


What's New In The Diagnosis And Management Of Glaucoma

Danica Marrelli, O.D.

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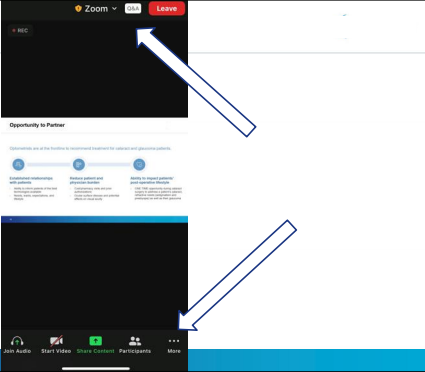


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- Ask questions using the zoom on-screen floating panel



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Speaker Bio –

Danica Marrelli received her Doctor of Optometry degree from the University of Houston College of Optometry, and completed a residency at the Baltimore VA Medical Center. She is a Clinical Professor at the University of Houston College of Optometry where she serves as Assistant Dean for Clinical Education and Director of the Medical Eye Service. She is a diplomate in the glaucoma section of the American Academy of Optometry and is the vice president of the Optometric Glaucoma Society.

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Financial Disclosures

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What's New in the Diagnosis and Management of Glaucoma?

Danica J. Marrelli, OD, FAAO, Dipl (AAO)

University of Houston College of Optometry

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Agenda

- Diagnosis
 - OCT
 - Central visual field testing
 - Headset perimetry - are we there yet?
- Treatment
 - New(ish) meds
 - Drug delivery
 - A fresh look at SLT

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Glaucoma Basics

- Glaucoma is a disease of ganglion cells
 - Damage occurs at level of the lamina cribrosa
 - Selective damage to superior and inferior poles of the optic nerve/RNFL
 - Asymmetry between sup/inf poles as well as OD/OS asymmetry

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The Big Question: Is this glaucoma?

- If there is characteristic optic nerve damage...
 - "Yes"
- If there are no characteristic optic nerve or VF changes ...
 - Usually "No"
 - This is changing with use of OCT and ability to detect earlier changes

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Characteristic Optic Nerve Changes

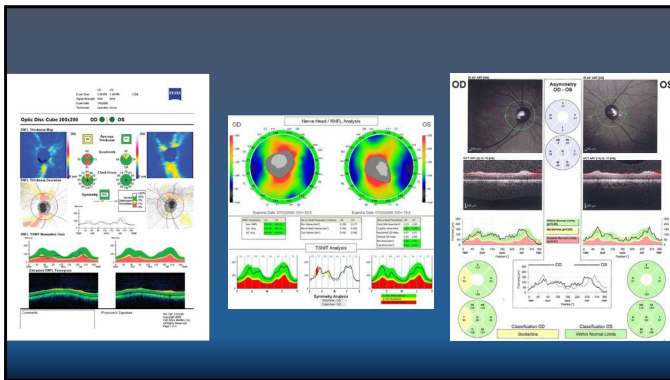
- Large C/D ratio FOR THE SIZE OF THE OPTIC NERVE
- Focal or diffuse rim thinning
- Focal or diffuse RNFL loss
- Optic disc hemorrhage
- Peripapillary atrophy

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EVALUATION OF RETINAL NERVE FIBER LAYER (RNFL)

- Defects in RNFL may precede glaucomatous visual field loss and structural changes in ONH
- Can help to differentiate physiologic cupping from glaucomatous cupping

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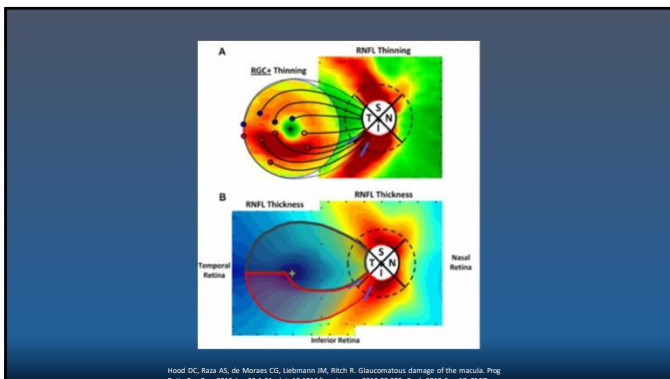


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Newest Addition to Glaucoma Diagnosis Arsenal: Macular Imaging

- 1998: Zeimer et al reported on macular thickness loss in patients with known glaucomatous damage
- 2003: Greenfield reported correlation between total macular thickness and MD on VF in glaucoma patients (time domain OCT)
- 2013: Hood et al - extensive investigation of segmented "RGC+" (RGC + IPL) layer and description of the "Macular Vulnerability Zone" (MVZ)

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Measuring Macular Thickness in Glaucoma

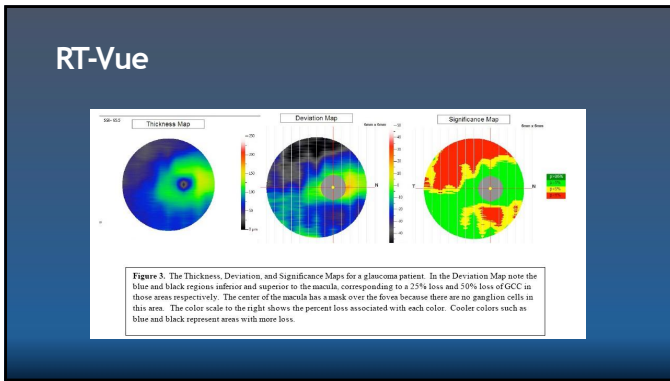
Clinicians must be aware of important differences in the macular imaging protocols of the commercially available optical coherence tomography systems.

