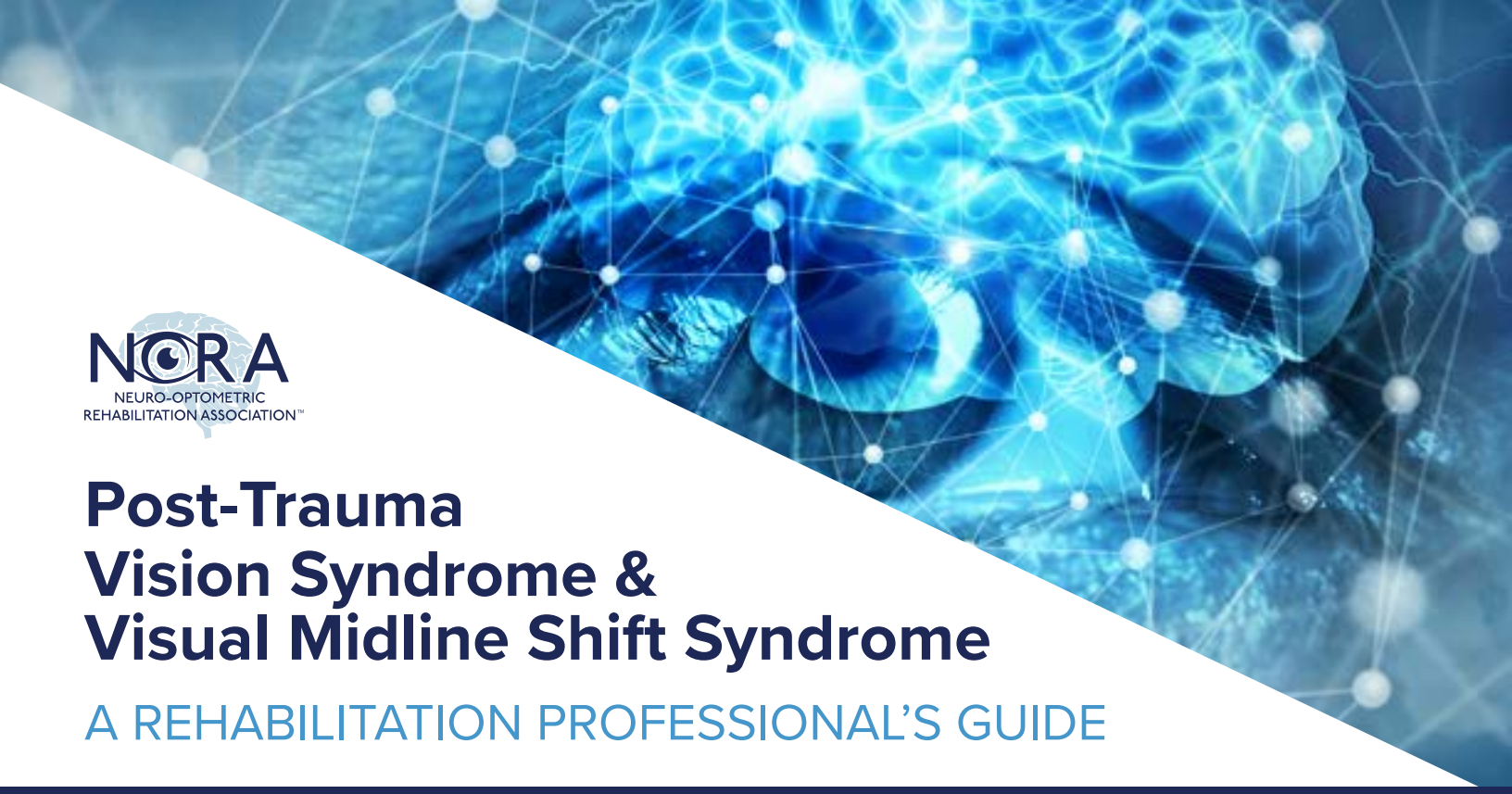

NORA
NEURO-OPTOMETRIC REHABILITATION ASSOCIATION™

Post-Trauma Vision Syndrome & Visual Midline Shift Syndrome

A REHABILITATION PROFESSIONAL'S GUIDE

This guide and checklist has been prepared to assist rehabilitation professionals (doctors, therapists, counselors, etc.) in determining the appropriateness of referring clients for neuro-optometric rehabilitation and treatment. Reliable observation skills provide valuable information to professionals regarding clients who have sustained a traumatic brain injury, CVA or other neurological impairment. This information may be a first step in determining if visual difficulties are interfering with the rehabilitation progress of an individual.

