Appendix 10.4

Screening Techniques for Vision Dysfunction

Example Questions for Screening:

1. Do you bump into objects and walls more now than before your injury?
   Yes___ No___

2. Were your eyes, eyelids, or area around your eyes injured when your TBI event occurred?
   Yes___ No___

3. Do you cover or close one eye at times since your injury?
   Yes___ No___

4. Have you noticed a change in your vision since your injury?
   Yes___ No___

5. Are you more sensitive to light, either indoors or outdoors, since your injury?
   Yes___ No___

6. Have you had any double vision since your injury?
   Yes___ No___

7. Have you noticed any changes in your peripheral vision since your injury?
   Yes___ No___

8. Is your vision blurry at distance or near since your injury?
   Yes___ No___

9. Have you noticed a change in your ability to read since your injury?
   Yes___ No___

10. Do you lose your place while reading more now than before your injury?
    Yes___ No___

11. How long can you read continuously before you need to stop? Why do you stop reading?
    Yes___ No___

12. Do you get headaches during/after reading more now than before your injury?
    Yes___ No___

13. Do you have more difficulty remembering what you have read now than before your injury?
    Yes___ No___

Goodrich GL, Martinsen GL, Flyg HM, et al. Development of a mild traumatic brain injury-specific vision screening protocol: a Delphi study. *J Rehabil Res Dev*. 2013;50(6):757-768.

Tests to conduct for visual screening

Visual Acuity	Visual acuity should be performed at both distance and near with each eye, with their current prescription (if applicable).
Extra-ocular Motility	The "Broad H" Test is designed to assess the action of all 6 extraocular muscles around each eye. Have the patient follow a penlight as it is moved into the patient's right and left field, as well as upwards and downwards in both right and left gaze, making a large "H" pattern out to at least 30-40 degrees (shoulder width as a rule of thumb). The movements should be full and smooth, without diplopia or eyestrain.
Vergence	The ability for the eyes to converge as a team should also be assessed via the Near Point of Convergence test. As a penlight is slowly brought inward towards the patient's nose, the patient is asked to report when the light "breaks into two" (diplopia). The normal point of convergence is approximately 8cm or less from the nose. If one eye turns outwards, or the patient report diplopia is greater than 8 cm, further investigation is warranted.
Pupils	Pupils should be equal, round and reactive to light without afferent pupillary defect.
Fundoscopy	The internal retinal examination should reveal healthy, distinct optic nerves, maculae and retinal tissue.