BY AHMAD A. AREF, MD

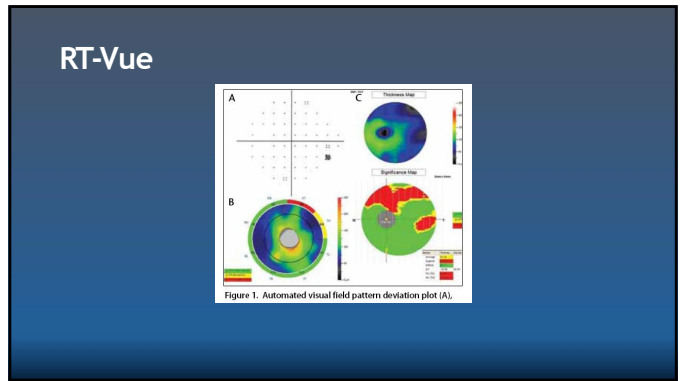
TABLE. COMPARISON OF COMMERCIALY AVAILABLE IMAGING DEVICES FOR MACULAR ANALYSIS IN GLAUCOMA				
OCT Device	Macular Imaging Protocol	Macular Area of Analysis	Macular Layers Analyzed	Normative Database?
RTVue FD-OCT	Ganglion cell complex analysis	7 mm ² ; centered 1 mm temporal to fovea	RNFL, RGC, IPL	Yes
Spectralis SD-OCT	Posterior pole asymmetry analysis	8 mm ² ; centered on fovea	All macular layers	No
Cimus HD-OCT	Ganglion cell analysis	Elliptical annulus (vertical radius of 2 mm; horizontal radius of 2.4 mm); centered on fovea	GC-IPL	Yes

Abbreviations: OCT, optical coherence tomography; RNFL, retinal nerve fiber layer; RGC, retinal ganglion cell; IPL, inner plexiform layer; CC-IPL, ganglion cell and inner plexiform layers.

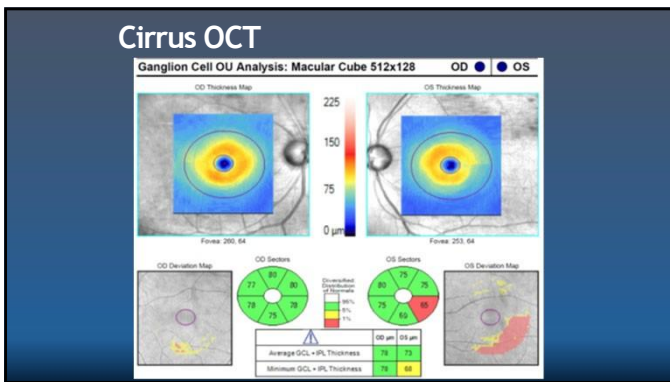
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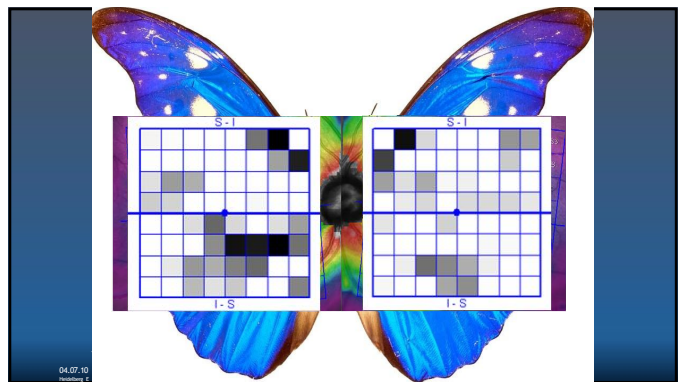
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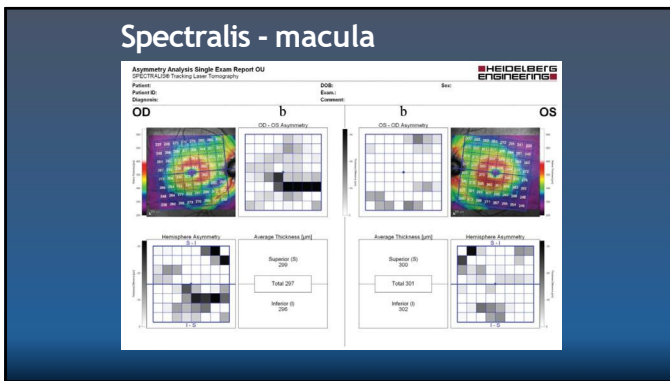
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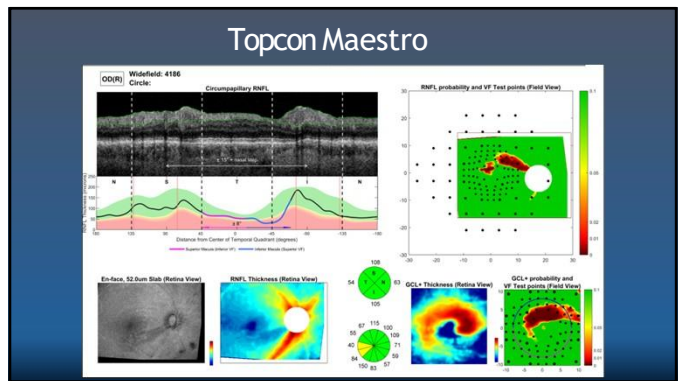
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Advantages of Macular Analysis