Insults to the cortex produced by a traumatic brain injury cause stress in central and autonomic nervous systems. The effect on vision causes an interference with the ambient visual process which is part of the sensory-motor feedback loop. This disruption occurs at the level of mid-brain where vision is matched with kinesthetic, proprioceptive, and vestibular processes. As a result, a head injured person may experience diplopia (double vision), binocular dysfunction, or concentration difficulties.

In the past, these symptoms were diagnosed as individual eye problems or muscle imbalances. However, the visual system is really a relationship of sensory-motor functions which are controlled and organized in the brain. The eye alignment imbalances and other reported difficulties that result from a head injury often occur because of dysfunction of the ambient visual process affecting sensory-motor spatial disorganization. This causes an eye to turn out (exotropia) or a strong tendency to both eyes to diverge (exophoria).

The resulting binocular problems are characteristic of a syndrome— **Post Trauma Vision Syndrome (PTVS)**.

The characteristics of PTVS include:

- Exotropia or High Exophoria
- Accommodative Insufficiency
- Convergence Insufficiency
- Low Blink Rate
- Spatial Disorientation
- Poor Fixations and Pursuits
- Unstable Peripheral Vision

The symptoms of PTVS include:

- Possible Diplopia
- Objects Appear to Move
- Poor Concentration and Attention
- Staring Behavior
- Asthenopic Symptoms

After a neurological impairment such as TBI or CVA, mismatches in neuro-motor and ambient vision processing can occur, causing shifts in concept of a person's visual and neuro-motor midline. This shift in midline can cause a person to shift his body laterally or anteriorally/posteriorally, affecting balance, posture, and gait. This shift in visual midline has been termed the Visual Midline Shift Syndrome (VMSS).

Due to the major impact of the visual system on cognitive and motor function, the visual rehabilitative needs of the head injured, stroke, or neurologically impaired patient must be addressed as early as possible. Neuro-optometric rehabilitation is an individualized treatment regimen for patients, with visual deficits as a result of such injuries. The treatment plan improves specific acquired vision dysfunctions determined by standardized diagnostic criteria. Treatment regimens encompass medically necessary non-compensatory lenses and prisms with and without occlusion and other appropriate rehabilitation strategies.

The Characteristics and Symptoms of VMSS include:

- Associated Neuromotor Difficulties with Balance, Coordination, and Posture
- Leaning Forward/Backward
- Leaning to One Side
- Seeing the Floor Tilted

Rehabilitation Professional's Checklist (PTVS/VMSS)

Behavioral observations during therapy sessions or medical examinations, in-depth interviews and screenings will provide information to rehabilitation professionals about potential visual and neuro-motor dysfunctions. Following is a list of client symptoms and/or behaviors that may be reported or observed. If these symptoms are present, the client may be in the Post Trauma Syndrome and/or the Visual Midline Shift Syndrome and should be referred for neuro-optometric rehabilitation.

_____

Patient Name

Date: _____

Post-Trauma Vision Syndrome

- ☐ Double vision
- ☐ Headaches
- ☐ Blurry vision
- ☐ Dizziness or nausea
- ☐ Attention or concentration difficulties
- ☐ Staring behavior (low blink rate)
- ☐ Spatial disorientation
- ☐ Loses place when reading
- ☐ Can't find beginning of next line when reading
- ☐ Comprehension problems when reading
- ☐ Visual memory problems
- ☐ Pulls away from objects when they are brought close to him/her

Visual Midline Shift Syndrome

- ☐ Dizziness or nausea
- ☐ Spatial disorientation
- ☐ Consistently stays to one side of hallway or room
- ☐ Bumps into objects when walking
- ☐ Poor balance or posture: leans back on heels, forward, or to one side when walking, standing or seated in a wheelchair

Rehabilitation Professional's Comments:

For more information about Neuro-Optometric Rehabilitation, including where to find a Neuro-Optometric Rehabilitation Optometrist near you, visit www.noravisionrehab.org

noravisionrehab.org

Bowersox Vision Center 3701 Hopewell Rd.
(Taylorsville Rd at the Snyder) Louisville or
403 Washington St Shelbyville, KY
V: 502 647 3937 F: 502 633 7326
Drs. Bowersox, Young, Bowling & Greif
DrBowersox.com

NORA
NEURO-OPTOMETRIC REHABILITATION ASSOCIATION™

Enhancing Neurological Recovery Through Vision Rehabilitation