AFTER CONCUSSION/MILD TRAUMATIC BRAIN INJURY

PHYSICAL THERAPY EVALUATION AND TREATMENT

CLINICAL PRACTICE GUIDELINE

PHYSICAL THERAPY EVALUATION AND TREATMENT AFTER CONCUSSION/MILD TRAUMATIC BRAIN INJURY

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INTERVENTIONS

<table>
<thead>
<tr>
<th>Grades of Recommendation</th>
<th>Must: benefits substantially outweigh harms; Should: benefits moderately outweigh harms; May: benefits minimally outweigh harms or benefit-harm ratio is value dependent; Should not: harms minimally or moderately outweigh benefits</th>
<th>Should: benefits moderately or minimally outweigh harms or benefit-harm ratio is value dependent; Should not: evidence that harms outweigh benefits or evidence of no effect; Must not: harms largely outweigh benefits</th>
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</thead>
<tbody>
<tr>
<td>• A (strong evidence)</td>
<td>Must: benefits substantially outweigh harms; Should: benefits moderately outweigh harms; May: benefits minimally outweigh harms or benefit-harm ratio is value dependent; Should not: harms minimally or moderately outweigh benefits</td>
<td>Should: benefits moderately or minimally outweigh harms or benefit-harm ratio is value dependent; Should not: evidence that harms outweigh benefits or evidence of no effect; Must not: harms largely outweigh benefits</td>
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<tr>
<td>• B (moderate evidence)</td>
<td>Should: benefits substantially outweigh harms; May: benefits moderately or minimally outweigh harms or benefit-harm ratio is value dependent; Should not: evidence that harms outweigh benefits or evidence of no effect</td>
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<tr>
<td>◊ C (weak evidence)</td>
<td>Should: benefits substantially outweigh harms; May: benefits moderately or minimally outweigh harms or benefit-harm ratio is value dependent; Should not: harms minimally or moderately outweigh benefits</td>
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<td>◊ D (conflicting evidence)</td>
<td>May: conflicting evidence; the benefit-harm ratio is value dependent</td>
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<td>▼ E (Theoretical/Foundational)</td>
<td>May: in the absence of evidence from clinical studies, theoretical and/or foundational evidence supports benefit; Should not: in the absence of evidence from clinical studies, theoretical and/or foundational evidence suggests risk of harms</td>
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<td>▼ F (Expert Opinion)</td>
<td>Must: strongly supported by consensus-based best practice/standard of care; Should: moderately supported by best practice/standard of care; May: supported by expert opinion in the absence of consensus; Should not: best practice/standard of care indicates potential harms; Must not: potential harms are strongly supported by consensus-based best practice/standard of care</td>
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COMMUNICATION AND EDUCATION

Physical therapists must educate patients and their families/caregivers about the various symptoms, impairments, and functional limitations that are associated with concussion, and stress that most patients with concussion recover relatively quickly.

• Level of Evidence: B
• Patient presentation: Experienced a concussive event.

Physical therapists must educate patients about self-management of symptoms, the importance of relative rest (rest as needed) instead of strict rest, the benefits of progressive re-engagement in activities, the importance of sleep, safe return-to-activity pacing strategies, and potential signs and symptoms of the need to follow-up care with a physician, physical therapist, or other health care provider.

• Level of Evidence: B
• Patient presentation: Experienced a concussive event.

MOVEMENT-RELATED IMPAIRMENTS

Physical therapists should design a personalized intervention plan that aligns interventions with patient’s identified impairments, functional limitations, participation limitations, self-management capabilities, and levels of irritability.

• Level of Evidence: B
• Patient presentation: Experienced a concussive event and have movement related impairments.

Physical therapists should refer patients for further consultation and follow-up with other health care providers as indicated.

• Level of Evidence: B
• Patient presentation: Experienced a concussive event.

MOVEMENT-RELATED IMPAIRMENTS – cont.

Physical therapists should use findings from the examination to triage patients into 1 of 2 categories: (1) patients with movement-related impairments and dysfunction who are good candidates for physical therapy interventions, or (2) patients with no identified movement related impairments of dysfunction.

• Level of Evidence: F
• Patient presentation: Experienced a concussive event.

CERVICAL MUSCULOSKELETAL

Physical therapists should implement interventions aimed at addressing cervical and thoracic spine dysfunction.

• Level of Evidence: B
• Patient presentation: Experienced a concussive event with cervical musculoskeletal impairments.

VESTIBULO-OCULOMOTOR

Physical therapists should use canolith repositioning interventions.

• Level of Evidence: A
• Patient presentation: BPPV identified as a potential impairment.

Physical therapists with appropriate expertise in vestibular and oculomotor rehabilitation should implement an individualized vestibular and oculomotor rehabilitation plan.

• Level of Evidence: B
• Patient presentation: Experienced a concussive event.
VESTIBULO-OCULOMOTOR - cont

Physical therapists may also provide an individualized visual-motion habituation program.

- **Level of Evidence:** B
- **Patient presentation:** Experienced a concussive event and exhibits visual vertigo/visual motion sensitivity (dizziness provoked by repetitive or moving visual environments)

Physical therapists who lack appropriate training in vestibular and oculomotor rehabilitation should refer patients to a clinician with appropriate expertise.

∇ **Level of Evidence:** F
∇ **Patient presentation:** Experienced a concussive event and exhibit vestibular and/or oculomotor impairments.

EXERTIONAL TOLERANCE AND AEROBIC EXERCISE

Physical therapists should implement a symptom-guided, progressive aerobic exercise training program for patients who are planning to return to vigorous physical activity levels.

- **Level of Evidence:** A
- **Patient presentation:** Experienced a concussive event and exhibit exertional intolerance.

Physical Therapists may implement progressive aerobic training for all patients in order to reduce risk for deconditioning, promote functional brain healing, and provide a nonpharmaceutical option to improve mental health.

- **Level of Evidence:** E
- **Patient presentation:** Experienced a concussive event and exhibit exertional intolerance, including those who do not exhibit exertional intolerance and those who do not intend to engage in vigorous physical activity.

MOTOR FUNCTION

Physical therapist should implement motor function interventions that help progress the patient toward higher-level functional performance goals.

◊ **Level of Evidence:** C
◊ **Patient presentation:** Experienced a concussive event and identified or suspect motor function impairments.

MONITORING AND PROGRESSING PATIENTS

Physical therapists should regularly document symptoms, provide reassessments of movement-related impairments, and administer selected outcome measures as needed or indicated.

∇ **Level of Evidence:** F
∇ **Patient presentation:** Movement-related impairments post-concussion.