

BOX 1. Observational Scale of Level of Arousal

The Observational Scale of Level of Arousal (OSLA) is a new short scale for measuring LoA in delirium (Table B1). It was devised by two geriatricians (RJH and AMJM) from the Edinburgh Delirium Research Group at the University of Edinburgh, to complement the currently available arousal scales (e.g., Glasgow Coma Scale²⁸ and RASS²¹) because it was found that these existing tools generally do not provide sufficient level of detail to measure the variations seen in delirium.

The OSLA is scored after a brief interaction with the patient, and it does not necessarily require a verbal response. Higher scores indicate an abnormal LoA. It consists of four domains: Eye opening, Eye contact, Posture, and Movement. A total score (score range: 0–15) is obtained by summation of scores on each of the four items. After the interaction with the patient, it generally takes under 60 seconds to complete.

Previous research tested a pilot version of the OSLA in 108 hip fracture patients who were assessed for delirium and LoA preoperatively and up to six further times over 2 weeks (Hall et al., in preparation). Preliminary findings showed that patients with delirium had higher OSLA scores than control subjects without delirium at each time of testing (U between 3.5 and 368.5, *p* between <0.01 and <0.001). OSLA scores correlated significantly with absolute RASS scores at each time of testing (*r_s* between 0.30 and 0.69, *p* between <0.05 and <0.01). Furthermore, OSLA scores were significantly correlated with DRS-R98 scores (*r_s* between 0.40 and 0.68, *p* <0.01).

distracting stimuli such as checkered patterns (Fig. 1). The current study used a modified version of the attention task from Brown et al.¹³ The test consisted of five subtasks that had progressively more difficult attentional demands. Participants were asked to count the number of times the buttons illuminated over the course of each trial and then verbally report that number when prompted at the conclusion of each trial. They were informed that additional, distracting lights may be flashed over the course of the trial but that these distracters should be ignored. Each trial consisted of 3–13 illuminations of the button. Illuminations lasted 1,000 ms with an inter-trial interval ranging between 1,000 and 4,000 ms. A total of 16 trials was presented, consisting of 1 practice trial and 3 trials per task level, with an overall duration of 8 minutes or less. Scores were generated by assigning a score of 1 to each correct answer (the practice trial was not scored), amounting to a summed total score ranging from 0 to 15.

The presence of delirium was assessed with the CAM⁷ and the Delirium Rating Scale-Revised-98 (DRS-R98).²⁶ Hospital staff and patients' case notes provided additional diagnostic information. The Mini-Mental State Examination²⁷ was used as part of the mental status examination.

TABLE B1. Observational Scale of Level of Arousal**Eye Opening**

Score	Description
0	Open on arrival and remain so, under patient's control, outlasts stimulus
1	Open on arrival but close if stimulus removed
1	Open to voice but then outlast stimulus
2	Open to voice but close if stimulus removed
3	Open to gentle physical stimulation (squeezing hand, gently shaking shoulder)
4	Open to pain only
5	No eye opening

Eye Contact

Score	Description
0	Spontaneously makes and holds eye contact appropriately
1	Drowsy and makes eye contact to command but can't hold it for very long
1	Alert but eyes wandering, some appropriate eye contact
2	Alert but eyes wandering, little or no appropriate eye contact
2	Drowsy but makes brief eye contact
3	Eyes will/are open but no eye contact

Posture (NB take into account weakness due to stroke or neurologic disease etc.)

Score	Description
0	Sitting out in chair or up in bed, holding appropriate posture
1	Slumped in chair or bed but attempts to sit upright and sustain posture on request
2	Slumped in chair or bed and unable to sustain posture
3	Lying in bed and unable or no response to request to sustain posture

Movement

Score	Description
0	Moves spontaneously and purposefully with no restless or agitated movements
1	Occasional or mild restless or fidgety movements, no aggressive or vigorous movements
1	Reduced frequency of movement, mildly slowed up
2	Frequent restless or fidgety movements, no aggressive or vigorous movements
2	Moderately reduced frequency and speed of movement, interfering with assessment or self care
3	Aggressive or vigorous, recent pulling out of lines
4	Overtly combative, violent
4	Severely reduced frequency and speed of movement, few spontaneous movements

Score (0–15)

Statistical Analysis

Statistical analyses were carried out using PASW Statistics 18.0 software (SPSS, Inc., Somers, NY). Because the data collected in this study were not normally distributed and the variances were not