



Down, Set, Hike!!!

Sideline Coverage and a PA's Role

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Objectives

- Discuss role of PA on sidelines at different levels of sport
- List common injuries/conditions and treatment options
- Define return to play criteria
- Review emergency protocols
- Take care of athletes-young and old

***No financial disclosures**

Coverage at Different Levels

> Curr Sports Med Rep. May-Jun 2013;12(3):143-9. doi: 10.1249/JSR.0b013e3182955d1c.

Sideline coverage of youth football



Katie Rizzone ¹, Alex Diamond, Andrew Gregory

> J Am Acad Orthop Surg. 2019 May 15;27(10):365-369. doi: 10.5435/JAAOS-D-18-00005.

Affilia

PMID:

The Role of Athletic Event Coverage in Orthopaedic Residency Training: A National Survey of Residency Program Directors

Study: 1



Daniel J M
Charles A I

Affiliations

PMID: 30320733 DOI

Study: 2



Na

Aff

PN

Study: 3

Medical Supervision of High School Athletics in Chicago: A Follow-up Study

> Orthop J Sports Med. 2019 Aug 12;7(8):2325967119862503. doi: 10.1177/2325967119862503. eCollection 2019 Aug.

> J Athl Train. 2019 Feb;54(2):133-141. doi: 10.4085/1062-6050-35-18. Epub 2018 Dec 5.

Emergency Preparedness of Secondary School Athletic Programs in Arizona



Tamara C Valovich McLeod ¹, Javier F Cardenas ²

Affiliations + expand

PMID: 30517023 PMCID: PMC6464296 DOI: 10.4085/1062-6050-35-18

Study: 4

Experience

- High School Football-1A-6A
- ASU-football, basketball, wrestling, baseball
- Phoenix Rising Soccer
- Cheez-It and Fiesta Bowls-college football
- Scottsdale Sand Sharks youth soccer



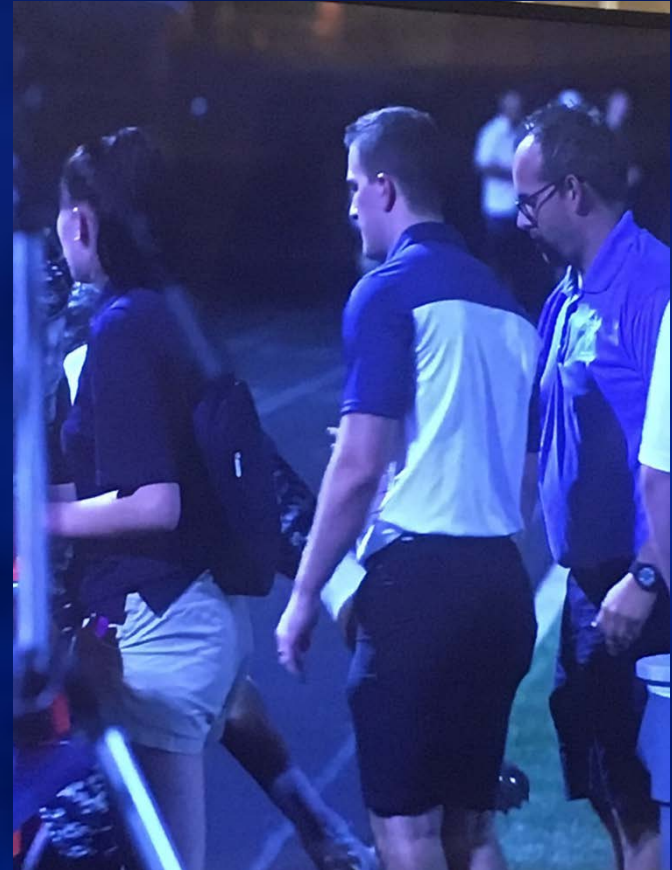
Contributing

- Anikar Chhabra, MD- head team orthopedic doctor for Arizona State University, supervising physician for high school football coverage
- John “JT” Tokish, MD- head team orthopedic doctor for Arizona Coyotes, former head team physician at Air Force Academy
- Matt Anastasi, MD- Primary Care doctor for Arizona Diamondbacks and Arizona Coyotes
- Kostas Economopoulos, MD- head team orthopedic doctor for Phoenix Rising soccer, former head ortho for Grand Canyon University
- Karan Patel, MD- associate team orthopedic for Phoenix Rising, associate supervising doctor for high school coverage and the “sand sharks”



