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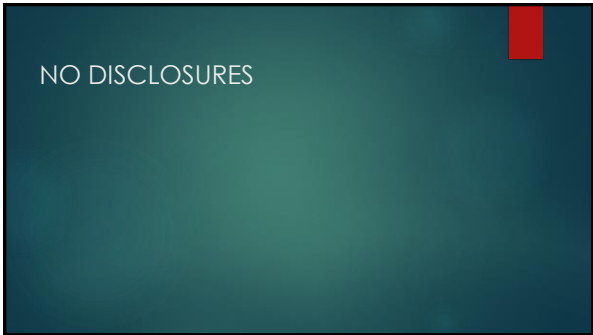
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### Objectives

- Review Concussion Guidelines
- Current Heat Rules
- SafeSport
- Pre Event Time-outs
- EAP
- Lightning

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### Current Papers

- ▶ 1- The Fifth International Conference on Concussion in Sport  
▶ Berlin 2016
- ▶ 2- 2017 Berlin Concussion in Sport Group Consensus Statement  
▶ — summary of 10 collision sports governing bodies  
▶ — adapts # 1 to various sporting codes

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### 11 R's

- ▶ Recognize
- ▶ Remove
- ▶ Re-evaluate
- ▶ Rest
- ▶ Rehabilitation
- ▶ Refer
- ▶ Recover
- ▶ Return to sport
- ▶ Reconsider
- ▶ Residual effects. >>>> Risk reduction

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### Concussion— Berlin

- ▶ Updated Best Practices
- ▶ SCAT5, Child SCAT 5, and Concussion Recognition Tool
- ▶ SCAT5 – 13 and older, provides immediate and post–event evaluation
- ▶ Usefulness decreases after 5 days
- ▶ Components with good validity and Reliability:
  - ▶ - Symptom Scale
  - ▶ - Standardized Assessment of Concussion (SAC)
  - ▶ - Balance Error Scoring System (BESS)

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### CONCUSSION

- ▶ Sport Related Concussion (SRC)
- ▶ Is a traumatic brain injury induced by biomechanical forces.
- ▶ Common features are direct blow to head, face, neck or elsewhere on the body with impulsive force transmitted to the head.
- ▶ Resulting in rapid onset of short lived impairment of neurological function that resolves spontaneously.
- ▶ Functional disturbance rather than structural injury
- ▶ Wide range of clinical signs and symptoms usually without LOC.

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### First step –Identify

- ▶ Confusion
- ▶ Vacant look
- ▶ Amnesia
- ▶ Clutching the head
- ▶ Slow to get up
- ▶ Facial injury or suspected fracture
- ▶ Behavioral change

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### Mandatory Signs

- ▶ LOC
- ▶ Lying motionless for > 5 sec. NRL uses >1 second
- ▶ Disorientation
- ▶ Motor incoordination
- ▶ Tonic posturing
- ▶ Impact seizure
- ▶ Ataxia

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### Immediate Exam

- ▶ Immediate (on-field assessment )
- ▶ —eval of red flags
- ▶ —observation of signs
- ▶ —Maddock's Memory questions
- ▶ —Glasgow Coma Scale
- ▶ — cervical spine assessment

