Rehabilitation Protocol for Concussion Return-to-Sport

This protocol is intended to guide clinicians through the return to sport following sports-related concussion. This protocol is time based (dependent on tissue healing) as well as criterion based. Specific intervention should be based on the needs of the individual and should consider exam findings and clinical decision making. The timeframes for expected outcomes contained within this guideline may vary based on physician preference, healing timeline and sporting activity. Return to sport following concussion can be a complex decision-making process and should be approached with a multidisciplinary team approach. If a patient is not progressing as expected, they should quickly be referred to a concussion specialty clinic.

The interventions included within this protocol are not intended to be an inclusive list. Therapeutic interventions should be included and modified based on the progress of the patient and under the discretion of the clinician.

Considerations for concussion return to sport
Current literature no longer supports a period of complete rest beyond 72 hours. Concussion recovery should be focused around active rehabilitation. Activities should be performed at a sub-symptom threshold to the patient’s tolerance. A patient should undergo formal exertional testing and a graded exercise protocol should be based on max exercise tolerance. If a clinician is not familiar with this testing and exercise prescription, the patient should be referred to a specialist.

PHASE I: EARLY POST-INJURY (0-3 DAYS)

<table>
<thead>
<tr>
<th>Rehabilitation Goals</th>
<th>Relative rest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions</td>
<td>Throughout progression, there should be minimal symptoms. If symptoms are starting, rest see if symptoms resolve and the resume at a slightly lower heart rate with goal of not increasing symptoms for pre-exercise level</td>
</tr>
<tr>
<td>Intervention</td>
<td>Household and community activities as tolerated</td>
</tr>
<tr>
<td>Criteria to Progress</td>
<td>3 days post injury</td>
</tr>
</tbody>
</table>

PHASE II: INTERMEDIATE POST-INJURY

<table>
<thead>
<tr>
<th>Rehabilitation Goals</th>
<th>Gradually reintroduce aerobic activity</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Decrease deconditioning</td>
</tr>
<tr>
<td>Precautions</td>
<td>Limit head movement, distractions and maintain neutral neck position</td>
</tr>
<tr>
<td></td>
<td>Avoid Valsalva</td>
</tr>
<tr>
<td></td>
<td>No contact</td>
</tr>
<tr>
<td>Additional Intervention</td>
<td>Light activity to gradually increase heart rate. If symptoms do not increase next session can increase workload slightly more</td>
</tr>
<tr>
<td><em>Continue with Phase I interventions</em></td>
<td>Exercise examples:</td>
</tr>
<tr>
<td></td>
<td>• Light biking</td>
</tr>
<tr>
<td></td>
<td>• Walking</td>
</tr>
<tr>
<td>Criteria to Progress</td>
<td>Tolerating activity well without symptoms, progress through gradually until able to achieve 85% of age adjust heart rate without symptoms</td>
</tr>
<tr>
<td></td>
<td>Able to tolerate daily activities without significant increase in visual/vestibular symptoms</td>
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</tbody>
</table>
PHASE III: LATE POST-INJURY

Rehabilitation Goals
- Reintroduce movement
- Progress active rehab

Precautions
- Avoid Valsalva
- No contact

Additional Intervention *Continue with Phase I-II Interventions
- Increased head movement with activity
  - Running, skating, swimming, rowing, shooting on empty goal, foot work, stick work
  - Busy gym, running with people around
  - Increased cognitive demands
  - Doing math in head, talking, thinking through plays while exercising

Criteria to Progress
- No symptoms with above exercise
- Minimal to no symptoms with all activities including daily activities, school, work etc.

PHASE IV: TRANSITIONAL

Rehabilitation Goals
Reintroduce sport specific activity, while continuing to avoid contact

Additional Intervention *Continue with Phase I-III interventions
Sport specific activity
Passing drills, shooting drills, non-contact drill participation

Criteria to Progress
No symptoms with above activity

PHASE V: FULL RETURN TO SPORT (MONTHS AFTER SURGERY)

Rehabilitation Goals
Full return to sport

Additional Intervention *Continue with Phase II-IV interventions
Scrimmage play first, then full game play if asymptomatic

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Contact
Please email MGHSportsPhysicalTherapy@partners.org with questions specific to this protocol

References: