



Queensland  
Trauma Education

**TRAUMATIC BRAIN INJURY**

# Management of closed head injury

## Case discussion

Participant resource kit

**CSDS**



Clinical Skills Development Service

Metro North  
Health



Queensland  
Government

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## Queensland Trauma Education

The resources developed for Queensland Trauma Education are designed for use in any Queensland Health facility that cares for patients who have been injured as a result of trauma. Each resource can be modified by the facilitator and scaled to the learners needs as well as the environment in which the education is being delivered, from tertiary to rural and remote facilities.

## National Safety and Quality Health Service (NSQHS) Standards



## About this training resource kit

This resource kit provides healthcare workers with the knowledge on how to effectively assess and manage a closed head injury following a traumatic incident.

### Learning objectives

By the end of this session the participant will be able to:

- Demonstrate an understanding of the medical and surgical management of mild/moderate/severe traumatic brain injury (TBI).
- Describe the differing patient disposition and features of patients with mild/moderate/severe TBI.
- Describe the appropriate follow up of mild/moderate/severe TBI.

# Overview of traumatic brain injury

A traumatic brain injury (TBI) is an injury caused to the brain by an external force and accounts for 50% of trauma deaths and 70% of all road accident deaths.<sup>1</sup>

TBI is classified based on severity: mild, moderate and severe.

## Further reading

Carney, N., Totten, A. M., O'Reilly, C., Ullman, J. S., Hawryluk, G. W., Bell, M. J., Bratton, S. L., Chesnut, R., Harris, O. A., Kisson, N., Rubiano, A. M., Shutter, L., Tasker, R. C., Vavilala, M. S., Wilberger, J., Wright, D. W., & Ghajar, J. (2017). Guidelines for the Management of Severe Traumatic Brain Injury, Fourth Edition. *Neurosurgery*, 80(1), 6–15. <https://doi.org/10.1227/NEU.0000000000001432>

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Menon, D. K., Schwab, K., Wright, D. W., Maas, A. I., & Demographics and Clinical Assessment Working Group of the International and Interagency Initiative toward Common Data Elements for Research on Traumatic Brain Injury and Psychological Health (2010). Position statement: definition of traumatic brain injury. *Archives of physical medicine and rehabilitation*, 91(11), 1637–1640. <https://pubmed.ncbi.nlm.nih.gov/21044706/>

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Werner, C., & Engelhard, K. (2007). Pathophysiology of traumatic brain injury. *British journal of anaesthesia*, 99(1), 4–9. [https://bjanaesthesia.org/article/S0007-0912\(17\)34784-0/fulltext](https://bjanaesthesia.org/article/S0007-0912(17)34784-0/fulltext)

Abbreviated Westmead Post Traumatic Amnesia Scale (A-WPTAS)  
[https://www.ourphn.org.au/wp-content/uploads/2017/03/A\\_WPTAS-scale-for-Head-injury.pdf](https://www.ourphn.org.au/wp-content/uploads/2017/03/A_WPTAS-scale-for-Head-injury.pdf)

## Acronyms and abbreviations

<b>A-WPTAS</b>	Abbreviated Westmead Post Traumatic Amnesia Scale
<b>GCS</b>	Glasgow Coma Scale
<b>CPP</b>	cerebral perfusion pressure
<b>ICP</b>	intracranial pressure
<b>MAP</b>	mean arterial pressure
<b>FiO2</b>	fraction of inspired oxygen
<b>ETCO2</b>	end tidal carbon dioxide
<b>PaCO2</b>	partial pressure of carbon dioxide
<b>RSI</b>	rapid sequence induction
<b>CRMO2</b>	cerebral metabolic rate
<b>CBF</b>	cerebral blood flow



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