## PEDIATRIC HEAD INJURY/CONCUSSION REFERRAL GUIDELINE

**SYMPTOMS AND LABS**

### HIGH RISK

**SYMPTOMS:**
- Seizure-like activity, worsening mental status, extreme confusion, severe and worsening headache, persistent vomiting, loss of consciousness with injury

**EXAM:**
- Papilledema, cranial nerve palsy, focal weakness or symmetric altered sensation, Glasgow Coma Scale < 15*

### SUGGESTED PREVISIT WORKUP

Send to ER for further evaluation if concern for intracranial pathology, severe debilitating headache

If unsure, consider contacting concussion specialist: MMP - Orthopedics & Sports Medicine (207) 773-0040

### MODERATE RISK

**SYMPTOMS:**
- History of multiple prior concussions, dizziness, headache, disorientation or confusion, loss of memory, balance problems, visual complaints, amnesia

**EXAM:**
- Slight dysmetria on cerebellar tests, ocular tracking abnormalities (nystagmus or provokes symptoms)

### SUGGESTED WORKUP

If uncomfortable with patient's presentation or if symptoms lasting greater than 2 weeks, refer to pediatric concussion specialist

If no pediatric concussion specialist nearby, refer to a non-operative sports medicine specialist

### LOW RISK

**SYMPTOMS:**
- Resolve in 24-48 hours completely, only focal pain on head where struck, no headaches, no vomiting, no loss of consciousness

**EXAM:**
- Patient has a normal neurological exam (including normal ocular tracking)

### SUGGESTED WORKUP

Monitor for any development of symptoms consistent with concussion as sometimes symptoms present later and/or go unrecognized

Clear for sports participation if no symptoms for 24 hours and able to participate fully in school without symptoms

### CLINICAL PEARLS

- Concussion is not visible on current imaging modalities so only obtain imaging if evaluating for intracranial pathology (mass, bleed).
- Seizure-like movements at the time of injury can be a benign symptom, however any seizure-like activity should prompt further evaluation (i.e. ER, concussion specialist, neurologist).
- Symptoms typically last longer in kids than adults (typical recovery timeline is 2-4 weeks), but symptoms can be prolonged especially in patients with a known personal history of anxiety and/or migraines and/or vestibulo-ocular deficits on presentation.
- Vestibulo-ocular dysfunction is frequently seen in pediatric concussion patients (abnormal eye movement on smooth pursuits, saccades and vestibulo-ocular reflex testing).

### RECOMMENDATIONS FOR PATIENTS WITH POSSIBLE CONCUSSION:

- Sleep: no need to wake patient periodically
- Avoid making symptoms worse. Rest will help patient avoid triggering worsening symptoms, but does not help speed up recovery
- Nutrition and Hydration: eat regular balanced meals and drink plenty of fluids, avoiding caffeine
- No sports or contact activities until cleared by a physician
- Avoid TV, computer, phone, electronic device use

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These clinical practice guidelines describe generally recommended evidence-based interventions for the evaluation, diagnosis and treatment of specific diseases or conditions. The guidelines are: (i) not considered to be entirely inclusive or exclusive of all methods of reasonable care that can obtain or produce the same results, and are not a statement of the standard of medical care; (ii) based on information available at the time and may not reflect the most current evidenced-based literature available at subsequent times; and (iii) not intended to substitute for the independent professional judgment of the responsible clinician(s). No set of guidelines can address the individual variation among patients or their unique needs, nor the combination of resources available to a particular community, provider or healthcare professional. Deviations from clinical practice guidelines thus may be appropriate based upon the specific patient circumstances.