What's New in OSD Management

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Paul M. Karpecki, OD, FAAO Financial Disclosures:

Abbvie
Able Tx
Adom
AI Optics
Alcon
Aldeyra
Amaris
Atlas Medical
Aurion
Azura Pharmaceuticals
Barti
Bausch + Lomb
BioTissue
BlephEx
Brill
Bruder Healthcare
Bruno Vision Care
Cambium Pharma
Denali Ocular
Dompe
Elemental

All Relevant Relationships have been mitigated.

Essilor
Eyedaptic
Eyedetec
Harrow Health
Healthe
Hue.AI
iCare USA
Iveena
Jobson/Web MD
Kala Pharmaceuticals
Lacrisciences
LenTechs
Lexitas
Lubricant
Mallinckrodt
Mati
Mazado
Movu
Neurolens
Nordic Pharma
Oasis Medial
Oculus
Ocuphire
OM Solutions
Omega Ophthalmics
OcuSoft
Orasis
Percept
RegenerEyes
Rendia
RxSight
Science Based Health
Scope
Sentiss Pharma
Sight Sciences
Silk Technologies
Signal 21
Stuart Therapeutics
Surface
Sydnexis
Tarsus Medical
TearSolutions
TECLens
Topcon
Trefoil
Vial
Vialase
Viatris
Visant Medical
Vital Tears
Zeiss

Dry Eye Disease Burden

- 42% of patients complain of symptoms that would indicate DED (60-80M people).
- 46.2 Million people in North America have DED, based on longitudinal studies -1, 2
- 16-18 Million diagnosed with DED

1. Paulsen AJ, Cruickshanks KJ, Fischer ME et al, Dry eye in the beaver dam offspring study: prevalence, risk factors, and health-related quality of life. Am J Ophthalmol. 2014 Apr;157(4):799-806. doi: 10.1016/j.ajo.2013.12.023. Epub 2014 Jan 2.
2. Moss SE, Klein R, Klein BEK, Arch Ophthalmol. Incidence of dry eye in an older population. 2004 Mar;122(3):369-73. doi: 10.1001/archopht.122.3.369.

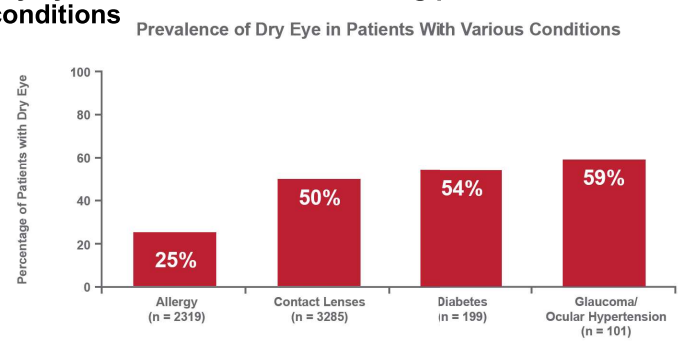
OSD in CL Wearers

- Symptoms of dryness and discomfort are highly prevalent (up to 50%) among contact lens wearers and are the most commonly cited reason for the discontinuation of contact lens wear.1
- 59% of CL wearers were found to have clinically significant MGD. 2

1. Blackie C. A single vectored thermal pulsation treatment for meibomian gland dysfunction increases mean comfortable contact lens wearing time by approximately 4 hours per day. Clinical Ophthalmology 2018: 12, 169-83.
2. Machalińska A, et al. Comparison of Morphological and Functional Meibomian Gland Characteristics Between Daily Contact Lens Wearers and Nonwearers. Cornea. 2015 Sep;34(9):1098-104.

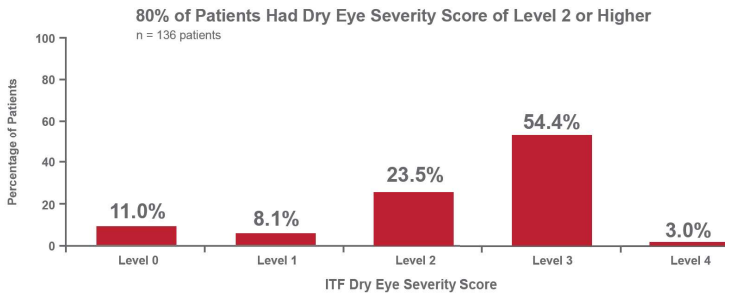
Dry Eye and Other Conditions

Dry eye disease is common among patients with other conditions



1. Moss SE, et al. Optom Vis Sci. 2008;85(8):668-74;
2. Doughty MJ, et al. Optom Vis Sci. 1997;74(8):624-31;
3. Manaviat MR, et al. BMC Ophthalmol. 2008;8:10; 4. Leung EW, et al. J Glaucoma. 2008;17(5):350-5.
4. Leung EW, Medeiros FA, Weinreb RN. Prevalence of ocular surface disease in glaucoma patients. J Glaucoma. 2008;17(5):350-355.

Dry Eye Prevalence in Patients Scheduled for Cataract Surgery1



- 22.1% of patients had previously received a diagnosis of Dry Eye Disease
- 80.9% of patients had an ITF Dry Eye Level 2* or higher, based on the presence of signs and symptoms

* An ITF level of 2 indicates moderate Dry Eye.

1 Trattler WB, et al. Clinical Study Report: Cataract and Dry Eye: prospective health assessment of cataract patients ocular surface study.
2010. (Unpublished study).

The Impact of DED on Cataract Surgery Outcomes

- 63% of pre-cataract surgical patients had a TBUT of less than 5 seconds. 1
- Patients who had osmolarity scores within normal limits were within a half diopter of intent, whereas 17% of those with hyperosmolarity would have missed their IOL calculation by more than a diopter. 2

1. Trattler WS, Majmudar PA, Donnenfeld ED, McDonald MB, Stonecipher KB, Goldberg DF. The prospective health assessment of cataract patient (PHACO) study: the effect of dry eye. Clin Ophthalmol. 2017; 11:1423-1430.

