

Structural imaging in the form of CT and MRI are the core neuroimaging examinations that serve as the basis for the evaluation of TBI.

Detailed recommendations for standardization of imaging protocols and for the assessment of imaging studies have been presented by the Common Data Elements Neuroimaging Working Group:

Common Data Elements in Radiologic Imaging of Traumatic Brain Injury

Ann-Christine Duhaime, Alisa D. Gean, E. Mark Haacke, Ramona Hicks, Max Wintermark, Patrik Mukherjee, David Brody, Lawrence Latour, Gerard Riedy

Archives of Physical Medicine and Rehabilitation 1 November 2010 (volume 91 issue 11 Pages 1661-1666 DOI; 10.116/j.apmr.2010.07.238).

Common data elements in radiologic imaging of traumatic brain injury

Haacke, EM, Duhaime AC, Gean AD, et al. J. Magn. Reson. Imaging 2010;32:516-43.

Here we present a simplified approach to the assessment of CT examinations in TBI. Similar approaches have been employed in most TBI studies and trials conducted in the past decade.

ADMISSION CT SCAN

Date of CT: - -

Day Month Year

Time of CT: : (use 24hr clock)

Hour Minute

CT classification:

- Category:**
- Diffuse injury, NVP Intracranial pathology not visible on CT scan
- Diffuse injury Cisterns present with shift 0-5 mm, lesions present, but no high or mixed density lesion >25 cc. May include bone fragments and foreign bodies.
- Diffuse injury with swelling Cisterns compressed or absent, shift 0-5 mm, no high or mixed density lesion >25 cc.
- Diffuse injury with shift Shift >5 mm, no high or mixed density lesion >25 cc.
- Mass lesions High or mixed density lesion > 25cc.
- Extradural Subdural Contusion

Scheduled for operation: No Yes

Depressed skull fracture: No Closed Open (compound)

Subarachnoid hemorrhage: No Basal Cortical

Midline shift: No Yes If yes, shift in mm:

Basal cisterns absent/compressed: No Yes

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Scheduled for operation: No Yes

Focal Lesions & Hemorrhage

	R	L	Bil	PF	Est. volume (ml.)
1. Subdural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
2. Extradural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
3. Contusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

- Mainly high density
- Mainly mixed
- Mainly low attenuation

4. Parenchymal lesions (small, shearing)

- Supratentorial
- Infratentorial

5. Subarachnoid hemorrhage

	No	Yes
Basal	<input type="radio"/>	<input type="radio"/>
Cortical	<input type="radio"/>	<input type="radio"/>
Tentorial	<input type="radio"/>	<input type="radio"/>

Fisher grade (I-IV)

6. Intraventricular hemorrhage

- No Yes

Mass Effect/Pressure:

07. Midline shift No Yes

If "Yes", shift in mm:

08. Basal cisterns Normal

Compressed

Absent

09. Third ventricle compressed

10. Contralateral ventricle dilated

Other:

11. Depressed fracture No

Closed

Open (Compound)

12. Hydrocephalus

13. Intracranial air

14. Ischemia Single arterial territory

Multiple territories

Hemisphere

If penetrating:

Missile Tract:

Bihemispheric lesions: No Yes

Multilobar injuries: No Yes

Ventricular involvement: No Yes

Crossing major cerebral artery or venous sinus: No Yes

Air Sinus involved: No Yes

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2. Extradural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____
3. Contusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	_____

- Mainly high density
 Mainly mixed
 Mainly low attenuation

4. Parenchymal lesions (small, shearing)
 Supratentorial
 Infratentorial

5. Subarachnoid hemorrhage

	No	Trace	Mod	Full
Basal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cortical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tentorial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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