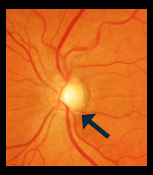
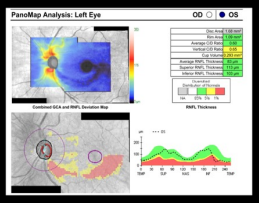
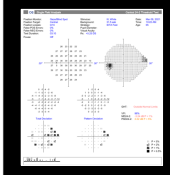
Next Gen SLT: What, When, Where?







Mitch Ibach, OD FAAO
Vance Thompson Vision, Sioux Falls, SD
Residency Coordinator

1

Financial Disclosures- Ibach

Disclosure Statement:

Alcon – consultant/speaker
Allergan – consultant
Bausch Health- consultant/speaker
C-light Technologies - consultant
Dompe – consultant/speaker
Equinox/Balance Ophthalmics – consultant/shareholder
Glaukos - consultant/speaker
iCare -- consultant
Orasis – consultant
Reichert -- consultant
Sight Sciences – consultant/speaker
Tarsus pharmaceuticals -- consultant
Thea – consultant
Zeiss – consultant



VANCE THOMPSON VISION

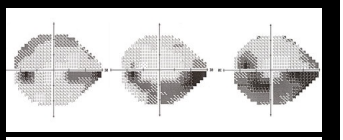
All relevant relationships have been mitigated

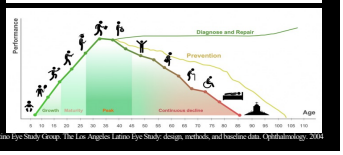
2

First Why? Why Do We Treat Glaucoma?

1. To Preserve VA/VF
   1. Our most precious sense

2. To Preserve QOL
   2. VRQOL scores worse if…
      2. VF loss monocular
      2. VF binocular
      2. Worse VF = higher mental health concerns



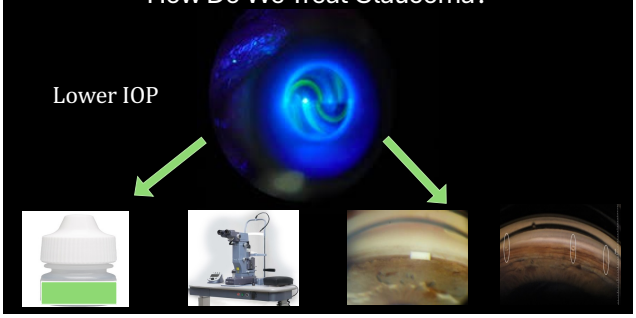


Varma R, Por SH, Azen SP, Klein R, Globe D, Torres M, Shufelt C, Preston-Martin S, Los Angeles Latino Eye Study Group. The Los Angeles Latino Eye Study: design, methods, and baseline data. Ophthalmology. 2004 Jun;111(6):1121-31. doi: 10.1016/j.ophtha.2004.02.001. PMID: 15177962.

3

How Do We Treat Glaucoma?

Lower IOP



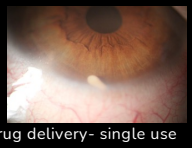
4

What Drawbacks lead to SLT


Drops- SE's


Drops - convenience


Drops - compliance

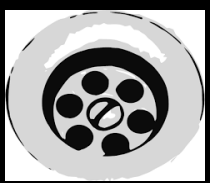

Drug delivery- single use


Tubes/Trabs – risks

5

SLT

- Selective Laser Trabeculoplasty
  - Works on 1* outflow pathway for aqueous through Trabecular Meshwork
  - Aqueous pushed/drained through TM keeps distal tissues (Schlemm's canal, collector channels) opened
  - Aqueous brings nutrients

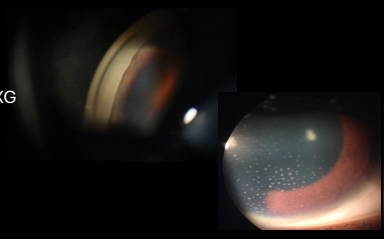

My SLT patient education

6

Where do I Position SLT in Glaucoma

1. Open-angle glaucoma
2. First line Tx. Option
3. Secondary glaucoma (PXG and PDG)
4. Phakic or pseudophakic

- Where do I avoid SLT?