2. Epitropoulos AT, Matossian C, Berdy GJ, et al. Effect of tear osmolarity on repeatability of keratometry for cataract surgery planning. Journal Cataract Refract Surg. 2015 Aug;41(8):1672-7.

Lacrimal Functional Unit (LFU)

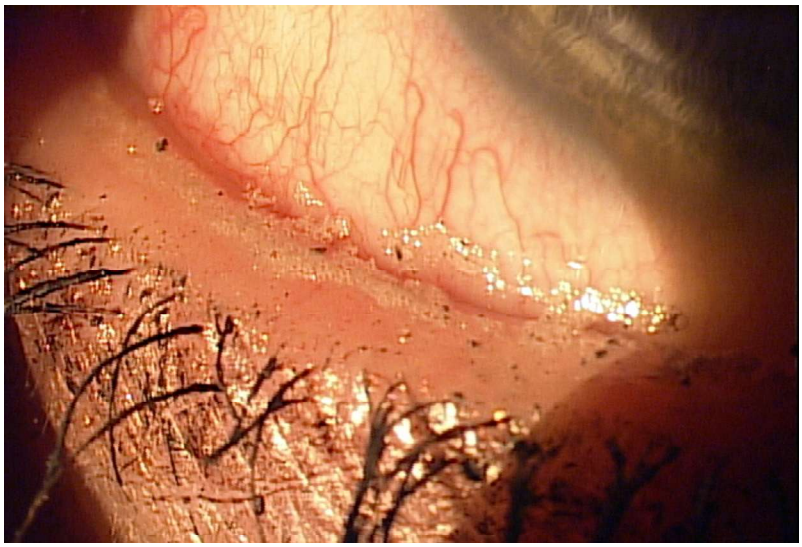
- Tear film
- Lacrimal glands
- Goblet cells
- Corneal and conjunctival epithelia
- Meibomian glands
- Lid closure

- Homeostasis controlled by nerve connections and systemic hormones

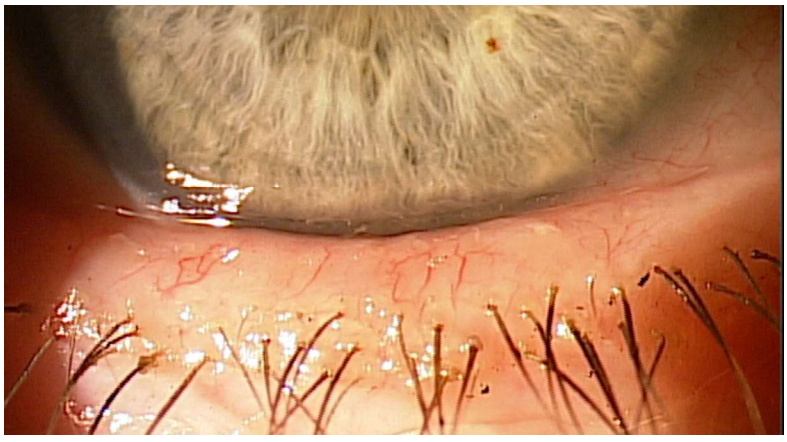
Barabino S et al. Prog Retin Eye Res. May 2012

