

Vision Screening Checklist for Traumatic Brain Injury (VSCTBI)

A Vision Screening and Referral Tool for Non-Ophthalmic Professionals within Community Neuro-Rehabilitation
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Vision and Traumatic Brain Injury

A Traumatic Brain Injury (TBI) can sometimes interrupt the lines of communication between the eyes and the brain, regardless of the severity of the injury; however, the symptoms arising from this damage can often be mistaken for symptoms of cognitive dysfunction, such as slowed information processing or reduced ability to attend to and concentrate on visual tasks. Furthermore, some subtle symptoms may not be identified at all if the right questions are not asked, or if the client is not assessed by the appropriate specialist.

It is suggested that up to 90% of TBI survivors may suffer from some form of visual dysfunction arising from their injury ^[1], such as (but not limited to); *blurred or double vision; sensitivity to light; difficulty with reading; headaches when conducting visual tasks; reduction or loss of visual field; pain on eye movement; and difficulties/differences with the way their eyes move.*

Visual dysfunction following TBI can be caused by multiple factors including direct neurological damage to the visual cortices, optic nerve injury, extra-ocular muscle injury or damage to the internal anatomy of the eye itself. Vision forms an integral part of our day-to-day functioning, and affects our ability to complete functional tasks, whilst working with our vestibular system to help us to maintain our balance and keep ourselves safe.

Visual function is often overlooked when assessing brain injury symptoms, particularly during initial assessments and in the initial stages of rehabilitation planning. Vision problems that are left untreated or which are misdiagnosed can have serious consequences. Following a TBI, it is recommended that individuals are assessed by an appropriately qualified specialist to help identify or rule out pathological dysfunction ^[2].

Delineation of Professional Roles

An **optician** is the term generally used to describe two different types of professionals concerned with basic care and treatment of the eyes; these are a **dispensing optician** and an **ophthalmic optician**, otherwise known as an **optometrist** in the UK; opticians generally deal with all things eye-care related. Dispensing opticians often work in high street stores, and provide advice on eye care, lens type and frame choice based on the prescription of an ophthalmic optician or ophthalmologist. Optometrists are more highly trained than dispensing opticians, are qualified to examine the eye to find visual deficits, to prescribe corrective eyewear and vision aids, and to recommend vision therapy; optometrists can often work in high street stores or in some hospitals.

Ophthalmologists and **ophthalmic surgeons** are medical doctors/surgeons who are highly specialised in eye care and treatment; they specialise in the identification and treatment of serious conditions and diseases of the eye and the surrounding anatomy using medicine and surgical intervention, working closely in some cases with other medical specialists including maxillofacial surgeons, neurologists and neurosurgeons.

VSCTBI - Intended Use

The VSCTBI is a referral tool which should be used to help **non-ophthalmic professionals** (i.e. case managers, therapists and other health & social care professionals) consider whether an initial ophthalmic assessment is required, to help identify or rule out potential underlying causes for the individual's presenting symptoms.

Like many screening tools ^[3], the VSCTBI is a **referral tool only** and is not intended to replace thorough ophthalmic assessment or to provide a diagnosis; non-ophthalmic professionals should use the VSCTBI to report on whether ophthalmic assessment is required.

Non-ophthalmic professionals should use the VSCTBI during their initial assessments with clients, or in review or follow-up sessions to plan for subsequent exploration and assessment as part of the broader rehabilitation programme.

Detailed analysis concerning the presence, impact and severity of any such visual dysfunction following TBI is to be determined by the assessing ophthalmic professional, to help identify or rule out potential problems, and to guide the MDT when considering the broad issues influencing the client's rehabilitation.

Instructions for use of VSCTBI

Interview the individual to whom the assessment relates; as individuals with TBI can sometimes have difficulty identifying and communicating their difficulties, it may be useful to have a family member or friend present to help inform the assessment.

Complete all sections of the VSCTBI; it may be helpful to complete one checklist with the individual's responses, and another with the family member or friend's responses if their responses differ.

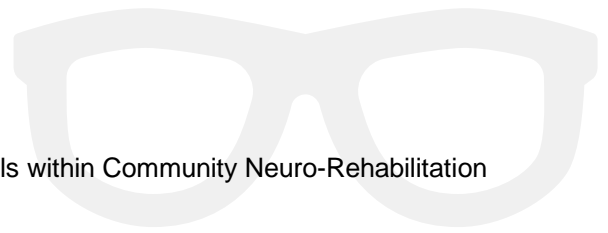
If one or more queries, difficulties or changes are noted since the TBI, obtain consent and refer for a full ophthalmological assessment.

References:

- [1] Cluffreda KJ, Kapoor N, Rutner D, Suchoff IB, Han ME, Craig S. (2007) Occurrence of oculomotor dysfunctions in acquired brain injury: a retrospective analysis. *Optometry*;78(4):155-61.
- [2] Abbas Farishta, R., & Farivar, R. (2022). Montreal Brain Injury Vision Screening Test for General Practitioners. *Frontiers in human neuroscience*, 16, 858378.
- [3] MacDonald, S. (2015). *Cognitive Communication Checklist for Acquired Brain Injury (CCCABI)*. CCD Publishing.

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Individual's Name: _____

Person Interviewed: _____
(if different)

General							
Have you been seen by your optician or in the hospital eye department since your accident?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, why? Please explain:							
Visual Acuity							
Did you need to wear glasses to help you to see before your brain injury?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Have you noticed a change in your vision in either or both eyes since your brain injury?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, please explain:							
Was this immediately after the accident or did it develop later?				<input type="checkbox"/> Immediately	<input type="checkbox"/> Later	<input type="checkbox"/> N/A	
Visual Field							
Do you tend to bump into objects such as door frames or furniture on one side or both sides?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
If yes, is this different to before your brain injury?				<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A	
Please explain:							
Have you noticed difficulty in seeing/detecting objects approaching you from one side?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Please explain:							
Convergence & Eye Movements							
Have you noticed one or both eyes turning in or out in the mirror or in photos?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do you experience any double vision?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
If so is this horizontal (one next to the other), or vertical (one above the other)?				<input type="checkbox"/> Horizontal	<input type="checkbox"/> Vertical	<input type="checkbox"/> Not sure	
Do you need to close one eye or tilt your head to see clearly?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do you have difficulty judging steps, kerbs or walking over uneven ground?				<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Don't know	
Have you noticed that what looks ahead to you isn't always actually straight ahead since your injury?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do you encounter difficulty, headache, slowness or blurred vision when reading or writing, even with glasses?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
How long can you read for, comfortably?		<input type="checkbox"/> 1-5 mins	<input type="checkbox"/> 6-10 mins	<input type="checkbox"/> 11-15 mins	<input type="checkbox"/> 16-20 mins	<input type="checkbox"/> 21 mins +	<input type="checkbox"/> Don't know
Visual Processing							
Do you have difficulty judging the speed of oncoming people or vehicles?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
If so, a) do you bump into people when walking on the pavement?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
b) do you find it harder to safely cross the road?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
c) did you have these same problems before your brain injury?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do you get tired in or avoid going into busy environments such as shopping centres and supermarkets?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do you find that daylight or normal indoor lighting is uncomfortable or causes too much glare?						<input type="checkbox"/> Yes	<input type="checkbox"/> No
Can you comfortably watch fast paced action films on TV?						<input type="checkbox"/> Yes	<input type="checkbox"/> No

If one or more queries, difficulties or changes are noted since the TBI, obtain the client's consent and refer for a full ophthalmological assessment.

Checklist Completed by:

Name: _____ Date: _____

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