ACI NSW Agency for Clinical Innovation

ADULT NEUROLOGICAL OBSERVATION CHART

Education Package

Introduction

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The Neurosurgery Network Executive.

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The Agency for Clinical Innovation, Surgery Anaesthesia and Critical Care Portfolio.

Westmead Hospital.

State Forms Management Committee

INTRODUCTION

The Adult Neurological Observation Chart has been designed as a **standardised** assessment tool. The Chart has been developed to reduce the amount of variation in chart design and to improve consistency in assessment skills and interpretation of assessment findings. The Chart complies with the Between the Flags program.

The most obvious changes to practice include assessment of limb strength (not movement) and the inclusion of a cranial nerve assessment. The cranial nerve assessment is not a compulsory component of conducting a basic neurological assessment. However, staff who work in neurosurgery or neurology stepdown wards may see it as a function of a more thorough examination and staff from general wards may wish to expand their clinical skill set.

The Education Package (EP) has been designed to accompany and complement the Adult Neurological Observation Chart. The EP mirrors the flow of the Adult Neurological Observation Chart.

ALERT / REMINDER

NEUROLOGICAL ASSESSMENT IS CONDUCTED TO DETERMINE **LEVEL OF CONSCIOUSNESS** IRRESPECTIVE OF THE CAUSE OR THE SETTING.

IT IS NOT ONLY FOR USE ON NEUROSURGICAL OR NEUROLOGY PATIENTS.

ADULT NEUROLOGICAL OBSERVATION CHART

Page 1

Hospital/Facility

Patient Details

NSW GOVERNMENT Health

Facility: _____

ADULT NEUROLOGICAL OBSERVATION CHART
(INCORPORATING THE GLASGOW COMA SCALE)

☐ Altered Calling Criteria

FAMILY NAME | MRN
GIVEN NAME | ☐ MALE ☐ FEMALE
D.O.B. ____/____/____ | M.O.
ADDRESS
LOCATION / WARD
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

Altered Calling Criteria

Other Charts

OTHER CHARTS IN USE
☐ Standard Adult General Observation ☐ Neurovascular ☐ Pain / Epidural / Patient Controlled Analgesia ☐ Other _____

Prescribed Frequency

PRESCRIBED FREQUENCY OF OBSERVATIONS			
DATE:			
TIME:			
Frequency Required			
Medical Officer Name (BLOCK letters)			
Medical Officer Signature			
Attending Medical Officer Signature			

Alterations to Calling Criteria

ALTERATIONS TO CALLING CRITERIA
(MUST BE REVIEWED WITHIN 24 HOURS OR EARLIER IF CLINICALLY INDICATED)
Any alteration MUST be signed by a Medical Officer and confirmed by the Attending Medical Officer

DATE:			
TIME:			
Next review due Date & Time			
Glascow Coma Scale – Clinical Review			
Glascow Coma Scale – Rapid Response			
Cranial Nerves			
Medical Officer Name (BLOCK letters)			
Medical Officer Signature			
Attending Medical Officer Signature			

BLOCK letters Medical Officer

REFER TO YOUR LOCAL CLINICAL EMERGENCY RESPONSE SYSTEM (CERS) PROTOCOL FOR INSTRUCTIONS ON HOW TO MAKE A CALL

Clinical Review Criteria

Clinical Review Criteria (in addition to SAGO chart Clinical Review Criteria)
- A drop of 1 point on the GCS or the patient is no longer obeying commands
- Any new onset of limb weakness (a decrease of 1 or more points on the MRC scale for muscle strength)
- Any new cranial nerve deficit
- Persistent severe headaches, vomiting and/or agitation

IF A PATIENT HAS ANY ONE (1) OR MORE CLINICAL REVIEW CRITERIA PRESENT, YOU MUST CONSULT PROMPTLY WITH THE NURSE IN CHARGE AND ASSESS WHETHER A CLINICAL REVIEW IS NEEDED (REFER TO YOUR LOCAL CERS PROTOCOL)

Rapid Response Criteria

Rapid Response Criteria (in addition to SAGO chart Rapid Response Criteria)
- A drop of 2 or more points on the GCS
- Glasgow Coma Scale ≤ 8
- Changes in pupil size in association with pupil dilation and / or loss of light reaction
- Seizure activity (including focal, generalised and absent seizures)

IF A PATIENT HAS ANY ONE (1) RAPID RESPONSE CRITERION PRESENT, CALL FOR A RAPID RESPONSE (REFER TO YOUR LOCAL CERS PROTOCOL)

READ the health care records

CHECK THE CLINICAL RECORD FOR ADVANCE CARE DIRECTIVES OR ALTERATIONS TO CALLING CRITERIA WHICH MAY AFFECT WHETHER A CLINICAL REVIEW OR RAPID RESPONSE CALL IS INDICATED

DOCUMENTATION
1. Write treatment, escalation process and outcome in the clinical record
2. Write date, signature and designation with each entry

DOCUMENTATION

ADULT NEUROLOGICAL OBSERVATION CHART

SMR110.021

Page 1 of 4

Page 2

Hospital/Facility

Patient Details

Altered Calling Criteria

SECTION 1 (Education Package)

SECTION 2 (Education Package)

SECTION 2 (Education Package)

NSW GOVERNMENT Health

Facility: _____

ADULT NEUROLOGICAL OBSERVATION CHART
(INCORPORATING THE GLASGOW COMA SCALE)

☐ Altered Calling Criteria

FAMILY NAME | MRN
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ADDRESS
LOCATION / WARD
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

SMR110021

		Date		
		Time		
GLASGOW COMA SCALE • EYES OPEN	Swollen Closed = c	Spontaneously	4	4
		To Speech	3	3
		To Pain	2	2
		None	1	1
VERBAL RESPONSE	ET Tube or Trach = T CALD = X	Orientated	5	5
		Confused	4	4
		Inapprop. Words	3	3
		Incompreh. Sounds	2	2
		None	1	1
BEST MOTOR RESPONSE	Record best arm response	Obeys Commands	6	6
		Localises to Pain	5	5
		Withdraws	4	4
		Flexion to Pain	3	3
		Extension to Pain	2	2
		None	1	1
		TOTAL SCORE		

CLINICAL REVIEW — If GCS drops by 1 point initiate a Clinical Review

RAPID RESPONSE — If GCS drops by 2 or more points initiate a Rapid Response

LIMB STRENGTH • ARMS	Normal power	5	5
	Active movement against resistance	4	4
	Active movement against gravity	3	3
	Active movement gravity eliminated	2	2
	Flicker of movement	1	1
	No movement	0	0
LEGS	Normal power	5	5
	Active movement against resistance	4	4
	Active movement against gravity	3	3
	Active movement gravity eliminated	2	2
	Flicker of movement	1	1
	No movement	0	0

EYE SIGNS	EYES + Reacts, - No, c Closed, SL Sluggish	Right	Size
			Reaction
		Left	Size
			Reaction
			Initials

PUPIL SIZE Pupil Scale (mm): 1 2 3 4 5 6 7 8

BINDING MARGIN - NO WRITING

Holes punched as per AS2828.1:2012

240513

Page 2 of 4

This GUIDE is in the Chart and therefore with you at the bedside.