- Macula contains ~50% of retinal ganglion cells
 - Glaucoma is a disease of these cells
 - Macular thinning/irregularity cannot be detected during clinical exam
- More reproducible measure (if not using retinal nerve fiber layer) than peripapillary RNFL
 - Fewer blood vessels and other cell components
 - Less anatomic variation compared to optic disc/peripapillary region
- Better superior/inferior symmetry and symmetry between eyes than peripapillary RNFL

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Disadvantages of Macular Imaging

- Macular imaging is not helpful in glaucoma cases in which patients have concurrent macular disease
 - AMD
 - ERM
 - CME
 - DME
 - Macular hole

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Segmentation Errors

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Case: Leo

- 71yo AAM
- Referral for glaucoma suspicion, based on age/race/IOP
- POH: Unremarkable
- PMH: (+) DM2 and HTN
- FOH: Unremarkable
- VA: 20/20 OD, OS
- SLE: Normal OU, mild cataract OU
- IOP: 23mmHg OD, OS
- CCT: 587 microns OD 582microns OS

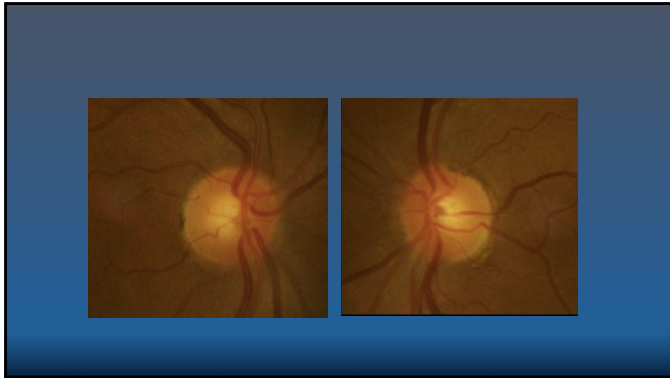
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GNH and RNFL OU Analysis: Optic Disc Cube 200x200

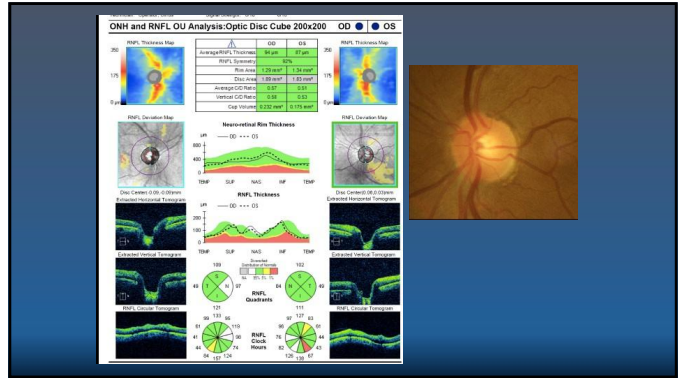
Parameter	OD	OS
Average RNFL Thickness	37 µm	35 µm
RNFL Symmetry	0.98	0.98
Rel. Area	1.29 µm²	1.30 µm²
Disc Area	1.89 µm²	1.82 µm²
Average GC Iden	0.27	0.25
Average GC Area	1.02 µm²	1.02 µm²
Cap. Volume	1.22 µm³	1.17 µm³

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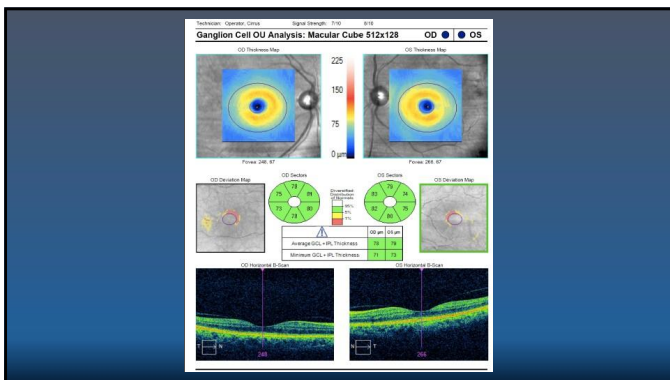
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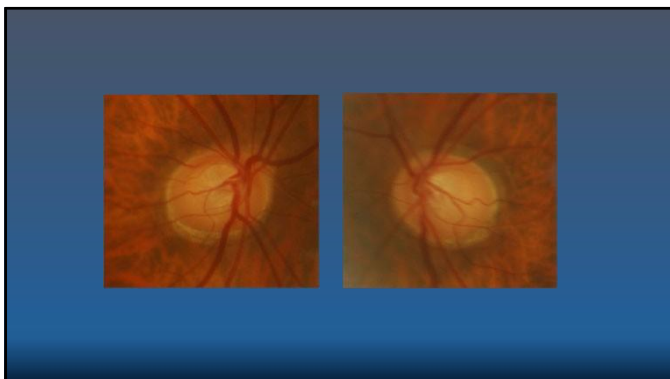


