PECARN RISK FACTORS FOR MORE SEVERE INJURY

- Age < 2 years old
- Recurrent vomiting
- Loss of consciousness
- Severe mechanism of injury
- Severe/worsening headache
- Amnesia
- Non-frontal scalp hematoma
- Glasgow Coma Score < 15
- Clinical suspicion for skull fracture

ASSESS

Assess symptoms using validated scales.
- Assess for concussion subtypes with cognitive, balance, and vestibulo-oculomotor testing
- Identify risk factors for poor prognosis

COUNSEL

Provide information:
- Warning signs of more serious injury
- Typical recovery course and risk factors for poor prognosis
- Future injury prevention strategies
- The need for social and emotional support

Offer clear instructions on a return to activity customized to the patient’s symptoms.
- Gradual return to physical and cognitive activity after 2-3 days of rest. Symptom exacerbation with physical activity is normal.
- No contact sports or risky activity until cleared for return by a physician.

REFER

Identify and tailor treatment plans to address:
- Acutely worsening symptoms, considering neuroimaging
- Concussion subtypes (page 2)
- Appropriate referrals

EXERCISE - SLEEP - NUTRITION

- Early cardio exercise (usually stationary bike or brisk walking/jogging) to support recovery for at least 20 minutes, 4x per week beginning the first week of recovery
- Sleep is likely to be disrupted during concussion recovery – advise sleep hygiene strategies
- Review appropriate hydration and proper nutrition

ANXIETY AND MOOD

- Advise tracking mood to identify triggers
- Discuss that tasks may take longer than usual to complete during recovery
- Review relaxation strategies to reduce day-to-day stress and support a positive outlook
### Conussion Subtype Classifications

<table>
<thead>
<tr>
<th>Subtype</th>
<th>Symptom</th>
<th>Therapeutic*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vestibular</td>
<td>• Dizziness • Head movements cause symptoms</td>
<td>• Vestibular physical therapy</td>
</tr>
<tr>
<td>Ocular-motor</td>
<td>• Difficulty focusing on moving objects or objects moving closer • Fatigue with reading</td>
<td>• Dynamic vision therapy</td>
</tr>
<tr>
<td>Cognitive</td>
<td>• Problems concentrating or remembering • Problems completing tasks</td>
<td>• Cognitive-behavioral therapy • Neuropsychologist***</td>
</tr>
<tr>
<td>Headache/Migraine</td>
<td>• Light and/or noise sensitivity associated with Headaches</td>
<td>• Analgesia and avoidance of triggers • Headache Clinic***</td>
</tr>
<tr>
<td>Anxiety/Mood</td>
<td>• Anxious and/or depressed</td>
<td>• Psychiatrist and counseling***</td>
</tr>
<tr>
<td>Cervical Strain**</td>
<td>• Moving neck causes symptoms, neck pain, and/or headache</td>
<td>• Neck physical therapy</td>
</tr>
<tr>
<td>Sleep Disturbance **</td>
<td>• Trouble going to sleep • Waking at night • Fatigue during the day</td>
<td>• Sleep Medicine Clinic***</td>
</tr>
</tbody>
</table>

*Early cardio exercise and sleep hygiene is recommended for the recovery of all subtypes

**Cervical strain and sleep disturbance are concussion-associated conditions

***Consider referral for severe or prolonged symptoms greater than 2-4 weeks