



# Visual disturbances in PTSD and its management through Neuro-Optometric Rehabilitation Therapy : A Case based approach

Priya Pandey M.Optom, FCSO-USA, MCOptom (UK),(PhD),Rabindra Kumar pandey Moptm,FAAO, FOVDR-USA,MCOptom-UK,(PhD),Vijaya Lakshmi M B.Optom, FBVVT  
Contact US : caringvisiontherapy@gmail.com

## Introduction

Post traumatic stress disorder(PTSD) is a prevalent and complex condition that arises in response to exposure to traumatic events, significantly impacting individuals mental well being . Characterized by a diverse array of symptoms, PTSD can affect cognition, mood , behaviour and vision. An estimated of 3.9% of the world population has had PTSD in some stage in their lives. Neuro optometric rehabilitation can play a role in addressing visual symptoms experienced by individuals with PTSD. This case report highlights that comprehensive neuro vision rehabilitation can provide additional benefits in the treatment of vision related symptoms associated with PTSD significantly improving daily functioning.

## Case Report

A 32-year-old female presented with a complaint of intermittent blurred vision at near following prolonged near tasks associated with difficulty in shifting focus from near to distance particularly during activities which involves neck movement and while driving with poor balance for one year. The patient has a history of PTSD with comorbid anxiety and depression. The PTSD was reported to be associated with childhood trauma. NSBVA findings indicated fusional vergence dysfunction and accommodation infacility. COVD QOL questionnaire score was 37 and BVDQ was 35 which is moderately high

PARAMETERS	PRE VT	POST VT
BCVA	OD:6/6, N6 @ 40 cm OU: 6/6, N6 @ 40 cm	OD:6/6, N6 @ 40 cm OU: 6/6, N6 @ 40 cm
WFDT	Fusion at all distance	Fusion at all distance
Stereopsis	40 seconds of arc	40 seconds of arc
Cover Test	Distance: Orthophoria Near: Orthophoria	Distance: Orthophoria Near: Orthophoria
EOM	Full Free Movements	Full Free Movements
NPC	11/15 cm	6/9cm
NPA	OD: 12.5 cm OS: 13 cm OU: 11 cm	OD: 13 cm OS: 14cm OU: 11 cm
MEM	OD: +1.OODS OU: +1.00DS	OD: +0.50DS OU: +0.50DS
NFV(distance)	X/4/2	X/14/10
NFV(near)	6/12/8	X/16/14
PFV(distance)	10/16/12	X/40/30
PFV (near)	12/16/12	X/40/35
Vergence facility	3cpm(Difficulty with BI and BO)	16cpm (No difficulty in BI and BO)
Accommodative facility	OD: 1 cpm OS:0.5 cpm OU: 2 cpm Difficultly with plus lens	OD: 12 cpm OS: 13 cpm OU: 8 cpm No difficulty with plus lens
NRA	+2.50 DS	+2.50 DS
PRA	-2.75 DS	-2.75 DS
Advance Romberg test	Grade 4	Grade 0

## Management Plan

Following diagnosis, the primary objective was to improve the fusional vergence amplitudes and accommodative facility to enhance binocular stability and focusing flexibility. Upon establishing improvements in vergence functions and accommodation , gaze stabilization was introduced to address visual symptoms provoked by head and neck movements which aimed to optimize visual-vestibular integration and to improve functional visual performance during dynamic visual activities along with lifestyle modifications.

## Methods

### Phase 1: Accommodation,vergence And Gross Oculomotor Training

COMPONENT	CLINICAL OBJECTIVE	THERAPY PROCEDURES	EXPECTED OUTCOME
Accommodation Training	Improve accommodative accuracy, amplitude and flexibility	Plus, lens relaxation Accommodative flippers (+/- 1.00DS),Hart chart (Near-Far shifts)	Improved focusing stamina and dynamic accommodative response
Vergence Training	Increase vergence amplitude and flexibility ; improves fusional reserves	Brock string; Tranaglyphs/Aperture Ruler/Bernelloscope; VTS( Manual vergence and RDS)	Enhanced convergence/divergence control and sensory fusion

Gross Oculomotor Training	Improve saccades, pursuits and eye and hand coordination	SVI Eye-hand Coordination; Rotator; Saccadic Charts; Pegboard Rotator	Better ocular motility, tracking accuracy and motor integration
---------------------------	--	---	---

