


On behalf of Vision Expo, we sincerely thank you for being with us this year.

Vision Expo Has Gone Green!

We have eliminated all paper session evaluation forms. Please be sure to complete your electronic session evaluations online when you login to request your CE letter for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.



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Financial Disclosure – Justin Schweitzer, OD, FAAO


• Amic – C/L	• Sun – C/L
• Alcon – C/L	• Equinox - I
• Allergan – C/L	• Reichert - C
• Bascom Vision – C/L	• J&J – C/L
• Ocular Therapeutics - C	• Glaukos – C/L
• EyePoint – C	• Horizon – C
• Sight Sciences – C/L	• Odel – C
• Drape – C	• Medline – C
• Zeiss – C/L	• LSC – C/L
• Visus - C	• Awelliro – C
• Science Based Health – C	• Novartis – C
• Koll – C	• Ivectan – C
• PVA – C	• Ocuphie – C
• Santen - C	• Tarius - C

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Optimizing the Ocular Surface in Glaucoma

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 Associate Optometric Residency Director
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The Long Time Glaucoma Patient

"My eyes are red on a daily basis and my vision fluctuates."
"I do miss my drops off and on – and my eyes feel better when I do"

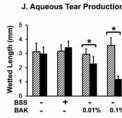
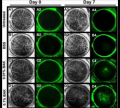
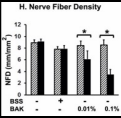
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Glaucoma Therapy and the Ocular Surface

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Neurotoxicity of BAK

- Exposure to BAK (0.01% or 0.1%) QD x 7 days:
 - Decrease NFD (p=0.02 & 0.001)
 - Decrease aqueous production (phenol red)




Agrillo L, et al. Br J Ophthalmol 2013.

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Effects on Meibomian Glands

Effect on lids/meibomian glands
 Study on glaucoma patients 18mo stable treatment with different medications.
 Reduced number of meibomian glands
 Reduced numbers of acinae and increased dysfunction in patients
 Patients on multiple medications with preservatives = increased dysfunction and reduced number of acinae

Table 3 Clinical characteristics	OSD score	SEI	SI	Conjunct staining	Meiboscore	Meiboscore
Control	6.6±4.8*	12.6±2.1*	18.6±5.9*	0.3±1.1*	1.0±0.01*	1.26±0.27*
Group 1	8.6±3.8**	7.2±1.9*	9.1±2.1**	1.8±2.1	0.6±0.2	2.26±0.91
# age	8.6±3.8**	7.2±1.9**	9.1±2.1**	1.8±2.1	0.6±0.2	1.86±0.68
Preserved Drop	10.6±4.1***	6.1±1.5***	9.6±1.1***	1.6±2.1	0.5±0.6	2.2±1.02
Group 2	10.6±4.7	4.1±1.5	7.2±2.7	2.3±1.1	0.5±0.38	2.2±1.15
Group 3	10.6±5.2	3.9±1.5	6.8±2.7	2.5±1.9	0.5±0.68	2.2±1.18



*p<0.05 vs group 1, **p<0.05 vs group 2 and 3, ***p<0.05 vs group 1, 2 and 3. #p<0.05 vs group 1. OSD score (OSDI), SEI (Schirmer Tear Test), SI (Significant Irritation), Conjunct staining (conjunctival hyperemia), Meiboscore (meibomian gland dysfunction), Meiboscore (meibomian gland density).

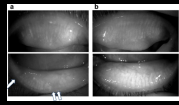
Apriol, et al. 2012
 Copyright 2012

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Effects on Meibomian Glands

Arita, et al. 2012: 1 eye treated with glaucoma meds, other eye control.
 N= 31.
 Mean duration eye drop use 7.9 +/-6.0 years

Significant findings:
 Lid margin abnormality (p<0.001)
 PEK (p<0.001)
 Meibomian gland dropout (Meiboscore) (p<0.001)
 TBUT (p<0.001)
 Schimers (p<0.0039)



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Glaucoma Therapy Exacerbated Ocular Surface Disease

101 treated glaucoma/OHTN patients completed OSDI
 59% of patients had symptoms of OSD
 Rate of OSD symptoms increases with number of BAK-containing drops

- 1 BAK drops - 52% of patients with symptoms
- 2 BAK drops - 62% of patients with symptoms
- 3 BAK drops - 68% of patients with symptoms

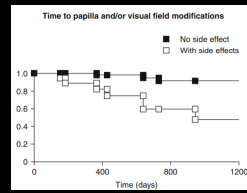
Leung, Emma W, Felipe A. Melillo, and Robert N. Weinreb. "Prevalence of ocular surface disease in glaucoma patients." *Journal of glaucoma*.

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Why Should We Care About the Ocular Surface in our Glaucoma Patients?

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Treatment Challenges



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Solutions?