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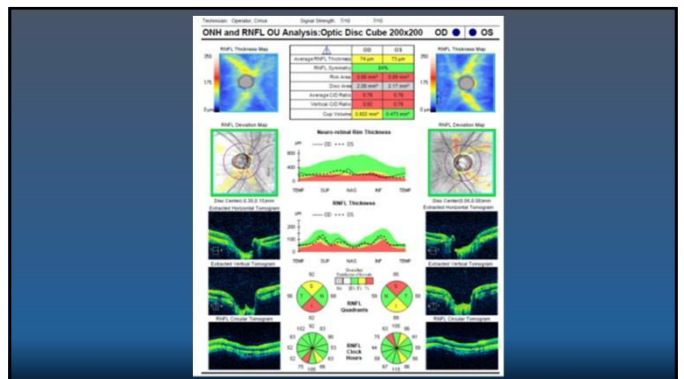
Case: Tony

- 51yo hypertensive HM
- POH: LASIK OU (2000) , PRK OS (2014)
- FH: (+) glaucoma - grandmother
- BCVA: 20/20 OD, OS
- Pupils, motility, CVF: Full OD, OS
- Slit Lamp Exam: LASIK flaps OU, otherwise nl
- Angles: open to CB 360 OU
- Tmax: 17mmHg OU
- CCT: 523 OD 489 OS

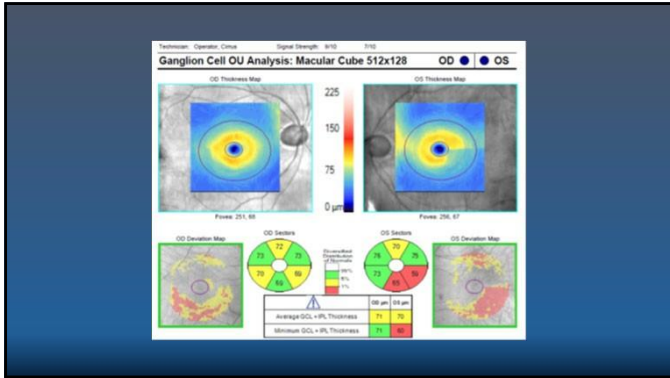
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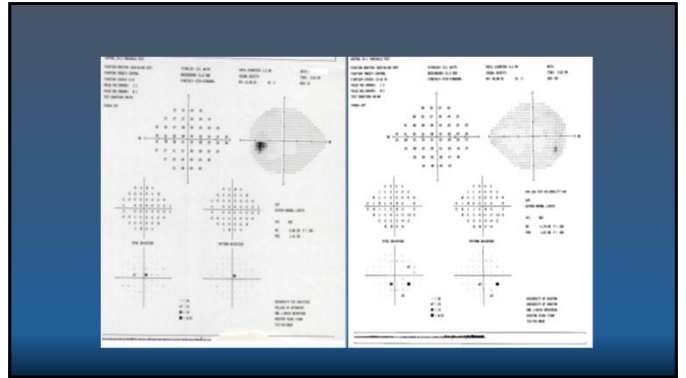
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What about the 10-2 VF?

- Central 8 degrees from the center of the foveal contains more than 30% of retinal ganglion cells
- 24-2 and 30-2 test strategies use a 6 degree test grid pattern; these points fall outside of the densist region of ganglion cells
- 10-2 test strategy uses a 2 degree test grid
- Recent research has shown that in some patients with small regions of macular ganglion cell loss, 10-2 testing may be better able to detect VF loss

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Prog Retin Eye Res 2013 January ;32(1):1-21. doi:10.1016/j.preteyres.2012.08.003.

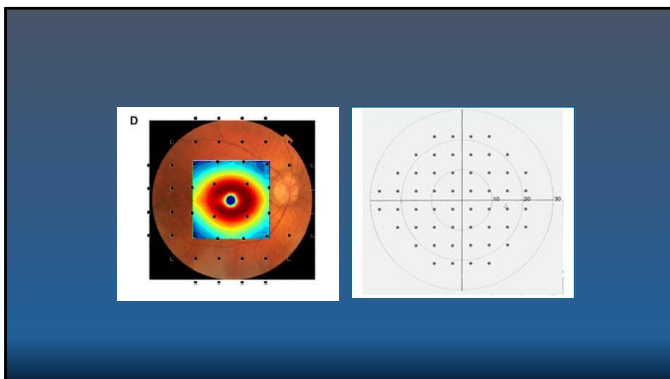
Glaucomatous damage of the macula

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FIGURE 1. The 8° area of central vision (the inner 8° of macula) is a high-density region of retinal ganglion cells (RGCs) and is the most vulnerable to glaucoma. (A) Schematic of the macula showing the central 8° region. (B) OCT image of the macula. (C) OCT image showing glaucomatous damage. (D) Heatmap of macular ganglion cell density.