7

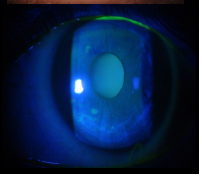
Patient VG- Demographics & Entrance Testing

- 48 year old female
- CC: Elevated IOP, antihistamines and fluticasone
- BCVA → 20/20- / 20/20-
- GAT → 19, TMAX 24 / 17, TMAX 28 — Travoprost QD OU
- PACH → 537 / 551
- ONH → 0.85V / 0.75V

Hysteresis
OD:8.8 OS: 9.1

Gonio
Ciliary Body





8

Laser Trabeculoplasty (SLT)

1. Modification of Argon Laser Trabeculoplasty (ALT)
   1. Less tissue thermal damage, less coagulation
2. SLT approved by the FDA 2002
3. Nd: YAG laser 532um, power 0.8-1mj
4. Spot size 400um
5. Treatment 180-360*
6. 3.0nsec delivery (compared to 0.1msec ALT)

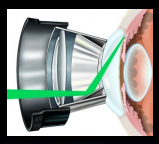


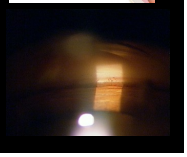
Jha B, Bhartiya S, Sharma R, Arora T, Dada T. Selective Laser Trabeculoplasty: An Overview. J Current Glau Prac 2012;6(2):79-90.

9

SLT

- (SLT) Mechanism of action
  - Delivers laser energy to pigmented TM cells
  - Activates inflammation to ↓ IOP
  - Macrophage uptick
    - Secondary glaucomas have a high number of pigmented TM cells
    - ?? More effective.





10

How We Deliver SLT - Pre-Op

- Scheduled 2-4 weeks after Glc. eval or same day
- Basic exam components
  - VA, IOP, etc.
- Gonioscopy (KEY)
  - Assess angle structure
  - Assess pigmentation
- Undilated or dilated (prefer undilated)
- 360* treatment OD/OS or OU



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Procedural Video

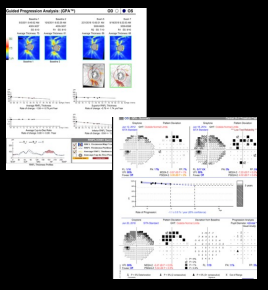


Video courtesy of Dr. Ben Gaddie

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How We Deliver SLT - Post-Op

- No longer use in office post-laser drops (brimonidine)
- No longer do post-laser steroid/NSAID
  - *SALT Trial vs. patient experience/cost*
- +/- stop 1 topical glaucoma drop (PGA)
- IOP check 8-12 weeks (level of glaucoma)
  - 75% SLT patients back with 1*OD for all care
  - 10 day global period
- New VF/OCT baselines 3-6 mo later (mild/mod/severe)



13

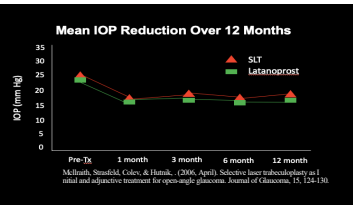
Adverse Events with SLT



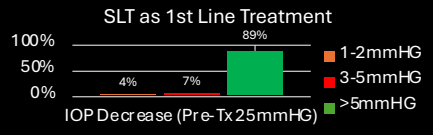
Melamed, S., Simon, G., & Levkovitch-Verbin, H. (2003, July). Selective Laser Trabeculoplasty as Primary Treatment for Open-Angle Glaucoma. *Archives of Ophthalmology*, 957-960.

14

SLT Efficacy



Mellmith, Strasfeld, Colev, & Hutnik, . (2006, April). Selective laser trabeculoplasty as I nitial and adjunctive treatment for open-angle glaucoma. Journal of Glaucoma, 15, 124-130.



Melamed, S., Simon, G., & Levkovitch-Verbin, H. (2003, July). Selective Laser Trabeculoplasty as Primary Treatment for Open-Angle Glaucoma. *Archives of Ophthalmology*, 957-960.