Begin with the Lid in Mind

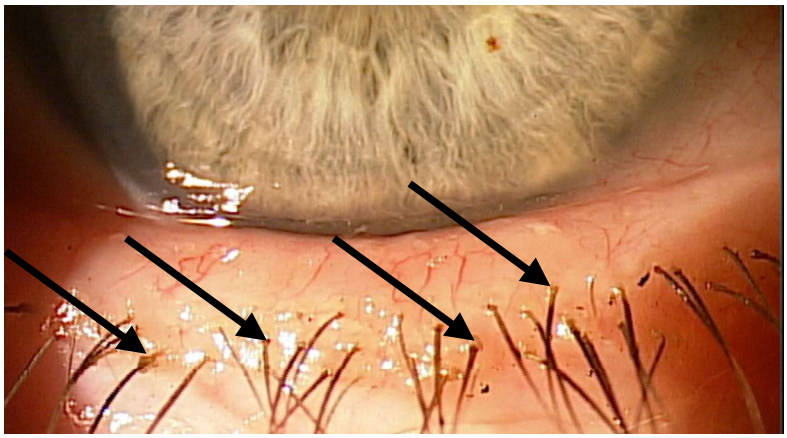
Frothy / Foamy Tears = MGD



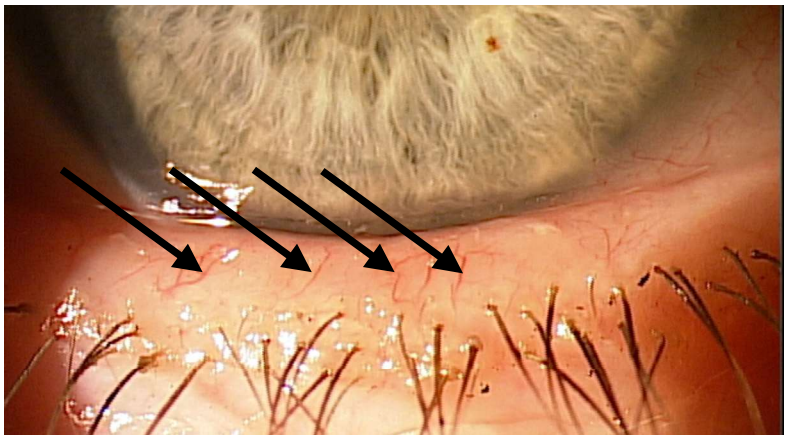
Significant Signs of Blepharitis



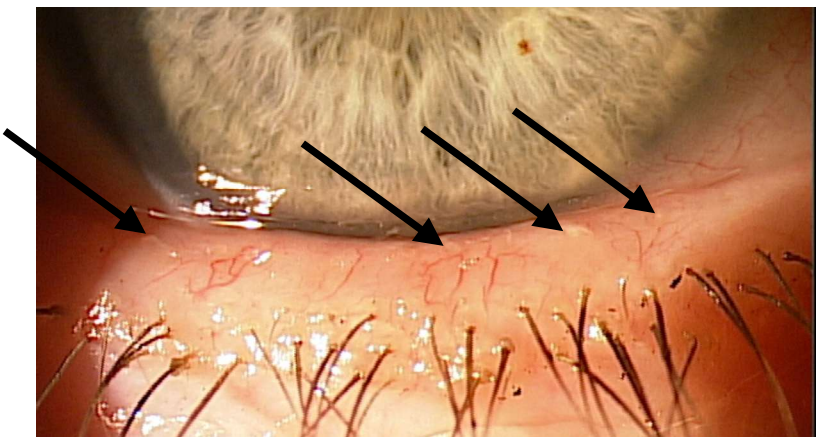
Collarettes



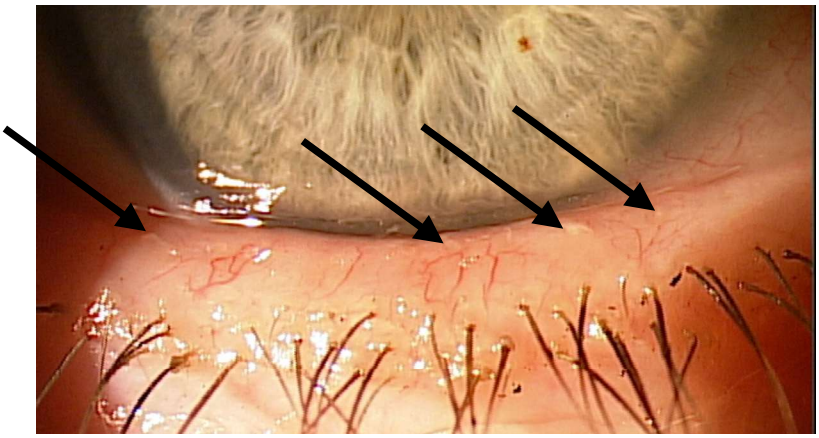
Telangiectatic vessels



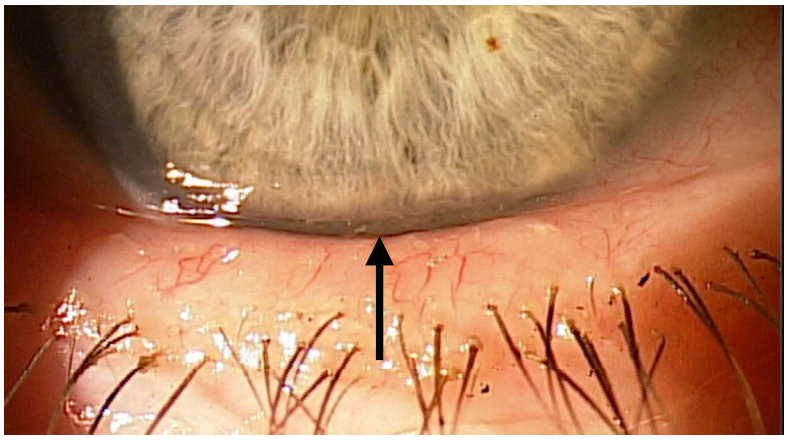
Capped MG’s



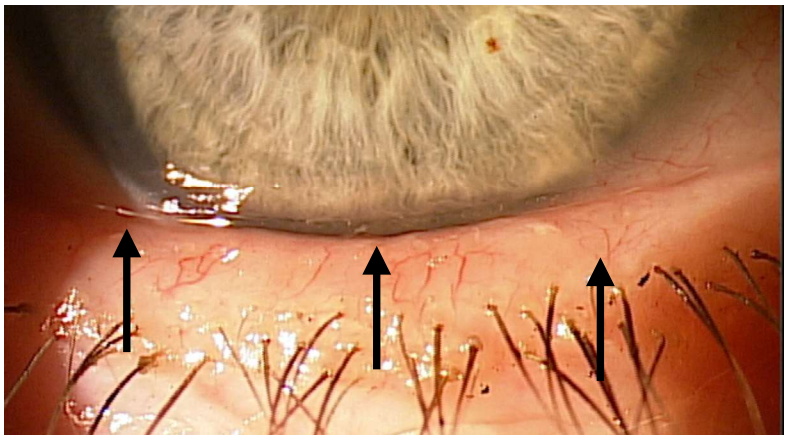
Posterior Placed MGs



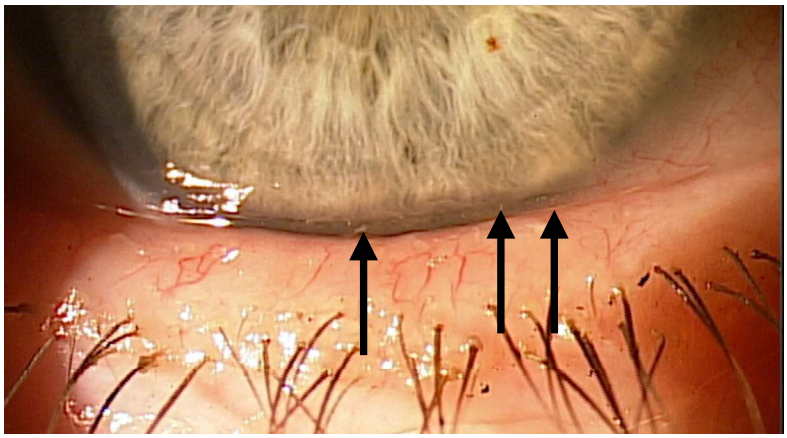
Tylosis

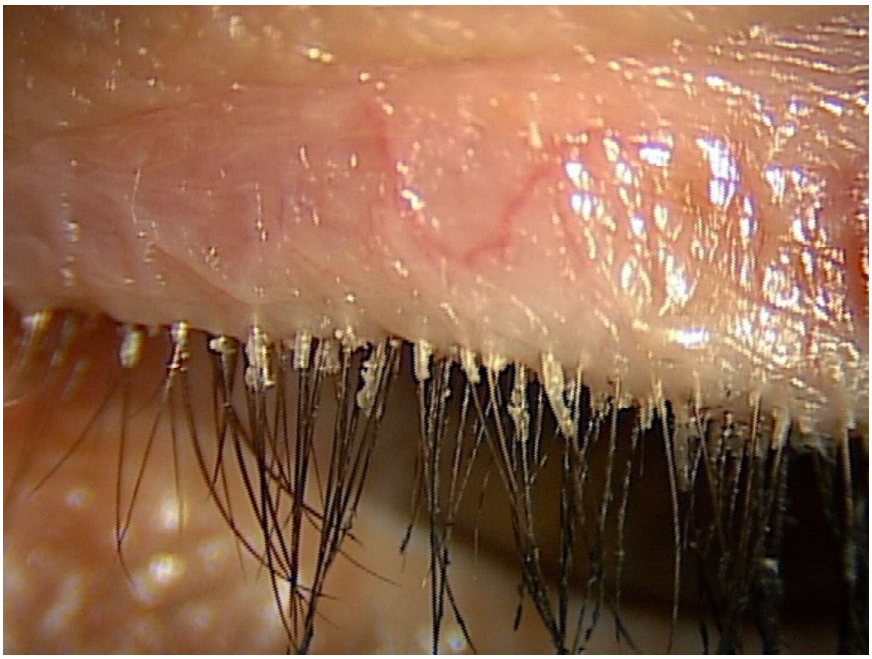


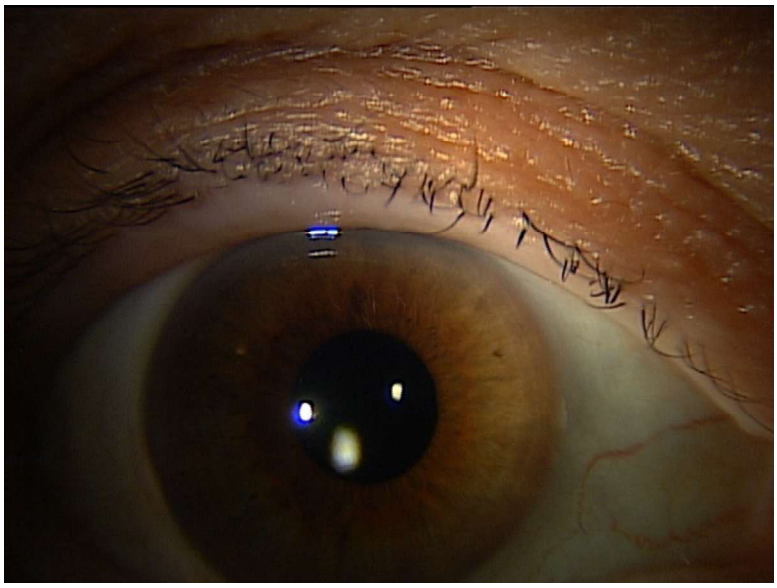
Scalloped Lid Margins

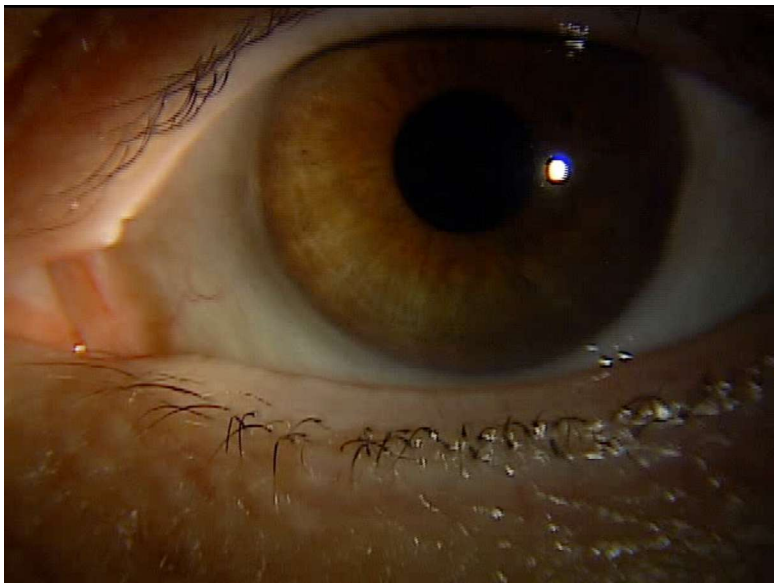


Debris in Tearfilm

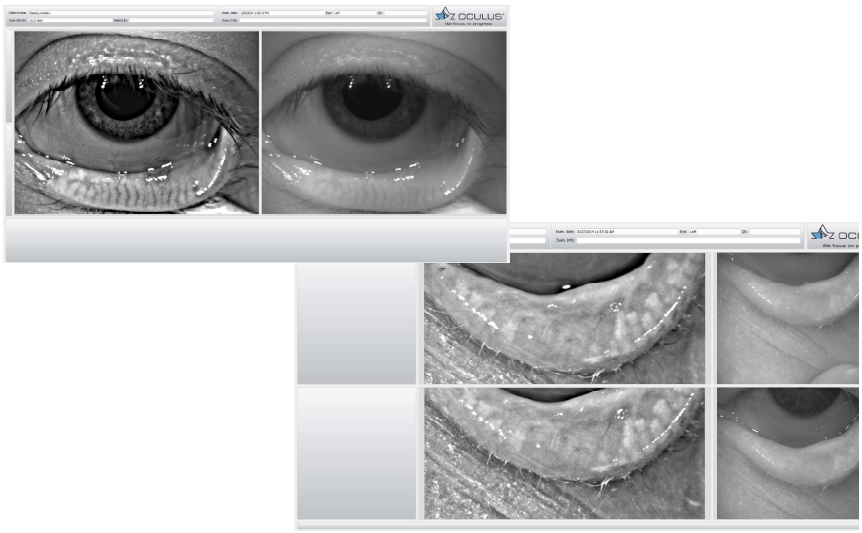




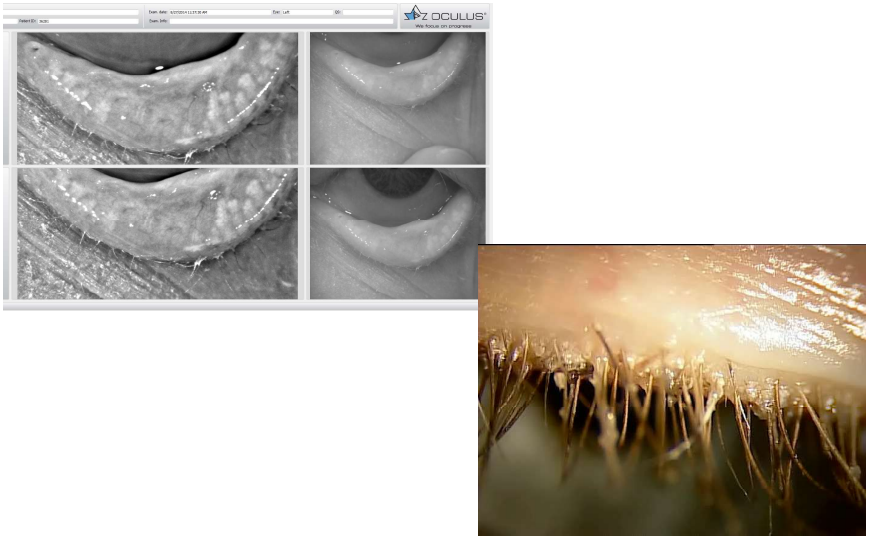




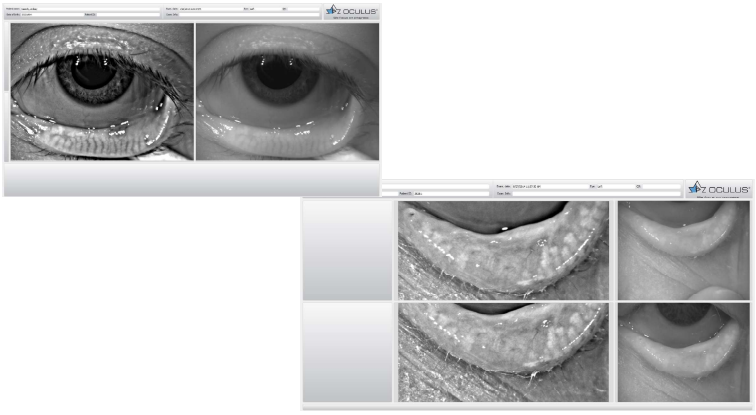
Key Tests for OSD Diagnosis



Grade 4 Collarettes



Meibography



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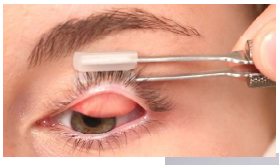
