

CT Head in Pediatric Population with Head Injury

Estimated rate of lethal malignancy from Pediatric CT Head is between 1:1000-1:5000

AGE	FEATURES	Recommendation
< 2 years	<ul style="list-style-type: none"> •GCS 14 or •Palpable Skull Fracture or •Signs of AMS*? 	Recommend CT; 4.4% risk of ciTBI**
	<ul style="list-style-type: none"> •Occipital or parietal or temporal scalp hematoma or •History of LOC \geq 5 sec or •Not acting normally per parent or •Severe Mechanism of Injury?*** 	Observation vs CT; 0.9% risk of clinically important Traumatic Brain Injury.****
	None of the above	No CT Recommended; 0.02% risk of ciTBI
>2 years	<ul style="list-style-type: none"> •GCS 14 or •Signs of Basilar Skull Fracture or •Signs of AMS*? 	Recommend CT; 4.3% risk of ciTBI**
	<ul style="list-style-type: none"> •History of LOC •History of Vomiting •Severe Headache •Not acting normally per parent or •Severe Mechanism of Injury?*** 	Observation vs CT; 0.9% risk of clinically important Traumatic Brain Injury.****
	None of the above	No CT Recommended

- * **AMS**=Agitation, somnolence, repetitive questioning, or slow response to verbal communication
- ** clinically important Traumatic Brain Injury (**ciTBI**)=death from traumatic brain injury, neurosurgery, intubation>24h for traumatic brain injury, admit 2 nights or more associated with traumatic brain injury on CT.
- *** **Severe Mechanism**=Motor vehicle crash with patient ejection, death of another passenger, or rollover; pedestrian or bicyclist without helmet struck by a motorized vehicle; falls of more than 0.9m/3ft in <2yrs or 1.5m/5ft in >2; head struck by a high-impact object
- **** **Imaging dependent on:**
- Physician Experience,
 - Worsening Signs/Symptoms During Observation Period,
 - Age <3 Months,
 - Parental Preference,
 - Multiple vs. Isolated Findings: Patients with certain isolated findings (ie, with no other findings suggestive of traumatic brain injury), such as isolated LOC isolated headache, isolated vomiting, and certain types of isolated scalp haematomas in infants older than 3 months have a risk of ciTBI substantially lower than 1%.

Ref: Identifying Low Risk Children for **clinically important** Traumatic Brain Injury-TBI-PECARN Pediatric Emergency Care Applied Research Network*
 Kuppermann, JF et al. Lancet 2009; 374:1160-70.