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Preservative-Free Formulations

N=349, Significant Improvement in both signs and symptoms of OSD with switch to PF meds

	Visit 1 (preserved)	Visit 2 (preservative free)	p Value
	n ^a	n ^a	
Patient symptoms			
Discomfort upon instillation	196/240 82.4%	40/243 16.5%	<0.001
Patients presenting with at least one symptom between instillations	283/342 82.7%	123/344 35.8%	<0.001
Objective signs based on the clinical examination (patients presenting with at least one)			
Follicular sign (Staphylococci)	122/242 50.4%	50/246 20.3%	<0.001
Conjunctival cap	220/238 92.4%	74/239 31.0%	<0.001
Superficial punctate keratitis	85/234 36.3%	16/237 6.8%	<0.001

^aNumber of patients for which the variable had been recorded

Pharis, P. L., R. Pridgen, and C. Baubou. Prevalence of ocular symptoms and signs with preserved and preservative free glaucoma medication

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BAK-Free Latanoprost

Following instillation, micelles mix with the tear film

As the micelles migrate toward the ocular surface, they break apart, releasing latanoprost

Preservative-Free

BAK-Free Latanoprost	Yes
Benzalkonium Chloride	No
EDTA	No
Phosphate Buffered Saline	No
Thimerosal	No
Other Preservatives	No

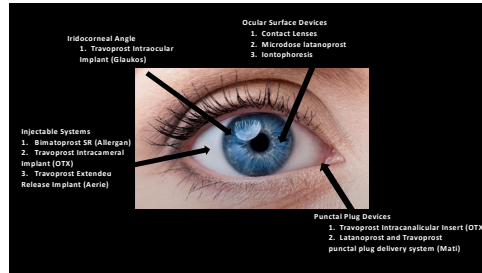
Preservative-Free Latanoprost (IYUZEH)

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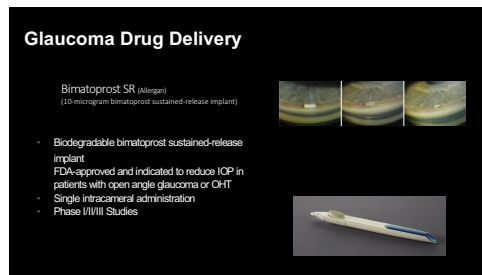
Selective Laser Trabeculoplasty

Selectively targets and laser burns pigmented TM cells

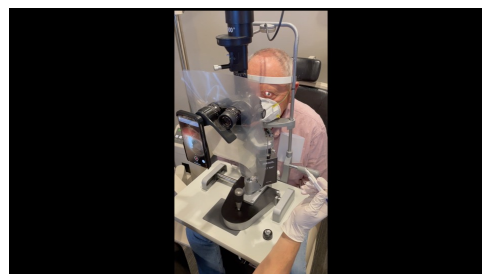
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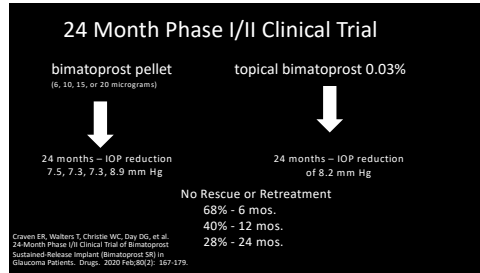
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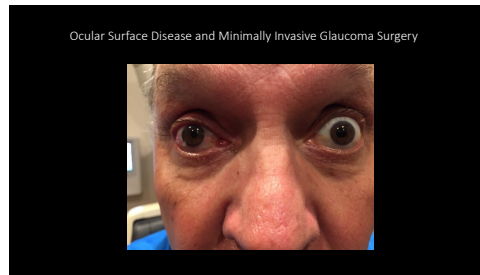
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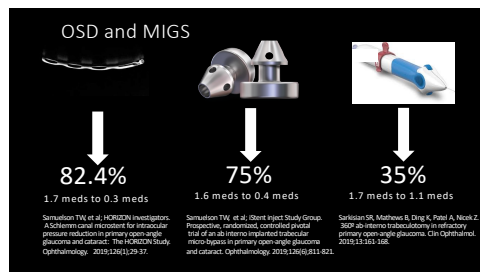
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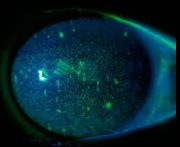


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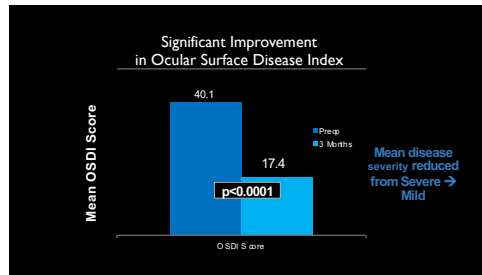
Prospective Interventional Cohort Study of Ocular Surface Disease Changes in Eyes After Trabecular Micro-Bypass Stent(s) Implantation (iStent or iStent *inject*) with Phacoemulsification
Justin A. Schechter,¹ Whitney H. Hauer,² Mitch Bach,³ Brandon Beaman,⁴ Ruben R. Goleman,⁵ Andrew W. Gohery,⁶ John G. Lind,⁷ and John R. Hayes⁸

