

## Summary

The neurological examination of the head-injured patient is limited to pupils and level of consciousness (GCS) during the primary survey. Further information can be gleaned during the secondary survey, even in unconscious patients. The most important aspects are GCS and lateralising signs, including pupillary abnormalities and hemiparesis.

The key to neurological observation is to detect a trend and the GCS therefore becomes more useful with increasing observations. A GCS of 9 may be a good sign in someone whose GCS was 5 an hour ago, or an indication for urgent treatment in someone whose GCS was 14 an hour ago.

An attempt must be made to determine the level of consciousness at the earliest possible time after the injury and then to assess and chart it repeatedly at regular intervals. A decrease of 2 or more points on the GCS suggests significant

deterioration and should be reported to the surgeon or neurosurgeon as a matter of urgency.

More detailed criteria for consultation and transfer in the civilian situation can be found in reference 4.

## Further reading

1. Teasdale G, Jennett B. Assessment of coma and impaired consciousness: a practical scale. *Lancet* 1974; 2: 81-84.
2. Turner DA. Neurological evaluation of a patient with head trauma: coma scales. In: Wilkins RH, Rengachary SS, editors. *Neurosurgery* second edition. New York: McGraw-Hill, 1996. Ch 262: 2667-2673.
3. Plum F, Posner JB. *The diagnosis of stupor and coma*. Third edition. Philadelphia: FA Davis Company, 1980.
4. The management of acute neurotrauma in rural and remote locations. Joint publication of The Neurosurgical Society of Australasia and The Royal Australasian College of Surgeons, Second Edition, 2000. [The first edition (1992) is also available at [www.nsa.on.net](http://www.nsa.on.net) or *J Clin Neuroscience* 1999; 6: 85-93. □

## Military anaesthesia

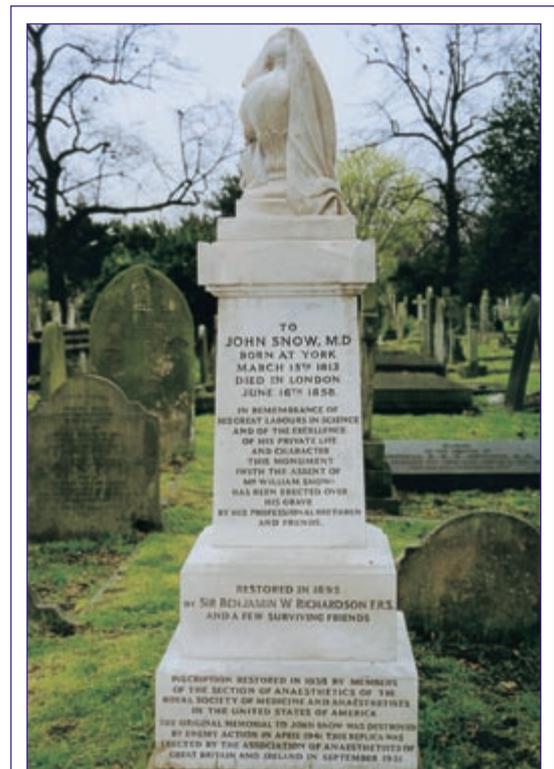
MILITARY ANAESTHESIA in Australia dates from January 1864, when an immigrant Scottish “etherist”, John Henry Hill Lewellin (1818–1886), was commissioned as an Assistant Surgeon in the Prahran and South Yarra Corps of the Victorian Volunteer Force (Rifles), in Melbourne.<sup>1</sup> His foundation appointment occurred 18 years after Dr William Morton, the Boston dentist, had first used modern surgical anaesthesia on 16 October 1846.

Since the earliest days of the discipline, anaesthetists have been subjected to military risk, sometimes even after their death (the memorial to John Snow, pioneer English anaesthetist, was destroyed by bombing in World War II).