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### Immediate Exam

- ▶ This serves as go no go process
- ▶ If concussion suspected-REMOVE FROM PLAY

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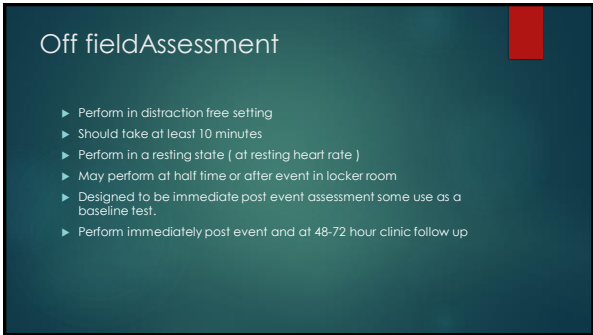
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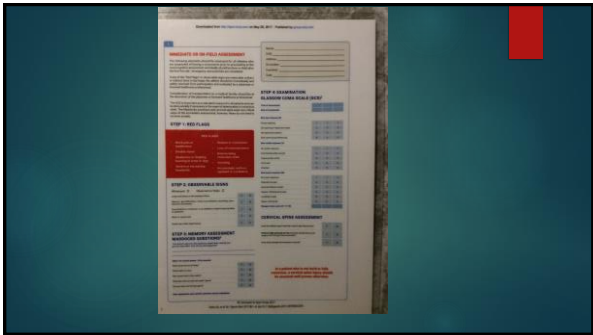
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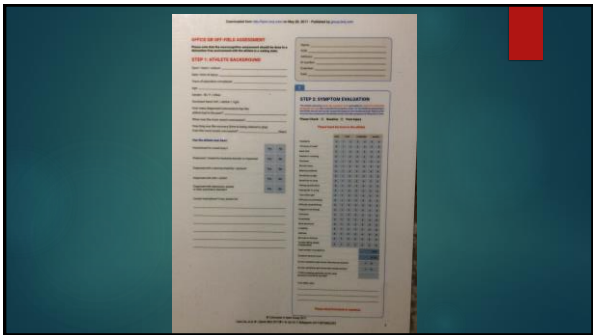
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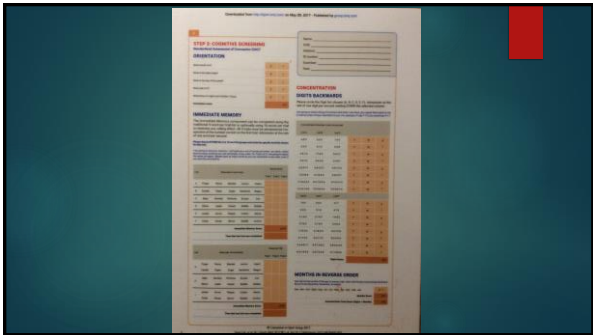
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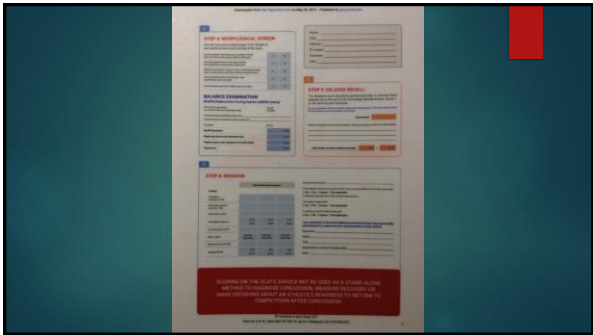
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### CLEAN SCAT for RTP

- ▶ Practice Variations
- ▶ 1- Clean SCAT 5 before beginning RTP
- ▶ 2- Not used after 5 days
- ▶ 3- Athlete symptom free before beginning Return to play .

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### Baseline Neurocognitive Testing

- ▶ Helpful
- ▶ Not necessary
- ▶ If performing question always is whom to test...
- ▶ All or high contact sports
- ▶ ImPACT is a major tool in the states
- ▶ Requires training to interpret or neuropsychologist on your staff
- ▶ REMEMBER IT IS JUST ANOTHER TOOL FOR YOU TO USE TO DETERMINE SAFE RETURN TO PLAY

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### New day two of Return to Play

- ▶ When symptom free in concussion protocol
- ▶ Day Two ( light aerobic exercise ) of GRTP
- ▶ WAS:
- ▶ 15 minute stationary bike ride followed by 1 mile jog at < 70 % max heart rate.
- ▶ NOW:
- ▶ Move 1 mile jog to following step

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### Re-evaluate

- ▶ History and detailed neuro exam to include:
  - Mental status
  - Cognitive functioning
  - Sleep/wake disturbances
  - Ocular function
  - Vestibular function
  - Gait and balance
- Current clinical status
- Need for neuroimaging

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### REST

- ▶ COMPLETE REST —Little evidence of benefit
- ▶ After 24-48 hours post injury encourage gradual activity WHILE STAYING BELOW THEIR THRESHOLD FOR SYMPTOMS— Cognitive and Physical

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### Rehabilitation

- ▶ Early interventions no literature as most recover in 10-14 days
- ▶ Persistent symptoms benefit from psychological, cervical and vestibular rehab
- ▶ Monitored activity should be sub-symptom threshold, submaximal exercise

