

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% MPMR. 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
- $220 - \text{age} \times .70$
- 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 $\frac{1}{2}$ 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

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