Besides Lewellin, Australia’s other pioneering anaesthetists were Belisario,<sup>2</sup> Pugh<sup>3,4</sup> and Buchanan.<sup>2</sup>

Since the Vietnam War, Australia’s operational health commitments have been built around the concepts of (a) the forward surgical team with its support and (b) major preventive medicine endeavours. The forward surgical team can provide Level Three surgical care, and can carry out definitive surgery in the theatre of operations. Such teams are built around a surgeon and an anaesthetist (as in the Peace Monitoring Group on Bougainville); or a general surgeon, an orthopaedic surgeon, an anaesthetist and an intensivist-physician (as in the UNAMIR II deployment in Rwanda, and in both INTERFET and UNTAET deployments to East Timor). The military anaesthetist is pivotal to these operations.

Since 1998, the Defence Health Service within the Australian



The memorial commemorating the life and work of Dr John Snow (1813-1858), in Brompton Cemetery, London (restored after the original was destroyed by German bombing in 1941). Snow first used chloroform anaesthesia, and delivered Queen Victoria of two of her children (in 1853 and 1858) under general anaesthesia. His work, *On chloroform and other anaesthetics*, published in 1858, is one of the milestones in the history of medicine.



Dr William Russ Pugh was a pioneer Australian anaesthetist who, on 7 June 1847, administered ether at St John's Hospital, St John's Square (190 Charles Street, today), in Launceston. This lifesize bronze statue by the sculptor, Peter Corbet, stands on the steps leading to Prince's Park (formerly St John's Square) in central Launceston, and was unveiled in June 1997. Dr Pugh lived on the corner of Frederick and St John Streets, in central Launceston. He compounded many of his drugs in the laboratory attached to his house. Dr Pugh (with Dr James Grant) opened St John's Hospital (the Morton House of today) on 1st September, 1845, as a self-supporting hospital and dispensary.

Defence Force has instituted a formal policy of developing Discipline (or Craft) Groups to promote and foster specialty disciplines within the profession of military health. One such key discipline is military anaesthesia. In March 2000 the first two Australian national workshops on military anaesthesia were held in Launceston. They were convened under the auspices of Wing Commander George Merridew (Consultant Anaesthetist, Launceston General Hospital) and Squadron Leader Haydn Perndt (Royal Hobart Hospital).

These pioneering "hands on" clinical workshops brought together 40 of the 60 Reserve officers who serve as anaesthetists in the Australian Defence Force.

Military anaesthetists require resilience, resolution, the ability to work to exhaustion, flexibility and widespread skills in many aspects of anaesthesia (from life-saving resuscitation of patients with massive limb avulsion, through the spectrum of specialty anaesthetic subdisciplines, to paediatric anaesthesia during humanitarian deployments). The challenges are great, and the spearhead example of the military anaesthesia discipline group has done much to meet these in the context of the great international demands of the future.

**Major General John H Pearn**  
**Surgeon General ADF**

## References

1. Pearn J, Macdonald A. Emigrant etherist: the medical and scientific influence of John Henry Hill Lewellin (1818–1886), pioneer anaesthetist and surgeon and patron of botany in Australia. *Aust N Z J Surg* 1994; 64: 790-794.
2. Wilson G. The first anaesthetics in Australia: an historical update. *Med J Aust* 1992; 157: 781-783.
3. Dunlop NJ. An essay relating chiefly to anaesthetics and their introduction to Australia and Tasmania. *Med J Aust* 1927; 1: 141-152.
4. Crowther WE. The Introduction of surgical anaesthesia in Van Diemen's Land. *Med J Aust* 1947; 2: 561-570. □

Faculty and postgraduate students of the second National Workshop of Military Anaesthesia held in Australia, conducted at the Department of Anaesthetics, Launceston General Hospital, Tasmania, 30-31 March, 2000. Front row (left to right): LTCOL Stuart Inglis, GPCAPT Roger Capps, LEUT Patrick Liston, LEUT Douglas Fahlbusch, LEUT Christopher Scarff, LTCOL Jan Wrobel and LEUT Fabian Purcell. Back row (left to right): Dr Jeremy Wallace (Demonstrator), SQNLDR Haydn Perndt (Lecturer), COL Brian Pezzutti, WGCDR David Schuster, Mr Andy Roussos (ULCO), WGCDR Doug McEwan, MAJ Gerry Meijer, Dr Richard Zacks (Demonstrator) and WGCDR George Merridew (Convenor).

