Massachusetts Medical Society Webinar

Return to Play Guidelines Following Concussion

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Rationale

- Monitor athletes for symptoms
- Keep athlete safer
  - Reduce risk of head trauma initially
  - Evaluate effect of exercise
- Gradual progression - incremental increase
  - Symptoms
  - Coordination / fitness / skill
  - Apprehension
  - Physically / mentally ready to return
  - Duration / Intensity
Drawbacks

- Zurich Protocol developed for older athletes – suggestions for children
- Not evidenced based
- Not widely evaluated but best we have
Parental Instruction

- Apply to recreation, recess, organized sports and physical activities
- Don’t always comprehend gradual increase or significance of concussion
- Need specific instructions
  - Duration
  - Maximums
  - Restricted activities
- Understand reasoning
When to Start

- Clinician decision based on multiple factors
  - Length of symptoms
  - Number of concussions
  - Severity of symptoms
  - Pediatric vs adult
- DeMatteo – children start 1 week post symptom resolution
- Zurich – when asymptomatic
Return to Play

- May apply to all activity – recreational, organized, playground.
- Must apply to those falling under state law guidelines
- Experts – Children more conservative
- NO symptoms
- Back to full academics
- Medical clearance
- Normal neurocognitive testing – If performed
- Complete graduated return to play
Return to Play

- Taken from Concussion in Sport Group Consensus Statement – Zurich Protocol also DeMatteo Research
- Stepwise progression back to activity / sport
- Assists in returning kids safely
- DO NOT start until complete symptom resolution*
- Intended to be supervised / monitored
Return to Play – Zurich Protocol

• Graduated Return to Play

• 1. No activity complete physical and cognitive rest - Recovery
• 2. Light aerobic exercise
  – Walking, swimming or stationary cycling keeping intensity <70% MPHR. No resistance training. Increase HR
• 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 more complex training drills (e.g. passing drills in football and ice hockey). May start progressive resistance training). Exercise, coordination, cognitive load
• 5. Full contact practice. Following medical clearance, participate in normal training activities Restore confidence, assessment of functional skills by coaching staff
• 6. Return to play Normal game play
Return to Play - DeMatteo

- Differences vs Zurich
- All children rest 1 week post symptom resolution
- Classified base on symptom history
- Blue group (sx less than 1 week) 24 hours for each step
  - Step 1 15-20 mins ex 2 times per day
- Purple – (sx 1- 4 weeks) 1 week for each step
  - Step 3 - no jarring activities – batting etc.
Gradual Return to Play - Zurich

- Gradual increase intensity / duration
- Each step 24 hours
  - Monitor for symptoms
    - No symptoms move to next step
    - Symptoms – rest until gone - go back step
- Usually spend 1 day at each step – may vary
- Some may spend several days
Gradual Return to Play Protocol

1) No Activity – Goal: Rest Recovery
   - Rest until no symptoms with cognitive activity

2) Light Aerobic Activity
   Goal: Increase HR
   Time: 10 – 15 mins
   - HR < 70% Max
   - 220 – age X .70
   - NO Jumping / Sprint / Intense Exercise / Lifting
   - Swimming, walking, biking
Gradual Return to Play Protocol

3) Sports Specific Training
   - Goal: Add movement head / body
   - Time: approx ½ time routine
     - NO head impact
     - NO Drills can be hit
     - NO Defenders
     - NO Ball Person
     - NO Holding FB yard / down markers
Gradual Return to Play Protocol

- Moderate Jogging
- Skating Drills,
- Running Drills
- Agility Drills – cones, fwd, bkwd
- Shooting Drills - individual
- Bat Swings, hit off tee
- VB serves
- Diving – spins in water (NOT off board)
- Squats, Lunges, bridges, light jumping – mimic sport
Gradual Return to Play Protocol

4) Non Contact Training
   - Goal: Exercise, Coordination, ↑ Cognitive load
   - Time: close to routine
     - NO Head Impact
     - NO Defenders
   - Begin resistance training
   - Passing Drills
   - VB – serving, passing
   - SB / BB – soft toss
   - Drills respond commands verbal, visual
   - Interval Training
   - Increase Jumping
Gradual Return to Play Protocol

5) Full Practice
   - Medical clearance
     - Goal: Restore confidence
       - Assessment by coaches
       - Skill Check
       - Restore confidence
     - Time: Full Length Practice
   - If collision sport ease them into practice
   - May be hesitant

6) Return to Game Play
References