GUIDE TO ASSESSMENT OF NEUROLOGICAL OBSERVATIONS

For in-depth information please refer to the Education Package

Instructions:

1. Use of deep pain to elicit a response may be necessary
2. Central stimulus is advocated as the first choice for a painful/noxious stimulus e.g. trapezius pinch, supra-orbital pressure or sternal rub (used as a last measure)

Assessment Category	Testing Method	Possible Responses		Explanation
GLASGOW COMA SCALE				
Eyes Open (E) *Assess arousal*	Speak in a clear, strong voice. If nil response to voice progress to use of painful stimulus	Spontaneous	4	Opens eyes without stimulus
		To speech	3	Opens eyes to any verbal stimulus
		To pain	2	Opens eyes to painful stimulus
		None	1	Record as (C) if closed due to trauma or swelling
Verbal Response (V) *Assess appropriateness of speech and awareness*	Obtain the patient's attention Allow time for the patient to respond Impaired hearing may affect response	Orientated	5	Orientated to person, place and time
		Confused	4	Talks but is confused as to person, place and time. Record as "X" if Culturally and Linguistically Diverse (CALD)
		Inappropriate words	3	Uses words or phrases that make little or no sense
		Incomprehensible sounds	2	Unintelligible sounds, moaning or groaning
		None	1	No sound or speech at all Record as "T" if unable to speak due to tracheostomy or ETT
Best Motor Response (M) *Assess overall awareness and ability to respond to external stimuli* Note: if eyes are closed due to trauma and the patient is aphasic, motor response indicates the level of consciousness	Give simple command e.g. "wiggle your fingers" Allow time for the patient to respond If nil response to verbal command, progress to use of painful stimulus Record the best movement response Be careful not to misinterpret a grasp reflex	Obeys Commands	6	Follows commands, even if weakly.
		Localise to Pain	5	Moves hand towards source of pain Hand should move above nipple line
		Withdraws	4	Hand or body moves away from the source of the pain
		Flexion to Pain	3	Flexes arm (decorticate posturing)
		Extension to Pain	2	Extends elbow and internally rotates wrist (decerebrate posturing)
		None	1	Makes no response even to painful stimuli
LIMB STRENGTH Medical Research Council (MRC) Scale for Muscle Strength				
Arms and Legs *Assess limb strength* Record separately if there is a difference in results between the limbs	Instruct patient to: Move arms/legs laterally on bed; lift limb against gravity; move limb against your resistance	Normal Power	5	Active movement of body part against gravity with full resistance
		Active movement against resistance	4	Active movement of body part against gravity with some resistance
		Active movement against gravity	3	Active movement of body part against gravity
		Active movement of limb with gravity eliminated	2	Active movement of body part when effect of gravity is removed
		Flicker of movement	1	Only a trace or flicker of movement is seen or felt in the muscle
		None	0	No detectable muscle contraction
EYE SIGNS				
Pupil Size	Compare size with pupil scale	1-8mm		Record size of each pupil Record reaction to light Record as "c" if unable to open eye due to trauma or swelling. Document a lack of consensual reaction (opposite pupil fails to constrict when light is shone in eye) in health care record.
Pupil Reaction	Hold eyelid open Move small bright light toward patient from the side Shine directly into eye	Reaction Yes + No - Closed c Sluggish SL		

Page 4

Hospital/Facility

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Altered Calling Criteria

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ADULT NEUROLOGICAL OBSERVATION CHART
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☐ Altered Calling Criteria

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GIVEN NAME	☐ MALE ☐ FEMALE
D.O.B. _____/_____/_____	M.O.
ADDRESS	
LOCATION / WARD	

COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

SECTION 2 (Education Package

SEIZURE ASSESSMENT CHART

DATE					
TIME					
DURATION					
Aura / Premonition (tick)	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
Is the seizure focal / generalised?					
In what part of the body was the seizure first noticed?					
Which other part/s of the body were involved?					
*Type of body movement: Tonic / Clonic / Myoclonic					
Head/Eye Deviation. Which direction (tick)	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil
Respiratory status / colour eg. cyanosis, pallor, flushing					
Pulse eg. Regular, rate					
*Post ictal state					
Drugs administered (tick)	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
G.C.S. Score / Altered pupils (during seizure) eg. constricted, dilated or symmetrical					
Other relevant comments eg. incontinence, oxygen administered,injuries sustained during seizure					
Initials					

*KEYWORDS
Tonic - Elbows flexed, arms pronated, legs extended
Clonic - Generalised shaking of all limb/s
Myoclonic - Sudden, brief, generalised muscle contractions
Post ictal state - Drowsy, confused, aggressive, fear, paranoia

SECTION 3 (Education Package) Non compulsory

CRANIAL NERVE ASSESSMENT

Nerves to be assessed										
DATE										
TIME										
	R	L	R	L	R	L	R	L	R	L
Olfactory (I) Ask the person to occlude one nostril at a time with the finger and close the eyes. Present several familiar odours such as coffee, cloves, peppermint, or soap and ask the person to identify each. (not routinely assessed)										
Optic (II) Test visual acuity by asking patient to read something (i.e. newspaper, or your badge) or ask the patient how many fingers you are holding up. Test by covering one eye at a time and testing their visual fields.										
Oculomotor (III) Test CN III, IV & VI together by evaluating extraocular eye movements (i.e. have patient follow your finger in all directions). Test pupillary constriction and accommodation by evaluating pupillary light reflexes using pen torch.										
Trochlear (IV) Evaluate extraocular eye movements.										
Trigeminal (V) Test motor function by asking the person to clench his/her teeth while you palpate the masseter and temporal muscle for firmness. Test the sensory function by testing the sensation to all 3 divisions of the cranial nerve, while the patient has their eyes closed.										
Abducens (VI) Evaluate extraocular eye movements.										
Facial (VII) Test the motor division of the facial nerve by asking the patient to perform voluntary facial movements such as frowning, smiling, wrinkling the forehead, puffing cheeks and whistling. Test the strength of eyelid closure by asking the patient to hold the eyes tightly closed. Then try to open the person's eyes.										
Acoustic (VIII) Test the cochlear portion of this cranial nerve by whispering a word into each ear separately (occlude the other ear) and asking them to repeat what you have said.										
Glossopharyngeal (IX) Cranial Nerves IX & X are tested together. Test cranial nerve IX by asking the person to open his/her mouth and say "ah" and see if soft palate on each side rises.										
Vagus (X) Cranial Nerves IX & X are tested together. Cranial nerve X is also tested by evaluating speech quality. Ask the person to say, "kuh, kuh, kuh" and "la, la, la", and "mi, mi, mi."										
Spinal accessory (XI) Place your hands on the person's shoulders and ask him/her to shrug as you apply resistance. Inspect and palpate the sternocleidomastoid muscles, noting tone & symmetry. Ask the patient to turn their head and touch chin to shoulder as you apply resistance. Test both sides.										
Hypoglossal (XII) Ask the person to stick out the tongue. Note symmetry, atrophy, and involuntary movements.										
Key: I = INTACT, D = DEFICIT										
Initials										

Page 4 of 4

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ADULT NEUROLOGICAL OBSERVATION CHART

Education Package

Prepared by **The Adult Neurological Observation Chart Working Party** a subgroup of the **Neurosurgery Network** Diane Lear, Violeta Sutherland, Karen Woods & Kylie Wright

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SECTION 1. GLASGOW COMA SCALE

GLASGOW COMA SCALE

Developed in 1973 by Drs Bryan Jennett and Graham Teasdale in Glasgow.

AIM

- Assess the depth and duration of impaired consciousness and coma, awareness and arousability.[1]
- Early detection of a deteriorating patient by clearly defining function.