Eyelid Evertors



- Silicone soft but grips well
- Painless
- Maintains hold
- Like a 3rd hand

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The Upper Eyelid Meibography plays an important role in the early diagnosis or prevention of…

CL dropouts

Cataract surgery-induced DED

Sjögren's Syndrome (SS)

Thyroid Eye Diseases (TED)

Contact lens dropout

Contact lens wearers with worsening upper eyelid meibum quality, gland plugging, and tortuosity are more likely to discontinue lens use due to discomfort.

Although the lower eyelid glands tend to be wider, this has no clinically significant impact on contact lens success.

The CLASS Group study found that increased upper eyelid meibomian gland tortuosity significantly raises the risk of contact lens dropout.

The meibography of both lower and upper eyelid can assist in patient education on maintaining MG health for prolonged contact lens wear.

1. Pucker AD, Jones-Jordan LA, Kunnen CM, Marx S, Powell DR, Kwan JT, Srinivasan S, Sickenberger W, Jones L. Contact Lens Assessment of Symptomatic Subjects (CLASS) Study Group. Impact of meibomian gland width on successful contact lens use. *Cont Lens Anterior Eye* 2019;42(6):646-651. doi: 10.1016/j.clae.2019.06.004.
2. Pucker AD, Jones-Jordan LA, Marx S, Powell DR, Kwan JT, Srinivasan S, Sickenberger W, Jones L. Contact Lens Assessment of Symptomatic Subjects (CLASS) Study Group. Clinical factors associated with contact lens dropout. *Cont Lens Anterior Eye* 2019;42(3):318-324. doi: 10.1016/j.clae.2018.12.002.

Cataract surgery – induced DED

Preoperative upper eyelid meibomian gland loss could be a significant predictor of postoperative DE symptoms, while the lower eyelid gland loss did not correlate.

