

# Anterior Segment Lasers for the Optometric Physician

1 Hour

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## Course Description

Attendees of this course will have a greater understanding of all aspects of performing YAG Capsulotomy, YAG Peripheral Iridotomy, and Selective Laser Trabeculoplasty. The course will cover how to prepare a patient, proper laser set up, use of the laser and post operative care for the procedures. Case examples, photos and videos of the procedures will be used to help facilitate a better understanding of the procedures.

## Course Objectives

- Identify basic principles of lasers used in Optometric Anterior Segment procedures
- Understand how to perform preoperative, operative and post operative care for YAG Capsulotomy, YAG peripheral Iridotomy, and Selective Laser Trabeculoplasty
- Understand how to treat common postoperative complications of the procedures

### I. YAG Capsulotomy

- a. Type of Laser 1064 nm YAG laser
- b. Pre-Op
  - i. Entering VA
  - ii. Informed Consent
  - iii. Blood Pressure
  - iv. IOP
  - v. Examine scotopic and photopic pupil, look for irregularities
  - vi. Examine capsule to be treated
  - vii. Dilate, ensure “good” dilation of pupil
  - viii. Pretreat with alpha agonist, brimonidine or iopidine
- c. Focus of the laser
  - i. Same as focusing a slit lamp use focusing rod specific for your laser
  - ii. Note HeNe beam alignment, not always same plane as focus of slit lamp.
- d. Using a lens
  - i. Personal preference
  - ii. Abraham is lens of choice
  - iii. If using a lens recommend arm support
  - iv. Use Proparacaine with or with out lens, both eyes
- e. Laser Set up
  - i. Starting power selection 0.8mJ -1.5 mJ
  - ii. Tissue reaction guides power
  - iii. Posterior offset

- iv. Single pulse
- f. Treatment
  - i. Decide on pattern to use, cruciate most common
  - ii. Size.. should be larger than scotopic pupil size
  - iii. Total energy, when is it too much
- g. Post-Op
  - i. Flush out coupling solution
  - ii. Insert alpha agonist
  - iii. IOP after 30-60 minutes later
- h. Complications
  - i. Pitting of IOL
  - ii. IOP spike
  - iii. Silicone IOL
  - iv. Uveitis

## II. SLT

- a. 532 nm Q switched frequency doubled YAG laser
- b. Pre-Op
  - i. VA, IOP, BP
  - ii. Informed consent
  - iii. Ensure open angle, at least one fully open quadrant
  - iv. Pre treat with alpha agonist
  - v. Pilocarpine?
  - vi. Lens selection
  - vii. Arm support
- c. Laser Set up
  - i. Initial energy Setting
    - 1. Normal pigment 0.6mJ -1.0mJ
    - 2. Heavy pigment 0.4mJ-0.6mJ
  - ii. Confirm focus
- d. Treatment
  - i. 360 vs 180 vs 90 degrees
  - ii. Cover entire TM
  - iii. Watch for Champagne bubbles
- e. Post-Op
  - i. Rinse out coupling solution
  - ii. Alpha agonist of choice
  - iii. VA, BP, examine cornea and AC
  - iv. IOP 30-60 minutes after procedure
  - v. Rx NSAID? Steroid?
- f. Complications
  - i. IOP spike
  - ii. Hyphema
  - iii. Other considerations

### **III. YAG PI**

- a.** 1064 nm YAG laser
- b.** Pre-Op
  - i.** VA, BP, IOP
  - ii.** Informed consent
  - iii.** Review meds
  - iv.** Pre treat with alpha agonist
  - v.** Pilocarpine?
  - vi.** Determine treatment site, crypt iris 11 or 1 o'clock
  - vii.** Proparacaine
  - viii.** Lens selection
  - ix.** Arm support
- c.** Laser Set Up
  - i.** Confirm focus of laser
  - ii.** Initial power 2.0 mJ-5.0mJ
  - iii.** Single vs multiple pulses
  - iv.** No offset
- d.** Treatment
  - i.** Prepare for pigment, bubbles in view
  - ii.** Be ready for possible hyphema
  - iii.** Watch for pigment plume, NOT transillumination
  - iv.** Enlarge opening to approximately 1 mm in size
- e.** Post Op
  - i.** Flush coupling solution
  - ii.** Alpha agonist of choice
  - iii.** Topical steroid
  - iv.** VA, BP, examine cornea and A/C
  - v.** IOP 30-60 minutes
  - vi.** Rx topical steroid
- f.** Complications
  - i.** Not getting through iris during procedure
  - ii.** IOP spike
  - iii.** Hyphema
  - iv.** Uveitis

### **IV. Q&A / Discussion**