

Heads Up to Clinicians:

Updated Mild Traumatic Brain Injury Guideline for Adults

A part of CDC's "Heads Up" Series

This Guideline is based on the 2008 Mild TBI Clinical Policy for adults, which revises the previous 2002 Clinical Policy. To help improve diagnosis, treatment, and outcomes for patients with mild TBI, it is critical that you become familiar with this guideline. The guideline is especially important for clinicians working in hospital-based emergency care.

Inclusion Criteria: This guideline is intended for patients with non-penetrating trauma to the head who present to the ED within 24 hours of injury, who have a Glasgow Coma Scale (GCS) score of 14 or 15 on initial evaluation in the ED, and are ≥ 16 years old.

Exclusion Criteria: This guideline is not intended for patients with penetrating trauma or multisystem trauma who have a GCS score of < 14 on initial evaluation in the ED and are < 16 years old.

Please turn over. ►

What You Need to Know:

This guideline provides recommendations for determining which patients with a known or suspected mild TBI require a head CT and which may be safely discharged.

Here are a few important points to note:

- There is no evidence to recommend the use of a head MRI over a CT in acute evaluation.
- A noncontrast head CT is indicated in head trauma patients with loss of consciousness or posttraumatic amnesia in presence of specific symptoms.
- A noncontrast head CT should be considered for head trauma patients with no loss of consciousness or post-traumatic amnesia in presence of specific symptoms.
- Even without a loss of consciousness or amnesia, a patient could still have an intracranial injury. Identifying those patients at risk is key.
- A patient with an isolated mild TBI and a negative CT is at minimal risk for developing an intracranial lesion and may be safely discharged.
- Discuss discharge instructions with patients and give them a discharge instruction sheet to take home and share with their family and/or caregiver. Be sure to:
 - Alert patients to look for postconcussive symptoms (physical, cognitive, emotional, and sleep) since onset of symptoms may not occur until days after the initial injury.
 - Instruct patients on what to expect, what to watch for, and when it is important to return immediately to the emergency department.
 - Emphasize that getting plenty of rest and sleep is very important after a concussion, as it helps the brain to heal. Patients should gradually return to their usual routine only after they start to feel better.
 - Inform patients to visit CDC's website at www.cdc.gov/Concussion.

The Four Critical Questions and Recommended Courses of Action:

Following are the four questions and the recommended course of action for each that are addressed in the 2008 Clinical Policy. Clinical findings and strength of recommendations regarding patient management were made according to the following criteria:

Level A recommendations: Generally accepted principles for patient management that reflect a high degree of clinical certainty.

Level B recommendations: Recommendations for patient management that may identify a particular strategy or range of management strategies that reflect moderate clinical certainty.

Level C recommendations: Other strategies for patient management that are based on preliminary, inconclusive, or conflicting evidence, or in the absence of any published literature, based on panel consensus.

1. Which patients with mild TBI should have a noncontrast head CT scan in the ED?

Level A recommendations: A noncontrast head CT is indicated in head trauma patients with loss of consciousness or posttraumatic amnesia only if one or more of the following is present: headache, vomiting, age > 60 years old, drug or alcohol intoxication, deficits in short-term memory, physical evidence of trauma above the clavicle, posttraumatic seizure, GCS score < 15, focal neurologic deficit, or coagulopathy.

Level B recommendations: A noncontrast head CT should be considered in head trauma patients with no loss of consciousness or posttraumatic amnesia if there is a focal neurologic deficit, vomiting, severe headache, ≥ 65 years old, physical signs of a basilar skull fracture, GCS score < 15, coagulopathy, or a dangerous mechanism of injury.*

*Dangerous mechanism of injury includes ejection from a motor vehicle, a pedestrian struck, and a fall from a height of > 3 feet or 5 steps.

Level C recommendations: None specified.

2. Is there a role for head MRI over noncontrast CT in the ED evaluation of a patient with acute mild TBI?

Level A recommendations: None specified.

Level B recommendations: None specified.

Level C recommendations: None specified.

3. In patients with mild TBI, are brain-specific serum biomarkers predictive of an acute traumatic intracranial injury?

Level A recommendations: None specified.

Level B recommendations: None specified.

Level C recommendations: In mild TBI patients without significant extracranial injuries and a serum S-100B level < 0.1 $\mu\text{g/L}$ measured within 4 hours of injury, consideration can be given to not performing a CT.**

**This test has not yet received Food and Drug Administration (FDA) approval for clinical use in the United States.

4. Can a patient with an isolated mild TBI and a normal neurologic evaluation result be safely discharged from the ED if a noncontrast head CT scan shows no evidence of intracranial injury?

Level A recommendations: None specified.

Level B recommendations: Patients with an isolated mild TBI who have a negative head CT scan result are at minimal risk for developing an intracranial lesion and therefore may be safely discharged from the ED.***

***There are inadequate data to include patients with a bleeding disorder, who are receiving anticoagulation therapy or antiplatelet therapy, or who have had a previous neurosurgical procedure in this population.

Level C recommendations: Patients with mild TBI discharged from the ED should be informed about postconcussive symptoms.

To view the full clinical policy or for more information about brain injury and concussion, please visit:
www.cdc.gov/TraumaticBrainInjury ■ www.acep.org/TraumaticBrainInjury