Responsibilities to Athletes and their Families

- **Protect from injury**
- **Allow them to participate**
- **Communication**
- **Confidentiality**



Responsibilities to Coaches, Staff, and School

- Education
- Availability to staff
- Balances needs and finances
- Protect from liability
- Formal agreement



The “Medical” Team

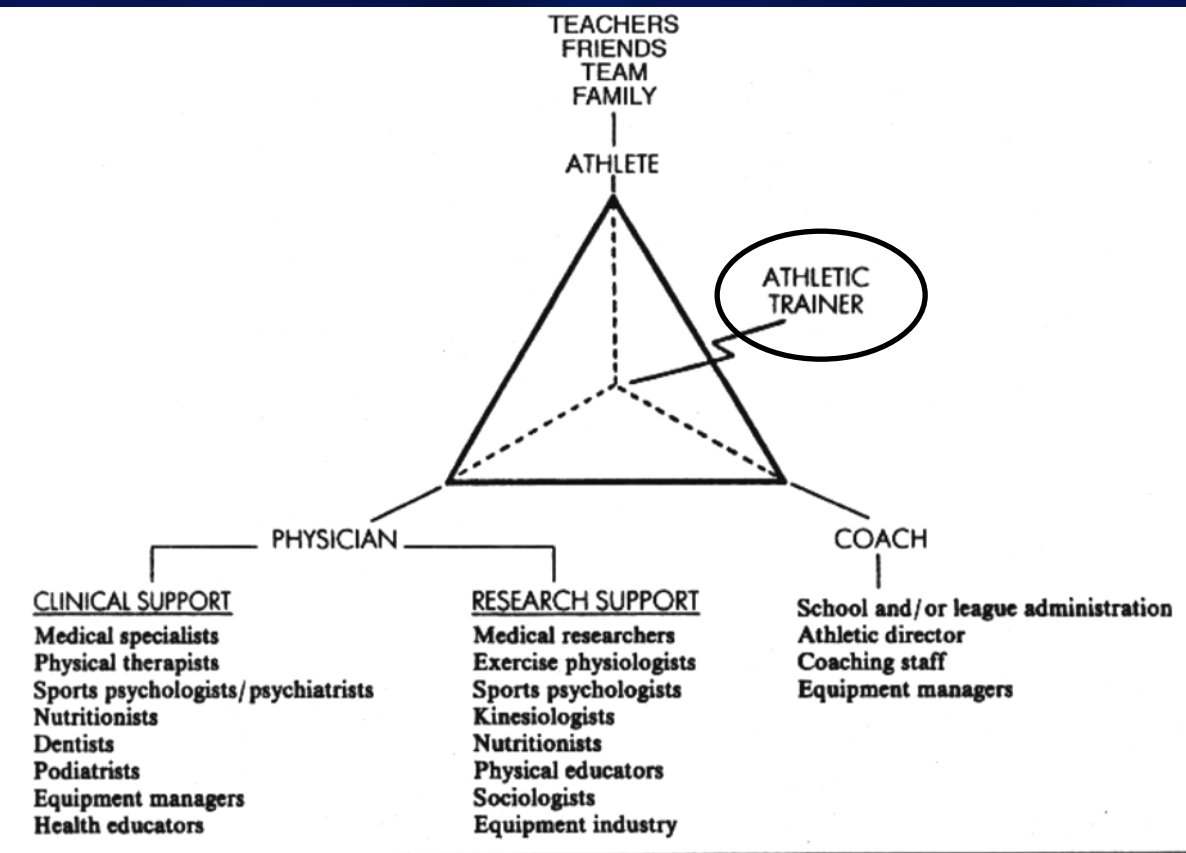


FIGURE 1. The sports medicine team. (Modified from Mellion MB: Office Sports Medicine. Philadelphia, Hanley & Belfus, Inc., 1996.)

