

## Mind Games: The Psychology of Dry Eye Disease

Dry eye disease (DED) can be an emotional roller coaster for some patients. While many have minor complaints, some patients flounder hopelessly in misery. Often, their symptoms far exceed their signs, raising a “chicken or egg” type of question: Is it the dry eye devastating their lives or are changes in their lives driving the dry eye symptomatology? This course explores the role of pain perception, mental health and stress triggers affect the dry eye disease patient.

- To compare subjective and objective clinical findings and how they may differ among dry eye disease patients
- To educate attendees on the physical manifestations of psychosomatosis with regard to ocular surface disease
- To provide supportive case reviews offering alternative therapy to treatment-resistant patients

### I. Dry Eye Disease

#### a. Prevalence

- i. Women > Men
- ii. Increasing number of patients
- iii. Approximately 30 million patients in the US

#### b. Risk factors

##### i. Medications

1. Emphasis on anti-depressants/anti-anxiety medications
2. Prevalence of women in the US who take anti-depressants
3. Alternative use of Beta-Blockers to decrease anxiety by lowering heart rate

- ii. Age
- iii. Gender
- iv. Surgical considerations
  - 1. Cataract
  - 2. Refractive
  - 3. Oculo-plastic
- v. Hormone changes
  - 1. Impact of hormone changes secondary to:
    - a. Birth control pills/Hormone replacement therapy
    - b. Menopause
    - c. Pregnancy
- vi. Autoimmune disease
  - 1. Autoimmune disease is often triggered by stressful life event
    - a. Sjögren's syndrome
    - b. Lupus
    - c. Rheumatoid arthritis

## II. Pain Perception

- a. Pain perception defined
- b. Genetic and environmental influences
- c. Gender
  - i. Research indicates that women have a lower pain tolerance
    - 1. Socio-cultural influences

- d. Ethnicity
  - i. Research compares races and pain tolerance
- e. Personality
  - i. Duke University Medical Center Study (2005) found it could predict participants that would suffer from chronic pain thirty years later.
- III. Psychosomatosis
  - a. Psychosomatosis defined
    - i. Physical manifestation of a physiological stressor
  - b. Physiological stress can neurologically suppress lacrimal gland function
  - c. 2016 retrospective study presentation
    - i. 110 therapy-resistant patients
    - ii. Compared Training for Interactive Psychiatric Screening (TRIPS) results versus Sicca score (combined Schirmer's testing, tear meniscus measurement, tear break-up time, fluorescein/rose bengal staining and subjective visual analogue scale)
    - iii. Patients with combined anxiety and depression suffered more commonly from therapy-resistant dry eye symptoms
- IV. Selective-Serotonin Reuptake Inhibitors
  - a. Mechanism of action
    - i. Increase serotonin by limiting its reabsorption into the presynaptic cell

- ii. Variable selectivity

- b. Indications

- i. Major depressive disorder
- ii. General anxiety disorder
- iii. Obsessive compulsive disorder
- iv. Eating disorders

- c. Adverse events

- i. Bone fracture
- ii. Akathisia
- iii. Suicidal ideation
- iv. Photosensitivity
- v. Dry eye

- 1. Studies identify decreased Schirmer's testing

- V. Post-Traumatic Stress Disorder

- a. Mental disorder after traumatic event

- i. Sexual assault
- ii. Warfare
- iii. Motor vehicle accident
- iv. Threat to life

- b. Symptoms

- i. Disturbing thoughts, feelings, dreams
- ii. Last months to years after the event

- c. Diagnostic testing

- i. Trauma Screening Questionnaire
- ii. PTSD Symptom Scale

iii. DSM\_5

d. Research

i. Depression, post-traumatic stress disorder, and dry eye syndrome: a study utilizing the national United States Veterans Affairs administrative database.

(2012, American Journal of Ophthalmology)

ii. Suggests that individuals with a known psychiatric diagnosis should be questioned about dry eye symptoms and, if applicable, referred to an eye care physician.

VI. Sleep patterns

a. Somnolence may be driven by a variety of mental illnesses like depression

b. Circadian tear production maintains a heightened tear level in the morning and a subsequent decrease throughout the day.

c. Lowest basal tear secretion is reported while sleeping

d. Up to 97% of patients with depression report sleep difficulties and 59% note that their QoL was adversely affected.

VII. Alternative diagnostics and treatments

a. Surveys

i. Impact of Dry Eye on Everyday Life (IDEEL),

ii. National Eye Institute's Visual Function Questionnaire (NEI VFQ-25)

iii. The Short Form-36 (SF-36)

b. Relaxation

i. Yoga

ii. Music

iii. Meditation

iv. Relaxation techniques

c. Diet

i. High nutritional content

ii. Limit caffeine

iii. Limit alcohol

d. Sleep