### Phase 2: Vergence & Fine oculomotor Integreation with Vestibular Activation

Vergence with Postural Demand	Integrate vergence skills with balance and spatial orientation	Brock string in varied gazes; Balance board Vergence Tasks; VTS(BI/BO, Rotational Vergence , Jump ductions)	Improved vergence stability under dynamic conditions
Cognitive balance training	Improve postural stability and functional balance	Balance training system	Improved balance control ,enhanced dual task performance and reduced risks of fall in functional activities
Oculomotor-Vestibular Integration	Enhance coordination between visual and vestibular systems	Tandem Walking with fixation charts; Saccadic charts with walking beam; Metronome guided eye movements	Improved visual-motor timing and sensorimotor integration

### Phase 3: Gaze Stabilization& Peripheral Awareness Training

Gaze Stabilization (VOR Training)	Improve Vestibulo-ocular reflex(VOR) function and fixation stability	Multiple wall charts with balance board; Visual feedback training	Improved peripheral processing efficiency and spatial orientation
Peripheral Awareness expansion	Enhance spatial awareness and visual field integration	Marsden ball; Macdonald Peripheral Awareness chart; SVI with central and peripheral targets	Increased peripheral processing efficiency and spatial orientation

### Adjunct Therapy: Syntonic Phototherapy

Syntonic Phototherapy	Modulate autonomic balance	Upsilon Omega filter-10 minutes; 10 minutes break; Mu Upsilon filter -10minutes	Improved autonomic balance and visual function
-----------------------	----------------------------	---	--

## Discussion

This case highlights clinically significant visual dysfunction associated with PTSD, including reduced accommodative facility, vergence insufficiency, gaze instability, and constricted peripheral awareness. Elevated pre-intervention scores on COVD-QOL and BVDQ indicated substantial visual symptoms affecting daily functioning's is known to involve autonomic dysregulation and altered visual-vestibular integration, which may manifest as binocular instability, hypervigilance, and spatial disorientation (Kaplan & Sadock, 2015). These findings are consistent with reports of oculomotor and accommodative dysfunction in neurologically mediated conditions (Ciuffreda et al., 2007).A structured neuro-optometric rehabilitation program focusing on fusional vergence amplitude, accommodative facility, gaze stabilization, and peripheral awareness training resulted in measurable clinical improvement and significant symptom reduction. The inclusion of syntonic phototherapy may have supported autonomic balance and visual comfort (Lieberman, 1991).Post-therapy improvements in clinical findings and questionnaire scores reflect meaningful functional recovery. This case underscores the importance of comprehensive binocular and neuro-visual assessment in patients with PTSD and supports the role of targeted vision therapy in improving quality of life. Objective findings were supported by elevated symptom scores on both COVD-QOL and BVDQ questionnaires prior to intervention. Following a structured Neuro Optometric Rehabilitation measurable improvements were observed and importantly, reduced symptomatic questionnaire score outcomes reflected substantial overall relief.

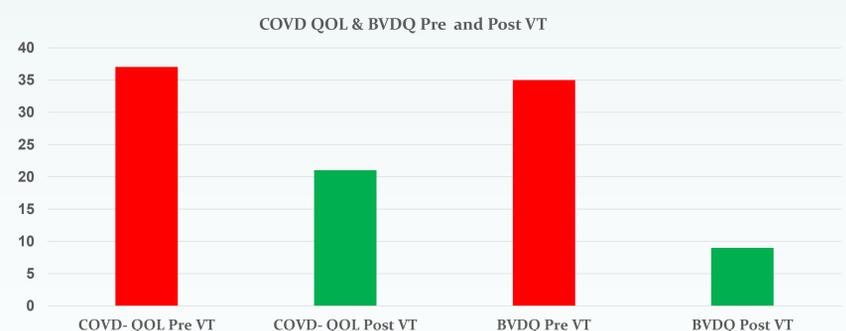


Figure 1: COVD -QOL & BVDQ Scores Pre and Post VT

## Conclusion

This case report emphasizes the clinical importance of comprehensive neuro optometric rehabilitation as a primary intervention for vision - related sequelae associated with PTSD. It is essential for optometrists to recognize the visual manifestations and to adopt to structured , individualized rehabilitation program which will improve functional visual performance and activities of daily living.

## Reference