Pre-season/Pre-game Responsibilities

- Pre-participation physicals (PPE)
- Meet coaches/administrators
- Emergency plans with athletic trainers/athletic director
- Understand coverage on opposing team
- Inventory of equipment/resources available (who else is available on sidelines with you)
- Discuss communication process with the ATC
- Locate the snack bar!!



Pre-Participation Physical Evaluation



OUR STUDENTS, OUR TEAMS . . . OUR FUTURE.

Arizona Interscholastic Association, Inc. Mild Traumatic Brain Injury (MTBI) / Concussion Annual Statement and Acknowledgement Form

I, _____ (student), acknowledge that I have to be an active participant in my own health and have the direct responsibility for reporting all of my injuries and illnesses to the school staff (e.g., coaches, team physicians, athletic training staff). I further recognize that my physical condition is dependent upon providing an accurate medical history and a full disclosure of any symptoms, complaints, prior injuries and/or disabilities experienced before, during or after athletic activities.

By signing below, I acknowledge:

- My institution has provided me with specific educational materials including the CDC Concussion fact sheet (<http://www.cdc.gov/concussion/HeadsUp/youth.html>) on what a concussion is and has given me an opportunity to ask questions.
- I have fully disclosed to the staff any prior medical conditions and will also disclose any future conditions.
- There is a possibility that participation in my sport may result in a head injury and/or concussion. In rare cases, these concussions can cause permanent brain damage, and even death.
- A concussion is a brain injury, which I am responsible for reporting to the team physician or athletic trainer.
- A concussion can affect my ability to perform everyday activities, and affect my reaction time, balance, sleep, and classroom performance.
- Some of the symptoms of concussion may be noticed right away while other symptoms can show up hours or days after the injury.
- If I suspect a teammate has a concussion, I am responsible for reporting the injury to the school staff.
- I will not return to play in a game or practice if I have received a blow to the head or body that results in concussion related symptoms.
- I will not return to play in a game or practice until my symptoms have resolved AND I have written clearance to do so by a qualified health care professional.
- Following concussion the brain needs time to heal and you are much more likely to have a repeat concussion or further damage if you return to play before your symptoms resolve.

Based on the incidence of concussion as published by the CDC the following sports have been identified as high risk for concussion; baseball, basketball, diving, football, pole vaulting, soccer, softball, spiritline and wrestling.

I represent and certify that I and my parent/guardian have read the entirety of this document and fully understand the contents, consequences and implications of signing this document and that I agree to be bound by this document.

Student Athlete:

Print Name: _____ Signature: _____ Date: _____

Parent or legal guardian must print and sign name below and indicate date signed:

Print Name: _____ Signature: _____ Date: _____

FORM 15.7-C 06/2015

In-game/post-game Responsibilities

- **Evaluate acute injuries**
- **Communicate with coaches and parents about injuries and f/u**
- **Assist ATC with in-game issues (cramping, dehydration, equipment problems)**
- **Coordinate transportation to higher level of care, imaging, post-game monitoring**
- **NOT TO CALL PLAYS OR MAKE PERSONNEL DECISIONS**

Pearls and Common Injuries

[J Athl Train](#). 2007 Apr-Jun; 42(2): 311–319.

