CONCUSSION: REST VS EXERCISE

Thomas Ripperda, MD
AMG Physical Medicine and Rehabilitation
Rest vs Exercise

• You are treating a patient in the ED for a concussion, upon returning home your recommendations are?

• (A) Isolation/Rest including no screens, avoid bright lights/dim room until symptoms improve

• (B) Get out of the house, resume school work, and social activities with your friends
Definitions

• Sports related concussion

• Rapid onset of short-lived impairment of neurological function. Signs and symptoms may evolve over minutes/hours.

• May or may not involve loss of consciousness

• Acute clinical signs/symptoms largely reflect a functional disturbance as opposed to a structural injury
Definitions

- Mild Traumatic Brain Injury
- Loss of Consciousness < 30 minutes
- Initial GCS 13-15
- Posttraumatic amnesia < 24 hours
Signs/Symptoms

• Symptoms:
  • Somatic (headache, sleep/wake disturbance)
  • Cognitive (feeling like in a fog)
  • Emotional (lability)

• Physical Signs
  • LOC, amnesia, balance impairment, slowed reaction times, gait unsteadiness
Concussion what does the literature say?

- 1928 Symonds - Rest until symptoms improve.

- 1972 Relander - 178 Pt’s mild/mod TBI. Rest vs Exercise. No differences in duration of hospital stay. Routine group missed more days of work than active treatment group.
More Studies/Consensus Statements

- Vienna 2001: No activity and complete rest.
- Prague 2004: Rest until all symptoms resolve.
- Zurich 2008: Physical and cognitive rest until symptoms resolve.
- Zurich 2012: An initial period of rest in the acute symptomatic period following injury 24-48 hours may be of benefit.
- Berlin 2016: A brief period of rest during the acute phase 24-48 hours after injury.

- Insufficient evidence that complete rest is beneficial.
- Amount and duration of rest is not well defined.
Additional Literature

• Buckley 2016
  • 50 subjects: 25 no rest and 25 rest on day of injury plus one additional day.
  • No difference between the groups to return to baseline on BESS, SAC, and ImPACT testing
  • Rest group was symptomatic longer vs no rest group (5.2 vs 3.9 days, p=0.047)
2015 Thomas et al.

- 88 Pt’s in ED with mTBI/concussion

- Randomized to 5 days of strict rest (intervention) vs usual care (2 days relative rest)

- Strict rest vs usual care

  - 3 days longer for symptom resolution in 50%
  - Greater # of post concussive symptoms
  - No differences on ImPACT or BESS
2015 Thomas et.al. Con’t

- Subgroup analysis demonstrated patients with hx of concussion reported greater symptoms at day 10 with strict rest.

- Concussion diagnosis based on symptoms only (headache, dizziness etc) had higher PCSS at day 10 with strict rest.

- Concussion with immediate signs (LOC >30 seconds, amnesia, confusion) trended towards lower PCSS at day 10 with strict rest (p=0.22)
What could explain these findings

- Social withdrawal and depression/anxiety by consequence
- Physical reconditioning/exercise intolerance
- Return to school and work may become overwhelming with prolonged rest.
Ongoing or Persistent Symptoms

- No interventions have been studied within the first 10-14 days as most individuals recover.
- Literature support psychological, cervical, and vestibular/occulomotor rehabilitation.
- Controlled cognitive stress, pharmacological treatment and school accommodations may be beneficial for persistent signs/symptoms.
Return to Sports

- Symptom limited activity (daily activities)
- Light aerobic exercise
- Sport specific exercise (No impact Running drills)
- Non-contact training drills (Harder training drills)
- Full contact practice
- Return to sport
- Minimum 6 days to return to sport
Recommendations

• Insufficient evidence that complete rest is beneficial

• Brief period of relative rest (24-48) hours

• Early and gradual and progressive return to physical and cognitive activity

• Rest may be more beneficial for patients with signs vs symptoms of concussion

• Increase activity while staying below their cognitive and physical symptom exacerbation thresholds