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Refer

- ▶ Persistent post –concussive symptoms
- ▶ Persisting Beyond :
- ▶ Adults— 10-14 days
- ▶ Children — > 4 weeks
- ▶ Less of role for pharmacotherapy— if placed on it must be off it and symptom free prior of start of RETURN TO PLAY
- ▶ Stick to :
  - Symptom limited exercise
  - Targeted PT
  - CBT

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RETURN TO SPORT

- ▶ Follow state law
- ▶ PA ACT 101– Safety in Youth Sports Act
- ▶ Graduated return to play
- ▶ Nonpublic and public schools need adhere
- ▶ Not limited to grades 7 – 12

BIAPA MODEL POLICY

Brainsteps

Have parents sign HIPPA that provider treating concussion may speak with the school !!

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RETURN TO SPORT

- ▶ Children and adolescents do NOT return to sport till they have successfully returned to school

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### Exertional Heat Stroke

- ▶ PREVENTION:
  - Hydration
  - Body Cooling
  - Work to Rest Ratios—WBGT
  - Acclimatization
  - Education

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### Exertional Heat Stroke Survival

- ▶ RECOGNITION
  - HEADACHE
  - DIZZINESS
  - NAUSEA
  - Signs of CNS Dysfunction
  - Body temp 104 F –RECTAL TEMP is the only viable field option to assess body temp in an exercising individual

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### Survival

- ▶ TREATMENT
- ▶ Cold water Immersion
- ▶ Fill cooling tubs with water Keep ICE nearby
- ▶ Cool to 102 F within 30 minutes
- ▶ If cooling available on site the individual with exertional heat stroke should be cooled prior to transportation to the hospital per Korey Stringer Institutes
- ▶

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### SURVIVAL

- ▶ Return to play requires :
- ▶ Physician exam
- ▶ Search for predisposing factor at time of their injury
- ▶ Demonstrate ability to tolerate exercise in the heat
- ▶ RTP – after cleared medically start exercise slow and gradual in temperate environment

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### GOLD STANDARD

- ▶ Heat Stroke Suspected
- 1. 911
- 2. Immerse athlete in whole body cold water immersion

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### Lightning

- ▶ Guidelines of NFHS
- ▶ DEVELOP EVACUATION PLAN / Safe Areas
- ▶ A School Bus
- ▶ Suspend play when:
  - ▶ Thunder is heard or lightning is seen
  - ▶ 30 minute rule
  - ▶ Hearing or seeing takes precedence over mobile apps or detection devices— 10 mile rule
  - ▶ Pregame or practice determine Who makes the call to suspend play.....

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### SAFESPORT

- ▶ Started by USOC now independent
- ▶ Developing guidelines that will impact Olympics, NCAA and secondary schools.
- ▶ Two-Deep Leadership
- ▶ Minimize Unsupervised One on One Time with Athletes
- ▶ Watch for Grooming behaviors

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### Pre Game Medical Time Outs

- ▶ Review EAP
- ▶ Define Protocols
- ▶ Confirm EMS presence
- ▶ Exchange mobile phone numbers

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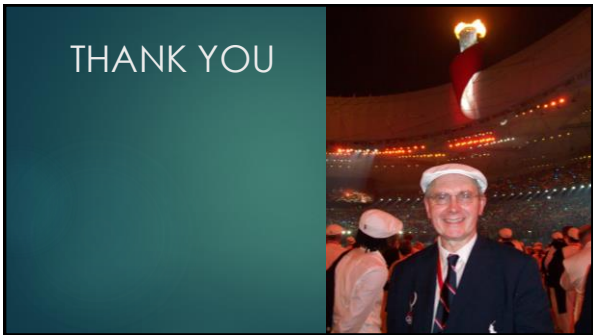
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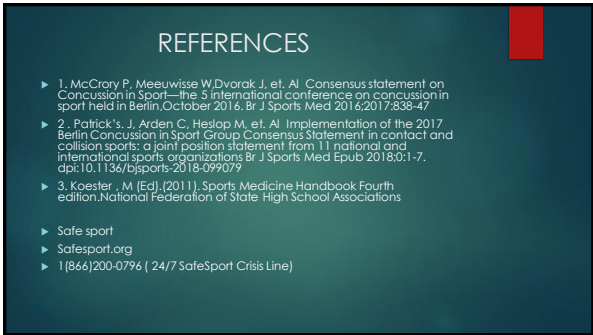
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