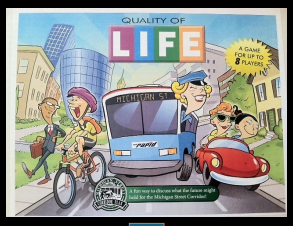
15

Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial

Gus Gazzard, Evgenia Konstantakopoulou, David Garway-Heath, Anurag Garg, Victoria Vickerstaff, Richael Hunter, Gareth Ambler, Catey Bunce, Richard Wormald, Neil Matthews, Keith Barton, Gary Rubin, Marta Boszewicz, on behalf of the LiGHT Trial Study Group*

SLT: 95% @target, 78% med free
Drops: 93.1% @target, 65% 1 med



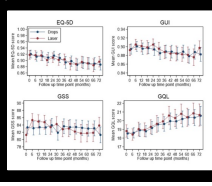


Gazzard G, Konstantakopoulou E, Garway-Heath D, et al. Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial. Lancet. 2019;393(10180):1505-1516.

16

LiGHT: SIX-YEAR STUDY UPDATE

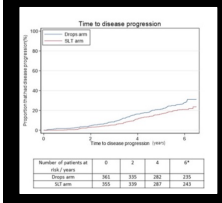
- 633 subjects entered 3-year extension study
- At the beginning of 3-year extension (month 37)
  - SLT: 313
    - 128 received SLT to decrease drop burden, 48 received SLT as treatment escalation
  - Medication: 320
  - QOL scores still non statistically significant



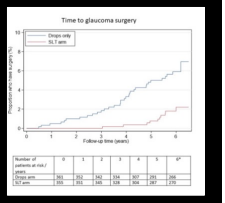
Gazzard G et al. Ophthalmology. 2023;130(2):139-151.

17

LiGHT: SIX-YEAR STUDY



SLT drop free vs same 1 med: 70% vs. 18%



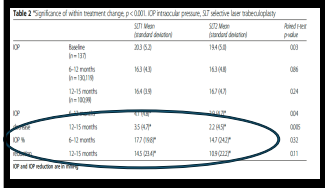
% progression
- SLT: 19.6
- Med: 26.8

% glaucoma surgery
- SLT: 2.4%
- Med: 5.8%

Gazzard G et al. Ophthalmology. 2023;130(2):139-151.

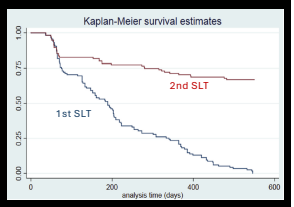
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Repeatability?



		SLT1 Mean (standard deviation)	SLT2 Mean (standard deviation)	Paired t-test p-value
IOP	Baseline (n = 137)	20.3 (5.2)	19.4 (5.0)	0.03
	6-12 months (n = 130,119)	16.3 (4.3)	16.3 (4.8)	0.86
	12-15 months (n = 100,99)	16.4 (3.9)	16.7 (4.7)	0.24
IOP		4.1 (4.3)	3.3 (3.7)	0.04
	12-15 months	3.5 (4.7)*	2.2 (4.5)*	0.005
IOP %	6-12 months	17.7 (19.6)*	14.7 (24.2)*	0.32
	12-15 months	14.5 (23.4)*	10.9 (22.2)*	0.11

IOP and IOP reduction are in mmHg.



Repeat SLT had lower absolute IOP lowering but a lower baseline IOP.

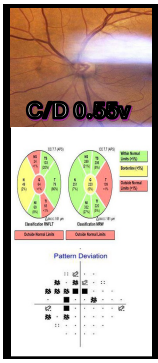
Repeat SLT is safe. Potentially more effective due to energy build up?

Francis, B., Loewen, N., Hong, B., Bacharach, J., Ichhpujani, P., Katz, J. (2016). Repeatability of Selective Laser Trabeculoplasty for Open-Angle Glaucoma. *BMC Ophthalmology, 16*(126).

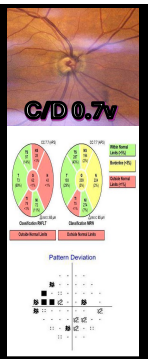
Garg, A., Vickerstaff, V., Nathwani, N., Garway-Heath, D., Konstantakopoulou, E., Burton, K., Gazzard, G. (2020, April). Efficacy of Repeat Selective Laser Trabeculoplasty in Medication-Naive Open-Angle Glaucoma and Ocular Hypertension during the LIGHT trial. *Ophthalmology, 127*(4).