3

The Glasgow Coma Scale (GCS) was developed in Glasgow Scotland by two neurosurgeons. Dr Brian Jennett and Dr Graham Teasdale. The GCS was quickly adopted by ICU nurses around the world with Edinburgh being the last place to use the GCS.

ADVANTAGES

- Means of defining the severity of brain injury.[2]
- Standardised approach to assessment of level of consciousness.[3]
- Allows health care workers to speak a common language.[4]
- Acts as a rule of thumb in management decisions. Cerebral CT scan is required if GCS drops by two points; a patient with a GCS of 8 or less requires airway management i.e. intubation.[3]

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Limitations

- Poor predictor of outcome.[2]
- Variation in inter-rater reliability.[2]
- Inconsistent use by health care professionals.
- Clinical limitations: spinal cord injury, sedated patients.

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GLASGOW COMA SCALE

The scale is divided into three subscales:

- Eye opening (4)
- Best verbal (5)
- Best motor response (6)

Final score is 15. Score range 3 - 15.

Pt with a score of 8 requires airway management.

A drop in the score by 2 or more points, initiate a Rapid Response.

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EYE OPENING (E)

Assess arousal ability

- Spontaneous (4) – Eyes open spontaneously
- Speech/touch (3) – Eyes open to verbal command
- Pain (2) – Eyes open to painful stimuli
- None (1) – Nil eye opening to painful stimuli

'c' – Eyes closed

7

EYE OPENING

Eye opening assesses arousal ability or wakefulness.

From a physiological point of view it is neurons within the reticular activating system (RAS) in the brain stem that are responsible for arousal ability. When we receive external stimuli to wake i.e. when light is detected by photosensitive cells in the retina, a message is sent from the retina to the RAS resulting in consciousness.[6]

The assessment of arousal ability or eye opening commences as soon as we walk into the room. If the patient's eyes are already open or the patient opens their eyes without any stimulation, use a dot '●' to mark the column next to **'Spontaneous' (4)** and under the correct time.

If a patient does not open their eyes spontaneously. Call the patients name, increasing the volume if the patient fails to respond and touching the patient. If they do open their eyes, eye opening is marked '●' as **'Speech' (3).**

If patient does not open eyes to verbal stimuli, painful stimuli needs to be applied. Acceptable methods of painful stimuli include trapezius pinch/squeeze, supra-orbital notch pressure or sternal rub *(used as a last measure)*. If the patient opens their eyes to painful stimuli, eye opening is marked '●' as **'Pain' (2).**

If there is no eye opening despite painful stimuli, eye opening is marked '●' as **'None' (1).**

If a patient has periorbital oedema due to trauma or surgery a **'c'** for closed can be documented next to the **'None' (1)** column.

Eyes open spontaneously

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Eyes open to painful stimulus

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Nil eye opening

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Nil eye opening - grimaces to pain

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PAINFUL STIMULI

Acceptable methods of painful stimuli

- Trapezius pinch/squeeze
- Supra-orbital pressure
- Sternal rub *(used as a last measure)*

12

Trapezius pinch/squeeze is the most commonly used form of painful stimuli. Using the thumb and index finger pinch/squeeze the trapezius muscle situated on the upper and back part of the neck and shoulders.[2, 7]

Supra-orbital pressure involves locating the supra-orbital notch which can be located by running the finger along the supra-orbital arch (eyebrow) from the nasal end. At the inner third of this arch is a notch or foramen which transmits the supra-orbital artery, vein and nerve.[7] Pressure on this notch using the thumb causes pressure on the nerve. If the patient has facial fractures this is not recommended.[8]

Sternal rub *(used as a last measure)* involves grinding the sternum using the knuckle of the index or middle finger. This method should be avoided in patients who have had cardiac surgery or injury to the sternum. Caution should also be taken using this method repeatedly as bruising and skin breakdown have been known to occur.[2]

Trapezius pinch/squeeze

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Supra-orbital pressure

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Sternal rub

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PAINFUL STIMULI

Unreliable/unacceptable methods of painful stimuli

- Nail bed pressure
- 'Nipple Cripple'

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16

Nail bed Pressure

Nail bed pressure which involves the application of pressure onto the fingernail using the shaft of a pen is considered unreliable in assessing 'best motor response'. Whilst a withdrawal response may be elicited it is debateable whether it is a cerebral/cognitive response to the painful stimuli or innervation of the reflex arc. Some literature does suggest application of nail bed pressure following application to central painful stimuli if no movement was noted in one arm to ascertain if it is capable of movement.[9]

'Nipple Cripple'

A slang term applied to the act of twisting the nipple to elicit a painful response. The application of this form of painful stimuli raises social, moral and cultural debate and in view of other highly effective methods of eliciting painful stimuli is considered inappropriate and unnecessary.[9]

Nail bed pressure

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VERBAL RESPONSE (V)

Measures appropriateness of speech and awareness

- Orientated (5) – Orientated to person, place and time.
- Confused (4) – Confused to either person, place or time.
- Inappropriate words (3) – Uses words or phrases making little or no sense.
- Incomprehensible sounds (2) – Unintelligible sounds, moaning or groaning.
- None (1) – Makes no sound or speech.

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18

To access verbal response the patient is asked questions that reflect they are orientated to person, place and time.

Remember you are ascertaining **Verbal Response**.
Examples of **'Person'** questions:
"Could you tell me your name?"
"Could you tell me where you live?"

Examples of **'Place'** questions:
"Where are you at the moment?"
"What is the name of this place?"

Examples of **'Time'** questions:
"What day is it today?"
"What month are we in?"
"What year is it?"
If the patient incorrectly answers any of these questions they are marked **'Confused' and scored (4).**

If the patient replies using words or phrases that make little or no sense the patient is marked as **'Inappropriate Words' and scored (3).** Examples of this are responses where the patient can only vocalise one word i.e.: "yes" as in the case of someone who is expressively dysphasic. A patient may also swear or call someone's name.

If the patient responds with moaning, groaning or indistinct mumbling especially to previous painful stimuli, the patient is marked as **'Incomprehensible Sounds' and scored (2).**

If there is no vocalisation at all, **'None' (1)** is marked. A patient with a tracheostomy or endotracheal tube insitu will be assessed as **'None' (1)** with the column marked with a **'T'.**

CHALLENGES ASSESSING VERBAL RESPONSE

- CALD
- Aphasia / Dysphasia
- Dementia
- Tracheostomy / Endotracheal (ET) tube

19

Culturally and Linguistically Diverse (CALD).

(Previously known as Non-English Speaking Background - NESB)

There is very little information in the literature that indicates precisely how culturally and linguistically diverse patients are to be assessed and scored on the Glasgow Coma Scale. Use of an interpreter (either hospital or family member) assists in establishing if a patient is orientated or confused.[10] *A CALD patient would be scored as **'Confused' (4)** with an **'X'** placed in the box.*

Aphasia / Dysphasia

When a patient is aphasic/dysphasic they cannot comprehend what the examiner is asking and will therefore respond inappropriately, seem confused or seem to be searching for the word even though they may be orientated to person, place and time.[8]

Dementia

Dementia is characterised by many symptoms including memory loss and language impairment e.g. dysphasia. The dementia sufferer can be disorientated to person, place and time and are sometimes unable to comprehend questions asked of them.[6]

*When assessing aphasic/dysphasic and dementia patients score as **'Confused' (4)** with an '●'placed in the box.*

Tracheostomy/Endotracheal (ET) tube

If a patient has a tracheostomy or endotracheal tube insitu they are unable to vocalise and therefore **'T'** can be marked in the **'None' (1)** box to indicate an artificial airway is preventing vocalisation.