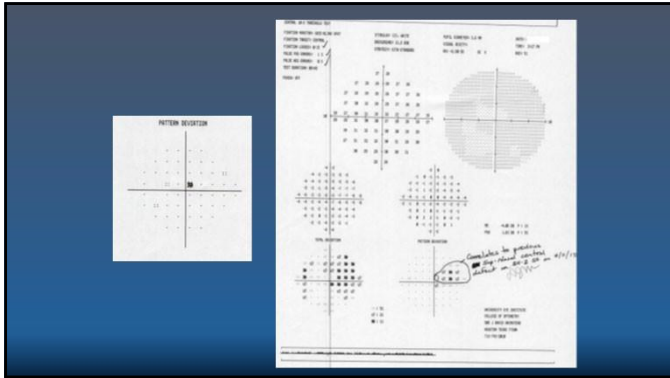
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Back to Tony...

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Macular Damage in Glaucoma (Take Home Message)

- Glaucoma damage to the macula is common
- Glaucoma damage to the macula can occur early in the disease
- Glaucoma damage to the macula is not visible on CLINICAL exam
- Glaucoma damage to the macula can be missed and/or underestimated by the standard 24-2 or 30-2 test grid
- New test pattern for glaucoma available on HFA-3

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SITA Faster 24-2C Pattern on HFA3

The 24-2C test pattern combines all 24-2 points + ten selected 10-2 points (shown in OD orientation)

Large Gray	24-2 pattern
Large Orange	Ten additional

Small Gray 24-2C points
Small Orange 10-2 pattern

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24-2C: The newest pattern on the HFA

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Headset Perimetry: Ready for Prime Time?

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Medical Therapy: Is there an unmet need?

$IOP = (PRODUCTION/OUTFLOW) + EVP$

Labels in diagram: Lower Resistance (Trabecular Meshwork), Decrease aqueous outflow resistance, Aqueous suppression, Increase trabecular outflow.

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Medical Therapy - New Treatment Classes

- Rho Kinase (ROCK) inhibitors: newest class of topical agents (netarsudil)
 - Inhibits both ROCK and norepinephrine transporter
 - Mechanism of action:
 - Increases trabecular outflow (20% in healthy eyes, 35% in glaucomatous eyes)!
 - Decreases episcleral venous pressure (EVP)
 - Decreases aqueous production

Labels in images: Aqueous flow, SC, Magnification of both images are identical, Expansion of TM structure.

References: 1. Kazemi et al. J Ocul Pharmacol Ther. 2018;34:380; 2. Ren et al. Invest Ophthalmol Vis Sci 2016;57:6197

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netarsudil (Rhopressa®) - efficacy & safety

- Phase 3 (rocket-2)
- Neurokinin B receptor antagonist
- Most frequent adverse events:
 - Conjunctival hemorrhages -15%
 - Small, limbal
 - Corneal verticillata -20%
 - 1 drop qhs

