

Concussion

Associated Order Set(s): ED Head or Neck Injury - Isolated



Children's Mercy
KANSAS CITY

Evidence Based Practice



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Inclusion criteria:

- Children ≥ 5 years of age with concern for [concussion/mTBI](#)
- GCS 14 - 15

Exclusion criteria:

- GCS < 14
- Concern for stroke (*refer to [Stroke: Suspected](#)*)
- Concern for C-spine injury
- Child with global developmental delay

Children meeting any of the above exclusion criteria may require a more extensive evaluation

Physical Exam

- Head and neck exam
- Age appropriate neurological exam
- Consider [Vestibular/Ocular-Motor Screening \(VOMS\)](#)
- Balance assessment

Patient with concern for [concussion /mTBI](#) presents to ED/UCC/Outpatient Clinic for care

Is there concern for abusive head trauma or NAT?

Yes → Off Guideline. Refer to [Child Physical Abuse Clinical Pathway](#)

No

History & Physical Exam

- General medical history
- Mechanism of injury
- Physical exam
- Consider assessment tools (e.g., *Acute Concussion Evaluation*, otherwise known as ACE, is helpful for follow-up)
 - [ACE ED version](#)
 - [ACE Physician/Clinician Office version](#)

Is Acute CT Head Imaging indicated?

Yes

Obtain CT Head imaging

No

Use shared decision-making with families regarding a period of observation in the ED vs. home with return precautions

Are the results normal?

Yes

No → Off Guideline. Treatment based on abnormal results

Off Guideline. Treatment based on clinical presentation

Is patient tolerating oral intake and stable for discharge?

Yes

Review Discharge Education, Expectations & Follow-up Plan

Discharge

Acute CT Head Imaging Indications

- Signs of altered mental status
 - Agitation
 - Somnolence
 - Repetitive questioning
 - Slow response to verbal communications
- Signs of basilar skull fracture

Additional Considerations (Observation vs. CT based on clinical findings)

- Combination or ≥ 2 of the following:
 - Loss of consciousness (*witnessed or documented*)
 - Severe or worsening headache
 - Multiple vomiting episodes
 - Worsening symptoms or signs
 - Severe mechanism of injury
 - Motor vehicle crash with patient ejection, death of another passenger, or rollover
 - Pedestrian or bicyclist without helmet
 - Helmet struck by a motorized vehicle
 - Falls of more than 1.5 meters (5 feet)
 - Head struck by a high impact object
- Physician/clinician experience

Discharge Checklist

It is not uncommon for concussion symptoms to develop within 48 hrs. Please consult PCP if symptoms develop

- **Medications**
 - Avoid opioids
 - Prescription medications are often not necessary
- **Education Materials** (includes information on return to school and activities, rest, headache management and screen time)
 - [Concussion Guidance](#)
 - [Educational Accommodations for Concussion](#)
 - [Sleep Tips for Children and Teens](#)
- **Expectations**
 - Many patients will have symptom resolution within 3 weeks, however for some it may take a month or longer
 - Return to school may occur prior to full resolution of symptoms
- **Timeline for follow-up**
 - Within 2 weeks for reassessment of symptoms
- **Follow-up**
 - Competitive sports/athletes, follow-up with Sports Medicine
 - All others should follow-up with PCP initially

May consider hospital admission for any of the following, though not limited to:

- Trouble ambulating (*significant risk of fall/injury*)
- Persistent vomiting
- Uncontrolled pain

Abbreviations :

mTBI = Mild traumatic brain injury
GCS = Glasgow coma scale
NAT = Non-accidental trauma