The Optometrist's Guide to Strabismus: Reorganizing Space, Time and the Visual Process

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DAY 1	Session Title:	3 Learning Objectives Per Session
9 – 10.30 am	Thinking in 4 Dimensions ☒ Lecture ☐ Workshop	Participants will be able to: 1. Characterize strabismus as a visual processing problem which impacts the whole person, and is not limited to an "eye-problem." 2. Categorize the processing adaptations which patients with strabismus learn to make in order to cope with the mismatch between the 3-D world as confirmed by touch, and the visual input of mis-aligned visual axes. 3. Explain the "driver/passenger" adaptation as it facilitates appreciation of stereopsis despite an eye posture with misaligned visual axes.
10.30 – 11 am	Break	
11 – 1:00 pm	Relating to Patients with Strabismus ☒ Lecture ☐ Workshop	Participants will be able to: 1. Describe the purpose of strabismus therapy as helping the patient appreciate global organization, in space and in time. This can be accomplished with activities in which visual information is used to guide movement with both static and dynamic targets (accounting for both spatial and temporal visual information processing). 2. Illustrate how the primary optometric exam findings can be evaluated to better relate to the patient's perspective: Rather than gathering concrete data, explain implications and inferences about visual information processing, based on standard exam data. 3. Analyse prognostic indications of binocular processing by comparing unilateral and alternating cover test findings.
1 – 2:00 pm	Lunch	

2-4 pm	Sensori-motor Diagnostics for Strabismus ☐ Lecture ☒ Workshop	Participants will be able to: 1. Apply visual biofeedback to help all patients (strabismic as well as all others with binocular vision disorders) experience sensory fusion. 2. Describe how the patient can be trained to develop responsibility and control over their visual perception during visual biofeedback exercises which modify the neural pathways between each eye-channel and the visual cortex. 3. Demonstrate adoption of the posture-oriented terms, "eso-" and "exo- diplopia." rather than refer to images as "uncrossed" or "crossed" during dissociative activities, so a source of language confusion is eliminated when switching between image localization activities and image projection activities.
4 – 4.30 pm	Break	
4.30 – 6pm	How do they function like that? Learning to see by logic ☒ Lecture ☐ Workshop	Participants will be able to: 1. Recognize that a patient may consider the image from one eye to be "unreal" as a survival mechanism… but that this will interfere with the patient's ability to make integrated use of the visual information presented through that eye-channel. 2. Recognize anomalous projection as a sensory adaptation which preserves some binocular vision benefits. 3. Construct the testing environment (like a laboratory experiment), so that the doctor/therapist removes the logical "clues" that the patient typically uses to interpret space.

DAY 2	Session Title:	3 Learning Objectives Per Session
9 – 10.30am	Working with the patient on the MIT/ Swirl, part 1 ☒ Lecture ☐ Workshop	Participants will be able to: 1. Recognize that Suppression is Protection, it is the brain's way of managing information which it is not prepared to see or use. 2. Know that anti-suppressive activities run the risk of disrupting the patient's safety mechanism, and should be approached with great care. 3. Employ the MIT (or Slotnick Swirl) as a target which naturally facilitates fusion (as it is large and round) while stimulating visual awareness with constant motion.
10.30 – 11am	Break	
11 –1 pm	Working with the patient on the MIT/ Swirl, part 2 ☒ Lecture ☐ Workshop	Participants will be able to: 1. Employ placement of the red filter over the non-preferred eye to help the patient increase attention for the under-used visual pathway. 2. Recognize that visual perceptual activities require extended viewing time for the patient to just observe. This allows the two eye-channels to come into balance at each condition (prism) change. 3. Base out fusion ranges require positive, voluntary effort, and should be engaged before Base in ranges, regardless of eye posture. 4. Binasal occlusion is an effective tool for disrupting anomalous projection in most patients with strabismus, regardless of eye posture.
1 – 2 pm	Lunch	

2 – 4 pm	Building a 4-D Brain, part 1 ☒ Lecture ☐ Workshop	Participants will be able to: 1. Illustrate how monocular depth cues can be used to prepare the brain for stereopsis development (binocular depth perception). 2. Apply looming as a dynamic (i.e. time-based) monocular depth cue, which can be used to build visual-motor planning skills in the therapy room. 3. Recognize that while looming provides a monocular cue to depth perception in which size changes as an object approaches, depth perception is more accurate when both size and stereo disparity changes occur in coordination, under binocular conditions. 4. Apply monocular depth cues such as motion parallax as a visual feedback mechanism, to help patients with binocular dysfunctions confirm the accuracy of their eye-posture with respect to the target when working independently.
4 – 4.30 pm	Break	
4.30 – 6 pm	Building a 4-D Brain, part 2 ☒ Lecture ☐ Workshop	Participants will be able to: 1. Construct sensory integration activities to provide opportunities for agreement between visual input and other forms of sensory input (tactile, auditory, vestibular, proprioceptive, etc.). 2. Recognize that peripheral vision is critical for all stereoscopic experiences. Therefore, activities which promote simultaneous visual information processing skills over an area help to prepare the brain for stereoscopic perception. 3. Prescribe tachistoscopic visual spatial memory activities to reward simultaneous perception over an area, and support visual processing of areas (whether conducted monocularly or binocularly). 4. Administer central-peripheral integration activities to help patients to develop and internalize visual spatial organization skills.

Note, Day 3 Workshop attendees should bring horizontal prism bars, red/blue and red/green glasses. The HTS red-blue with the cobalt blue filter is preferable.

DAY 3	Session Title:	3 Learning Objectives Per Session
8:30– 10.00 am	Diagnostics of Visual Projection ☐ Lecture ☒ Workshop	Participants will be able to: 1. Illustrate cover testing with the simultaneous prism cover test, in order to preserve functional posture with minimal binocular disruption. 2. Recognize and appreciate the flick on cover testing as a pathognomonic indication of anomalous projection. 3. Practice presenting stimuli and interpreting projections with the Brock Posture Board. 4. Practice interpreting image projections with the Slotnick Swirl for diagnostic applications.
10 – 10:15 am	Break	
10:15 - 12 pm	Therapeutics: Development of binocular processing ☐ Lecture ☒ Workshop	Participants will be able to: 1. Assess the effect of prolonged observation, using time with the experience to provide new opportunities for neural adaptation. 2. Practice manipulating image projections with the Slotnick Swirl, coaching patients to develop responsibility and control over their own binocular visual perception. 3. Facilitate simultaneous perception with over-compensating prism, moving images to under-utilized retinal areas for a slow, controlled approach to fusion which minimizes prism adaptation effects. 4. Evaluate decision-making junctures with the Slotnick Swirl, determining whether the patient is ready to build binocular fusion skills, or needs additional practice with simultaneous processing skills.
12 - 1 pm	Lunch	

1pm- 2.30pm	Building a 4-D Brain: Vision Therapy techniques for all binocularly-challenged patients: Supplementary Activities ☐ Lecture ☒ Workshop	Participants will be able to: 1. Evaluate a large variety of activities supporting *all* patients with binocular and oculomotor dysfunctions. 2. Envision supplementary procedures which support the development of spatial organization and 4-dimensional thinking in patients with strabismus and other binocular dysfunctions. 3. Review and identify sensory integration opportunities within familiar vision therapy techniques, to elevate consciousness for real-life integration of visual input with other sensory inputs.