Chemical structure: Cc1ccc(cc1)C(=O)Nc2ccc(cc2)C(=O)Nc3ccc(cc3)C(=O)Nc4ccc(cc4)C(=O)Nc5ccc(cc5)C(=O)Nc6ccc(cc6)C(=O)Nc7ccc(cc7)C(=O)Nc8ccc(cc8)C(=O)Nc9ccc(cc9)C(=O)Nc10ccc(cc10)C(=O)Nc11ccc(cc11)C(=O)Nc12ccc(cc12)C(=O)Nc13ccc(cc13)C(=O)Nc14ccc(cc14)C(=O)Nc15ccc(cc15)C(=O)Nc16ccc(cc16)C(=O)Nc17ccc(cc17)C(=O)Nc18ccc(cc18)C(=O)Nc19ccc(cc19)C(=O)Nc20ccc(cc20)C(=O)Nc21ccc(cc21)C(=O)Nc22ccc(cc22)C(=O)Nc23ccc(cc23)C(=O)Nc24ccc(cc24)C(=O)Nc25ccc(cc25)C(=O)Nc26ccc(cc26)C(=O)Nc27ccc(cc27)C(=O)Nc28ccc(cc28)C(=O)Nc29ccc(cc29)C(=O)Nc30ccc(cc30)C(=O)Nc31ccc(cc31)C(=O)Nc32ccc(cc32)C(=O)Nc33ccc(cc33)C(=O)Nc34ccc(cc34)C(=O)Nc35ccc(cc35)C(=O)Nc36ccc(cc36)C(=O)Nc37ccc(cc37)C(=O)Nc38ccc(cc38)C(=O)Nc39ccc(cc39)C(=O)Nc40ccc(cc40)C(=O)Nc41ccc(cc41)C(=O)Nc42ccc(cc42)C(=O)Nc43ccc(cc43)C(=O)Nc44ccc(cc44)C(=O)Nc45ccc(cc45)C(=O)Nc46ccc(cc46)C(=O)Nc47ccc(cc47)C(=O)Nc48ccc(cc48)C(=O)Nc49ccc(cc49)C(=O)Nc50ccc(cc50)C(=O)Nc51ccc(cc51)C(=O)Nc52ccc(cc52)C(=O)Nc53ccc(cc53)C(=O)Nc54ccc(cc54)C(=O)Nc55ccc(cc55)C(=O)Nc56ccc(cc56)C(=O)Nc57ccc(cc57)C(=O)Nc58ccc(cc58)C(=O)Nc59ccc(cc59)C(=O)Nc60ccc(cc60)C(=O)Nc61ccc(cc61)C(=O)Nc62ccc(cc62)C(=O)Nc63ccc(cc63)C(=O)Nc64ccc(cc64)C(=O)Nc65ccc(cc65)C(=O)Nc66ccc(cc66)C(=O)Nc67ccc(cc67)C(=O)Nc68ccc(cc68)C(=O)Nc69ccc(cc69)C(=O)Nc70ccc(cc70)C(=O)Nc71ccc(cc71)C(=O)Nc72ccc(cc72)C(=O)Nc73ccc(cc73)C(=O)Nc74ccc(cc74)C(=O)Nc75ccc(cc75)C(=O)Nc76ccc(cc76)C(=O)Nc77ccc(cc77)C(=O)Nc78ccc(cc78)C(=O)Nc79ccc(cc79)C(=O)Nc80ccc(cc80)C(=O)Nc81ccc(cc81)C(=O)Nc82ccc(cc82)C(=O)Nc83ccc(cc83)C(=O)Nc84ccc(cc84)C(=O)Nc85ccc(cc85)C(=O)Nc86ccc(cc86)C(=O)Nc87ccc(cc87)C(=O)Nc88ccc(cc88)C(=O)Nc89ccc(cc89)C(=O)Nc90ccc(cc90)C(=O)Nc91ccc(cc91)C(=O)Nc92ccc(cc92)C(=O)Nc93ccc(cc93)C(=O)Nc94ccc(cc94)C(=O)Nc95ccc(cc95)C(=O)Nc96ccc(cc96)C(=O)Nc97ccc(cc97)C(=O)Nc98ccc(cc98)C(=O)Nc99ccc(cc99)C(=O)Nc100ccc(cc100)C(=O)Nc101ccc(cc101)C(=O)Nc102ccc(cc102)C(=O)Nc103ccc(cc103)C(=O)Nc104ccc(cc104)C(=O)Nc105ccc(cc105)C(=O)Nc106ccc(cc106)C(=O)Nc107ccc(cc107)C(=O)Nc108ccc(cc108)C(=O)Nc109ccc(cc109)C(=O)Nc110ccc(cc110)C(=O)Nc111ccc(cc111)C(=O)Nc112ccc(cc112)C(=O)Nc113ccc(cc113)C(=O)Nc114ccc(cc114)C(=O)Nc115ccc(cc115)C(=O)Nc116ccc(cc116)C(=O)Nc117ccc(cc117)C(=O)Nc118ccc(cc118)C(=O)Nc119ccc(cc119)C(=O)Nc120ccc(cc120)C(=O)Nc121ccc(cc121)C(=O)Nc122ccc(cc122)C(=O)Nc123ccc(cc123)C(=O)Nc124ccc(cc124)C(=O)Nc125ccc(cc125)C(=O)Nc126ccc(cc126)C(=O)Nc127ccc(cc127)C(=O)Nc128ccc(cc128)C(=O)Nc129ccc(cc129)C(=O)Nc130ccc(cc130)C(=O)Nc131ccc(cc131)C(=O)Nc132ccc(cc132)C(=O)Nc133ccc(cc133)C(=O)Nc134ccc(cc134)C(=O)Nc135ccc(cc135)C(=O)Nc136ccc(cc136)C(=O)Nc137ccc(cc137)C(=O)Nc138ccc(cc138)C(=O)Nc139ccc(cc139)C(=O)Nc140ccc(cc140)C(=O)Nc141ccc(cc141)C(=O)Nc142ccc(cc142)C(=O)Nc143ccc(cc143)C(=O)Nc144ccc(cc144)C(=O)Nc145ccc(cc145)C(=O)Nc146ccc(cc146)C(=O)Nc147ccc(cc147)C(=O)Nc148ccc(cc148)C(=O)Nc149ccc(cc149)C(=O)Nc150ccc(cc150)C(=O)Nc151ccc(cc151)C(=O)Nc152ccc(cc152)C(=O)Nc153ccc(cc153)C(=O)Nc154ccc(cc154)C(=O)Nc155ccc(cc155)C(=O)Nc156ccc(cc156)C(=O)Nc157ccc(cc157)C(=O)Nc158ccc(cc158)C(=O)Nc159ccc(cc159)C(=O)Nc160ccc(cc160)C(=O)Nc161ccc(cc161)C(=O)Nc162ccc(cc162)C(=O)Nc163ccc(cc163)C(=O)Nc164ccc(cc164)C(=O)Nc165ccc(cc165)C(=O)Nc166ccc(cc166)C(=O)Nc167ccc(cc167)C(=O)Nc168ccc(cc168)C(=O)Nc169ccc(cc169)C(=O)Nc170ccc(cc170)C(=O)Nc171ccc(cc171)C(=O)Nc172ccc(cc172)C(=O)Nc173ccc(cc173)C(=O)Nc174ccc(cc174)C(=O)Nc175ccc(cc175)C(=O)Nc176ccc(cc176)C(=O)Nc177ccc(cc177)C(=O)Nc178ccc(cc178)C(=O)Nc179ccc(cc179)C(=O)Nc180ccc(cc180)C(=O)Nc181ccc(cc181)C(=O)Nc182ccc(cc182)C(=O)Nc183ccc(cc183)C(=O)Nc184ccc(cc184)C(=O)Nc185ccc(cc185)C(=O)Nc186ccc(cc186)C(=O)Nc187ccc(cc187)C(=O)Nc188ccc(cc188)C(=O)Nc189ccc(cc189)C(=O)Nc190ccc(cc190)C(=O)Nc191ccc(cc191)C(=O)Nc192ccc(cc192)C(=O)Nc193ccc(cc193)C(=O)Nc194ccc(cc194)C(=O)Nc195ccc(cc195)C(=O)Nc196ccc(cc196)C(=O)Nc197ccc(cc197)C(=O)Nc198ccc(cc198)C(=O)Nc199ccc(cc199)C(=O)Nc200ccc(cc200)C(=O)Nc201ccc(cc201)C(=O)Nc202ccc(cc202)C(=O)Nc203ccc(cc203)C(=O)Nc204ccc(cc204)C(=O)Nc205ccc(cc205)C(=O)Nc206ccc(cc206)C(=O)Nc207ccc(cc207)C(=O)Nc208ccc(cc208)C(=O)Nc209ccc(cc209)C(=O)Nc210ccc(cc210)C(=O)Nc211ccc(cc211)C(=O)Nc212ccc(cc212)C(=O)Nc213ccc(cc213)C(=O)Nc214ccc(cc214)C(=O)Nc215ccc(cc215)C(=O)Nc216ccc(cc216)C(=O)Nc217ccc(cc217)C(=O)Nc218ccc(cc218)C(=O)Nc219ccc(cc219)C(=O)Nc220ccc(cc220)C(=O)Nc221ccc(cc221)C(=O)Nc222ccc(cc222)C(=O)Nc223ccc(cc223)C(=O)Nc224ccc(cc224)C(=O)Nc225ccc(cc225)C(=O)Nc226ccc(cc226)C(=O)Nc227ccc(cc227)C(=O)Nc228ccc(cc228)C(=O)Nc229ccc(cc229)C(=O)Nc230ccc(cc230)C(=O)Nc231ccc(cc231)C(=O)Nc232ccc(cc232)C(=O)Nc233ccc(cc233)C(=O)Nc234ccc(cc234)C(=O)Nc235ccc(cc235)C(=O)Nc236ccc(cc236)C(=O)Nc237ccc(cc237)C(=O)Nc238ccc(cc238)C(=O)Nc239ccc(cc239)C(=O)Nc240ccc(cc240)C(=O)Nc241ccc(cc241)C(=O)Nc242ccc(cc242)C(=O)Nc243ccc(cc243)C(=O)Nc244ccc(cc244)C(=O)Nc245ccc(cc245)C(=O)Nc246ccc(cc246)C(=O)Nc247ccc(cc247)C(=O)Nc248ccc(cc248)C(=O)Nc249ccc(cc249)C(=O)Nc250ccc(cc250)C(=O)Nc251ccc(cc251)C(=O)Nc252ccc(cc252)C(=O)Nc253ccc(cc253)C(=O)Nc254ccc(cc254)C(=O)Nc255ccc(cc255)C(=O)Nc256ccc(cc256)C(=O)Nc257ccc(cc257)C(=O)Nc258ccc(cc258)C(=O)Nc259ccc(cc259)C(=O)Nc260ccc(cc260)C(=O)Nc261ccc(cc261)C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latanoprostene bunod - efficacy and safety

