

VANCE THOMPSON  
**VISION**

**Expanding the MIGS Platform**

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**Financial Disclosures**  
Brandon Baartman, MD

Name of Intelligence Company	Nature of Relevant Financial Relationship (Include all that apply)	
	What was Received?	For What Role?
Reflex Group	Consultant Fee	Consultant
Alcon	Consultant Fee	Consultant
Sight Sciences	Honorarium	Lecture
Sight Sciences	Consultant Fee	Consultant
Sight Sciences	Research	Research
Glaukos	Speaker	Lecture
Glaukos	Research	Research
EyeSite Pharma	Consultant Fee	Consultant
Equinox	Consultant Fee	Consultant
Expert Opinion	Consultant Fee	Consultant
Trefoil Therapeutics	Research	Research
Oyster Point Pharma	Research	Research
KOWA	Research	Research
STAAR Surgical	Research	Research
RX Sight	Research	Research




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**Financial Disclosures**  
John Goertz, OD, FAAO

Name of Intelligence Company	Nature of Relevant Financial Relationship (Include all that apply)	
	What was Received?	For What Role?
Glaukos	Research	Research
Trefoil Therapeutics	Research	Research
Oyster Point Pharma	Research	Research
Sight Sciences	Research	Research
Alcon	Research	Research
Bausch & Lomb	Research	Research
Beaver VisiTech (BVI)	Research	Research
KOWA	Research	Research
STAAR Surgical	Research	Research
RX Sight	Research	Research




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**Financial Disclosures**  
Kristen Walton, OD, FAAO

Name of Intelligence Company	Nature of Relevant Financial Relationship (Include all that apply)	
	What was Received?	For What Role?
Glaukos	Research	Research
Trefoil Therapeutics	Research	Research
Oyster Point Pharma	Research	Research
Sight Sciences	Research	Research
Alcon	Research	Research
Bausch & Lomb	Research	Research
Beaver VisiTech (BVI)	Research	Research
KOWA	Research	Research
STAAR Surgical	Research	Research
RX Sight	Research	Research




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**Defining MIGS**

- IOP lowering surgery with the following characteristics:
  - Minimally traumatic
  - Via a conjunctiva-preserving approach
  - High safety profile
  - Rapid recovery
  - Combined with cataract extraction or standalone




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**Gathering the Facts**

- Pre-testing/pre-surgery information
  - FxHx
  - Topical medications currently?
  - IOP
    - ORA
  - Pachymetry
  - Gonioscopy
  - OCT of RNFL
  - Perimetry
  - Cataracts?



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## Topical Medications



**Number one** question that needs to be answered when considering MIGS therapy:

**Have there been any previous treatment for glaucoma, topical or otherwise?**



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## Topical Medications



- And what comes with that?
  - Success with that particular med/treatment?
  - How is compliance?
  - Side effects?
  - Financial burden?
  - Other health co-morbidities preventing compliance?



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Multicenter Study > Ophthalmology. 2009 Feb;116(2):191-9.  
doi: 10.1016/j.ophtha.2008.09.004. Epub 2008 Dec 12.

### Adherence with topical glaucoma medication monitored electronically the Travatan Dosing Aid study

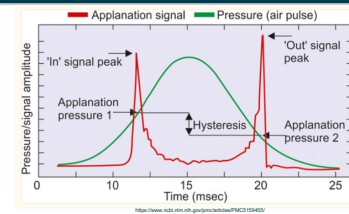
Constance O Okeke <sup>†</sup>, Harry A Quigley, Henry D Jampel, Gui-shuang Ying, Ryan J Plyler, Yuzhen Jiang, David S Friedman

Affiliations + expand

PMID: 19084273 DOI: 10.1016/j.ophtha.2008.09.004



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Ocular Response Analyzer (ORA)



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## ORA → Corneal Hysteresis



Higher the number, higher the buffer from IOP fluctuations

In turn that reduces strain on the optic nerve

Reduces risk for glaucoma progression



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## Pachymetry



- Thinner corneas: viewed as a risk factor for progression



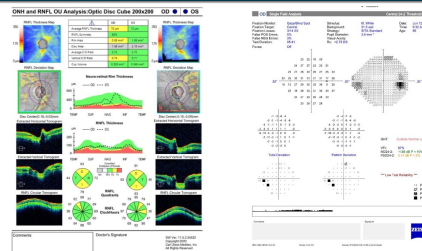
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## Gonioscopy

- Should be done at least yearly on glaucoma patients
- Needs to be done to identify what type of glaucoma the patient has
- Done again following MIGS to monitor healing

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## OCT of RNFL and HVF



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## Other Ocular Conditions

Is there a cataract present?  
Other prior surgeries in the past?  
How does the ocular surface look?

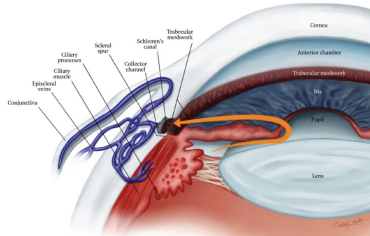
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**Glaucoma is not always enough...**  
Need to show failure/intolerance to previous therapy (drops or otherwise).