The subjective DE symptom onset following cataract surgery was associated with the baseline upper eyelid gland loss before surgery.

Upper eyelid changes may precede those in the lower eyelid.

Integrating upper eyelid meibography into preoperative evaluations can help identify high-risk patients and positively impact post-op recovery.

1. Fujimoto H, Ochi S, Inoue Y, Kiryu J. Upper eyelid meibomian gland dysfunction is a risk factor for dry eye symptoms following cataract surgery in the early phase. *Clin Ophthalmol* 2022;16:293-302. doi: 10.2147/OPTH.S346606.

Sjögren's Syndrome (SS)

The upper eyelid meibomian gland dropout is significantly higher in SS patients than in non-SS.

Changes in the upper eyelid are probably responsible for the differences between SS and non-SS patients.

The upper eyelid changes can serve as an early diagnostic marker, aiding to quick decision- making and timely interventions that may prevent severe gland dysfunction.

1. Sullivan DA et al. *Ophthalmic Res* 2018. 2. Viso E, et al. *Invest Ophthalmol Vis Sci* 2012. 3. Foulks GN, et al. *Ocul Surf* 2015.

Thyroid Eye Disease

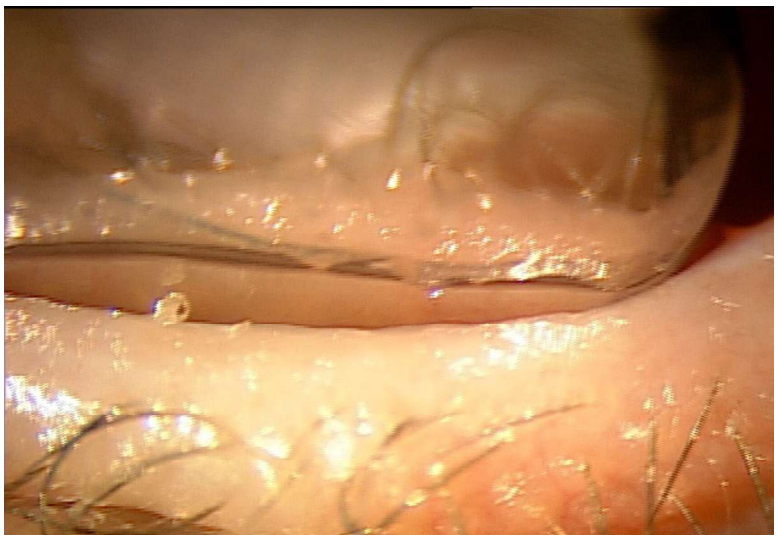
Thyroid eye disease (TED) has been linked to significant upper eyelid meibomian gland loss due to factors like incomplete blinking, proptosis, and eyelid retraction.

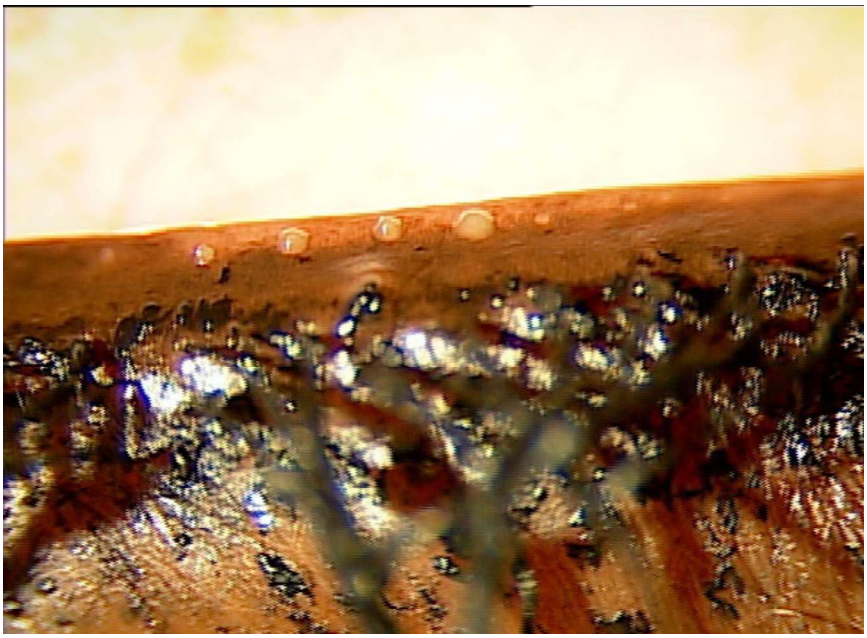
TED patients exhibit higher upper eyelid meiboscores and greater central gland dropout than other DED patients, correlating with increased ocular surface inflammation and oxidative stress.

Comprehensive assessment of both upper and lower eyelids can assist in accurately diagnosing of TED-related dry eye and implementing effective management strategies.

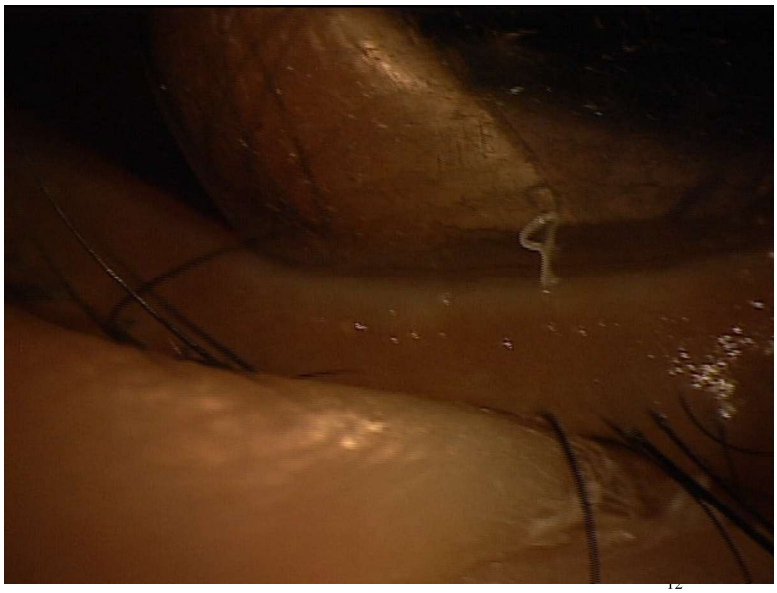
1. Park J, Baek S. Acta Ophthalmol 2019. 2. Inoue S, et al. J Clin Med 2020.

