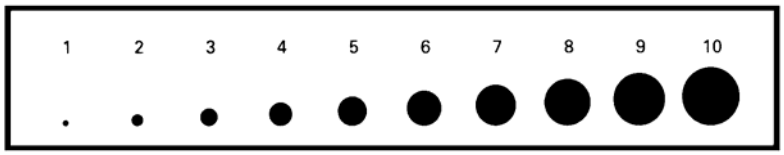
NEUROLOGICAL ASSESSMENT
Pupils

Pup_PreHosp = Pupils prehospital
Pup_FHosp = Pupils first hospital
Pup_Adm = Pupils admission to study hospital
Pup_PostStab = Pupils post stabilization
Pup_ClinB = Best Pupils
Pup_ClinW = Worst Pupils
Pup_Disch = Pupils discharge
Pup_VisitX = Pupils visit

1. CDE Variable	Pup_PreHosp = Pupils pre-hospital (at scene of accident or during transport) Pup _FHosp = Pupils first hospital, before referral to study hospital Pup _Adm = Pupils on admission to study hospital Pup _PostStab = Pupils after primary stabilization Pup _ClinB = Best pupils during a given time period (daily) Pup _ClinW = Worst pupils over a given time period (daily) Pup _Disch = Pupils on discharge study hospital Pup _VisitX = Pupils at predefined visit
2. CDE Definition	The element pupils is differentiated into reactivity and size. Separate assessments for each eye are performed.
3. Recommended instrument for assessment	N/A.
4. Description of measure	Reactivity: binary. Size: numerical. Add date tag for daily assessments.
5. Permissible values	Reactivity: - negative/positive Size: - numerical: 1-9 mm. - untestable/unknown 
6. Classification: Basic / Intermediate / Advanced	Identical for all versions. The time periods at which assessment is required will be dependent on the level of detail mandated by protocol.
7. Procedure	Assess the size of the pupils as accurately as possible; if necessary hold the eyes of the patient open; shine a bright light on to the pupil from an angle and observe whether there is any contraction of the pupil to light. Mark 'untestable' if pupillary size or reactivity can not be assessed

	due to for example orbital swelling, trauma to the orbit or eye or the presence of an artificial eyeball.

8. Comments/Special instructions:
Use a bright light to assess pupillary reactivity; in the traditional neurological examination the light should be directed from an angle in order to differentiate between a response to convergence and the actual response to light. In TBI this is less relevant as the important issue is whether there is any constriction (reactivity) of the pupil and whether this is due to convergence or a consensual response is not relevant. The important aspect is to assess the integrity of the brain stem oculomotor pathways.

9. Rationale/justification:
The development of pupillary abnormalities may be indicative of increasing pressure on the midbrain and a sign of tentorial herniation. The development of pupillary abnormalities warrant immediate diagnostic and therapeutic intervention. The presence of pupillary abnormalities is strongly associated to poorer outcome following TBI.

10. References:
Marmarou A, Lu J, Butcher I, et al. Prognostic value of the Glasgow Coma Scale and pupil reactivity in traumatic brain injury assessed pre-hospital and on enrollment: an IMPACT analysis. *J Neurotrauma*. Feb 2007;24(2):270-80.

Recommended time for assessment:		
Basic	***Intermediate***	***Advanced***
- Admission - Daily - Discharge - Visit X	- Pre-hospital - First hospital - Admission to study hospital - Daily - Discharge - Visit X	- Pre-hospital - First hospital - Admission to study hospital - Post stabilization - Daily best/worst - Discharge - Visit X