Clinical Practice Procedures:
Assessment/Neurological assessment

Policy code	CPP_AS_NA_0221
Date	February, 2021
Purpose	To ensure a consistent procedural approach to undertaking a patient neurological status assessment.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
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Author	Clinical Quality & Patient Safety Unit, QAS
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Neurological assessment

The **neurological status assessment** forms part of the overall patient Assessment process.

Patients with an impaired level of consciousness or obvious neurological dysfunction require a thorough assessment as is practicable in the circumstances.

Assessing bilateral muscle strength

Indications

- To assess the patient's neurological status

Contraindications

- Nil in this setting

Complications

- The pre-existing neurological status of a patient must be taken into account during assessment.
- The application of a painful stimulus by a clinician during the assessment of an intoxicated patient has the propensity to elicit a violent response and should be minimised.

There are five critical areas to a neurological assessment: [1]

1. *Level of consciousness* [2,3]

a) The **AVPU scale** represents a tool easily applied during the initial patient assessment. In the AVPU assessment, three questions are asked:

AVPU ASSESSMENT	
Alert	Is the patient alert?
Verbal	Does the patient respond to a verbal command?
Pain	Does the patient respond to a painful stimulus?
Unconscious	With no response to any of the above, the patient is considered unconscious.

b) A formal assessment of the GCS is subsequently performed as soon as possible and repeated throughout patient management as is necessary to detect deterioration. The need for repeated painful stimuli is rare and should not be practiced.

2. *Pupils*

a) Pupil size must be determined as:

- pinpoint (< 2 mm)
- normal (2–6 mm)
- dilated (> 6 mm)

b) Assess the pupillary reaction to light using a small bright light. Direct light reflex is assessed by covering one eye and shining the light directly into the open eye which should result in a rapid constriction.

c) Assessment is repeated on the other eye. Both reactions should be equal.

d) Document any unusual eye movement such as deviation from midline, dilated, or non reactive pupils on one side, indicating possible raised intracranial pressure (ICP), nerve compression or traumatic mydriasis.[1]

3. *Motor function*

a) Muscle coordination, strength and tone, including any obvious facial weakness.

b) Abnormal movements such as seizures, tremors or decorticate/decerebrate posturing. The latter is an ominous sign and may occur spontaneously, or to painful stimuli.

4. *Sensory function*

a) Hearing and ability to understand verbal communication.
b) Superficial sensation (light touch or pain).

5. *Vital signs*

a) Assess respirations for rate, rhythm and effort.

b) Assess blood pressure and pulse to ensure adequate perfusion status. Note that a widening pulse pressure and slowing pulse rate may indicate a rising ICP.

c) Assess body temperature and maintain normothermia.[2]

Patient Name: _____

Examiner Name: _____ Date/Time of Exam: _____

ASIA
AMERICAN SPINAL INJURY ASSOCIATION

STANDARD NEUROLOGICAL CLASSIFICATION OF SPINAL CORD INJURY

ISCOS

MOTOR

KEY MUSCLES

C5	☐	☐	Elbow flexors
C6	☐	☐	Wrist extensors
C7	☐	☐	Elbow extensors
C8	☐	☐	Finger flexors
T1	☐	☐	Finger abductors

UPPER LIMB TOTAL (MAXIMUM): ☐ + ☐ = ☐ (25) (25) (50)

L2	☐	☐	Hip flexors
L3	☐	☐	Knee extensors
L4	☐	☐	Ankle dorsiflexors
L5	☐	☐	Long toe extensors
SI	☐	☐	Ankle plantar flexors

Voluntary anal contraction (Yes/No) ☐

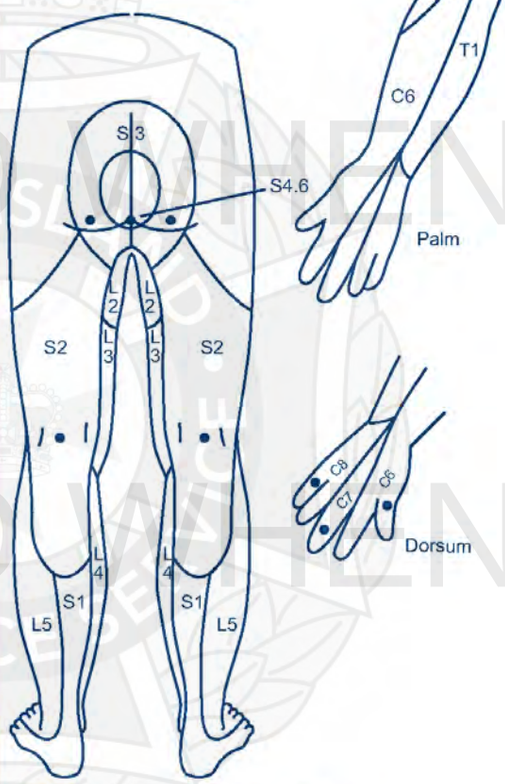
LOWER LIMB TOTAL (MAXIMUM): ☐ + ☐ = ☐ (25) (25) (50)

