

**Human Element Issues KISHPNI-HEI-01-2020**  
***(Dealing with Head Injuries on Board)***

► **Introduction:**

The type of work conducted on board ships and movement through many confined spaces may lead to head injuries, among other hazards. In fact, head injuries are the common injuries for crew members while on duty due to failure to use safety equipment (helmets), inappropriate or damaged Personal Protective Equipment (PPE), slip and fall accidents and accidents involving cranes and the cargo as well as improperly stored equipment.

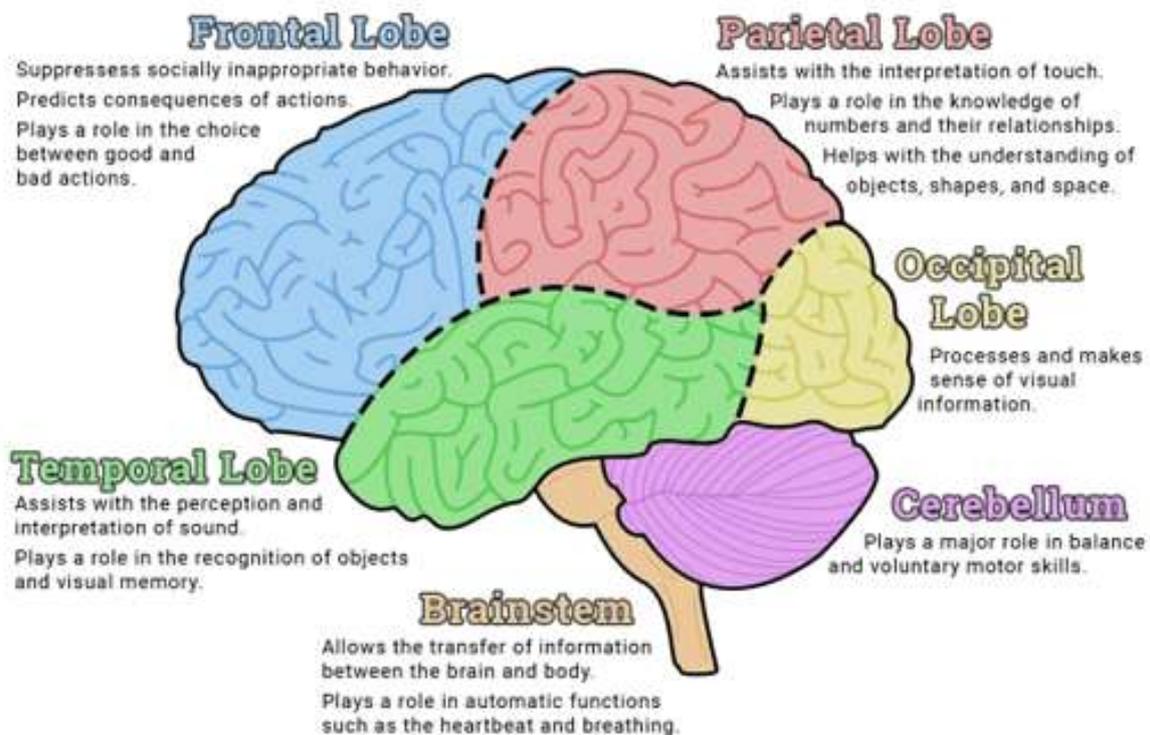
► **Types of Head Injuries:**

There are mainly two types of common head injuries:

- **Closed:** A closed head injury is when an injury occurs, but the skull is not broken, fractured, or pierced.
- **Penetrating:** Also called Open head injury and occurs when the skull is penetrated, pierced or fractured.

All head injuries are serious due to the risk to the brain as one of the most important or vital organs, but often closed head injuries are more difficult to be diagnosed. Overall, head injuries can be dangerous and require immediate medical care with extended observation.

## The Human Brain




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### ► What to know:

Caution is required as some head injuries may not seem serious at first. The symptoms that should alert the seafarer and medical officer onboard may be:

- A persistent headache that won't diminish
- Chronic vomiting and/or nausea
- Dilated pupils
- Unexpected seizures, especially if they never existed before
- Convulsions
- Disorientation and/or confusion
- Weakness and numbness in the arms and or legs.

