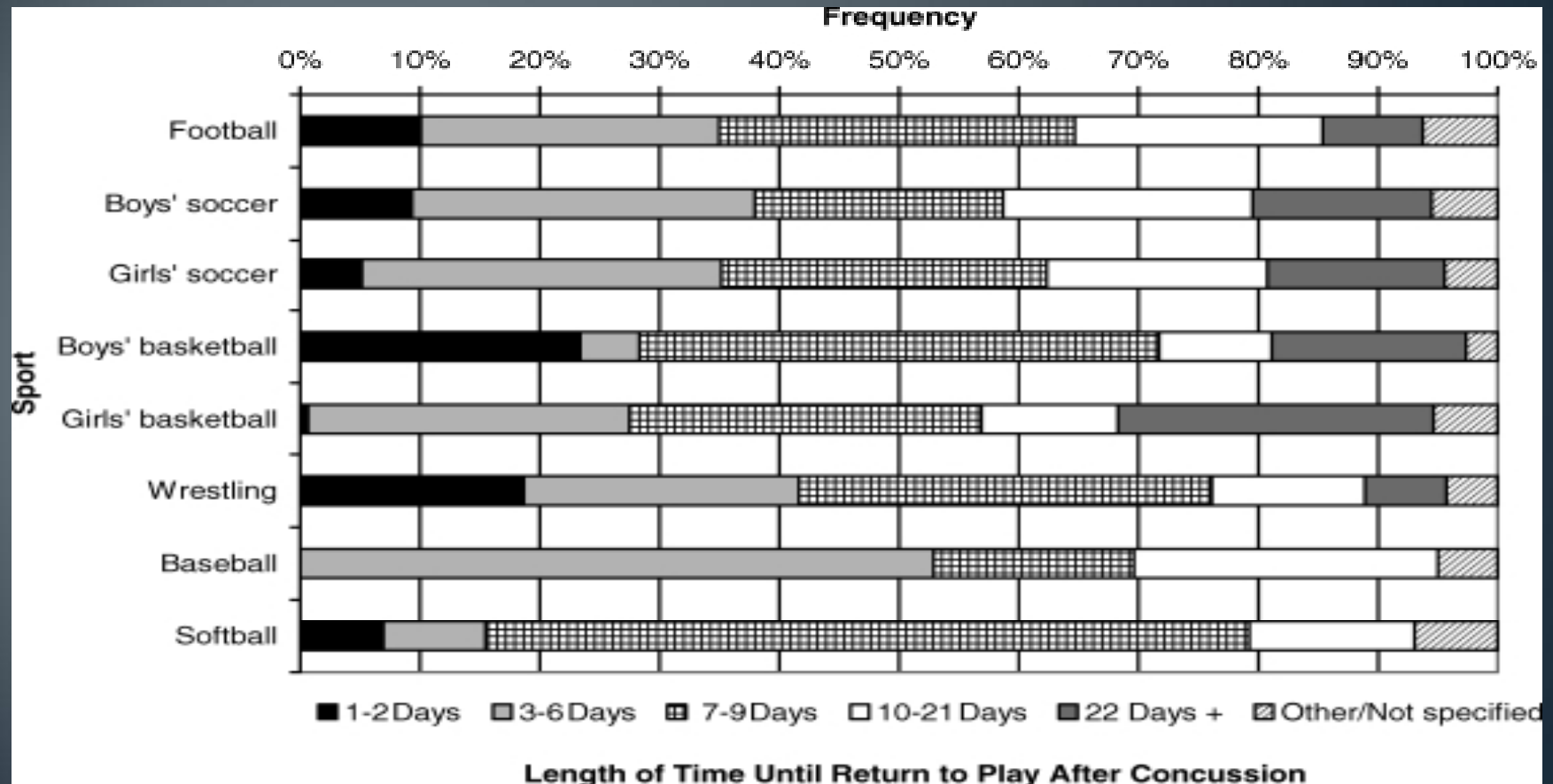
- 6-72 hours
 - Tylenol ONLY for headaches
 - Non-steroidal Anti Inflammatory medicines ibuprofen (Advil, Motrin), naproxen (Aleve), or aspirin are NOT to be used in the first 72 hours after a concussion
 - Rest – no physical activities
 - Relative brain rest -No activities that required mental activity
 - Reading
 - Writing
 - Studying
 - School
 - Watching television
 - Playing video games
 - Texting
- 2-10 days following injury
 - Evaluation by a licensed physician
 - Neurocognitive testing, if available, to monitor and guide return to play
 - When symptom free and cleared by a licensed physician, the graduated return to play protocol may be conducted