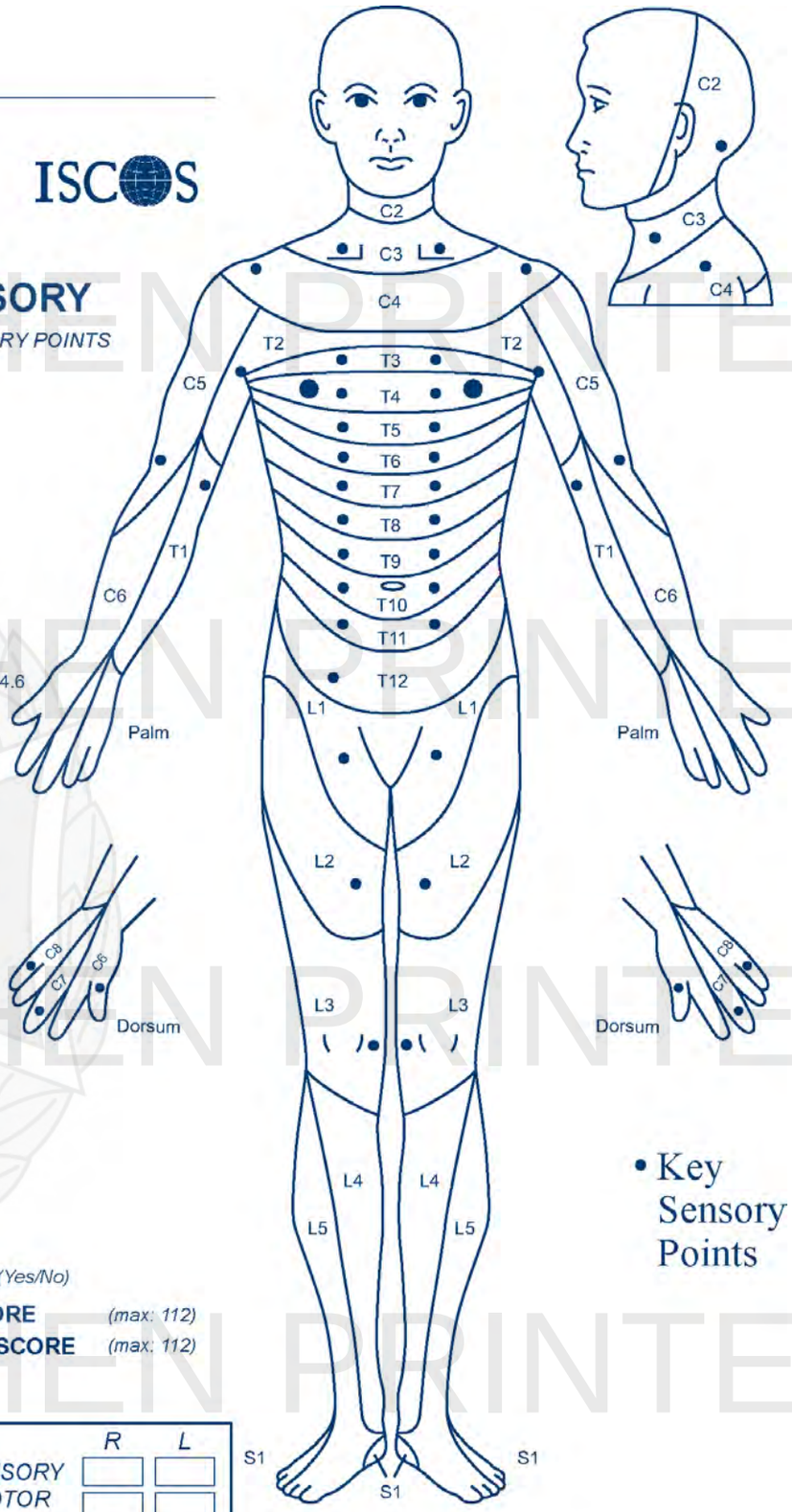
SENSORY

KEY SENSORY POINTS

	LIGHT TOUCH R	LIGHT TOUCH L	PIN PRICK R	PIN PRICK L
C2				
C3				
C4				
C5				
C6				
C7				
C8				
T1				
T2				
T3				
T4				
T5				
T6				
T7				
T8				
T9				
T10				
T11				
T12				
L1				
L2				
L3				
L4				
L5				
S1				
S2				
S3				
S4-5				

0 = absent
1 = impaled
2 = normal
NT = not testable





• Key Sensory Points

Any anal sensation (Yes/No) ☐

PIN PRICK SCORE (max: 112) ☐ + ☐ = ☐

LIGHT TOUCH SCORE (max: 112) ☐

TOTALS (MAXIMUM) (56) (56) (56) (56)

NEUROLOGICAL LEVEL *The most caudal segment with normal function*		R	L
	SENSORY	☐	☐
	MOTOR	☐	☐
COMPLETE OR INCOMPLETE? ☐ *Incomplete = Any sensory or motor function in S4-S5*			
ASIA IMPAIRMENT SCALE ☐			
ZONE OF PARTIAL PRESERVATION *Caudal extent of partially innervated segments*			
	SENSORY	☐	☐
	MOTOR	☐	☐

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