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A Case for SLT?



- 57 yo female
- cc: Told she was at high risk for glaucoma
- +Fhx glaucoma (aunt)
- No Treatment hx
- BCVA < (20/20) BAT 20/25 (20/20-) BAT 20/20-
- GAT < 21mmHG TMAX ↑ 20's 24mmHG TMAX ↓ 30's
- Pach < 550um 565um
- SL → clear cornea and lens OU



20

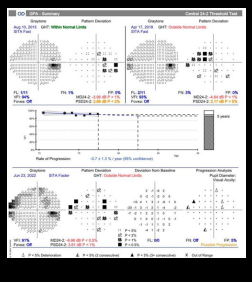
What Now?

IOP 8 weeks post SLT: 16, 17

IOP 6 months post SLT: 19, 18

IOP 12months post SLT: 20, 16
- started PGA OD QHS

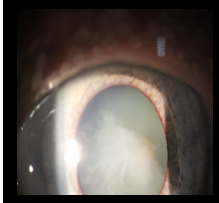
IOP 2 years post SLT: 17, 19
- "How can I get off that drop?"



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When do we avoid SLT?

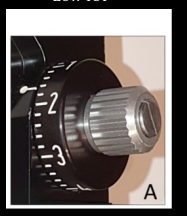
Cataract present





Corneal edema

Low IOP



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What's New in SLT

- FDA Approves Belkin's EAGLE DSLT December 2023.
- Direct selective laser trabeculoplasty (DSLT)
- Noncontact SLT, 120 automated shots to limbal area
  - <3.5 seconds per eye
  - OD's can perform in 12 states



Direct selective laser trabeculoplasty in open angle glaucoma study design: a multicentre, randomised, controlled, investigator-masked trial (GLAUrious)

Nathan Congdon,[1,2] Augusto Azuara-Blanco,[3] Yoram Solberg,[3] Carlo E Traverso,[4] Michele Iester,[4] Carlo Alberto Cutolo,[4] Alessandro Bagnis,[4] Tin Aung,[5] Scott J Fudemberg,[6] Richard Lindstrom,[7,8] Thomas Samuelson,[7] Kuldev Singh,[9] Eytan Z Blumenthal,[10,11] Gus Gazzard,[12,13] and GLAUrious study group

Geffen N et al. *Journal of Glaucoma*. 2017;26(3):201-207.

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GLAUrious Trial: SLT vs. DSLT

Purpose
- Compare DSLT outcomes to manual SLT (non-inferiority)
- Demonstrate safety and efficacy of DSLT

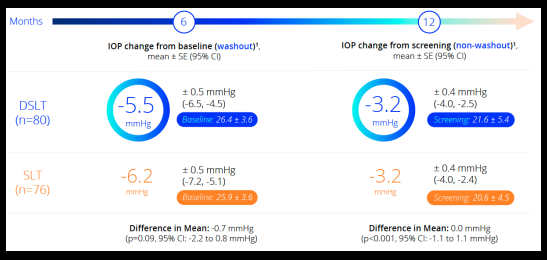
Effectiveness Endpoints
- Primary: Difference in mean IOP reduction from baseline (washout) at 6 months
- Secondary:
  1. Proportion with >20% IOP reduction at 6 months without SSI
  2. Change in # of medications at 6 months

Patient Parameters[1]	DSLT	SLT
N	80	76
Age (avg)	66.0	66.0
Male (%)	60.0%	56.6%
OAG (%)	66.3%	71.1%
OHT (%)	20.0%	10.5%
PXF + PG (%)	13.8%	18.4%
Treated Eye OD (%)	45.0%	59.2%
Screening IOP mmHg (avg ± SD)	21.6 ± 5.4	20.6 ± 4.5
Baseline Washout IOP mmHg (avg ± SD)	26.4 ± 3.6	25.9 ± 3.6
Hypotensive Med Count	1.2 ± 1.0	1.1 ± 1.0