### ► What to do:

1. check for other injuries, especially of the neck or spinal cord and also for bleeding wounds
2. Place the unconscious seafarer in the coma, or recovery, position, unless you suspect spinal injury
3. Check for an obvious compound skull fracture
4. Check seafarer's tetanus immunization status if there is an open wound
5. Use the Glasgow Coma Scale (GCS) of Medical Guide on-board Ships to assess the degree of impairment of consciousness, which is the most important outcome of traumatic brain injury.

### ► The Glasgow Coma Scale:

The Glasgow Coma Scale (GCS) is a neurological scale which aims to give a reliable and objective way of recording the state of a person's consciousness for initial as well as subsequent assessment.

A person is assessed against the criteria of the scale, and the resulting points give a person's score between 3 (indicating deep unconsciousness) and either 14 (original scale) or 15 (more widely used, modified or revised scale).

If the Glasgow Coma Scale score is less than 13 when measured at 30 minutes after the injury, it is important to seek medical advice with a view to urgent evacuation. Also, do not give anything by mouth and do not give morphine unless there is severe pain from other injuries.

### **Glasgow Coma Scale has been attached to this circular.**

Clinicians use this scale to rate the best eye opening response, the best verbal response, and the best motor response an individual makes.

*The final GCS score or grade is the sum of these numbers.*

*A person with medical first aid training may easily be able to perform this test.*

If you give morphine, note down that you have done so, together with the dose, time, and route of administration both in the patient's medical record and, using a waterproof indelible marker, on a conspicuous part of the patient's body away from major wounds (forearm, chest, or forehead).

Furthermore, seek medical advice about the advisability of evacuation even if the Glasgow Coma Scale score is 13 or more but the patient is over 65; or fell onto the head from a height of more than one metre or down four or more stairs.

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## CHECK

For factors Interfering with communication, ability to respond and other injuries



## OBSERVE

Eye opening , content of speech and movements of right and left sides



## STIMULATE

Sound: spoken or shouted request  
Physical: Pressure on finger tip, trapezius or supraorbital notch



## RATE

Assign according to highest response observed

### Eye opening

Criterion	Observed	Rating	Score
Open before stimulus	✓	Spontaneous	4
After spoken or shouted request	✓	To sound	3
After finger tip stimulus	✓	To pressure	2
No opening at any time, no interfering factor	✓	None	1
Closed by local factor	✓	Non testable	NT

### Verbal response

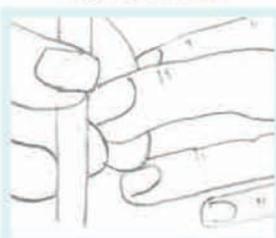
Criterion	Observed	Rating	Score
Correctly gives name, place and date	✓	Orientated	5
Not orientated but communication coherently	✓	Confused	4
Intelligible single words	✓	Words	3
Only moans / groans	✓	Sounds	2
No audible response, no interfering factor	✓	None	1
Factor interfering with communication	✓	Non testable	NT

### Best motor response

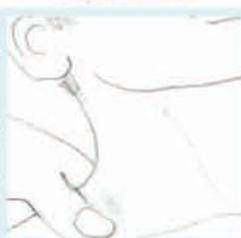
Criterion	Observed	Rating	Score
Obey 2-part request	✓	Obeys commands	6
Brings hand above clavicle to stimulus on head neck.	✓	Localising	5
Bends arm at elbow rapidly but features not predominantly abnormal	✓	Normal flexion	4
Bends arm at elbow, features clearly predominantly abnormal	✓	Abnormal flexion	3
Extends arm at elbow	✓	Extension	2
No movement in arms / legs, no interfering factor	✓	None	1
Paralysed or other limiting factor	✓	Non testable	NT

### Sites For Physical Stimulation

Finger tip pressure



Trapezius Pinch



Supraorbital notch



### Features of Flexion Responses

Modified with permission from Van Der Naalt 2004  
Ned Tijdschr Geneeskd

#### Abnormal Flexion

Slow Stereotyped  
Arm across chest  
Forearm rotates  
Thumb clenched  
Leg extends



#### Normal flexion

Rapid  
Variable  
Arm away from body