PMCID: PMC1941297

PMID: [17710181](#)

Epidemiology of Collegiate Injuries for 15 Sports: Summary and Recommendations for Injury Prevention Initiatives

[Jennifer M Hootman](#), PhD, ATC, FACSM,^{*} [Randall Dick](#), MA, FACSM,[†] and [Julie Agel](#), MA, ATC[‡]

- **50 % of all injuries were to the lower extremities**
- **Ankle ligament sprains most common (15% of all reported injuries)**
- **Concussions and anterior cruciate ligaments increased significantly over course of study (16 years)**
- **Football highest rates**
- **Baseball lowest rate**

Pearls

- **“Teamwork: ensure everyone is clear on their role- you don’t need to be the trainer- and can’t be.”**

Ankle Sprains

[Inj Epidemiol](#). 2018 Dec; 5: 33.

Published online 2018 Sep 3. doi: [10.1186/s40621-018-0163-x](https://doi.org/10.1186/s40621-018-0163-x)

PMCID: PMC6119677

PMID: [30175385](https://pubmed.ncbi.nlm.nih.gov/30175385/)

Epidemiologic comparison of ankle injuries presenting to US emergency departments versus high school and collegiate athletic training settings

[Alexandria J. Wiersma](#),^{1,2} [Lina Brou](#),³ [Sarah K. Fields](#),⁴ [R. Dawn Comstock](#),^{2,5,6} and [Zachary Y. Kerr](#)⁷



Ankle Sprains

EVALUATE

- Understand the mechanism (inversion vs. eversion)
- Evaluate neurovascular status
- Evaluate for bony tenderness
- Remove the shoe/sock/tape, brace
- Test strength and mobility
- Know the history
- Evaluate for high ankle component
 - Squeeze test
 - Proximal fibular tenderness

PLAN

- Re-tape and return?
 - Must show strength and motion
 - Protect themselves
 - Run, cut, twist on sideline
- RICE therapy
- Crutches PRN
- Discuss with parents and coaches
- Arrange for x-rays, orthopedic f/u

Pearls

- “Know your job: people get hurt- which is sad, but you can live with that. But if someone gets hurt due to your own negligence- that is a whole different level.”

Anterior Cruciate Ligament Injuries

FULL TEXT ARTICLE



Epidemiology and Diagnosis of Anterior Cruciate Ligament Injuries



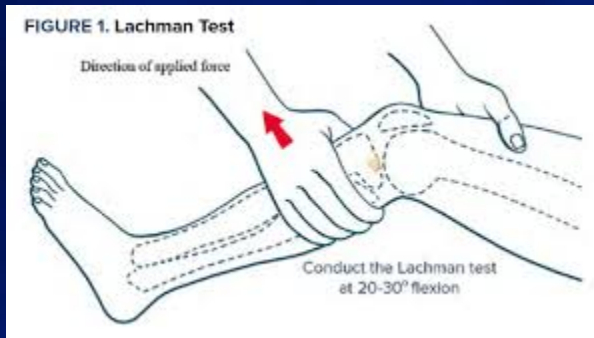
Christopher C. Kaeding MD, Benjamin Léger-St-Jean MD and Robert A. Magnussen MPH, MD
Clinics in Sports Medicine, 2017-01-01, Volume 36, Issue 1, Pages 1-8, Copyright © 2016 Elsevier Inc.



ACL Injuries

EVALUATE

- Mechanism of injury
- “popping” sound or sensation
- Presence of swelling quickly
- Difficulty bearing weight
- Recognize other knee injuries
- +Lachman, anterior drawer



PLAN

- “Prove” they can’t run
- Compression, ice, +/-brace, crutches
- Discuss with athlete/parent/ATC/coaches
- Express concern over knee but do not give firm diagnosis
- Arrange for f/u with imaging and ortho f/u

Pearls

- “If you are enjoying the game, you are probably a little too relaxed.”

Shoulder Dislocations

> Sports Health. 2014 May;6(3):246-55. doi: 10.1177/1941738113499721.