BEST MOTOR RESPONSE (M)

Assess overall awareness and the ability to respond to an external stimuli[3]

- Obey commands (6)
- Localises to pain (5)
- Withdraws to pain (4)
- Flexion to pain (3)
- Extension to pain (2)
- None (1) – Nil response to painful stimuli.

20

Best Motor Response

This requires the patient to understand and respond to instructions. Give simple commands e.g. "wiggle your fingers" and allow time for the patient to respond. If the patient follows the command, even weakly, they would be scored as **'Obeys Commands' (6).**

If nil response to verbal command, progress to use of painful stimulus. Types of acceptable painful stimuli have previously been discussed.

If using the trapezius pinch/squeeze, a patient would be scored as **'Localises to Pain' (5),** if the patient moves their hand towards the source of pain. Their hand should move above the nipple line to be recorded as a **'Localises to Pain' (5)**.

If the patient moves their body away from the source of the pain, but does not localise they are scored as **'Withdraws to Pain' (4).**

If the patient bends their arm at the elbow (flexes) the patient is scored as **'Flexion to Pain' (3).**

If in response to painful stimuli the elbows extend and the wrists internally rotate this is scored as **'Extension to Pain' (2).**

If there is no motor response to painful stimuli the patient is scored as **'None' (1).**

NB: If you ask the patient to squeeze your hands also ask them to release your hands as stimulation of the palm can stimulate a grasp reflex in the severely head injured patient.

Obeys commands

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Localises to pain

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Withdraws to pain

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Abnormal flexion (decorticate)

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Extension to pain (decerebrate)

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SECTION 2.

LIMB STRENGTH

LIMB STRENGTH

- To be performed after the GCS score has been completed.
- Each limb assessment should be scored separately on the limb strength section of the chart.
- Each limb should be assessed moving from upper to lower limb, in a proximal to distal direction.

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LIMB STENGTH ASSESSMENT

Based upon the motor strength grading scale:

(5) Normal power – active movement of the limb against gravity with full resistance.

(4) Active movement against resistance – active movement of limb against gravity with some resistance.

(3) Active movement against gravity – active movement of the limb against gravity, not resistance.

(2) Active movement with gravity eliminated – active movement of the limb when effect of gravity is eliminated (limb can roll in bed but not lift)

(1) Flicker of movement – weak muscle contraction observed or palpated without active movement.

(0) None – no detectable muscle contraction or movement of the extremity.

Medical Research Council (MRC) Scale for Muscle Strength

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Normal power

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Pronator drift

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30

This requires the patient to understand and respond to instructions. Ask the patient to "Lift your arms off the bed", "close your eyes" and observe for downward movement or 'drift' of one or both limbs and the hand curving inwards. This indicates a weakness and is referred to as 'pronator drift'.[9]

TESTING UPPER LIMBS

The following movements can be used to assess the upper limbs, if the patient can obey commands.

Ask the patient to:

- Make 'chicken wings' shoulder abduction (nerve root C5, deltoid) – examiner places resistance against arms stretched out to the side and flexed at the elbow
- Elbow flexion (nerve root C6, C7, biceps brachii) – hold patient's elbow and wrist. Ask patient to pull towards their face.
- Elbow extension (nerve root C6, C7, C8, triceps) – flex arm up while examiner pulls against arm.

Assesses equality of movement and record right and left sides separately.

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‘Chicken wings’

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Elbow flexion

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Elbow extension

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E.g: TESTING UPPER LIMB

During the upper limb assessment, if the patient's bilateral motor strength is equal to that of the examiner, the patient has normal power and a '•' is placed in the **'Normal Power' (5)** box of the arms/limb movement section.

LIMB STRENGTH	ARMS	Normal power	5	•																								5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1																									1
		No movement	0																									0
	LEGS	Normal power	5																									5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1																									1
		No movement	0																									0

Record right & left separately if there is a difference between each side

Record right and left separately if there is a difference between each side

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E.g: TESTING UPPER LIMB

If the patient's bilateral motor strength is weak and the examiner easily overpowers the patient when resistance is applied then the patient has active movement against some resistance and the **'Active movement against resistance' (4)** box of the arms/limb strength section is marked with a '●'.

LIMB STRENGTH																													
ARMS	Normal power	5																											5
	Active movement against resistance	4	●																										4
	Active movement against gravity	3																											3
	Active movement gravity eliminated	2																											2
	Flicker of movement	1																											1
	No movement	0																											0
LEGS	Normal power	5																											5
	Active movement against resistance	4																											4
	Active movement against gravity	3																											3
	Active movement gravity eliminated	2																											2
	Flicker of movement	1																											1
	No movement	0																											0

Record right & left separately if there is a difference between each side

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E.g: TESTING UPPER LIMB

- (Assessing the right (R) upper limb) If the patient can make 'chicken wings', but the (R) upper limb collapses as soon as the examiner applies resistance, the limb is active against gravity and a 'R' is placed in the **'Active movement against gravity' (3)** box of the arms/limb strength section.
- If the left (L) upper limb can move but the patient can not lift the limb from the bed, this limb has active movement with gravity eliminated, and a 'L' is placed in the **'Active movement with gravity eliminated' (2)** box of the arms/limb strength section.

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E.g: TESTING UPPER LIMB

LIMB STRENGTH	ARMS	Normal power	5																									5
		Active movement against resistance	4																									4
		Active movement against gravity	3	R																								3
		Active movement gravity eliminated	2	L																								2
		Flicker of movement	1																									1
		No movement	0																									0
	LEGS	Normal power	5																									5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1																									1
		No movement	0																									0

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E.g: TESTING UPPER LIMB

- If you ask a patient to lift their right (R) arm off the bed and the patient has no active movement but the examiner observes or feels the bicep muscle twitch as the patient tries to lift the limb then a 'R' is placed in the **'Flicker of movement' (1)** box of the arms/limb strength section.

- Similarly, if a patient is asked to lift their left (L) arm off the bed and no movement is seen or muscle twitch palpated then the patient has no detectable muscle contraction and a 'L' is placed in the **'No movement' (0)** box of the arms/limb strength section.

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E.g: TESTING UPPER LIMB

LIMB STRENGTH	ARMS	Normal power	5																									5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1	R																								1
		No movement	0	L																								0
	LEGS	Normal power	5																									5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1																									1
		No movement	0																									0

When a patient is unable to obey commands but moves limbs to pain, then limb strength is based upon the degree of movement as specified previously in the motor strength grading scale.

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TESTING LOWER LIMBS

The following movements can be used to assess the lower limbs, if the patient can obey commands.

Ask the patient to:

- Hip flexion: Ask the patient to raise their knee to the chest with the knee at 90^0 against resistance from the examiner (L1-L2; iliopsoas)
- Knee extension: Ask the patient to bend knee to 90^0 while the examiner places hand at the knee and on other ankle. Ask the patient to straighten their leg. (nerve root L3, L4; quadriceps femoris)
- Knee flexion: Ask the patient to bend knee and bring heel toward their bottom; when the knee is 90^0, the examiner tries to straighten the leg while holding the knee (nerve root L5, S1; hamstrings)

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Against resistance

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Knee flexion/extension

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TESTING LOWER LIMBS
(continued)

- Foot dorsiflexion: Ask the patient to pull ankle back and bring toes toward the head. The examiner should attempt to push feet down (nerve root L5; tibialis anterior).

