

Examination primary survey

Examination: primary survey

ATLS guidelines address a fundamental priority: ensuring uninterrupted perfusion of the brain with oxygenated blood. This is especially important after a head injury, given the disturbance to intracranial autoregulation and the sensitivity of the primary injured brain tissue to further insult. Bleeding from scalp lacerations may require management as part of the primary survey as the blood loss can be substantial and ongoing. Check the responsiveness of the pupils and conscious level and check for any gross focal neurological deficits. The blood glucose level should also be measured as early as possible as hypoglycaemia is very dangerous and easily reversible. Pupils The pupil size should be recorded in millimetres and the reactivity documented as present, sluggish or absent. Uncal herniation Sir Gordon Morgan Holmes, 1876–1965, physician, National Hospital for Nervous Diseases, London, UK. William John Adie, 1886–1935, physician, National Hospital for Nervous Diseases, London, UK. parasympathetic supply to the pupil. Unopposed sympathetic activity produces a sluggish enlarged pupil, progressing to fixed and dilated under continued compression. Established pupil changes may reflect pathology anywhere in the eye or the reflex loop made up by the optic nerve, the oculomotor nerve and the brainstem. Direct ocular trauma or nerve injury in association with a skull base fracture can cause mydriasis (dilated pupil) to be present from the time of injury. Pre-existing discrepancy in the pupil size (anisocoria), as a result of Holmes-Adie pupil or cataracts for example, may also complicate assessment. - Glasgow Coma Scale score The GCS score is the sum of scores on three components, as detailed in Table 28.4. The breakdown of the GCS score into eye opening, verbal and motor components should always be recorded and used when communicating the status to other doctors. Remember that the score represents the best performance elicited, so a patient flexing in response to a painful stimulus on the left and localising on the right scores 'M5'. A sternal or supraorbital rub or trapezius squeeze represents an appropriate painful stimulus. Neurological deficit Gross focal neurological deficits, such as paraplegia, may be evident at the primary survey, and an assessment to exclude such a deficit should be carried out, especially if the patient is to be intubated so that subsequent examination will be impossible. Detailed neurological examination is included in the secondary survey. -

TABLE 28.4 Glasgow Coma Scale score for head injury. Eyes open Spontaneously 4 To verbal command 3 To painful stimulus 2 Do not open 1 Verbal Normal 5 Confused 4 Inappropriate/words only 3 Sounds only 2 No sounds 1 Intubated patient T Motor Obeys commands 6 Localises to pain 5 Withdrawal/ flexion 4 Abnormal flexion 3 Extension 2 No motor response 1

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Ensure adequate oxygenation and circulation Exclude hypoglycaemia Check pupil size and response and GCS score as soon as possible Check for focal neurological deficits before intubation if possible

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Bleeding from scalp lacerations may require management as part of the primary survey as the blood loss can be substantial and ongoing. Check the responsiveness of the pupils and conscious level and check for any gross focal neurological deficits. The blood glucose level should also be measured as early as possible as hypoglycaemia is very dangerous and easily reversible. Pupils

The pupil size should be recorded in millimetres and the reactivity documented as present, sluggish or absent. Uncal herniation

Sir Gordon Morgan Holmes, 1876–1965, physician, National Hospital for Nervous Diseases, London, UK. William John Adie, 1886–1935, physician, National Hospital for Nervous Diseases, London, UK. parasympathetic supply to the pupil. Unopposed sympathetic activity produces a sluggish enlarged pupil, progressing to fixed and dilated under continued compression. Established pupil changes may reflect pathology anywhere in the eye or the reflex loop made up by the optic nerve, the oculomotor nerve and the brainstem. Direct ocular trauma or nerve injury in association with a skull base fracture can cause mydriasis (dilated pupil) to be present from the time of injury. Pre-existing discrepancy in the pupil size (anisocoria), as a result of Holmes–Adie pupil or cataracts for example, may also complicate assessment.

- Glasgow Coma Scale score

The GCS score is the sum of scores on three components, as detailed in Table 28.4. The breakdown of the GCS score into eye opening, verbal and motor components should always be recorded and used when communicating the status to other doctors. Remember that the score represents the best performance elicited, so a patient flexing in response to a painful stimulus on the left and localising on the right scores 'M5'. A sternal or supraorbital rub or trapezius squeeze represents an appropriate painful stimulus. Neurological deficit

Gross focal neurological deficits, such as paraplegia, may be evident at the primary survey, and an assessment to exclude such a deficit should be carried out, especially if the patient is to be intubated so that subsequent examination will be impossible. Detailed neurological examination is included in the secondary survey.

TABLE 28.4 Glasgow Coma Scale score for head injury.

Eyes open Spontaneously	4	To verbal command	3	To painful stimulus	2	Do not open	1
Verbal Normal	5	Confused	4	Inappropriate/words only	3	Sounds only	2
No sounds	1	Intubated patient		Motor Obeys commands	6	Localises to pain	5
Withdrawal/ flexion	4	Abnormal flexion	3	Extension	2	No motor response	1

Primary survey

Ensure adequate oxygenation and circulation Exclude hypoglycaemia Check pupil size and response and GCS score as soon as possible Check for focal neurological deficits before intubation if possible

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