

**Vision Expos West 2025 & Vision Expos East 2026
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The OCT Workshop

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Course Outline:

Part I - Education

1. Introduction
 - a) Non-contact, in vivo 3D imaging of the vitreous, retina, choroid, and sclera
 - b) Basic principle is low coherence interferometry
2. Posterior Segment OCT
 - (1) Thickness Map Analysis
 - (a) Macular Cube 512 x 200 – can display ganglion cell analysis and macular thickness
 - (i) Can perform macular thickness change analysis between 2 scans and ganglion cell progression analysis available
 - (2) Cross Sectional Exam
 - (a) Cross Sectional Anatomy of the Retina/Macula

- (i)
- (ii) Pathological Examples
 1. Conditions of vitreoretinal interface
 - a. VMA, VMT, EMM, MH
 2. Retinal Vascular Disease
 - a. Diabetic Retinopathy
 - b. Retinal Vein Occlusion
 - c. Retinal Artery Occlusion
 3. Degenerative Disease
 - a. AMD
 - b. Macular Dystrophies

- (b) Optic Nerve
 - (i) Cross Section vs. NFL Thickness Analysis
 - (ii) Pathologic Examples
 1. Glaucoma
 2. Non-glaucomatous neuropathies
 3. Congenital ONH Disease
 4. Acquired ONH Disease
 - a. Disc Edema

- (c) Peripheral Retina
 - (i) Wide-field and off-axis OCT
 - (ii) Pathologic Examples
 1. Retinoschisis
 2. Retinal Detachment
 3. Retinal tear vs tuft

- ii) Enface analysis
 - (1) An en face image represents a slab of data, typically including several retinal layers, that are compressed down into a 2D plane
 - (2) Can be used to view both structural and angiography OCT data
 - (3) Presets: Vitreoretinal interface (ERM), Mid-retina (CME), IS/OS Junction (hydroxychloroquine toxicity, geographic atrophy)

- iii) Enhanced depth imaging (EDI)
 - (1) Checkbox at the bottom of the acquisition screen
 - (2) Penetrates an additional 500-800µm deeper compared to traditional OCT imaging
 - (3) Better imaging of choroid, sclera, lamina cribrosa (pachychoroid disease, choroidal tumors)
 - b) OCT Angiography
 - i) Non-invasive optical coherence tomography (OCT) technology that provides 3D volumetric data regarding retinal and choroidal vasculature and blood flow
 - ii) Co-registration of vascular and structural data allows for precise localization of vasculature abnormalities
 - iii) Scan options
 - iv) Clinical Examples
3. Anterior OCT
- a. Anterior OCT – areas we can scan
 - i. Cornea
 - 1. Each layer
 - 2. Thickness
 - 3. Pachymeter
 - 4. Scleral lens evaluation
 - ii. Conjunctival conditions
 - iii. Angles
 - iv. Lens
 - v. Iris Anterior chamber
4. How to capture anterior scans
- a. Corneal lens
 - b. Anterior chamber lens
5. Scleral Lens fitting
- a. Parts of the CL/Cornea relations
 - b. Scans to take for a scleral lens evaluation
 - c. Central, Edge and limbal evaluation
 - d. Measuring heights
 - e. Ruler feature
 - f. Sagittal height of the cornea
 - g. Office set up
6. Pachymeter evaluation
- a. Uses
 - b. How to read
 - c. Useful for scleral lens evaluation
7. Epithelial thickness
- a. Examples for usage
8. Corneal Evaluation

- a. Layers of the cornea
 - b. Looking at Pachymeter scans
 - c. What can you measure with an OCT
 - i. Breaks
 - ii. Swelling
 - iii. KCN
 - 1. Front and back surface
 - iv. Hydrops
 - v. Scars
 - vi. Shunts
 - vii. Intacts
 - viii. Corneal Edema
 - ix. Dystrophy Degenerations
 - x. Monitoring Transplants
 - xi. Astigmatism cuts
 - xii. Dry eye disease
 - 1. Tear film meniscus
9. Angle Assessment
- a. Glaucoma evaluation
 - b. In addition to slit lamp and gonio
 - c. Pre and post dilation
 - d. Angle structures
 - e. Angle grading how to grade
10. Conjunctival scans
- a. Pterygium monitoring
 - b. Cysts
 - c. Pingueculae
11. Lens Vault
- a. How to Evaluate
 - b. Evaluate for risk of angle closure
12. Lasik Evaluation
- a. Corneal flap measurement
 - b. Enhancement determination

Part 2: Hands-On Training

- 1. Positioning the patient
- 2. Great image capture
 - a. Tricks to get this right
 - b. Drops
 - c. Patient education
 - d. Constant patient communication
- 3. What are we looking at
- 4. Corneal, retinal, and optic nerve/NFL evaluations