

2020 South Dakota Optometric Society Fall Meeting

Preventative Medicine and Systemic Disease Management

- I. Retinal Anatomy and Physiology
- II. Systemic Disease
 - a. Inflammation
 - b. Reactive Oxygen Intermediates
 - c. Mitochondrial dysfunction
- III. Vaculopathies
 - a. Diabetes
 - b. Hypertension
 - c. Heart Disease
- IV. Neurodegenerative
 - a. Multiple Sclerosis
 - b. Alzheimer's disease
 - c. Parkinson's disease
- V. Autoimmune
 - a. Grave's disease
 - b. Hashimoto's thyroidopathy
 - c. Sjogren's disease
- VI. Collagen Vascular Disease
 - a. Rheumatoid arthritis
 - b. Systemic lupus erythematosus
 - c. Scleroderma
- VII. Clinical Measurement and Imaging
 - a. Entrance Skills
 - i.
 - b. Slit lamp Point-of-Care
 - i. CLIA Testing
 - c. Retinal Imaging
 - i. OCT-A
 - ii. OCT with Ganglion Cell Analysis
 - iii. Retinal Microvascular Imaging
 - iv. Fundus Autofluorescence
 - v. Red-free retinal imaging
 - vi. Ultra-widefield retinal imaging
- VIII. Case Report
 - a. Hyperlipidemia
 - i. Lab ordering ownership
 - b. Subdural bleed
 - i. Primary optometry = patient advocacy
- IX. Systemic etiology of anterior uveitis
 - i. Model for systemic co-management
 - ii. Bayesian Belief Algorithm
- X. Links to Top 5

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- a. Vasculopathies
 - b. Neurodegenerative disease
 - c. Autoimmune
 - d. CVD
- XI. Best Apps
- a. EyeMD
 - b. Practice Manager
- XII. What's now?
- a. MDCalc
 - i. OHTS
 - b. Retina Risk
 - i. Sight-threatening retinopathy
 - c. ASCVD
 - i. 10-year cardiovascular risk score
- XIII. What's next?
- a. Oculonomics
 - b. UK EyePACS
 - c. UK AlzEye
- XIV. Opportunities and Limitations
- a. Primary care teaming
 - b. Efficient resource utilization
 - c. Lab and Imaging ownership
- XV. Take Home
- a. Practice growth
 - b. Referral Center
 - c.

Course Description:

The eye is a complex structure of highly-metabolic tissue extending from the central nervous system and receives its blood supply from tributaries originating at the internal carotid artery. Retinal imaging is a noninvasive, in vivo technique that can reach resolutions of 3-5 μ m and can be applied as a population-level screening technique. These imaging capabilities are critical due to the subclinical vascular and neurologic changes that can present months to years before a patient will experience symptoms. Optometry is well-positioned to leverage developing methods with primary care physicians, physician assistants and nurse practitioners that will lead to earlier recognition, targeted treatment and better patient outcomes. This integration is possible for a growing number of systemic conditions across vascular, neurologic, autoimmune and inflammatory regions. Point-of-care testing along with smartphone applications derived from evidence-based medicine can create increased patient involvement and responsibility leading to the decreased cost of chronic care conditions.

Cope Category: Public Health (PB)

Course Objectives (3/credit hour)-

Objective 1: Describe underlying destructive cellular processes that can lead to retinal pathology.

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Objective 2: Identify 4 systems conditions that can manifest as subclinical retinal findings.

Objective 3: Discuss the 3 POC tests and 3 smartphone-based applications that can lead to better patient outcomes