- Non-inferior to timolol in Phase 3 trials
 - Reduced IOP 7.5-9.1mmHg from baseline
- Adverse events:
 - Hyperemia (5.9%)
 - eye irritation (4.6%)
- Longer studies:
 - Lash growth
 - Iris pigment changes

Kaufman Expert Opinion on Pharmacotherapy 18:4,433-444

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Drug Delivery - bimatoprost SR

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bimatoprost SR

24-Month Phase I/II Clinical Trial of Bimatoprost Sustained-Release Implant (Bimatoprost SR) in Glaucoma Patients

Key Points

- A single administration of bimatoprost sustained-release implant (Bimatoprost SR) lowered intraocular pressure for up to 1 year in 40% of patients and up to 2 years in 28%, with no additional treatment.
- Efficacy of re-administration with a second implant of Bimatoprost SR was similar to that with the first implant.
- The safety profile of Bimatoprost SR was favorable during the 24-month study.

Graves et al. Drugs 2020; 80:147-170

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Drug Delivery - travoprost implant (iDose)

Efficacy and Safety of the Travoprost Intraocular Implant in Reducing Topical IOP-Lowering Medication Burden in Patients with Open-Angle Glaucoma or Ocular Hypertension

Key Points

- The travoprost intraocular implant (fast-eluting and slow-eluting models) effectively reduced intraocular pressure in patients with open-angle glaucoma or ocular hypertension.
- At month 36, 63% (fast eluting) and 69% (slow eluting) of implant patients reduced or maintained their topical medication burden relative to pre-study medications.
- The safety profile of the travoprost intraocular implant was favorable over the 36 month study.