- Plantar flexion of the foot: Ask the patient to push feet/toes downward while the examiner pulls up (nerve root S1; gastrocnemius).

Assess equality of movement and record right and left sides separately.

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E.g: TESTING LOWER LIMB

During the lower limb assessment, if the patient's bilateral motor strength is equal to that of the examiner then the patient has normal power and a '●' is placed in the **'Normal Power' (5)** box of the legs/limb strength section.

LIMB STRENGTH	ARMS	Normal power	5																									5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1																									1
		No movement	0																									0
	LEGS	Normal power	5	●																								5
		Active movement against resistance	4																									4
		Active movement against gravity	3																									3
		Active movement gravity eliminated	2																									2
		Flicker of movement	1																									1
		No movement	0																									0

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E.g: TESTING LOWER LIMB

If the patient's bilateral motor strength is weak and the examiner easily overpowers the patient when resistance is applied then the patient has active movement against some resistance and the **'Active movement against resistance' (4)** box of the arms/limb strength section is marked with '●'.

LIMB STRENGTH																													
ARMS	Normal power	5																											5
	Active movement against resistance	4																											4
	Active movement against gravity	3																											3
	Active movement gravity eliminated	2																											2
	Flicker of movement	1																											1
	No movement	0																											0
LEGS	Normal power	5																											5
	Active movement against resistance	4	●																										4
	Active movement against gravity	3																											3
	Active movement gravity eliminated	2																											2
	Flicker of movement	1																											1
	No movement	0																											0

Record right and left separately if there is a difference between each side.

E.g: TESTING LOWER LIMB

- If a patient's right (R) lower limb is severely weak and the patient is able to 'Raise the knee to the chest' but as soon as the examiner applies resistance the limb collapses then this limb is active against gravity and a 'R' is placed in the **'Active movement against gravity' (3)** box of the legs/limb strength section.

- If the left (L) lower limb can move but the patient can not lift the limb from the bed/chair then this limb has active movement with gravity eliminated, and a 'L' is placed in the **'Active movement with gravity eliminated' (2)** box of the legs/limb strength section.

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E.g: TESTING LOWER LIMB

LIMB STRENGTH	ARMS	Normal power	5																										5
		Active movement against resistance	4																										4
		Active movement against gravity	3																										3
		Active movement gravity eliminated	2																										2
		Flicker of movement	1																										1
		No movement	0																										0
	LEGS	Normal power	5																										5
		Active movement against resistance	4																										4
		Active movement against gravity	3	R																									3
		Active movement gravity eliminated	2	L																									2
		Flicker of movement	1																										1
		No movement	0																										0

Record right and left separately if there is a difference between each side.

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E.g: TESTING LOWER LIMB

- If you ask a patient to lift their right (R) leg up off the bed/chair and the patient has no active movement but the examiner observes or feels the quadricep muscle twitch as the patient tries to lift the limb then a 'R' is placed in the **'Flicker of movement' (1)** box of the legs/limb strength section.

- Similarly if a patient is asked to lift their left (L) leg off the bed/chair and no movement is seen or muscle twitch palpated then the patient has no detectable muscle contraction and a 'L' is placed in the **'No movement' (0)** box of the legs/limb strength section.

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E.g: TESTING LOWER LIMB

LIMB STRENGTH	ARMS	Normal power	5																											5
		Active movement against resistance	4																											4
		Active movement against gravity	3																											3
		Active movement gravity eliminated	2																											2
		Flicker of movement	1																											1
		No movement	0																											0
	LEGS	Normal power	5																											5
		Active movement against resistance	4																											4
		Active movement against gravity	3																											3
		Active movement gravity eliminated	2																											2
		Flicker of movement	1	R																										1
		No movement	0	L																										0

Again, when a patient is unable to obey commands but moves limbs to pain, then limb strength is based upon the degree of movement as specified in the previous outlined motor strength grading scale.

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EYE SIGNS

To be performed after the GCS score is completed and the upper and lower limb movements have been assessed.

Assess the eyes for:-

- size
- equality
- reaction to light
- consensuality of pupil response.

A bright pen torch must be used when assessing 'reaction' at the end of the eye signs section.

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SIZE

- Pupils are assessed for size against a uniform scale in millimetres.
- A visual representation of pupil sizes from 1-8mm are displayed on the chart.
- Document the size of the pupil before the pen torch light is directed into the eye.

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EQUALITY

- Pupils are assessed for equality

  i.e. are both pupils the same size?

- If pupils are not the same size 'unequal' differences are noted between the pupils on the 'Right' and 'Left' sections of the chart.

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REACTION

- Direct a small, bright torch from the outer aspect of the eye towards the pupil and look for a reaction of the pupil.
- Pupillary reaction is recorded as
  - **Reacts '+'** if there is a brisk constriction of the pupil and the pupil remains constricted (it should not redilate as long as the light is still on),
  - **No '-'** if the pupil has been non-reactive and has not changed in size, or
  - **Sluggish 'SL'** if the pupil has constricted but it took slightly longer.
- If it is difficult to see a response, darken the surroundings.
- If both eyes are closed and unable to be opened because of gross orbital swelling, this is recorded as **Closed 'c'**.

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54

Naturally you do not expect a reaction from a blind or false eye.

CONSENSUALITY

The direct light reflex is elicited when the light is shown into one eye e.g. the right eye, and constriction is noted.

Observe the pupillary reaction of the opposite (left) eye while shining the light into the right eye.

Constriction of the opposite eye is known as the consensual light reflex.

Pupillary reaction

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E.g: EYE SIGNS

- Upon observation if a patient's pupils are the same size and that size is relative to the 5mm circle on the chart, the pupil size will be marked as a '5' in both the left and right **'Size'** box of the Eye Signs section.
- If pupils react briskly and equally when a light is shone into them, a '+' is marked in both the left and right **'Reaction'** box of the Eye Signs section.

EYE SIGNS				
	EYES + Reacts - No c Closed SL Sluggish	Right	Size	5
			Reaction	+
		Left	Size	5
			Reaction	+
			Initials	
	PUPIL SIZE Pupil Scale (mm)			

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E.g: EYE SIGNS

- Upon observation if a patient's pupils are unequal and the right pupil equates to the 6mm circle on the Pupil Scale and the left pupil equates to the 3 mm circle on the Pupil Scale then this observation would be recorded with a '6' in the right **'Size'** box and a '3' in the left **'Size'** box of the Eye Signs section.

- When assessing pupil reaction with a bright light and there is no reaction (constriction) from the right pupil but a sluggish reaction from the left, this is charted with a '-' in the right **'Reaction'** box and a 'SL' in the left **'Reaction'** box of the Eye Signs section.

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E.g: EYE SIGNS

EYE SIGNS					
	EYES + Reacts - No c Closed SL Sluggish	Right	Size	6	
			Reaction	-	
		Left	Size	3	
			Reaction	SL	
				Initials	
	PUPIL SIZE Pupil Scale (mm)				1 2 3 4 5 6 7 8

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E.g: EYE SIGNS

- Upon observation if a patient's eyes were observed to be closed due to swelling then a 'c' would be documented in both the right and left 'size' boxes and vigilance in the assessment of the Glasgow Coma Scale will alert the assessor to neurological deterioration.