In-game Management of Common Joint Dislocations



Nathan W Skelley¹, Jeremy J McCormick¹, Matthew V Smith¹

Affiliations + expand

PMID: 24790695 PMCID: PMC4000468 DOI: 10.1177/1941738113499721



Shoulder Dislocations

EVALUATE

- Mechanism of injury
- Help off field likely into locker room
- Remove pads or shirt, compare to other side
- Doesn't want to move joint
- Assess skin
- Assess neurovascular status
 - Evaluate deltoid contraction and light touch to upper arm for axillary nerve

PLAN

- Controversy over reduction attempts
- Early reduction better
- Can cause harm
- Traction/countertraction technique
 - pulling longitudinal traction on the injured arm and slowly abducting the arm while using one hand to manipulate the humeral head
- Immobilize
- If unable to reduce should be seen urgently
- Arrange for imaging and f/u

Pearls

- “Error to the side of caution. You may be the only one on the sideline who understands the implications of return to play...”

Concussion

Concussion Incidence and Trends in 20 High School Sports

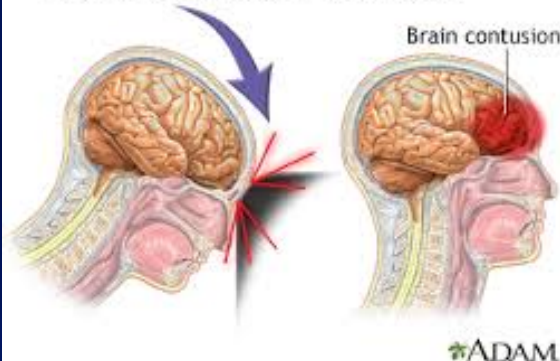


Zachary Y Kerr^{1 2}, Avinash Chandran^{3 2}, Aliza K Nedimyer^{4 2}, Alan Arakkal⁵,
Lauren A Pierpoint⁶, Scott L Zuckerman⁷

Affiliations + expand

PMID: 31615955 DOI: 10.1542/peds.2019-2180

A concussion is a violent jarring or shaking that results in a disturbance of brain function



Concussion

EVALUATE

- Recognition
- Importance of watching game and high-risk plays
- Take helmet away
- Sideline concussion evaluation (SCAT testing)
- Balance, memory, recall
- Talk to teammates
- Evaluate for other symptoms
 - Headaches, N/V, blurry vision

PLAN

- REMOVE FROM GAME
- Discuss with family
- Talk about things to observe over night and concerning features
- Referral to sports med or neurology
- Concussion protocol with symptom scores and retesting of baseline for return to play
 - IMPACT, King-Devick