1. GLAUrious Study - Clinical Study Report (CSR), CA-RP-01-006, Rev. 01; 2022

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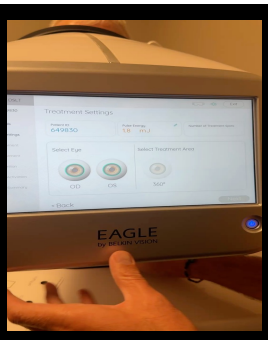
GLAUrious Trial: SLT vs. DSLT



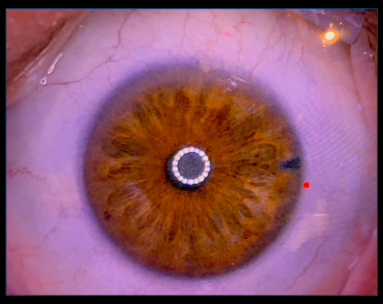
1. GLAUrious Study - Clinical Study Report (CSR). CA-RP-01-006, Rev. 01; 2022

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DSLT Patient Experience



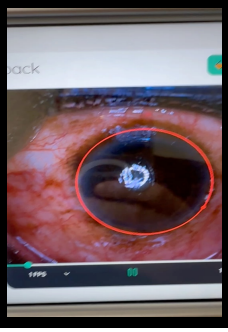
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Lessons Learned

1. Extraordinarily efficient!!
2. Efficacy trade-off to conventional SLT
3. Tetracaine + proparacaine
4. Vocalize the process, +/- head hold to avoid jump back
5. Undilated!
6. Push out follow-up 8-12 weeks

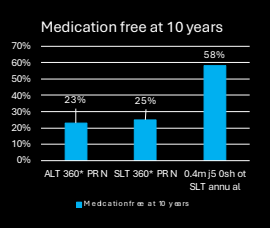


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COAST Trial (Clarifying the Optimal Application of SLT Therapy)

Rationale

- Preserve vs. Rescue Trabecular Meshwork (TM)
  - Annual SLT keeps IOP lower preserving healthy TM tissue/structure
  - PRN SLT leads to high IOP and TM damage?
- Less energy, less efficacy, but less damage
  - Lower energy SLT lowers IOP comparably but causes less harm to TM tissue.



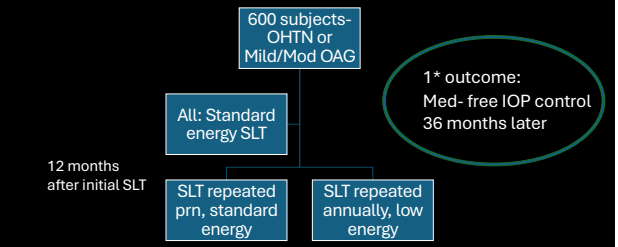
Gandolfi S Low power selective laser trabeculoplasty (SLT) repeated yearly as primary treatment in open angle glaucoma(s): long term comparison with conventional SLT and ALT. E-Abstract 3459. Association for Research in Vision and Ophthalmology Annual Meeting; May 1, 2018; Honolulu, HA.

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Published in final edited form as:
J Glaucoma. 2021 July 01; 30(7): 548–551. doi:10.1097/IJG.0000000000001788.

Low-Energy Selective Laser Trabeculoplasty Repeated Annually: Rationale for the COAST Trial

Tony Realini, MD, MPH[1], Gus Gazzard, MD[2], Mark Latina, MD[3], Michael Kass, MD[4]

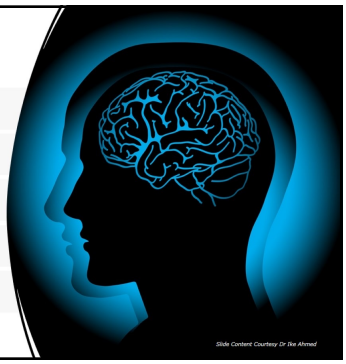


Gandolfi S Low power selective laser trabeculoplasty (SLT) repeated yearly as primary treatment in open angle glaucoma(s): long term comparison with conventional SLT and ALT. E-Abstract 3459. Association for Research in Vision and Ophthalmology Annual Meeting; May 1, 2018; Honolulu, HA.

