Course Description: This workshop will present a multidisciplinary approach to the techniques used to diagnosis and treat vestibular ocular and vision disorders in patients with post-concussion syndrome. We will use a hands-on approach with stations demonstrating both diagnostic and treatment techniques that can easily be incorporated into any optometry practice.
1. Introduction
   a. Overview of common conditions that present in patients with post-concussion syndrome
      i. Vestibular ocular dysfunction
         1. Balance
         2. VOR
      
      ii. Oculomotor dysfunction
         1. Fixation
         2. Pursuits
         3. Saccades

      iii. Vergence dysfunction
         1. Convergence insufficiency
         2. Vergence infacility
         3. Convergence excess

      iv. Accommodative dysfunction
         1. Accommodative insufficiency
         2. Accommodative infacility
         3. Accommodative excess/accommodative spasm

      v. Symptoms common with post-concussion syndrome
         1. CISS
         2. CISS-CON

   b. General considerations of therapy in the concussed population
      i. Typically begin vision therapy ≥ 1-month post-injury
         1. Due to cognitive and physical rest (recovery period)
         2. Time it takes to get vision referral

      ii. Monitor carefully for symptoms present during therapy/training sessions
         1. Therapy is not recommended if they are causing significant headaches, dizziness, difficulty concentrating or remembering, irritability or drowsiness.
         2. It is important to modify and give breaks during physical activities and activities that require a lot of thinking or concentration if causing symptoms to worsen.
         3. Actively co-manage the patient with referral sources and other members of the health care team (neurology, sports medicine, PCP, physical therapist)

      iii. Monitor symptoms throughout recovery
         1. CISS
2. CISS-CON

2. Station 1A: Vestibular Ocular – diagnostic testing
   a. Evaluation to rule out Benign Paroxysmal Positional Vertigo
   b. Evaluation of the Cervical spine
      i. Full flexion rotation test
      ii. Modified sharp purser test
   c. Vestibular-ocular function evaluation
      i. Dynamic visual acuity test
      ii. Step-over Cone-tap test
      iii. Ball-Catch-Rotational test
   d. Return-to-sport diagnostic testing protocol

3. Station 1B: Vestibular Ocular – treatment techniques
   a. Epley’s Maneuver (treatment for Benign Paroxysmal Positional Vertigo)
   b. Tandem line walk with vestibular-ocular reflex x 1
   c. Tandem stance card drills
   d. Ball pursuits
   e. Painted dot ball drills
   f. Ball-catch-rotational drill
   g. Step-over cone-tap drills with line reads
   h. Sport specific training and accommodation drills
   i. Tandem line-walk with vestibular ocular reflex

4. Station 2A: Oculomotor – diagnostic testing
   a. Vestibular Ocular Motor Screening (VOMS) assessment
   b. Developmental Eye Movement test
   c. King Devick Test

5. Station 2B: Oculomotor – training techniques
   a. Hart chart saccades
   b. Letter/symbol tracking
   c. Visual tracing
   d. Flashlight tag

6. Station 3A: Vergence – diagnostic testing
   a. Near point of convergence (repeat 3 times)
   b. Positive fusional vergence with prism bar (repeat 3 times)
   c. Negative fusional vergence with prism bar (repeat 3 times)
   d. Vergence facility

7. Station 3B: Vergence – training techniques
   a. General training approach
      i. Gross convergence → smooth fusional vergence → step fusional vergence → jump fusional vergence → improve both BI/BO
vergence \rightarrow \text{jumps between chiastopic fusional vergence and orthopic fusional vergence

ii. Incorporate vergence facility throughout training

b. Gross convergence
   i. Brock string
   ii. 3-dot card

c. Fusional vergence
   i. Vectograms
   ii. Aperture rule
   iii. Lifesaver cards
   iv. Eccentric circles

d. Vergence facility
   i. 4BI/8BO flippers
   ii. Eccentric circles with look-aways
   iii. Eccentric circles with both chiastopic and orthopic fusion

8. Station 4A: Accommodation – diagnostic testing
   a. Accommodative testing is done monocularly to eliminate accommodation that is generated through vergence

   b. Accommodative accuracy
      i. Dynamic retinoscopy
         1. MEM
         2. Nott

   c. Accommodative amplitude
      i. Monocular push-up accommodative amplitude

   d. Accommodative facility
      i. Monocular accommodative facility (+/-2.00D flippers)

9. Station 4B: Accommodation – training techniques
   a. Monocular near/far Hart Chart

   b. Monocular loose lens accommodative rock

   c. Binocular accommodative flippers