Berdahl et al. Drugs 2024; 84:83-97

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SLT: Old News?

- SLT FDA approved 2002
 - Multiple studies show it is efficacious, safe
 - Historically used as adjunct therapy, but sometimes used as first-line

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HEALTH TECHNOLOGY ASSESSMENT

Selective laser trabeculotomy versus drops for newly diagnosed ocular hypertension and glaucoma: the LASHT RCT

Key Points

- Newly diagnosed OAG and OHTN (treatment-naïve)
- Two groups:
 - Medicine 1st
 - Laser 1st
- Compared
 - HRQoL
 - Clinical Efficacy
 - Cost effectiveness
- Followed for 36 mo

National Institute for Health Research

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LiGHT Trial Results

- 91% patients completed 36 months
 - No difference in HRQoL
- Proportion of patients at target IOP:
 - SLT-1 93% (0 patients requiring surgery)
 - Med-1 91% (11 patients requiring surgery)
- SLT-1 provided **medicine-free treatment for at least 36 months in 74% of group**

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Laser in Glaucoma and Ocular Hypertension (LiGHT) Trial
 Six-Year Results of Primary Selective Laser Trabeculoplasty versus Eye Drops for the Treatment of Glaucoma and Ocular Hypertension
 Ophthalmology Volume 130, Number 2, February 2023

- After 3 years:
 - SLT first group allowed 3rd SLT if necessary
 - Med first group allowed SLT as switch or escalation
- 692 subjects remaining at 3 years
 - 633 entered extension study (91.5%)
- 524 subjects completed 6 years (82.8% of those entering extension)

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LiGHT Study - 6 year Results

- Quality of Life:**
 - No significant difference in quality of life with Euro QOL EQ-5D, Glaucoma Utility Index, and Glaucoma QOL-15
 - SLT showed better Glaucoma Symptom Scale (72 months)

Have you experienced any of the following problems in the last 4 weeks? (Please respond for both the left and right eyes.)

a. Burning, Stinging, Stinging

Left Eye	Right Eye
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> No

b. Tearing
 c. Dryness
 d. Itching
 e. Soreness, Tiredness
 f. Blurry/Dim Vision
 g. Feeling of Something in Your Eye
 h. Hard to See in Daylight
 i. Hard to See in Dark Places
 j. Halos Around Lights

How bothersome has it been?
 Very, Somewhat, A Little, Not at All

Glaucoma Symptom Scale Items

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LiGHT Trial - 6 Year Results

- Efficacy:**
 - SLT first group: **69.8%** remained at or less than target IOP without need for medications or surgical treatment
 - More eyes in Med first group exhibited progression (26.8% vs 19.6%)
 - Trabeculectomy: Med first (32), SLT first (13)
 - Cataract surgery: Med first (95), SLT first (57)
 - NO serious laser-related adverse events

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COAST
 CLARIFYING THE OPTIMAL APPLICATION OF SL THERAPY

COAST is a collaborative study between researchers in the US and the UK in partnership with the National Eye Institute / National Institutes of Health to investigate the optimal energy level and frequency of laser therapy to treat glaucoma. For more information, click one of the boxes below.

For Doctors
 Click here to learn more about the design and goals of COAST

For Patients
 Click here to learn more about glaucoma, laser treatment, and the COAST trial

Researchers in the U.S. and the U.K. are collaborating with the National Eye Institute to investigate the optimal energy level and frequency of laser therapy to treat glaucoma.

- NEWLY DIAGNOSED OHT AND POAG PATIENT RANDOMIZED TO RECEIVE:
 - STANDARD SLT (REPEAT AS NEEDED)
 - LOW ENERGY SLT ANNUALLY

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SLT- COAST background


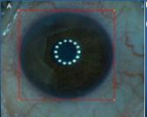
- Traditional SLT v. ALT v. Low-Energy SL as primary treatment in OAG
 - Years to topical treatment:
 - SLT: 2.8
 - ALT: 3.2
 - LE SLT: 6.2 (LE = 0.4mJ with 50-60 spots over 360°)
 - % Remaining Drop-free
 - SLT: 22.6%
 - ALT: 25%
 - LE SLT: 58.3%

Stephano Gandolfi, ARVO abstract 2019

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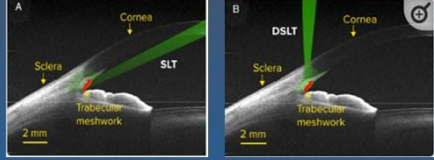
SLT - Direct SLT

- The Eagle (Belkin)
 - Q-switched frequency-doubled Nd:Yag laser
 - 532nm
 - No gonioscopy lens
 - Delivers 120 simultaneous pulses through limbus/peripheral cornea

ond application time
d December 2023

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Traditional application

Direct SLT

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GLAurious Trial

- OHTN or OAG patients
- Randomized SLT (77) vs DSLT (84)
- Mean IOP reduction (6 months):
 - DSLT: 5.46mmHg
 - SLT: 6.16mmHg
- Mean # medications used reduced by 50% at 12 months (both groups)
- Patients remaining medication-free (12 months):
 - DSLT 61.7%
 - SLT 59.5%



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