RESEARCH TO CLINICAL PRACTICE

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NATA RESEARCH & EDUCATION FOUNDATION

Concussion Management and Return-to-Play

Best-practice recommendations regarding management and return-to-play of patients with sport-related concussions is evolving. Complete physical and cognitive rest until asymptomatic may not be best, and health care providers may consider an active (e.g., physical activity) approach to the management and rehabilitation of concussions. Review the resources below to maintain and/or enhance your knowledge regarding the management of sport concussion.*

*Given the importance of this topic and the vast amount of work conducted in this area, the resources listed below are just a subset of the available research.

RESOURCES

Position Statement
National Athletic Trainers' Association Position Statement: Management of Sport Concussion

Consensus Statements
Consensus Statement on Concussion in Sport

Infographic
NATA Concussion 101

Website
PedsConcussion Living Guideline

CDC HEADS UP

NATA Foundation Funded Research

Landon Lempke, PhD, ATC

Identifying Somatosensory and Neuromuscular Deficits Throughout Concussion Recovery

Our findings may help identify if and which specific somatosensory pathways and neuromuscular functions have altered function following concussion, and in time, help guide post-concussion rehabilitation strategies.

Jennifer Savage, PhD, ATC

Examining Driving Performance Among High School and Collegiate Athletes After Sustaining a Sport Related Concussion

Driving in an impaired state may carry serious consequences that may affect both the concussed individual and others on the road.

from Recent Articles (links available below)

Graded symptom scales are frequently used to determine how patients are feeling following a concussion, but these tools fail to provide detailed information regarding root cause(s) of the symptoms or their impact on the patient's functional ability. Clinicians should consider using concussion profiles and patient-reported outcome measures to better understand the patient perspective. Access this commentary for an example of how to use the symptom scale to identify a patient profile. *Valovich McLeod & Vesci 2022, Clin Pract Athl Train, Concussion Profiles: Moving Beyond the Graded Symptom Scale*

There is moderately significant evidence supporting the use of aerobic exercise for individuals with acute and prolonged symptoms post-concussion. Concussion management efforts that included aerobic exercise demonstrated decreased symptom severity and improvements in recovery time. *Powell et al. 2020, Int J Sports Phys Ther, The Effect of Aerobic Exercise on Adolescent Athletes Post-Concussion: A Systematic Review and Meta-Analysis*

This study assessed the relationship between free-living physical activity (e.g., walking) and recovery outcomes for individuals with a concussion. The authors concluded free-living physical activity may not be enough compared to more structured protocols to reduce symptoms and expedite recovery. *Petit et al. 2022, JAT, Relationship Between Physical Activity Participation and Recovery Outcomes in College-Aged Adults With a Concussion*

Recent research suggests the use of an active approach to recovery following a 24-to-48-hour rest period in individuals with a concussion may facilitate recovery. Authors recommend using the Buffalo Concussion Treadmill Test to determine the symptom exacerbation threshold to ensure prescribed exercise does not increase symptom severity. *Bolno et al. 2021, Clin Pract Athl Train, Rest and Therapeutic Interventions Following Sport-Related Concussion: An Evidence-to-Practice Review*

In a sample of 15,821 sport-related concussions, the median time to unrestricted participation was 11 days, with approximately 30% of patients taking greater than 14 days to return to unrestricted participation. This data can be used to educate stakeholders and establish realistic return-to-play timelines. *Covassin et al. 2021, J Athl Train, Time-to-Event Analyses: Return to Unrestricted Participation After Sport-Related Concussion in a Cohort of High School Athletes*

Compared to previous reports, athletic trainers more frequently reported implementing concussion assessment and return to play methods that align with current recommendations. Moving forward, athletic trainers are encouraged to implement a 3-domain minimum concussion assessment battery (e.g., symptom, balance, and neurocognitive evaluations) and refrain from using outdated methods (e.g., concussion severity scales). *Lempke et al. 2020, J Athl Train, Athletic Trainers' Concussion-Assessment and Concussion-Management Practices: An Update*

This study focused on the rehabilitation process for individuals aged 8-17 years who were slow to recover from a concussion. Though an active rehabilitation intervention did not affect post-concussion symptoms beyond standard care, the authors reported the role of active rehabilitation on increasing quality of life and decreasing feelings of anger, and its potential role in increasing energy and balance. *Gauvin-Lepage et al. 2020, Clin J Sport Med, Effectiveness of an Exercise-Based Active Rehabilitation Intervention for Youth Who Are Slow to Recover After Concussion*

highlights 2022 Free Communications Program (link to JAT Supplement available below)

- Attention Deficit Hyperactivity Disorder Does Not Influence the Recovery of Collegiate Athletes Diagnosed With a Sport Concussion (Scales et al.) S-115
- Assessing Time to Symptom Resolution Among Collegiate Student Athletes With Delayed Injury-Reporting Following Concussion (Bretzin et al.) S-116
- Mapping Adolescent Athletes' Perceptions of Activity Limitations Following Sport-Related Concussion to the International Classification of Functioning, Disability, and Health (Valovich McLeod, Snyder Valier) S-109
- Anxiety Influences Concussion Assessment Scores at Baseline in Division-I Collegiate Athletes (Quintana et al.) S-107
- Earlier Initiation of Rehabilitation Services Improves Recovery Outcomes Following Pediatric Concussion (Teel, Gagnon) S-174

Return-to-Learn

- Development of the Post-Concussion Collegiate Return-to-Learn Protocol Using a Modified Delphi Approach (Memmini et al.) S-110
- Factors Associated With Return to Normal Academic Performance Post-Concussion in United States Service Academy Cadets and Midshipmen (Ross et al.) S-111
- Publicly Available Return to Learn Protocols Among National Collegiate Athletic Association Division I Universities (Beck et al.) S-102
- Perceptions of Academic Concerns and Performance Ability Among Adolescents Following a Sport-Related Concussion (Duszynski et al.) S-180