Concussion- Assessment tools

STANDARDIZED ASSESSMENT OF CONCUSSION - ER VERSION				FORM A	
INTRODUCTION: I am going to ask you some questions. Please listen carefully and give your best effort.					
ORIENTATION					
What Month is it?	_____	0	1		
What's the Date today?	_____	0	1		
What's the Day of Week?	_____	0	1		
What Year is it?	_____	0	1		
What Time is it right now? (within 1 hr.)	_____	0	1		
Award 1 point for each correct answer.					
ORIENTATION TOTAL SCORE				➔	<input type="text"/>
IMMEDIATE MEMORY					
I am going to test your memory. I will read you a list of words and when I am done, repeat back as many words as you can remember, in any order.					
LIST	TRIAL 1	TRIAL 2	TRIAL 3		
FINGER	0 1	0 1	0 1		
PENNY	0 1	0 1	0 1		
BLANKET	0 1	0 1	0 1		
LEMON	0 1	0 1	0 1		
INSECT	0 1	0 1	0 1		
TOTAL					
<i>Trials 2 & 3:</i> I am going to repeat that list again. Repeat back as many words as you can remember in any order, even if you said the word before.					
Complete all 3 trials regardless of score on trial 1 & 2. 1 pt. for each correct response. Total score equals sum across all 3 trials. Do not inform the subject that delayed recall will be tested.					
IMMEDIATE MEMORY TOTAL SCORE				➔	<input type="text"/>
GRADED SYMPTOM CHECKLIST:					
Tell me if you are currently experiencing or have experienced any of the following symptoms since you were injured. If so, rate the symptom as mild, moderate, or severe. Circle response for each item.					
SYMPTOM	SEVERITY				
	NONE	MILD	MODERATE	SEVERE	
Headache	0	1	2	3	
Nausea	0	1	2	3	
Vomiting	0	1	2	3	
Dizziness	0	1	2	3	
Poor balance	0	1	2	3	
Blurred/Dbf vision	0	1	2	3	
Sensitivity to light	0	1	2	3	
Sensitivity to noise	0	1	2	3	
Ringing in ears	0	1	2	3	
Poor concentration	0	1	2	3	
Memory problems	0	1	2	3	
Not feeling "sharp"	0	1	2	3	
Fatigue/sluggish	0	1	2	3	
Sadness/depression	0	1	2	3	
Irritability	0	1	2	3	
NEUROLOGIC SCREENING					
POST-TRAUMATIC AMNESIA? Poor recall of events after injury		<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____			
RETROGRADE AMNESIA? Poor recall of events before injury		<input type="checkbox"/> No <input type="checkbox"/> Yes Length: _____			
		NORMAL	ABNORMAL		
STRENGTH -					
Right Upper Extremity		<input type="checkbox"/>	<input type="checkbox"/>		
Right Lower Extremity		<input type="checkbox"/>	<input type="checkbox"/>		
Left Upper Extremity		<input type="checkbox"/>	<input type="checkbox"/>		
Left Lower Extremity		<input type="checkbox"/>	<input type="checkbox"/>		
SENSATION - examples:					
FINGER-TO-NOSE/ROMBERG		<input type="checkbox"/>	<input type="checkbox"/>		
COORDINATION - examples:					
TANDEM WALK/ FINGER-NOSE-FINGER		<input type="checkbox"/>	<input type="checkbox"/>		
CONCENTRATION					
<i>Digits Backward:</i> I am going to read you a string of numbers and when I am done, you repeat them back to me backwards, in reverse order of how I read them to you. For example, if I say 7-1-9, you would say 9-1-7.					
If correct, go to next string length. If incorrect, read trial 2. 1 pt. possible for each string length. Stop after incorrect on both trials.					
4-9-3	6-2-9	0	1		
3-8-1-4	3-2-7-9	0	1		
6-2-9-7-1	1-5-2-8-6	0	1		
7-1-8-4-6-2	5-3-9-1-4-8	0	1		
<i>Months in Reverse Order:</i> Now tell me the months of the year in reverse order. Start with the last month and go backward. So you'll say December, November...Go ahead. 1 pt. for entire sequence correct.					
Dec-Nov-Oct-Sept-Aug-Jul-Jun-May-Apr-Mar-Feb-Jan	0	1			
CONCENTRATION TOTAL SCORE				➔	<input type="text"/>
DELAYED RECALL					
Do you remember that list of words I read a few times earlier? Tell me as many words from the list as you can remember in any order. Circle each word correctly recalled. Total score equals number of words recalled.					
FINGER PENNY BLANKET LEMON INSECT					
DELAYED RECALL TOTAL SCORE				➔	<input type="text"/>
SAC SCORING SUMMARY					
Symptom Index & Neurologic Screening are important for examination, but <u>not</u> incorporated into SAC Total Score.					
ORIENTATION	/ 5				
IMMEDIATE MEMORY	/ 15				
CONCENTRATION	/ 5				
DELAYED RECALL	/ 5				
SAC TOTAL SCORE	➔ /30				

© 1998 McCrea, Kelly & Randolph

Concussion- symptom score



For more information about ImPACT
call 877-646-7991 or visit www.impacttest.com

PATIENT'S NAME: _____

SEVERITY RATING

Please use this scale to rate each symptom.

