Disclosures

• No relevant disclosures to discuss
Team Physician Consensus Statement

- Return To Play (RTP) is the process of deciding when an injured or ill athlete may safely return to practice or competition

- This ultimately leads to medical clearance of an athlete for full participation in sport
The goal is to return an injured or ill athlete to practice or competition without putting the individual at undue risk for injury or illness. The team physician’s duty is to protect the health and welfare of the athlete.
Evaluating the Athlete’s Participation Risk

- Demands of the athlete’s sport, including the position and competitive level of play
- Role of taping, bracing, or orthoses to protect the athlete
- Role of medical interventions
- RTP may affect other athletes
19 year old female soccer athlete

- HPI: 4-5 days of sore throat, fever, fatigue, and left sided lymphadenopathy

- PMHx: non-contributory

- PE: Febrile to 101F, bilateral white tonsillar exudate, left sided anterior chain cervical lymphadenopathy

- Clinic testing: rapid strep negative
Next steps

- Labs: CBC with differential, Monospot
- Leukocytosis (WBC 15) and monospot positive
Mononucleosis and RTP

- Minimum 3 weeks from the start of symptoms before RTP
  - Splenic injury/rupture
  - Pharyngitis with tonsillar enlargement
- No evidence to measure spleen size
  - No baseline
  - No data that correlates spleen size to splenic rupture
- Need to reassess before clearance
  - Physical fitness level, hydration status, vitals
CASE 2
18 year old male wrestler

- HPI: Rash over his forehead, painful bumps with some redness for 3-4 days, started draining fluid today. Denies fever, chills, n/v.
- PMHx: Exercised induced asthma
- PE: Skin: superior forehead vesicular lesions with an erythematous base
Physical exam
Next steps

- Culture fluid – positive for HSV-1
Herpes Gladiatorium and RTP

- Primary Infection before RTP
  - No new blisters for 48 hours
  - Receive treatment and not allowed to participate for at least 10 days
  - No fever, chills, or swollen lymphadenopathy
  - All lesions have a firm adherent crust

- Recurrent outbreaks
  - Systemic antiviral therapy for > 120 hours prior to competition
Wrestler’s skin lesions and RTP

- Tinea lesions – “ringworm”
  - Skin 72 hours of oral/topical treatment
  - Scalp 14 days of oral/topical treatment
Herpetic Lesions (Simplex, fever blisters/cold sores, Zoster, Gladiatium): To be considered “non-contagious,” all lesions must be scabbed over with no oozing or discharge and no new lesions should have occurred in the preceding 48 hours. For primary (first episode of Herpes Gladiatium), wrestlers should be treated and not allowed to compete for a minimum of 10 days. If general body signs and symptoms like fever and swollen lymph nodes are present, that minimum period of treatment should be extended to 14 days. Recurrent outbreaks require a minimum of 120 hours of oral anti-viral treatment, again so long as no new lesions have developed and all lesions are scabbed over.

Tinea Lesions (ringworm on scalp or skin): Oral or topical treatment for 72 hours on skin and oral treatment for 14 days on scalp.
CASE 3
17 year old male basketball athlete

- **HPI:** Point guard of his team; went up for a lay-up and landed on an opponent’s foot. His left ankle inverted. Developed lateral ankle pain with associated swelling. Pain with weight bearing. Denies popping or clicking. Sustained injury 1 day prior to clinic visit.

- **PMHx:** No history of ankle sprains or fractures. No surgical history.
Physical exam

• Left Ankle – Notable swelling with ecchymosis. Tender to palpation over the ATFL (anterior talofibular ligament). No tenderness over the CFL (calcaneal fibular ligament), PTFL (posterior talofibular ligament) and lateral malleolus. No syndesmosis tenderness. Negative talar tilt.

• Gait: Unable to bear weight on the left side.

