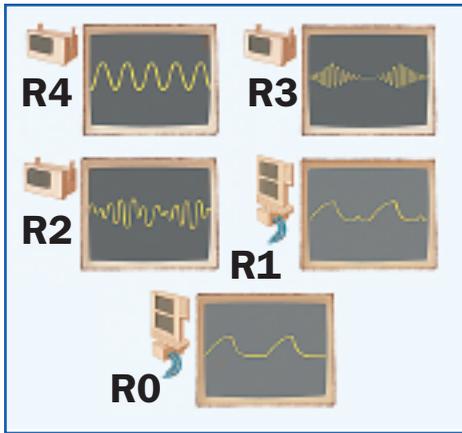


Respiration (R)



- 4 Not intubated, regular breathing pattern**
- 3 Not intubated, Cheyne-Stokes breathing pattern**
- 2 Not intubated, irregular breathing pattern**
- 1 Breathes above ventilator rate**
- 0 Breathes at ventilator rate or apnea**

Grade simply as regular **R4**, Cheyne Stokes breathing **R3** or irregular **R2**. In intubated patients the patient breathes over the ventilator **R1** or only ventilator generated breaths are seen **R0**. The ventilator monitor displaying respiratory patterns is used to identify the patient generated breaths on the ventilator. No adjustments are made to the ventilator while the patient is graded, but grading is done preferably with PaCO₂ within normal limits. 1-2 minute of disconnection of the ventilator-while providing oxygenation- maybe needed to assess breathing drive. A standard apnea (oxygen-diffusion) test may be needed when patient breathes at ventilator rate.

Wijdicks EFM, Bamlet WR, Maramattom BV, Manno EM, McClelland RL. Validation of a new Coma Scale: the FOUR score. *Annals of Neurology*, 2005, 58:585-593



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FOUR Score

Instruction Guide

Eye Response

E

Motor Response

M

Brainstem Reflexes

B

Respiration

R

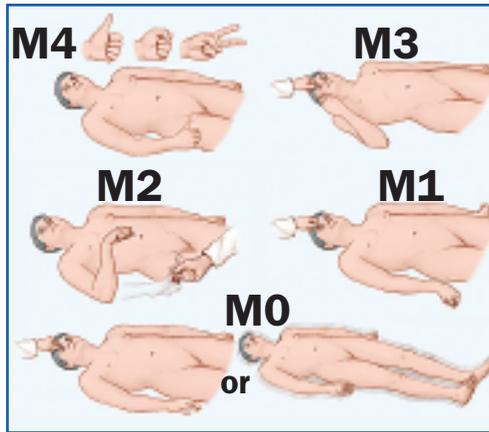
Eye Response (E)



- 4** Eyelids open or opened, tracking or blinking to command
- 3** Eyelids open but not tracking
- 2** Eyelids closed, opens to loud voice, not tracking
- 1** Eyelids closed, opens to pain, not tracking
- 0** Eyelids remain closed with pain

Grade the best possible response after at least 3 trials in an attempt to elicit the best level of alertness. A score of **E4** indicates at least 3 voluntary excursions. If eyes are closed, the examiner should open them and examine tracking of a finger or object. Tracking with the opening of 1 eyelid will suffice in cases of eyelid edema or facial trauma. If tracking is absent horizontally, examine vertical tracking. Alternatively, 2 blinks on command should be documented. This will recognize a locked-in syndrome (patient is fully aware). A score of **E3** indicates the absence of voluntary tracking with open eyes. A score of **E2** indicates eyelids opening to loud voice, but not tracking. A score of **E1** indicates eyelids open to pain stimulus, but not tracking. A score of **E0** indicates no eyelids opening to pain.

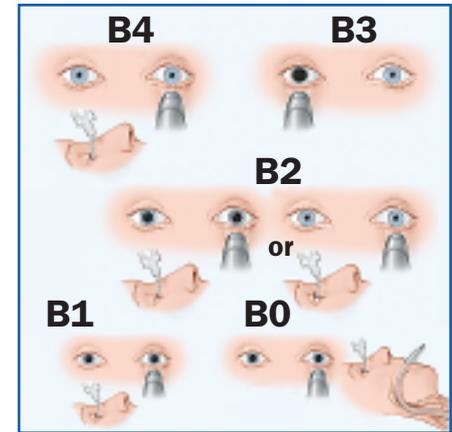
Motor Response (M)



- 4** Thumbs up, fist, or peace sign to command
- 3** Localizing to pain
- 2** Flexion response to pain
- 1** Extensor posturing
- 0** No response to pain or generalized myoclonus status epilepticus

Grade the best possible response of the arms. A score of **M4** indicates that the patient demonstrated at least 1 of 3 hand positions (thumbs-up, fist, or peace sign) with either hand. A score of **M3** indicates that the patient touched or nearly touched the examiner's hand after a painful stimulus compressing the temporomandibular joint or supraorbital nerve (localization). A score of **M2** indicates any flexion movement of the upper limbs. This may be withdrawal or decorticate posturing. A score of **M1** indicates extensor posturing. A score of **M0** indicates no motor response or myoclonus status epilepticus.

Brainstem Reflexes (B)



- 4** Pupil and corneal reflexes present
- 3** One pupil wide and fixed
- 2** Pupil or corneal reflexes absent
- 1** Pupil and corneal reflexes absent
- 0** Absent pupil, corneal, and cough reflex

Grade the best possible response. Examine pupillary and corneal reflexes. Preferably, corneal reflexes are tested by instilling a few drops of saline on the cornea from a distance of several inches (this minimizes corneal trauma from repeated examinations). Cotton swabs can also be used. The cough reflex to tracheal suctioning is tested only when both of these reflexes are absent. A score of **B4** indicates pupil and cornea reflexes are present. A score of **B3** indicates one pupil wide and fixed. A score of **B2** indicates either pupil or cornea reflexes are absent, **B1** indicates both pupil and cornea reflexes are absent, but the cough reflex (using tracheal suctioning) is present. A score of **B0** indicates pupil, cornea and cough reflexes are absent.