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## Anatomy Review



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## Stent Progression



- iStent
  - FDA approved in 2012
  - Creates a direct channel from the AC to Schlemm's canal

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## iStent Inject



- FDA approval **2018**
- MOA: bypassing the TM to create direct route from anterior chamber to Schlemm's canal
- Intended use: in conjunction with cataract surgery for lower IOP in adult patients with **mild to moderate** primary open angle glaucoma



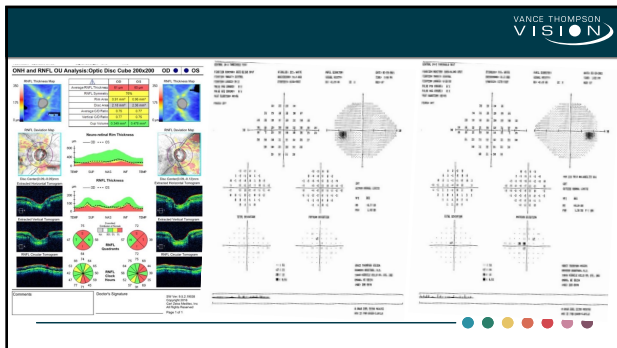
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## Case: Referral for cataract surgery + MIGS



- 70-year-old male
- Currently on **latanoprost** 1 gtt qhs OU
- s/p LASIK OU
- Visually significant **cataracts**
- 0.8 CD OD, OS with superior and inferior thinning
- Large disc area
- Gonioscopy: **open to CB 360 degrees**
- Tmax **28** and **27** mmHg
- IOP 18.4 and 13.7 mmHg at eval
- CH – 9.3 and 10.2
- Phacy: thin

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## Case



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## iStent Inject



- Post-operative care:
  - Typically do not need any further addition of medication other than cataract regimen
  - 1 day, 1 week and 1 month initial f/u
    - Slit lamp exam, monitoring for heme
  - Gonio recommended if IOP not at expected outcome

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## iStent Infinite



- Approved by FDA in **August 2022**
- MOA: bypassing the TM to create direct route from anterior chamber to Schlemm's canal
- Indication: treatment of open angle glaucoma in patients having **failed medical and surgical therapy**
- **Can be stand alone procedure**



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## iStent Infinite



- A 12-month study on the **toughest glaucoma patients** (failed surgery or uncontrolled on MTMT)
- **76%** of patients achieved **20% IOP lowering** from diurnal baseline
- 53% of patients (on same or fewer meds than baseline) achieved at least 30% IOP lowering



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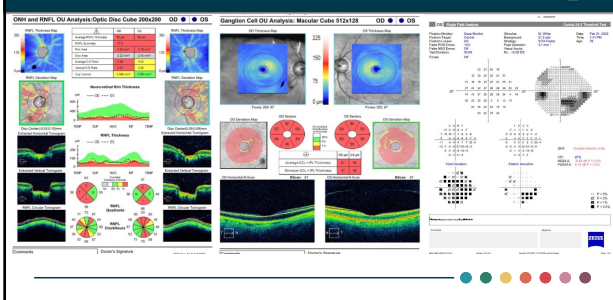
## Case: iStent Infinite



- 78-year-old female
- **Glaucoma progressing OS**
- IOP 14mmHg
- CH 9.0 and 9.3
- Previous **MLT OD**
- Previous **SLT OS**
- **Cataract surgery OD, OS**
- **S/p istent inject OD**
- Pt on latanoprost, brimonidine, dorzolamide/timolol

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## Case



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## iStent Infinite Video



- video

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## iStent Infinite



- Post-operative care:
  - Typically need antibiotic for 1 week and steroid for 4 weeks
  - 1 day, 1 week and 1 month initial f/u
    - Slit lamp exam, monitoring for heme
  - Gonio recommended if IOP not at expected outcome

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## Canal-based MIGS



- Indicated for the surgical treatment of mild to moderate open angle glaucoma
- 90 degree span of Schlemm's canal in the nasal region
  - Opens and dilates the canal
  - Bypass the TM

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## Canal-based MIGS Video



- video

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## Canal-based MIGS



- Post-operative care:
  - Typically do not need any further addition of medication other than cataract regimen
  - 1 day, 1 week and 1-month initial f/u
    - Slit lamp exam, monitoring for heme
  - Gonio recommended if IOP not at expected outcome

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## Canaloplasty and Trabeculotomy



- FDA approved 2021
- Indicated for **mild, moderate, and severe primary and secondary open-angle glaucoma**
- Implant-free surgical system

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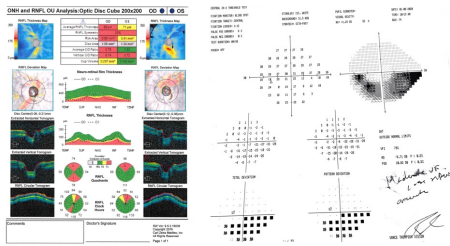
## Canaloplasty and Trabeculotomy Case