None	Mild	Moderate	Severe
0	1	2	3
			4
			5
			6

POST-CONCUSSION SYMPTOM SCALE

Symptoms	Date:	Date:	Date:	Date:	Date:	Date:	Date:
Headache							
Nausea							
Vomiting							
Balance Problems							
Dizziness (spinning or movement sensation)							
Lightheadedness							
Fatigue							
Trouble falling asleep							
Sleeping more than usual							
Sleeping less than usual							
Drowsiness							
Sensitivity to light							
Sensitivity to noise							
Irritability							
Sadness							
Nervous/Anxious							
Feeling more emotional							
Numbness or tingling							
Feeling slowed down							
Feeling like "in a fog"							
Difficulty concentrating							
Difficulty remembering							
Visual problems							
Other							
Total							

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Concussion- return to play progression

- A return to normal baseline testing or 7-day rest/recovery period then commence protocol with 24-48 hours for each stage

STAGE	ACTIVITY	OBJECTIVE
1. SYMPTOM-LIMITED ACTIVITY*	DAILY ACTIVITIES THAT DO NOT PROVOKE SYMPTOMS	GRADUAL REINTRODUCTION OF WORK/SCHOOL ACTIVITIES
2. LIGHT AEROBIC EXERCISE	WALKING OR STATIONARY CYCLING AT SLOW TO MEDIUM PACE. NO RESISTANCE TRAINING	INCREASE HEART RATE
3. SPORT-SPECIFIC EXERCISE	SKATING DRILLS IN ICE HOCKEY, RUNNING DRILLS IN SOCCER. NO HEAD IMPACT ACTIVITIES	ADD MOVEMENT
4. NON-CONTACT TRAINING DRILLS	PROGRESSION TO HARDER TRAINING DRILLS, E.G. PASSING DRILLS IN FOOTBALL AND ICE HOCKEY; MAY START PROGRESSIVE RESISTANCE TRAINING	EXERCISE, COORDINATION AND INCREASED THINKING
5. FULL CONTACT PRACTICE	FOLLOWING MEDICAL CLEARANCE. PARTICIPATE IN NORMAL TRAINING ACTIVITIES	RESTORE CONFIDENCE AND ALLOW COACHING STAFF TO ASSESS FUNCTIONAL SKILLS
6. RETURN TO PLAY	NORMAL GAME PLAY	

Second Impact Syndrome

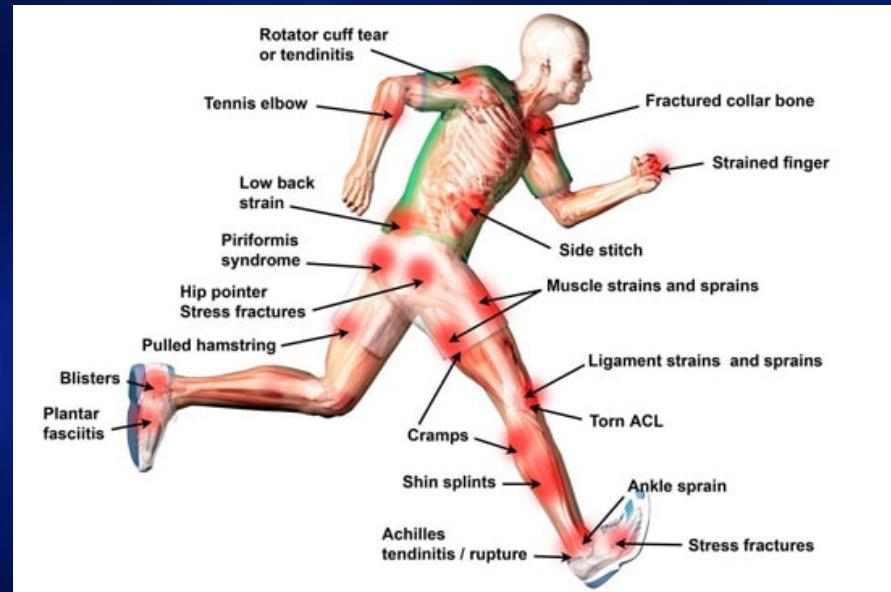
- When the brain swells rapidly after a person suffers a second concussion after earlier concussion
- Rare but catastrophic and often fatal
- Can be minor impact
- Younger patient=poorer prognosis
- Emergency