• Should an ankle xray be obtained?
Ottawa Ankle Rules

An ankle x-ray series is required only if there is any pain in the malleolar zone and any of these findings:
- Bone tenderness at A
- Bone tenderness at B
- Inability to bear weight both immediately and in emergency department

A foot x-ray series is required only if there is any pain in the midfoot zone and any of these findings:
- Bone tenderness at C
- Bone tenderness at D
- Inability to bear weight both immediately and in emergency department

Ottawa ankle rules for use of radiography in acute ankle injuries (adapted from Stiell et al.)*
Diagnosis

- Left ankle radiograph – no evidence of fracture
- Left lateral ankle sprain of the ATFL
Lateral ankle sprain and RTP

- Initial management with RICE

- Functional rehabilitation vs Immobilization
  - Early rehab superior to prolonged immobilization

- Bracing – ASO (ankle stabilizing orthosis)
  - Decreases risk of injury recurrence
Functional Rehabilitation

- Functional rehab
  - Proprioception exercises (wobble board)
  - Foot circles
  - Alphabet exercises
  - Marble pickups
Ankle sprain and RTP

- Timing of return depends on severity of ankle sprain

- Functional testing
  - Proprioception, ROM, strength, testing balance, and agility
  - Lateral hop test

- Restoration of sport specific skills
CASE 4
39 year old female runner

- HPI: Presented to clinic 2 hours after completing a training run for a half marathon. She ran 12 miles and is now complaining of myalgias, dizziness, and nausea. Temperature outside was 92°F degrees.
- PMHx: non-contributory
Physical Exam

• Vitals: Oral temperature 101F, HR 130, RR 16, BP 90/60, SpO2 99%
• Gen: Appears tired and sweaty, conversational
• Cards: Tachycardic, no murmurs, cap refill 3 seconds
• Resp: Clear to auscultation bilaterally
• Neuro: A&Ox3, EOMI, PERRL
• Next steps?
Next steps

- Rectal temperature: 99F
- Orthostatic vitals: positive
- Clinical presentation and exam most consistent with heat exhaustion

What now??
Acute Heat Exhaustion Management

- Remove excessive clothing
- Place in supine position with legs elevated
- Oral rehydration
- Monitor mental status
Heat Exhaustion and RTP

- Resolution of symptoms
- Typically return to training within 24-48 hours
- Nutrition/hydration
- Sport specific issues – equipment indoor/outdoor
- Environmental conditions
HEAT EXHAUSTION

CAUSES:
- Fluid Intake
- Heat Exposure
- Activity

Symptoms:
- Headache
- Fatigue
- Weakness
- Skin Moist
- Sweating
- BP - Orthostatic
- Pulse
- Anxiety - Confusion

Body Temp:
- 38.8°C or 102°F
Heat Illness

Heat Cramps
• Involuntary, painful contractions of skeletal muscle during or after prolonged exercise.
• Typically resolves with cessation of activity and stretching.

Heat Exhaustion
• Body temperature > 39°C but < 40°C with inability to continue exercising.
• Should resolve with cessation of activity and sweating.

Heat Stroke
• Rectal temp > 40-41°C (104-105 °F) with associated symptoms.
• Heat generated exceeds heat lost, leading to rise in core temperature and thermoregulatory failure.
CASE 5
21 year old female softball catcher

- HPI: Sustained a collision at home plate with an opposing team runner. Runner’s elbow collided into her catcher’s mask; she subsequently fell and hit the back of her head. After collision, she felt foggy with an associated headache and nausea. Removed from the game and seen in clinic the following day.
Physical exam

- Vitals: BP 104/60, HR 66, SpO2 100%
- Neck: Nontender to palpation over cervical spine, ROM full and non-painful, negative Spurling’s
- VOMS: Positive (nausea and dizziness) horizontal and vertical saccades, vestibular-ocular-reflex positive (dizziness) horizontal and vertical, negative smooth pursuit, convergence 4cm
- SCAT 5 completed
Concussion and RTP

- Clinical history and exam consistent with the diagnosis of a concussion
BRAIN PROTOCOL
A step-by-step gradual process for return to play

BIKE
Increase heart rate with sustained effort while keeping the head as still as possible.

RUN
Adds simple, repetitive movement.

AGILITY
Adds more explosive movement and asks the brain to do more complex function.

IN RED
Adds usual drills and workout while avoiding all physical contact.

(NO RESTRICTIONS
A doctor must clear the athlete before this step.

IN RED
Must be cleared by a doctor

Adds mental functions of normal workout/drills. No contact

Adds athletic movements and explosive effort

Adds simple repetitive movement

Increase heart rate with sustained effort
Neuro Sport Brain Protocol

- Athlete cannot start the protocol until there are no remaining symptoms

- Athletes 18 years old or younger must wait at least 24 hours between each step

- If the symptoms return, the protocol MUST stop. Once ALL symptoms are gone again, the process restarts by repeating the last step completed before symptoms returned.
Concussion and RTP

- Work with the school’s athletic trainer and coach

- Go through the return to play protocol

- Athlete must be cleared by a physician prior to return to full participation
Return To Play
References

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