EYE SIGNS				
	EYES + Reacts - No c Closed SL Sluggish	Right	Size	c
			Reaction	
		Left	Size	c
			Reaction	
			Initials	
	PUPIL SIZE Pupil Scale (mm)	1 2 3 4 5 6 7 8		

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SEIZURE ASSESSMENT CHART

- For 'one off' seizures - does not replace seizure specific chart
- Date, time and duration of seizure
- Aura or premonition
- Record GCS and pupillary response during seizure if witnessed

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SEIZURE CLASSIFICATIONS

- Record type of seizure - generalised or focal
- Record part of body seizure first noticed
- Record type of body movements - tonic/clonic, myoclonic
- Record head or eye deviation
- Record respiratory rate and colour of patient (note any cyanosis)
- Record pulse rate and rhythm

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POST SEIZURE

- Record state of patient post seizure (post ictal state) - e.g. confused, drowsy
- Indicate if any drugs were administered during seizure
- Record any other relevant comments e.g. patient incontinent, patient sustained injury during seizure
- Place initials in last box

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SECTION 3. CRANIAL NERVE ASSESSMENT

CRANIAL NERVE ASSESSMENT

- Medical Officer to order frequency and specific orders
- Include date and time
- Assess each nerve separately
- Indicate 'I' if nerve intact
- Indicate 'D' if deficit observed

64

•Date and time to be recorded in box provided

•Assess right and left sides separately

CRANIAL NERVE 1

Olfactory

- Sensory nerve, not routinely tested
- Occlude one nostril at a time and ask the patient to close their eyes
- Ask the patient to identify familiar odours
- Beware of noxious stimuli

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CRANIAL NERVE 2

Optic

- Sensory nerve
- Test visual acuity by holding up fingers or asking the patient to read
- Test visual fields - the examiner is to cover the corresponding eye to the patient
- Each eye is tested separately

68

Visual acuity is generally tested using a Snellen chart, but gross vision can be tested by using a newspaper from a distance and asking the patient to read a headline.

Near vision can be tested by reading the small print.

Ensure the patient has their glasses or contact lenses if required.

Cover each eye separately.

When testing visual fields the examiner covers the corresponding eye to the patient.

Using yourself as the 'norm' ask the patient to tell you when your 'wriggling' finger comes into view.

Visual Acuity

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Visual Acuity

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Visual fields

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Visual fields

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CRANIAL NERVE 3, 4 & 6

Occulomotor, Trochlear, Abducens - motor nerves

- Ask the patient if there is any diplopia
- Observe for nystagmus
- Observe for conjugate eye movement
- Observe for ptosis - levator palpebrae muscle
- Observe for pupillary reaction to light
- Observe the 6 different directions of gaze

superior rectus	-	3rd
inferior oblique	-	3rd
inferior rectus	-	3rd
medial rectus	-	3rd
superior oblique	-	4th
lateral rectus	-	6th

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71

•Steady the patient's head at arms length, using your finger or a pen observe the full range of horizontal and vertical eye movements in the six different directions of gaze representing maximal muscle strength.

•Conjugate eye movement is the ability of the eyes to move together.

•Nystagmus is an upset of the normal balance of eye control. A slow drift in one direction followed by a fast corrective movement

•The levator palpebrae muscle elevates the eyelid

•Superior rectus muscle - looking up and out

•Inferior oblique muscle - looking up and in

•Inferior rectus muscle - looking down and out

•Medial rectus muscle - medial movement / adduction

•Superior oblique muscle - looking down and in

•Lateral rectus muscle - lateral movement / abduction

Extraoccular movements

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Extraoccular movements

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CRANIAL NERVE 5

Trigeminal

- Mixed nerve
- Observe for wasting of the temporalis muscle
- Compare sensation on each side of the face - ophthalmic, maxillary and mandibular divisions
- Corneal reflex
- Jaw reflex

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74

•Three branches.

•Tested by asking the patient to close their eyes, and while you touch their face on each side ask if they feel the same sensation.

•Jaw reflexes - ask the patient to clench their teeth while you palpate the temples and jaw, movement should be symmetrical and the jaw should not deviate.

•The corneal reflex is not tested in the conscious patient. A blink response should occur bilaterally when touching the cornea with a wisp of cotton in the unconscious patient.

Sensation of the face

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Jaw reflex

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CRANIAL NERVE 7

Facial

- Mixed nerve
- Observe for facial symmetry
- Test motor function by asking the patient to perform voluntary facial movements
- Test muscle strength against resistance
- Taste - anterior two thirds of the tongue

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77

•Damage to the facial nerve will result in asymmetrical elevation of one corner of the mouth and flattening of the nasolabial fold.

•Test motor function by asking the patient to perform voluntary facial movements such as frowning, smiling, wrinkling the forehead, puffing cheeks and whistling.

•Test muscle strength against resistance - see if the patient can keep their eyes closed while you try to open them.

•Taste is not routinely tested.

Observing facial symmetry

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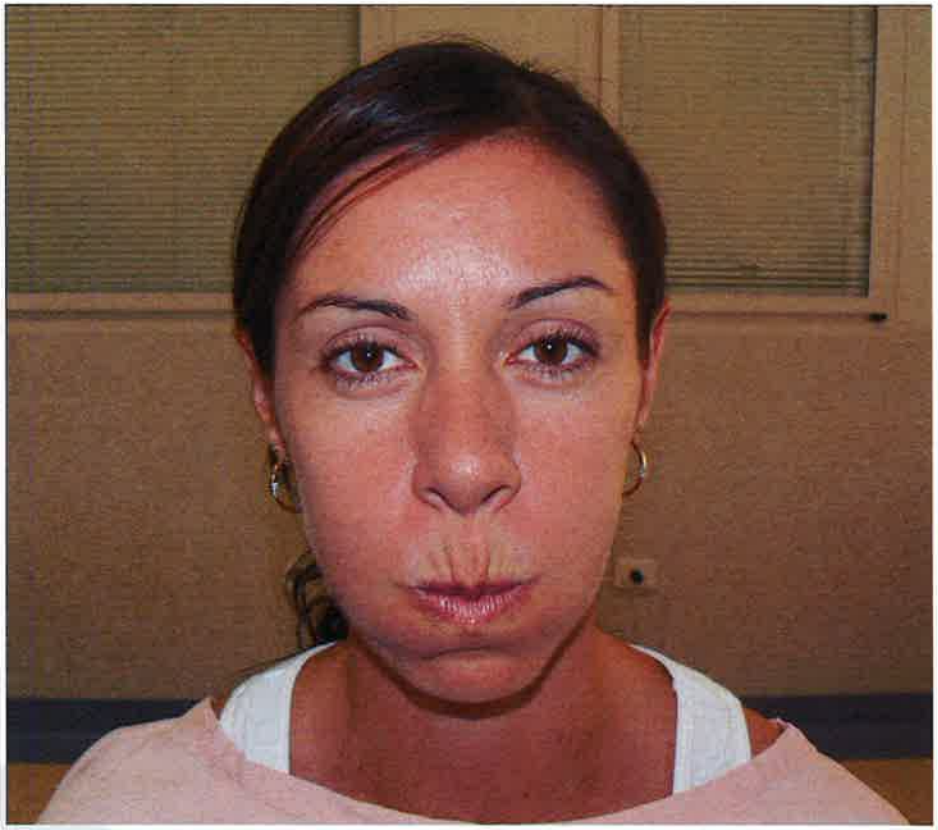
Voluntary facial movements - puffing the cheeks



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Voluntary facial movements - raising the eyebrows

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CRANIAL NERVE 8

Vestibular cochlear (acoustic)

- Sensory nerve
- Test hearing in each ear separately for gross screening (cochlear division)
- Ask the patient if they experience dizziness, vertigo or loss of balance (vestibular portion)

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81

•Whisper into each ear separately and ask the patient to repeat what you have said.