Pearls

- “Have a pair of gloves as well as a 4 x 4 in your pocket. A lot of acute issues that may require on field or sideline assistance do involve blood and sometimes the hardest part is finding the equipment when you needed.”

Soft tissue/Muscle injuries

- Quad
- Hamstrings
- Back
- Groin
- Oblique
- Shoulder
- Calf



Treatment/Return to Play

EVALUATE

- Mechanism
- Palpation
- Test strength
- Rule out worse injury
- Remove equipment to test

PLAN

- Functional assessment on sidelines with ATC/coaches
- Wrap/rub/oral meds to control symptoms
- Occasionally at higher levels injections or bracing can help
- Prove on sidelines that they can go back
- Discuss with athlete and family if possible
- Understand implications of return
- Athlete must be able to protect themselves with good strength and motion



Pearls

- **“ALWAYS be familiar with the emergency action plan as these are all different for each individual site”**
- **“Think thru worst case scenarios- talk about it with the EMTs/ trainers”**
- **“VISIT the EMTs before every game or know what/where emergency equipment and resources are there”**
- **“Emergencies happen”**



Emergencies

- 23 HS and 25 colleges over period of 6 years
- 485 emergency transports
- Most common were head and face injuries
- Collegiate women's hockey had highest rate
- HS Football had highest rate

Journal of Athletic Training 2018;53(9):906-914
doi: 10.4085/1062-6050-340-17
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www.natajournals.org

Epidemiology

Epidemiology of Injuries Requiring Emergency Transport Among Collegiate and High School Student-Athletes

Rebecca M. Hirschhorn, MS, SCAT, ATC, NREMT*; Zachary Y. Kerr, PhD, MPH†; Erin B. Wasserman, PhD‡; Melissa C. Kay, MS, LAT, ATC§; Daniel R. Clifton, PhD, ATC||; Thomas P. Dompier, PhD, LAT, ATC¶; Susan W. Yeargin, PhD, ATC*

Other common problems

- Heat illness
- Hand/finger injuries
 - Jersey finger vs. mallet finger
- Asthma/Sickle cell- systemic problems
- Dental problems
- Cuts/abrasions
- Equipment issues- casting/bracing



HEAT EXHAUSTION	OR	HEAT STROKE
Faint or dizzy		Throbbing headache
Excessive sweating		No sweating
Cool, pale, clammy skin		Body temperature above 103° Red, hot, dry skin
Nausea or vomiting		Nausea or vomiting
Rapid, weak pulse		Rapid, strong pulse
Muscle cramps		May lose consciousness
<ul style="list-style-type: none">• Get to a cooler, air conditioned place• Drink water if fully conscious• Take a cool shower or use cold compresses		CALL 9-1-1 <ul style="list-style-type: none">• Take immediate action to cool the person until help arrives
Weather.gov/socialmedia Weather.gov/heat		@SacramentoOES SacramentoReady.org

- **“When you are on the sidelines covering football or lacrosse and an athlete(s) are running towards you, the knee jerk reaction is to run away. However, the best and safest route is to actually run towards them so that you miss any risk of getting runover.”**
- **“Stay hydrated”**
- **“always bring snacks”**
- **“don’t follow the ball, follow the collisions”**
- **“It is ok to pull for your team, but some discretion is appropriate”**
- **“don’t ask for autographs”**
- **“take the helmet away until they are cleared to return”**
- **“have fun”**

Biggest Pearl- “PAY ATTENTION”



Thank You

