

# Developing a game plan for headaches and concussion protocol

## Course Description:

This course will give insights about headaches and concussions from both a doctor and patient perspective. Dr Nanasy, who suffered a concussion almost 3 years ago, will recount her own experiences during recovery as well as give specific details that will allow attendees to feel confident assessing headache and concussion patients in their practice.

## Course Learning Objectives:

Attendees will:

1. Understand how to evaluate, identify, and understand various testing methods for headaches and concussion vision syndrome
2. Understand protocol evaluation, testing, and observation for comprehensive optometric care
3. Learn basic testing that can be done to assist in Headache and concussion symptom recovery
4. Gain knowledge of how primary care optometry can assist in recovery from symptoms

## Introduction

- Joint statement from AOA sports vision, vision rehab and TBI task force
  - According to the CDC, 1 in every 225 Americans sustain a TBI each year.
  - From infants to the elderly, athletes and non-athletes, these people are members of our patient base. Based on these numbers, roughly 2 of your patients may have symptoms of a concussion each month. A mild traumatic brain injury may occur from any bump, blow or jolt to the head or body.
  - Traumatic brain injury (TBI) can happen to anyone and can have life altering consequences. Given that over 50% of the brain is directly or indirectly involved in visual processing it is not surprising that visual symptoms would be amongst the most common long-term sequelae of brain injury.
  - Headaches and migraines are among the most common disorders of the human nervous system worldwide. In the United States, over 15 percent of all adults complain about severe headaches or migraines, with prevalence among women more than twice as high as among men.
  - These patients often present with headaches, balance problems, or even just say “Hey doc, I’m not feeling so well”. They may have difficulty with reading and concentration that stem from undiagnosed accommodative disorders.
  - A high percentage of these patients will also have problems sustaining convergence. Without your involvement, these conditions can go untreated. This unnecessary prolonged recovery can lead to increased time away from school or work. Unresolved symptoms of headaches and TBI can cause mental and behavioral health issues.
- Doctor of Optometry have the ability to detect, identify, treat and sometimes refer these individuals to the care that they need to improve their quality of life. As the AOA works to gain optometry interprofessional recognition of what we bring to the table, it’s our responsibility to provide the care that is necessary to help our patients.
- **My Goals for today...**
  - Part 1- Understand a concussion from a patient perspective
  - Part 2- Give you details about how to evaluate a headache and/or a concussion patient in your chair tomorrow
  - There is a LOT more to learn about visual-neuro evaluations and treatments that what you will learn today. But we will discuss what EVERY optometrist can do to help a large, underserved patient population\*\*\*\*\*
  - Return to Play..... Return to Learn.
- **Dr. Nanasy’s concussion and recovery process**

- Two days before.....One day before.....June 25, 2018
- The symptoms I knew to ask...
- #1 Headaches,
- #2 Nausea “See” Sick
- #3 Blurry Vision
- #4 Light Sensitivity
- #5 Dizzy
- #6 Fog
- #7 Visually Overwhelmed?
- #8Speech
- #8 Mood

- **Headache Types and differentiation**

- Location, Duration, Severity, Quality, Timing, Modifying Factors, Context, Associated S/S
- **Types of Headaches**
- **Trigeminal Dysphoria**
  - What is Trigeminal Dysphoria: Over stimulation of Trigeminal nerve causing symptoms of headaches, neck strain, eyestrain, discomfort at the computer, dry eyes, light sensitivity
  - Increasing prevalence with increasing digital use and stress
  - Review of brain involvement and geographical location
- **Tension Headaches**
  - Bilateral occipital and neck pain that radiates to the retro-orbital regions
  - Constant pressure or ache
  - Dry eye sensation
  - Fatigue
  - Light sensitive
  - Worse with reading and working on the computer
  - Triggers may include:
    - Stress, Depression, Anxiety, Computer Posture, sleeping in an awkward position or in a cold, room, Eye strain, Drugs or alcohol, Fatigue, Overexertion, Skipping meals, Head or neck injury, even years after the injury, Clenching your jaw or grinding your teeth (bruxism), Medications, leading to rebound headaches, Arthritis, Hormonal changesRare nausea/vomiting, No light or sound sensitivity, Better or no change with activity, Mild to moderate
- **Medication Overuse Headaches**
  - Diffuse dull ache, pressure or discomfort
  - Non throbbing
  - No nausea/vomiting
  - No light or sound sensitivity
  - No change with activity
  - Mild in severity
- **Migraine with Aura**
  - Unilateral
  - Throbbing
  - Nausea/vomiting
  - Severe
  - Last 6-8 hours untreated
  - The idea that dilation of cerebral vessels is a primary cause of migraine pain has been challenged by a variety of evidence. However, the “trigeminovascular system” continues

to be widely accepted as an important component of the headache, Light and sound sensitive

