

**The FOUR score** Engels (Stead et al., 2009 ; Wijdicks et al., 2005)

**EYE RESPONSE**

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

**MOTOR RESPONSE**

- 4 = Thumbs up, fist, or peace sign
- 3 = Localizing to pain
- 2 = Flexion response to pain
- 1 = Extension response to pain
- 0 = No response to pain or generalized myoclonus status

**BRAINSTEM REFLEXES**

- 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

**RESPIRATION**

- 4 = not intubated, regular breathing pattern
- 3 = not intubated, Cheyne-Stokes breathing pattern
- 2 = not intubated, irregular breathing
- 1 = Triggers ventilator or breathes above ventilator rate
- 0 = Apnea or breathes at ventilator rate

**Instructions for the assessment of the individual categories of the FOUR (Full Outline of UnResponsiveness) score. (Wijdicks et al., 2005) :**

(A) For **eye response** (E), grade the best possible response after at least three trials in an attempt to elicit the best level of alertness. A score of E4 indicates at least three voluntary excursions. If eyelids are closed, the examiner should open them and examine tracking of a finger or object. Tracking with the opening of one eyelid will suffice in cases of eyelid edema or facial trauma. If tracking is absent horizontally, examine vertical tracking. Alternatively, two 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 a loud voice. A score of E1 indicates eyelids open to pain stimulus. A score of E0 indicates no eyelid opening to pain.

(B) For **motor response** (M), grade the best possible response of the arms. A score of M4 indicates that the patient demonstrated at least one of three hand positions (thumbsup, fist, or peace sign) with either hand. A score of M3 (localization) indicates that the patient touched the examiner's hand after a painful stimulus compressing the temporomandibular joint or supraorbital nerve. A score of M2 indicates any flexion movement of the upper limbs. A score of M1 indicates extensor response to pain. A score of M0 indicates no motor response to pain, or myoclonus status epilepticus.

(C) For **brainstem reflexes** (B), grade the best possible response. Examine pupillary and corneal reflexes. Preferably, corneal reflexes are tested by instilling two to three drops sterile saline on the cornea from a distance of 4 to 6 inches (this minimizes corneal trauma from repeated examinations). Sterile 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 corneal 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. A score of B1 indicates both pupil and cornea reflexes are absent. A score of B0 indicates pupil, cornea, and cough reflex (using tracheal suctioning) are absent.

(D) For **respiration** (R), determine spontaneous breathing pattern in a nonintubated patient and grade simply as regular (R4), or irregular (R2), Cheyne–Stokes (R3) breathing. In mechanically ventilated patients, assess the pressure waveform of spontaneous respiratory pattern or the patient triggering of the ventilator (R1). The ventilator monitor displaying respiratory patterns can be 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 PaCO<sub>2</sub> within normal limits. A standard apnea (oxygen-diffusion) test may be needed when patient breathes at ventilator rate (R0).

## **The FOUR score**

Franstalig – met de toestemming van de auteur :

Source : Ledoux D., Piret S., Boveroux P., Bruno MA, Vanhauzenhuysen P., Damas P., Moonen G., Laureys S. Les échelles d'évaluation des états de conscience altérée Réanimation 2008 ; 17 : 695-701. [www.coma.ulg.ac.be](http://www.coma.ulg.ac.be).

### **E : Réponse visuelle**

4 = Fermeture des yeux sur commande (au moins deux fois sur trois) ou poursuite visuelle d'un doigt ou objet (au moins trois fois). Si les yeux sont fermés, ils sont ouverts par l'examineur. Les mouvements d'un œil suffisent. Si la poursuite visuelle est absente horizontalement, elle est évaluée verticalement (locked-in syndrome).

3 = Yeux ouverts sans poursuite visuelle volontaire.

2 = Ouverture des yeux au bruit.

1 = Ouverture des yeux à la douleur.

0 = Pas d'ouverture des yeux à la douleur.

### **M : Réponse motrice**

4 = Lève le pouce en l'air, ferme le poing ou fait le signe « V » de la paix sur commande (au moins un des trois avec la meilleure main).

3 = Localisation de la douleur (touche la main après compression de l'articulation temporomandibulaire ou du nerf supraorbitaire).

2 = Réponse en flexion (normale ou stéréotypée) à la douleur (compression du lit de l'ongle).

1 = Réponse en extension stéréotypée.

0 = Pas de réponse motrice ou myoclonies si état de mal épileptique.

**B : Réflexes du tronc cérébral**

4 = Réflexes pupillaires et cornéens présents (laisser tomber deux à trois gouttes de liquide physiologique sur la cornée d'une hauteur de plus ou moins 15 cm).

3 = Mydriase fixe unilatérale.

2 = Réflexes pupillaires ou cornéens absents.

1 = Réflexes pupillaires et cornéens absents.

0 = Réflexes pupillaires et cornéens et de toux absents (utiliser le système d'aspiration trachéale).

**R : Respiration**

4 = Respiration spontanée régulière.

3 = Respiration spontanée Cheyne-Stokes.

2 = Respiration spontanée irrégulière.

1 = Respiration assistée (déclenche le respirateur).

0 = Respiration contrôlée ou apnée (envisager d'effectuer le test d'apnée standard).