MG Expression

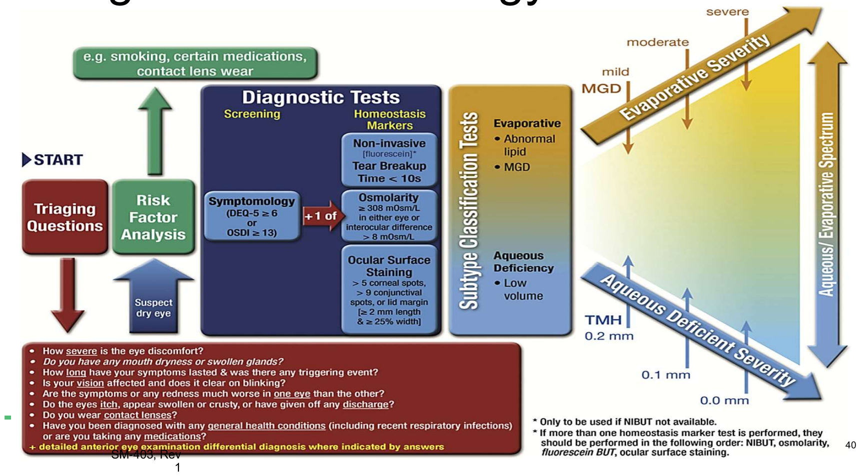


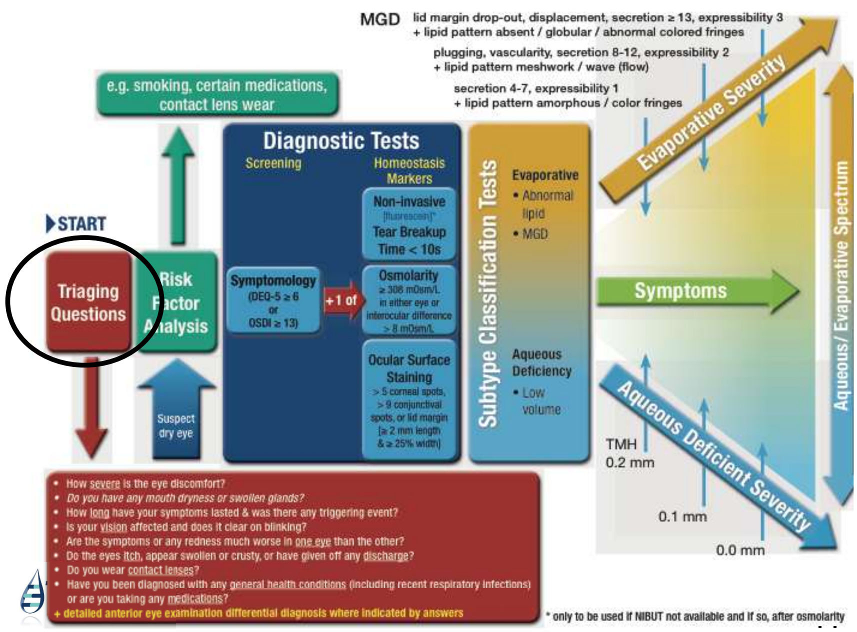



Kentucky Eye Institute



Diagnostic methodology

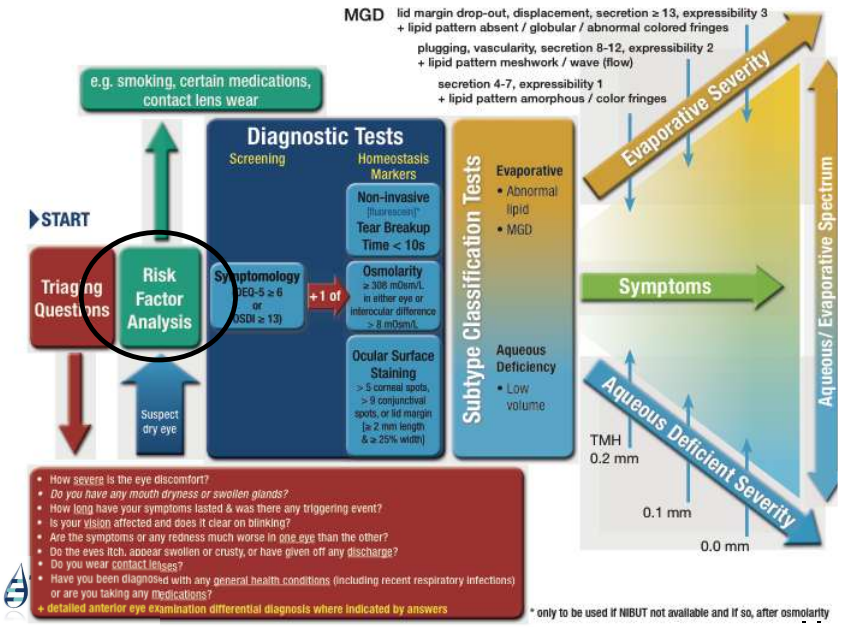




5 Triaging Questions from OD Summit

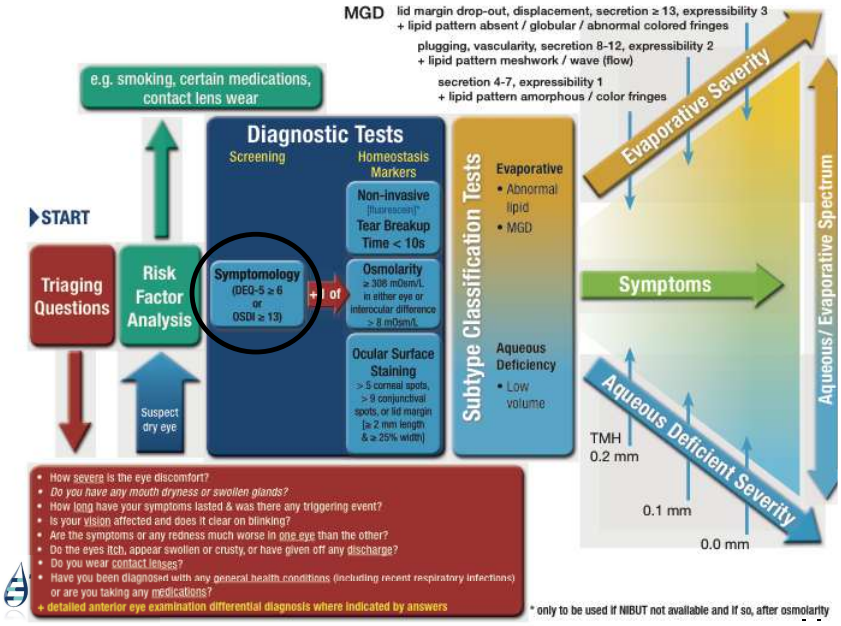
- Do your eyes ever feel irritated, dry or burn?
- Are your eyes red?
- Do you experience blurred vision especially fluctuating vision?
- Do you use or have the urge to use artificial tears?