Testing gross hearing

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CRANIAL NERVE 9 & 10

Glossopharyngeal and Vagus

- Mixed nerves
- Tested together
- Evaluate speech quality - vagus nerve
- Sensation to the pharynx, tonsils and posterior two thirds of the tongue - glossopharyngeal nerve
- Observe for soft palate rise
- Observe for uvula to sit midline

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83

•Test soft palate rise by asking the patient to open their mouth and say “ah”.

•The uvula should sit midline.

•Test speech quality by asking the person to say “kah, kah, kah” and “mi, mi, mi”

•The uvula will swing to the affected side if damage is present due to unopposed muscle action.

Observe for soft palate rise & midline uvula

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CRANIAL NERVE 11

Spinal Accessory

- Motor nerve
- Trapezius muscle - shoulder movement
- Sternocleidomastoid muscle - neck movement

85

•The trapezius muscle is tested by placing your hands on the patients shoulders and asking them to shrug their shoulders checking for equal strength.

•The sternocleidomastoid muscle is tested by asking the patient to push their head against your hand, testing both sides separately.

•The patient should be able to resist any effort to depress the shoulders and turn the head.

Trapezius muscle testing

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Sternocleidomastoid muscle testing

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CRANIAL NERVE 12

Hypoglossal

- Motor nerve
- Controls tongue movement for speech and swallow
- Observe for symmetry, atrophy and involuntary movement

88

•To test, ask the patient to poke their tongue out and point it from side to side.

•The tongue will deviate to the side of the lesion or weakness.

•Damage to this nerve may result in dysarthria (difficulty forming words) often seen in stroke.

Observing for tongue symmetry

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Testing for tongue movement

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GLASGOW COMA SCALE

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NSW GOVERNMENT Health

Facility: _____

ADULT NEUROLOGICAL OBSERVATION CHART
(INCORPORATING THE GLASGOW COMA SCALE)

☐ Altered Calling Criteria

FAMILY NAME	MRN
GIVEN NAME	☐ MALE ☐ FEMALE
D.O.B. _____ / _____ / _____	M.O.
ADDRESS	
LOCATION / WARD	

COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

SMR110021

Holes punched as per AS2828.1:2012

BINDING MARGIN - NO WRITING

			Date	
			Time	
GLASGOW COMA SCALE • EYES OPEN (Swollen Closed = c)	Spontaneously	4		4
	To Speech	3		3
	To Pain	2		2
	None	1		1
VERBAL RESPONSE (ET Tube or Trach = T, CALD = X)	Orientated	5		5
	Confused	4		4
	Inapprop. Words	3		3
	Incompreh. Sounds	2		2
	None	1		1
BEST MOTOR RESPONSE (Record best arm response)	Obeys Commands	6		6
	Localises to Pain	5		5
	Withdraws	4		4
	Flexion to Pain	3		3
	Extension to Pain	2		2
	None	1		1
	TOTAL SCORE			

CLINICAL REVIEW — If GCS drops by 1 point initiate a Clinical Review

RAPID RESPONSE — If GCS drops by 2 or more points initiate a Rapid Response

LIMB STRENGTH • ARMS	Normal power	5		5
	Active movement against resistance	4		4
	Active movement against gravity	3		3
	Active movement gravity eliminated	2		2
	Flicker of movement	1		1
	No movement	0		0
LIMB STRENGTH • LEGS	Normal power	5		5
	Active movement against resistance	4		4
	Active movement against gravity	3		3
	Active movement gravity eliminated	2		2
	Flicker of movement	1		1
	No movement	0		0

EYE SIGNS — EYES (+ Reacts, - No, c Closed, SL Sluggish)	Right	Size	
		Reaction	
	Left	Size	
		Reaction	
		Initials	
PUPIL SIZE (Pupil Scale (mm))	1 2 3 4 5 6 7 8		

240513

GUIDE TO ASSESSMENT OF NEUROLOGICAL OBSERVATIONS

For in-depth information please refer to the Education Package

Instructions:

1. Use of deep pain to elicit a response may be necessary
2. Central stimulus is advocated as the first choice for a painful/noxious stimulus e.g. trapezius pinch, supra-orbital pressure or sternal rub (used as a last measure)

Assessment Category	Testing Method	Possible Responses		Explanation
GLASGOW COMA SCALE				
Eyes Open (E) *Assess arousal*	Speak in a clear, strong voice. If nil response to voice progress to use of painful stimulus	Spontaneous	4	Opens eyes without stimulus
		To speech	3	Opens eyes to any verbal stimulus
		To pain	2	Opens eyes to painful stimulus
		None	1	Record as (C) if closed due to trauma or swelling
Verbal Response (V) *Assess appropriateness of speech and awareness*	Obtain the patient's attention Allow time for the patient to respond Impaired hearing may affect response	Orientated	5	Orientated to person, place and time
		Confused	4	Talks but is confused as to person, place and time. Record as "X" if Culturally and Linguistically Diverse (CALD)
		Inappropriate words	3	Uses words or phrases that make little or no sense
		Incomprehensible sounds	2	Unintelligible sounds, moaning or groaning
		None	1	No sound or speech at all Record as "T" if unable to speak due to tracheostomy or ETT
Best Motor Response (M) *Assess overall awareness and ability to respond to external stimuli* Note: if eyes are closed due to trauma and the patient is aphasic, motor response indicates the level of consciousness	Give simple command e.g. "wiggle your fingers" Allow time for the patient to respond If nil response to verbal command, progress to use of painful stimulus Record the best movement response Be careful not to misinterpret a grasp reflex	Obeys Commands	6	Follows commands, even if weakly.
		Localise to Pain	5	Moves hand towards source of pain Hand should move above nipple line
		Withdraws	4	Hand or body moves away from the source of the pain
		Flexion to Pain	3	Flexes arm (decorticate posturing)
		Extension to Pain	2	Extends elbow and internally rotates wrist (decerebrate posturing)
		None	1	Makes no response even to painful stimuli
LIMB STRENGTH Medical Research Council (MRC) Scale for Muscle Strength				
Arms and Legs *Assess limb strength* Record separately if there is a difference in results between the limbs	Instruct patient to: Move arms/legs laterally on bed; lift limb against gravity; move limb against your resistance	Normal Power	5	Active movement of body part against gravity with full resistance
		Active movement against resistance	4	Active movement of body part against gravity with some resistance
		Active movement against gravity	3	Active movement of body part against gravity
		Active movement of limb with gravity eliminated	2	Active movement of body part when effect of gravity is removed
		Flicker of movement	1	Only a trace or flicker of movement is seen or felt in the muscle
		None	0	No detectable muscle contraction
EYE SIGNS				
Pupil Size	Compare size with pupil scale	1-8mm		Record size of each pupil Record reaction to light Record as "c" if unable to open eye due to trauma or swelling. Document a lack of consensual reaction (opposite pupil fails to constrict when light is shone in eye) in health care record.
Pupil Reaction	Hold eyelid open Move small bright light toward patient from the side Shine directly into eye	Reaction Yes + No - Closed c Sluggish SL		