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IG is an Attitude

- Proactive vs reactive
- Early predictive diagnostics
- Active monitoring
- Early procedural intervention
- Address adherence and risk



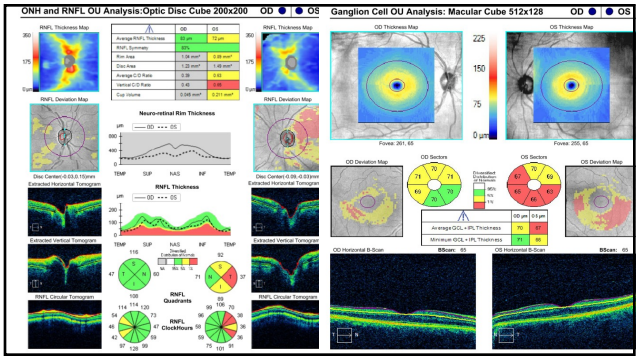
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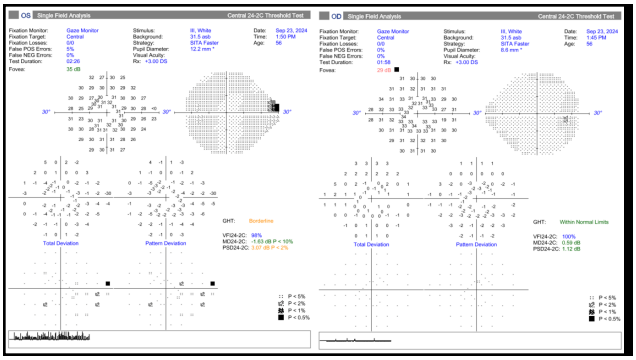
56-year-old male

- Diagnosis of mild-mod pigmentary glaucoma OS, OHTN Glc. supect OD
- 2nd Opinion; he is cautious about SLT—but wishes to reduce medication load
  - Significant symptoms of DED (SPEED 15)
- History of bilateral LASIK (Avg. CCT still)
- Gonio: CBB 360*, dense pigment OD, OS.
- Tmax: 27 OD, 31 OS
- Latanoprost 0.005% QHS OU, dorzolamide-timolol BID OS, brimonidine 0.2% BID OS
  - IOP 17mmHg OD, 21mmHg OS

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56-year-old male



- Diagnosis of mild-mod pigmentary glaucoma OS, OHTN Glc. supect OD
- Medicated IOP 17 OD, 21 OS
- 1 bottle meds OD, 3 bottles OS.



- Plan – dSLT OU to reduce meds. (reduce to PGA QHS OU)
- 6-8 weeks later IOP 14 OD, 18 OS.

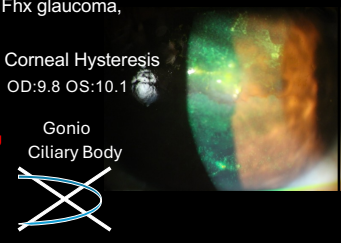
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Patient MC- Demographics & Entrance Testing

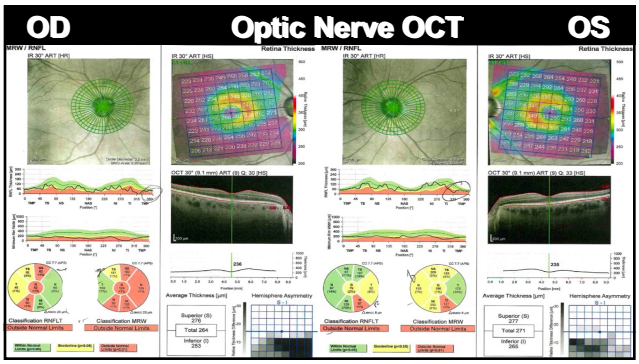
- 55 year old female
- CC: Elevated IOP w/headaches, Fhx glaucoma,
- BCVA: 20/20- / 20/20-
- GAT: 16, TMAX 28 / 18, TMAX 28
  - Cosopt BID OU, Trav. Z QD OU
- PACH: 593 / 595
- ONH: 0.85V / 0.75V