Study Objectives

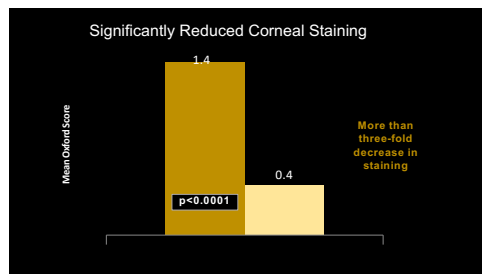
- Prospective multi-surgeon study at 2 U.S. sites
- Trabecular microbypass stent implantation with phaco in 50 eyes with OASD and cataract
- Follow-up through 3 months postop
- Measure:
 - OSDI and 4 topical meds (glaucoma drops, artificial tears, ocular surface medx)
 - Ocular Surface Disease Index (OSDI)
 - Corneal/conjunctival staining (Oxford Scale)
 - Fluorescein tear break-up time (FTBUT)
 - Conjunctival hyperemia (E-Box Scale)



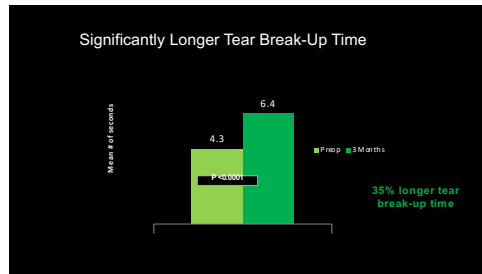
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Additional Treatment Considerations

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Doxycycline vs Azithromycin

Purpose: To assess the efficacy and safety of oral azithromycin compared with oral doxycycline in patients with MGD who had failed to respond to prior conservative management

Conclusion: Both improved symptoms of MGD, but 5-day oral azithromycin is recommended for its better effect on improving signs, better overall clinical response and shorter duration of treatment.

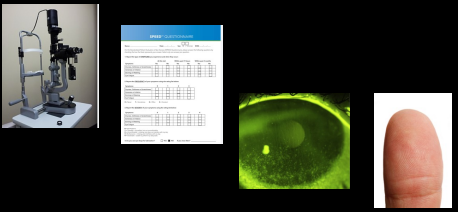
Kashouli MB et al. Br J Ophthalmol. 2015;99(2): 199-204

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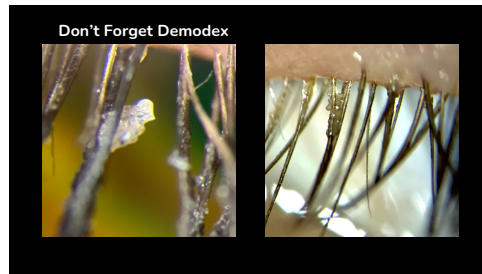
Where Do Nutraceuticals Fit In?

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Look Lift Pull Push Look Down

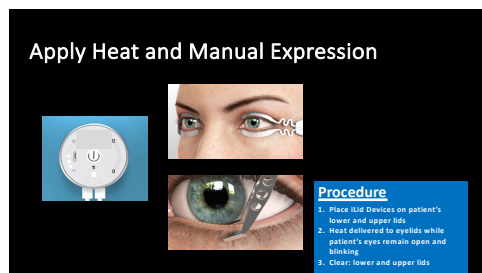
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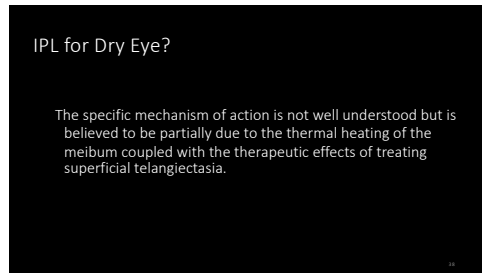
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Analysis of Cytokine Levels in Tears and Clinical Correlations After Intense Pulsed Light Treating Anterior Chamber Dysgenesis

Results:

- All of the inflammatory markers declined in value compared to baseline.
- IL-17A and IL-6 showed statistically significant decreases compared to sham treatment at each measured time point.
- PGE2 showed statistically significant decreases compared to sham at week 12.
- Results showed that the expressions of IL-17A and IL-6 correlated well with ocular surface parameters of the lower eyelid before IPL.

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Conclusion

OSD is common in our glaucoma patients
 OSD effects QOL, patient outcomes, and maybe IOP
 BAK is deleterious to the ocular surface
 Alternative therapies are safe, effective, and a quickly growing form of treatment

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Thank you!!
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