NSW Health ACI - Adult Neurological observation chart 240513.indd 1 08-08-2013 10:37:40 AM

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Facility: _____

ADULT NEUROLOGICAL OBSERVATION CHART
(INCORPORATING THE GLASGOW COMA SCALE)

☐ Altered Calling Criteria

FAMILY NAME	MRN
GIVEN NAME	☐ MALE ☐ FEMALE
D.O.B. _____ / _____ / _____	M.O.
ADDRESS	
LOCATION / WARD	
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE	

OTHER CHARTS IN USE

☐ **Standard Adult General Observation** ☐ **Neurovascular** ☐ **Pain / Epidural / Patient Controlled Analgesia** ☐ **Other** _____

PRESCRIBED FREQUENCY OF OBSERVATIONS			
DATE:			
TIME:			
Frequency Required			
Medical Officer Name (BLOCK letters)			
Medical Officer Signature			
Attending Medical Officer Signature			

ALTERATIONS TO CALLING CRITERIA
(MUST BE REVIEWED WITHIN 24 HOURS OR EARLIER IF CLINICALLY INDICATED)
Any alteration MUST be signed by a Medical Officer and confirmed by the Attending Medical Officer

DATE:				
TIME:				
Next review due Date & Time				
Glasgow Coma Scale	Clinical Review			
	Rapid Response			
Cranial Nerves				
Medical Officer Name (BLOCK letters)				
Medical Officer Signature				
Attending Medical Officer Signature				

REFER TO YOUR LOCAL CLINICAL EMERGENCY RESPONSE SYSTEM (CERS) PROTOCOL FOR INSTRUCTIONS ON HOW TO MAKE A CALL

Clinical Review Criteria (in addition to SAGO chart Clinical Review Criteria)
- A drop of 1 point on the GCS or the patient is no longer obeying commands
- Any new onset of limb weakness (a decrease of 1 or more points on the MRC scale for muscle strength)
- Any new cranial nerve deficit
- Persistent severe headaches, vomiting and/or agitation

IF A PATIENT HAS ANY ONE (1) OR MORE CLINICAL REVIEW CRITERIA PRESENT, YOU MUST CONSULT PROMPTLY WITH THE NURSE IN CHARGE AND ASSESS WHETHER A CLINICAL REVIEW IS NEEDED (REFER TO YOUR LOCAL CERS PROTOCOL)

Rapid Response Criteria (in addition to SAGO chart Rapid Response Criteria)
- A drop of 2 or more points on the GCS
- Glasgow Coma Scale ≤ 8
- Changes in pupil size in association with pupil dilation and / or loss of light reaction
- Seizure activity (including focal, generalised and absent seizures)

IF A PATIENT HAS ANY ONE (1) RAPID RESPONSE CRITERION PRESENT, CALL FOR A RAPID RESPONSE (REFER TO YOUR LOCAL CERS PROTOCOL)

CHECK THE CLINICAL RECORD FOR ADVANCE CARE DIRECTIVES OR ALTERATIONS TO CALLING CRITERIA WHICH MAY AFFECT WHETHER A CLINICAL REVIEW OR RAPID RESPONSE CALL IS INDICATED

DOCUMENTATION
1. Write treatment, escalation process and outcome in the clinical record
2. Write date, signature and designation with each entry

ADULT NEUROLOGICAL OBSERVATION CHART SMR110.021

NSW GOVERNMENT | Health

Facility: _____

ADULT NEUROLOGICAL OBSERVATION CHART
(INCORPORATING THE GLASGOW COMA SCALE)

☐ Altered Calling Criteria

FAMILY NAME | MRN
GIVEN NAME | ☐ MALE ☐ FEMALE
D.O.B. _____ / _____ / _____ | M.O.
ADDRESS
LOCATION / WARD
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE

SEIZURE ASSESSMENT CHART

DATE					
TIME					
DURATION					
Aura / Premonition (tick)	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
Is the seizure focal / generalised?					
In what part of the body was the seizure first noticed?					
Which other part/s of the body were involved?					
*Type of body movement: Tonic / Clonic / Myoclonic					
Head/Eye Deviation. Which direction (tick)	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil	☐Left ☐Right ☐Nil
Respiratory status / colour eg. cyanosis, pallor, flushing					
Pulse eg. Regular, rate					
*Post ictal state					
Drugs administered (tick)	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No	☐Yes ☐No
G.C.S. Score / Altered pupils (during seizure) eg. constricted, dilated or symmetrical					
Other relevant comments eg. incontinence, oxygen administered,injuries sustained during seizure					
Initials					

***KEYWORDS**
- Tonic - Elbows flexed, arms pronated, legs extended
- Clonic - Generalised shaking of all limb/s
- Myoclonic - Sudden, brief, generalised muscle contractions
- Post ictal state - Drowsy, confused, aggressive, fear, paranoia

CRANIAL NERVE ASSESSMENT

Nerves to be assessed										
DATE										
TIME										
	R	L	R	L	R	L	R	L	R	L
Olfactory (I) Ask the person to occlude one nostril at a time with the finger and close the eyes. Present several familiar odours such as coffee, cloves, peppermint, or soap and ask the person to identify each. (not routinely assessed)										
Optic (II) Test visual acuity by asking patient to read something (i.e. newspaper, or your badge) or ask the patient how many fingers you are holding up. Test by covering one eye at a time and testing their visual fields.										
Oculomotor (III) Test CN III, IV & VI together by evaluating extraocular eye movements (i.e. have patient follow your finger in all directions). Test pupillary constriction and accommodation by evaluating pupillary light reflexes using pen torch.										
Trochlear (IV) Evaluate extraocular eye movements.										
Trigeminal (V) Test motor function by asking the person to clench his/her teeth while you palpate the masseter and temporal muscle for firmness. Test the sensory function by testing the sensation to all 3 divisions of the cranial nerve, while the patient has their eyes closed.										
Abducens (VI) Evaluate extraocular eye movements.										
Facial (VII) Test the motor division of the facial nerve by asking the patient to perform voluntary facial movements such as frowning, smiling, wrinkling the forehead, puffing cheeks and whistling. Test the strength of eyelid closure by asking the patient to hold the eyes tightly closed. Then try to open the person's eyes.										
Acoustic (VIII) Test the cochlear portion of this cranial nerve by whispering a word into each ear separately (occlude the other ear) and asking them to repeat what you have said.										
Glossopharyngeal (IX) Cranial Nerves IX & X are tested together. Test cranial nerve IX by asking the person to open his/her mouth and say "ah" and see if soft palate on each side rises.										
Vagus (X) Cranial Nerves IX & X are tested together. Cranial nerve X is also tested by evaluating speech quality. Ask the person to say, "kuh, kuh, kuh" and "la, la, la", and "mi, mi, mi."										
Spinal accessory (XI) Place your hands on the person's shoulders and ask him/her to shrug as you apply resistance. Inspect and palpate the sternocleidomastoid muscles, noting tone & symmetry. Ask the patient to turn their head and touch chin to shoulder as you apply resistance. Test both sides.										
Hypoglossal (XII) Ask the person to stick out the tongue. Note symmetry, atrophy, and involuntary movements.										
Key: I = INTACT, D = DEFICIT										
Initials										

Holes punched as per AS2828.1:2012
BINDING MARGIN - NO WRITING

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NSW Health ACI - Adult Neurological observation chart 240513.indd 2 08-08-2013 10:37:41 AM