- Worse with activity
- **Migraine without Aura**
  - Reversible neurologic symptoms that are fully reversible
  - Usually last 20-30 minutes
  - Can be visual, unilateral numbness, unilateral weakness or dysphasia
- **Migraine with aura**
  - (also called classic migraine) is a recurring headache that strikes after or at the same time as sensory disturbances called aura. These disturbances can include flashes of light, blind spots and other vision changes or tingling in your hand or face.
  - Blind spots (scotomas), which are sometimes outlined by simple geometric designs
  - Zigzag lines that gradually float across your field of vision
  - Shimmering spots or stars
  - Changes in vision or vision loss
  - Flashes of light
  - Differential diagnosis: stroke or retinal tear
- **Sinus Headaches**
  - Pain, pressure and fullness in your cheeks, brow, or forehead
  - Worsening pain if you bend forward or lie down, worsens with activity
  - Stuffy nose
  - Fatigue
  - Achy feeling in your upper teeth
  - Sinusitis, however, usually isn't associated with nausea or vomiting or aggravated by noise or bright light — all common features of migraines
- **Ominous Headaches**
  - Refer, can be an emergency
  - Headache pain as a symptom of emergent etiology that needs neurology or ED referral
  - Tumor
  - Thunderclap headache
  - Venous sinus thrombosis
  - Pseudotumor cerebri
  - Hydrocephalus

- **The link between eye Misalignment, Compensation and resulting Symptomatology**

- Linking commonality of Headaches and Concussions
- Not double vision but other
- How prism can have profound perceptual impact
- Clinical data review headaches, study review

- **Linking TBI and visually related issues**

Vision Anomaly	TBI (%)	Most common anomaly
Accommodation	41.1	Accommodative insufficiency
Versional	51.3	Deficits of saccades

Vergence	56.3	Convergence insufficiency
Strabismus	25.6	Strabismus at near
CN palsy	6.9	CN III

Ciuffreda 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

- Kapoor's High Yield Vision Screening/Bedside Assessment
  - Optic nerve function
  - visual acuity
  - confrontation visual fields
  - color vision testing
  - Extraocular motility function
    - fixation, saccades, and pursuit (may be performed monocularly or binocularly)
      - near point of convergence (performed binocularly)
      - stereopsis (performed binocularly)
  - Optic nerve function: pupils
    - Kapoor N, Ciuffreda KJ. (2009) Vision deficits following acquired brain injury. In *Medical management of adults with neurologic disabilities* (Edited by Cristian A). Demos Medical Publishing, New York, NY, pp. 407-423.
- **High Yield Case History Vision-related Questions**
  - Functional Vision and Reading-related
  - Have you noticed a change in your vision since your injury?
  - Are you more sensitive to light, either indoors or outdoors, since your injury?\*
  - Have you had any double vision since your injury?\*
  - Have you noticed any changes in your peripheral vision since your injury?\* Is your vision blurry at distance or near since your injury?\*
  - Have you noticed a change in your ability to read since your injury?
  - Do you lose your place while reading more now than before your injury?\* How long can you read continuously before you need to stop?
  - Do you get headaches during/after reading more now than before your injury?
  - Do you have more difficulty remembering what you have read now than before your injury?
- **Case Study #1: Patient, Why Do I feel this way?**
  - History, patient description
  - Don't overlook prism component to address micro-eye misalignment
  - Advantages of Contoured prism to address eye misalignment at various distances
  - Symptomatology reduction study review
  - Review Nelson and Krall landmark headache study
- **Case Study #2: Explaining issues, "My daughter has the same problem!"**
  - Discovery and the Eureka moment
  - Asking critical questions, how to quantify
  - Whys high tech measurements and repeatability are so critical today
  - Summarize your findings and relate to symptomatology

**Review** and wrap up how new technologies may create paradigm shifts creating challenges to current treatment plans and mindsets resulting in new treatments plans. The result is better patient outcomes.

### **Additional Certification Requirements:**

#### **Professional Practice Gaps:**

Throughout the past 15 years working with various professionals, mostly optometrist and industry personnel, there is the constant challenge of what is being taught in optometric schools and the rapid development of new technologies that challenge our mindsets and prior education. Optometrists are continually asking for additional training with regards to evolving their practice and skill set to adapt to our rapidly changing profession. Standard of care is no longer a phoropter, keratometer and slit lamp. Standard of care includes many types of new technologies including emerging treatments and new theories. Patient outcomes targeted at symptomatic and asymptomatic issues using the latest new research and theories create better patient experience from improved implementation. When done properly, it leads to great consistency, better and faster understanding, better patient outcomes, healthier patient, and healthier practices.

#### **Educational needs:**

Optometrists at all career levels, optometry schools and practice owners all have expressed desires to be trained in the latest technologies and theories, need to understand how to evaluate and implement the new processes and procedures to help improve patient outcomes. There is a need to understand the mindset of changing habits and beliefs, how to analyze new data sets and to guide optometric recommendations. The result will be better patient outcomes and healthier practices.

#### **Learning Objectives:**

This 1 hour course will teach individuals how:

- Headache and TBI treatment and assessment ODs must embrace and understand
- Implementing standards and protocols with create greater confidence and understand for better patient care
- To improve patient outcomes by utilizing various tools and strategies to identify needs
- To become more efficient and data driven to drive better patient outcomes
- To enhance patient outcomes, experiences, health and lifestyles by adopting new technologies