- 74-year-old female
- Cat/glaucoma eval
- Dx glaucoma 2015
- On **Latanoprost 1 gtt qhs** OU
- Visually significant cataract
- Open to **CB OU**
- IOP **22.7, 18.6** mmHg
- **0.6** inferior notch OD, **0.7** superior notch OS

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## Canaloplasty and Trabeculotomy Case



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## Canaloplasty and Trabeculotomy Video



- Video

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## Canaloplasty and Trabeculotomy



- Post-operative care:
  - Typically following course for cataract surgery post-op
    - Taper of steroids over course of 1 month
  - 1 day, 1 week and 1 month initial f/u
    - Slit lamp exam
  - May continue to be on topical IOP lowering meds may continued to be used, reduce risk of IOP spikes



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## Other MIGS



- Gonioscopy Assisted Transluminal Trabeculotomy (GATT)
- Variations of Goniotomy



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## Goniotomy



- MOA: surgical **removal of the TM**
- Indicated for treatment of **open angle glaucoma** and **ocular hypertension**
- Can be done **stand-alone** or with cataract surgery; can be done phakic or pseudophakic



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## Goniotomy Case

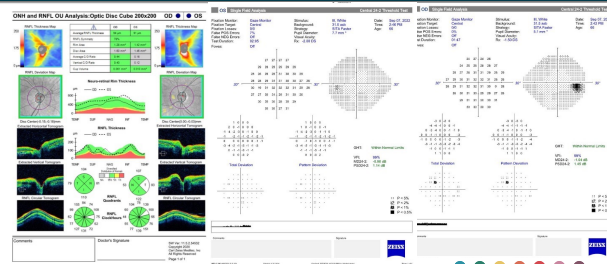


- 67-year-old male
- Long-term **OHTN**
- Historically well controlled on topical medications
- Currently on latanoprost 1 gtt qhs OU, dorzolamide/timolol 1 gtt qhs OD and rhopressa 1 gtt qhs OD
- **Pseudoexfoliation** noted OD
- CD ratio **0.3 OU**
- **Mild cataract OU**
- **IOP 40, 16 mmHg**
- CH 9.3, 11.3
- Thinner than avg pachs



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## Goniotomy Case



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## Goniotomy Video



- Video



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## Goniotomy



- Post-operative care:
  - Typically following course for cataract surgery post-op
    - Taper of steroids over course of 1 month
  - 1 day, 1 week and 1 month initial f/u
    - Slit lamp exam
  - May continue to be on topical IOP lowering meds may continued to be used, reduce risk of IOP spikes

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## CyPass Micro-stent



### Safety and Effectiveness of CyPass Supraciliary Micro-Stent in Primary Open-Angle Glaucoma: 5-Year Results from the COMPASS XT Study



GEORGE REISS, BILL CLIFFORD, STEVEN VOLD, JONATHAN HE, CODY HAMILTON, JAIME DICKERSON, AND STEPHEN LANE



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## XEN Gel Stent



- Indicated for **refractory glaucoma** patients
  - Those who are pseudophakic and on max tolerated meds
  - Those who have had prior SLT and/or MIGS
  - Can be done **with cataract surgery** or **stand-alone**

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## XEN Gel Stent



- MOA: drainage shunt from the AC to the subconjunctival space
- Response
  - In the primary analysis at **12 months**, **76.3%** (95% CI = 65.8, 86.8%) of subjects achieved **≥ 20% mean diurnal IOP** reduction on the same or fewer number of medications vs baseline (N = 65).

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## XEN Video



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## Xen Gel Stent



- Post-operative care:
  - Antibiotics and Steroids warranted
  - Looking out for:
    - migration of stent
    - Hypotony
    - Bleb dysfunction
      - Wound leak, scarring

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## Endocyclophotocoagulation (ECP)



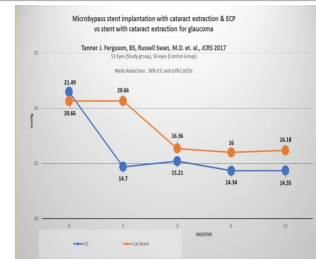
- Developed in 1992
- **Laser ablation of ciliary body** epithelium to decrease IOP
- Indicated in many types of glaucoma
- Can be done stand-alone or alongside other MIGS and/or with cataract surgery

<https://pubmed.ncbi.nlm.nih.gov/11555555/> Endocyclophotocoagulation (ECP) for the treatment of glaucoma: a review of the literature. J Glaucoma. 2009;18(10):e1-e10.



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## Endocyclophotocoagulation (ECP)



## Setting Patient Expectations



- Blood in anterior chamber is common finding
  - Microhyphema vs hyphema
  - Educating on impact of blood to visual acuity
    - Positioning!
  - NOT managing like a traumatic hyphema

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## When to Send Patients Back



- IOP very elevated
  - Patient may be experiencing nausea
- You do not feel comfortable managing these IOP spikes
- IOP is elevated for more than 1 week AND is not responding to topical IOP lowering drops



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## What MIGS Are NOT



- Only limited to stents
- Only limited to the time of cataract surgery
  - Can be performed as a stand-alone procedure
- Only effective for mild cases
- Only reserved for severe disease
  - May be beneficial for those appropriate patients with milder disease

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## Questions?



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