Concussion Symptom Resolution



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Length of Time Until Return to Play



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Graduated Return to Play



Athlete Name: _____

Date of RTP Clearance: _____

School / Sport: _____

Graduated Return to Play Protocol

With no symptoms, a gradual return to play can be initiated. Follow these gradual progressive steps of the training. There should be approximately 24 hours (or longer) in between each step. If any symptom(s) return at any time during these activities, STOP the workout. Rest until symptom-free for 24 hours. Return to the previous asymptomatic step. If symptoms return or worsen, seek medical attention.

- Step 1: Light General Conditioning Exercises:
 - Begin with a sport specific warm-up
 - Do a (15-20 minute) workout which can/may include: stationary bike, fast paced walking or light jog, rowing, or freestyle swimming
- Step 2: General Conditioning and Sport Specific Skill Work (Individually)
 - Continue with the sport specific warm up
 - Slowly increase intensity and duration of workout (20-30 minutes)
 - Begin sport specific skill work within the workout. NO spins, dives, or jumps
- Step 3: General Conditioning, skill work (Individually and with a team-mate)
 - NO CONTACT
 - Continue with general conditioning (up to 60 minutes). Increase intensity and duration. Begin interval training.
 - Continue with individual skill work.
 - May begin skill work with a partner.
 - May start beginner level spins, dives, and jumps.
- Step 4: General Conditioning, skill work, and team drills
 - Do not play live scrimmages. NO CONTACT
 - Resume regular conditioning, duration of practice, and team drills
 - Increase interval training and skill work as required.
 - Gradually increase skill level of spins, dives, and jumps.
 - Review team plays with NO CONTACT.
- Step 5: Full Team Practice WITH Body Contact
 - Participate in a full practice.
 - If this is complete with NO symptoms, you are ready to return to competition. Discuss with the coach about getting back in the game.

Step 1 Completion Date: _____ Tolerance / Comments: _____

Step 2 Completion Date: _____ Tolerance / Comments: _____

Step 3 Completion Date: _____ Tolerance / Comments: _____

Step 4 Completion Date: _____ Tolerance / Comments: _____

Step 5 Completion Date: _____ Tolerance / Comments: _____

I hereby certify that the athlete named above has completed the return-to-play protocol without symptoms on the date noted above as "Step 5 Completion Date."

Parent / Guardian / Athletic Trainer: _____

Athlete: _____

Neurocognitive Testing

- There are various computerized neurocognitive testing programs on the market
 - Immediate-Post Concussion Assessment and Cognitive Testing (IMPACT)
 - Computerized Cognitive Assessment Tool (CCAT)
 - Concussion Resolution Index (CRI)
 - Automated Neuropsychological Assessment Metrics (ANAM)

Prevention

- Teach and practice safe playing techniques for your sport
- Enforce rules of the game
- Encourage good sportsmanship
- Ensure the proper protective equipment for each sport is worn, and WORN PROPERLY

Second Impact Syndrome

- Occurs when a person suffers a second concussion while still recovering from a previous concussion
- This is a rapid swelling of the brain, which has devastating effects, including death
- Can occur up to 14 days post injury



Multiple Concussions in a season/year

- If an athlete experiences 2 concussions in the same sport, during the same season, they are not permitted to return to that sport during that season
- If an athlete experiences 3 concussions during an academic year, they are removed from all sports for the remainder of the year
- If an athlete experiences 4 concussions in any one sport, serious consideration should be given to permanently stop participating in that sport

Safety in Youth Sports Act

- Pennsylvania Senate bill 100 (2011/2012)
 - Increase awareness of the importance of proper management of concussion in sports
 - Educate coaches on the management of a concussion
 - Educate parents and athletes on the signs and symptoms of a concussion or traumatic brain injury
 - Reinforce the removal from play when exhibiting signs and symptoms of a concussion
 - Set forth guidelines for proper return to play following a concussion

Thank You