Corneal Hysteresis
OD:9.8 OS:10.1

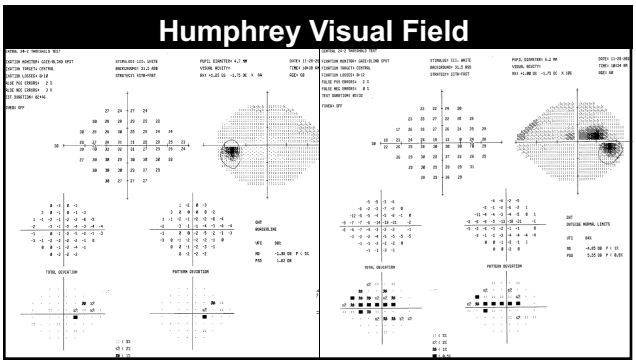
Gonio
Ciliary Body



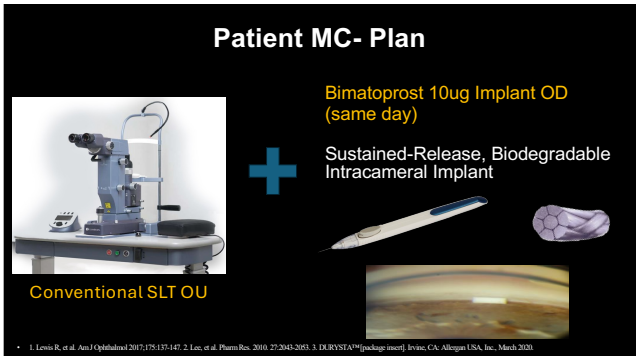
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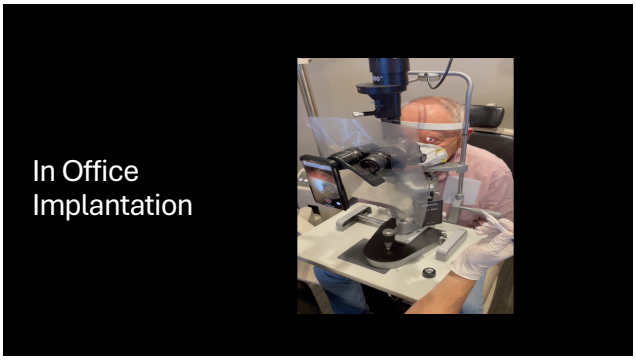
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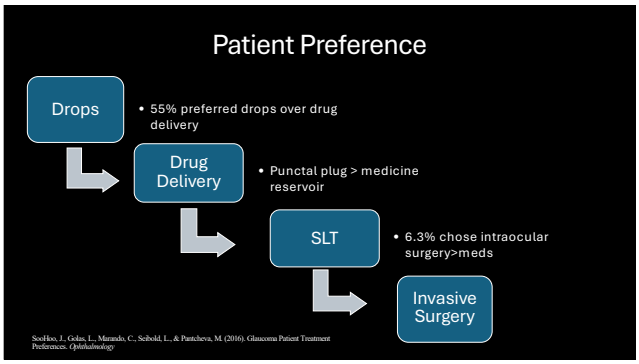
38



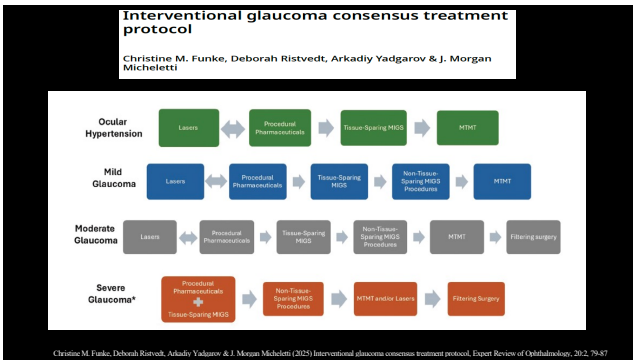
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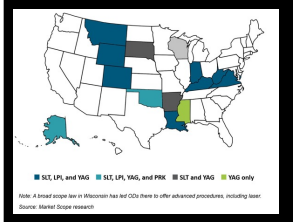


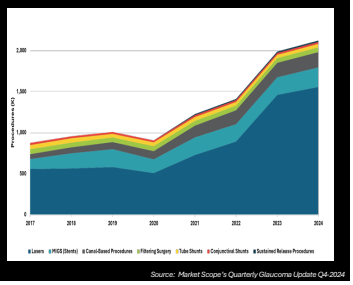
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OD's Confidence in SLT





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Source: Market Scope's Quarterly Glaucoma Update Q4-2024

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What's your preferred 1st line POAG Tx?

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