Concussion is the most common cause of brain injury and is caused by a blow to the head, face, neck or body through sport, falling or accident. This sudden injury causes physiologic disruption which leads to neurologic signs and symptoms. Symptoms may develop immediately at time of injury or may be delayed in onset for hours, days or even longer post-injury.

**ASSESSMENT**

Perform standard history and physical exam (HPE). Assess for more severe injury. Include musculoskeletal evaluation, neurologic exam (movement, coordination, strength, sensation, reflexes, gait and balance), vision and vestibular assessment, and cognitive performance (memory, concentration, function).

Signs and symptoms may vary over time, and may be significantly different than a prior concussion’s effects.

**MANAGEMENT/TREATMENT**

If a concussion is recognized early and properly treated to limit severity and duration of symptoms, most patients recover within 1–3 months. Instruct patient to avoid further head trauma and pace return to activities (cognitive, physical and social, including school work) based on symptom tolerance. Recommend quality sleep, hydration and nutrition. Recommend Tylenol/ibuprofen intermittently for symptom management. Progressions should occur over several stages. Concussion symptoms may vary as the patient attempts to return to normal activities, but severity and frequency of symptoms should gradually improve. Advise patient to contact you if symptoms worsen or do not improve, or if new symptoms arise.

If you have clinical questions or to make a referral, contact the Brain Health and Wellness team at 513-803-4323 (HEAD) or braininjury@cchmc.org.
Concussion/Traumatic Brain Injury

**Inclusion Criteria**
- Suspected brain injury
- Age 0–22 with history of trauma and signs/symptoms of possible concussion

**Patient Presents**

**Standard Workup**
- History of Present Illness
  - Concussion/recovery
  - Co-morbidities/conditions
  - Time since injury
- Family History
- Physical Exam

**HPE RED FLAGS**
- Repeated vomiting
- Seizure-like episodes
- Severe or progressive headache
- Lethargy/difficult to arouse
- Passes out
- Weakness in arms or legs
- Difficulty recognizing people or places

**If any of these red flags are present, emergent evaluation is warranted**

**If no red flags are present, begin rehabilitative care:**
- Early walking/return to daily activity as symptoms allow
- May begin physical activity progression when tolerating school and other daily activity
- Follow-up evaluations

**Improvement evident**

**Yes**
- Return to daily cognitive/social/physical activity
- Resolution of symptoms observed:
  - Return to normal daily and social activity
  - Physical activity program completed

**No**
- Investigate behaviors and complaints
- Consider additional treatment options
- Medications, therapies
- Adjust school/work accommodations if needed
- Consider addressing other co-morbidities as needed
- Consider referral to Cincinnati Children’s Brain Health & Wellness team

**Discharge from care**

For urgent issues, or to speak with the specialist on call 24/7, call the Physician Priority Link at 1-888-636-7997.