Disclosures

• I have no disclosures

Learning Objectives

• Identify steps in a graded return to learn protocol
• Recommend appropriate academic accommodations based on concussion clinical trajectories
• Identify individuals involved in the implementation of a return to learn protocol

Why are we here?

• Estimated 27-90% students report trouble with school or had a decline in grades (Wasseman et al., 2016)
• 61% of student athletes reported academic dysfunction 1 month post-injury (Wasseman et al., 2016)
• Only 12% of high schools had a formal RTL protocol (Lyons et al., 2017)
• As of 2015, only 63% of NCAA schools have a RTL, but 97% had a RTP protocol (Beatson et al., 2017)

Evolution of RTL

1989-1990
3 articles about closed head injuries and return to work

Late 1990’s – 2000’s
Research looking at cognitive impairments in days following a concussion

2010
Article in JAT identifies the need for assistance in returning athletes to the classroom

2014
National Athletic Trainers Association releases position statement

2014
Huge “boom” in concussion research with focus on RTL

2013
American Medical Society for Sports Medicine releases position statement

2014
Berlin Consensus Statement has Stepwise RTL

2016
Consensus statement

Current RTL Guidelines

McCrory et al., 2017
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**Modifying Accommodations Based on Clinical Trajectories**

**Common Problems in School**
- Nausea, dizziness, foginess
- Increase of symptoms in busy environments

**Solutions**
- Breaks
- Extra time on assignments & testing
- Leave class early
- Avoid cafeteria
- Avoid assemblies, observation of gym classes, and high dynamic classes (i.e. theater, flight simulations)
- Modified attendance when highly symptomatic

- Various
  - 24-48 hours (Purcell, 2018)
  - No more than 5 days (Noch, 2018)

- Different guidelines:
  - Once pt tolerates cognitive activities at home without worsening of symptoms (McCrory et al., 2017)
  - Tolerate cognitive activates for 30-45 minutes (Halestead et al., 2013)
  - Tolerate 2, 30 minute cognitive sessions (G.F Strong School Program)

- Consider age, type and severity of symptoms, and academic course load need to be considered

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**Returning too soon....**
- Increase risk of psychosocial problems in those who return full time with no AA compared to those with reduced cognitive exertion (Brown et al., 2014)
- Approximately a third of students reported new symptoms once back in school (Baker et al., 2015; Darling et al., 2014)
  - Decrease academic performance
  - Increase mental health concerns
- Prolong Recovery

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**Returning too late....**
- No evidence that complete rest = full and efficient recovery (McCrory et al., 2017)
- Longer restriction from activity, including being withheld from school, may prolong recovery and even increase symptoms (Thomas et al., 2015)
- 24-48 hours rest (Purcell, 2018)
- Minimizing school absence to avoid onset of secondary problems
  - Social isolation
  - Depression
  - Anxiety about make up work, social status, academic success
  - Deconditioning and tolerance

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**Goal: maximum stimulation with minimal symptom provocation**

- Increase of symptoms in busy environments
- Symptoms once back in school
- Various

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**Return to School**

**Under stimulation**

**Over stimulation**
Modifying Accommodations Based on Clinical Trajectories

Common Problems in School
- Headaches
- Nausea
- Dizziness
- Fatigue
- Photosensitivity
- Auditory learning
- Visual Disturbances

Solutions
- Minimize triggers
  - Dim lights
  - Avoid noisy environments
- Allow water and snacks in class
- Keep on a consistent routine
- Shorten assignments
- Extra time on assignments & tests
- Testing in the morning
- Testing across multiple sessions
- Testing in quite room
- Multiple breaks throughout the day

Collins, Kontos, et al. KSST, 2013

Modifying Accommodations Based on Clinical Trajectories

Common Problems in School
- Mental Fatigue
- Difficulty Concentrating
- Slowed down: difficulties multi-tasking
- Difficulty retaining information (working memory)
- Mentally foggy or one step behind themselves

Solutions
- Keep them in school, but will need scheduled breaks
  - Built in breaks vs as needed
- Core assignments only
  - Excuse “busy work”
  - Shorten core projects
  - Focus on key academic concepts
- Extra time on assignments & tests
- Testing in the morning
- Testing across multiple sessions
- Excuse from standardized testing if possible
- Print out notes

Hakamai et al., 2019
Collins, Kontos, et al. KSST, 2013

Modifying Accommodations Based on Clinical Trajectories

Common Problems in School
- Headaches
- Nausea
- Dizziness
- Fatigue
- Photosensitivity
- Auditory learning
- Visual Disturbances

Solutions
- Visual Breaks
  - Quite reading/studying is not appropriate
  - Reduction of work load
  - Extra time on homework and testing
  - Allow setting changes on computers/screens
  - Limit computer usage
  - Provide notes; larger font
  - Audio books
  - Record lectures
  - Dim lights
  - Avoid noisy environments

40% of pediatric cases has abnormal near point convergence (Pearce, 2015)

Barriers to Implementing RTL Protocols

- Only 30% of teachers had formal education on concussions (Lyons et al., 2016)
- Lack of time for 1-on-1 instruction needed for some accommodations (Lyons et al., 2016)
- Lack of awareness, education, and support for educators and school counselors (Lyons et al., 2016; Valovich McLead, 2017)
- Lack of collaboration – only 50% of HS with an AT had a professional relationship with their nurse (Valovich McLead, 2017)
- School administration
  - “we don’t know what to do” (Lyons et al., 2016)
  - Felt they had minimal knowledge with academic accommodations and how to implement them (Valovich McLead, 2017)
- Only 9 states have law on return to school (Thompson, 2016)
  - Most place responsibility on the school
  - Lack of required education of school personnel
  - No guidance of managing of students with prolong/persistent symptoms

A Team Approach: Who is Involved?

- Personnel will vary depending on setting
  - Elementary and Middle Schools
  - High Schools
  - College/Universities
  - Athlete vs non-athlete
- No matter the setting, successful RTL is dependent on collaboration and coordination of an interdisciplinary team

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Where to Begin in the Secondary Schools

**Medial Team**
- Look into current policies
  - District, state, conference
- Identify resources are available in your school and establish relationships
- Find community referral resources
- Multidisciplinary concussive team
- Establish academic accommodations forms
- Work with academic team to create an RTL protocol
- Point person
- Chain of communication
- Review cases and adjust as needed

**Academic Team**
- Educate teachers and support staff on concussions and their effects on academics
- Set up classroom strategies for different academic accommodations
- Work with academic team to create an RTL protocol
- Administration to help reinforce protocol
- Provide feedback to medial team
- Review cases and adjust as needed

**References:**