- How much time to you spend on digital devices per day?

Optometry Dry Eye Summit, Denver 2014



Risk Factors for Dry Eye Disease

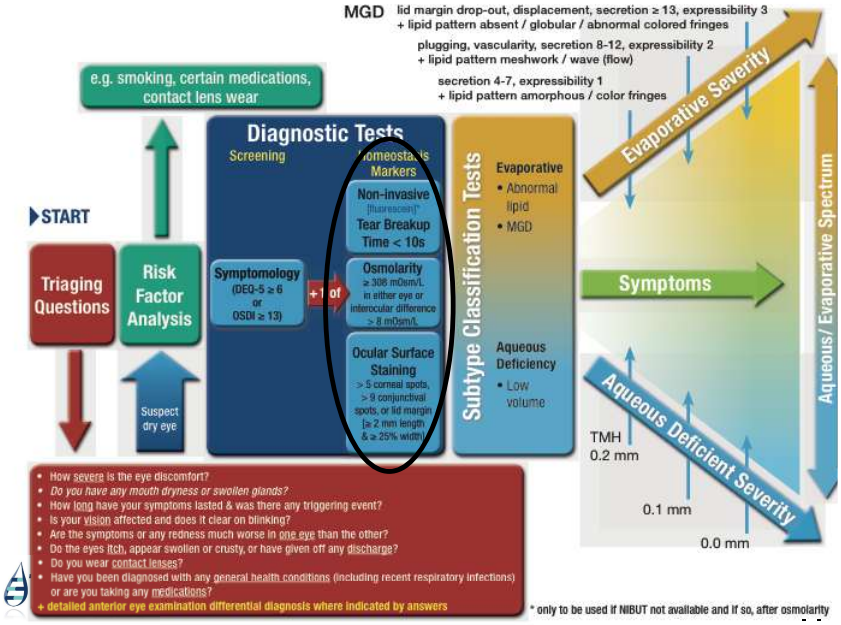
- ☐ Systemic Medications
- ☐ Topical Medications
- ☐ Age
- ☐ Gender
- ☐ Contact Lens Wear
- ☐ Ocular Surgery
- ☐ Environment
- ☐ Digital Devices
- ☐ Systemic Disease
- ☐ Smoking
- ☐ Certain Anterior Segment Diseases

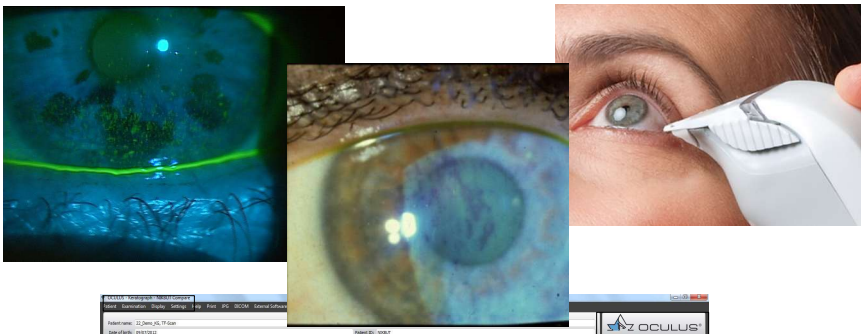


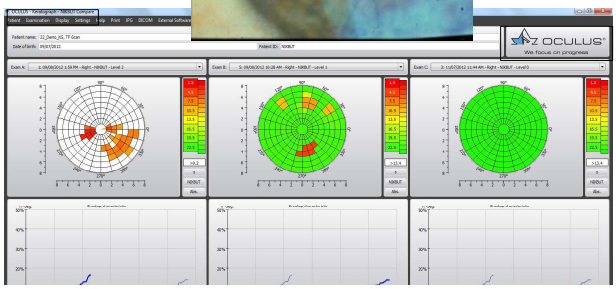
Questionnaires

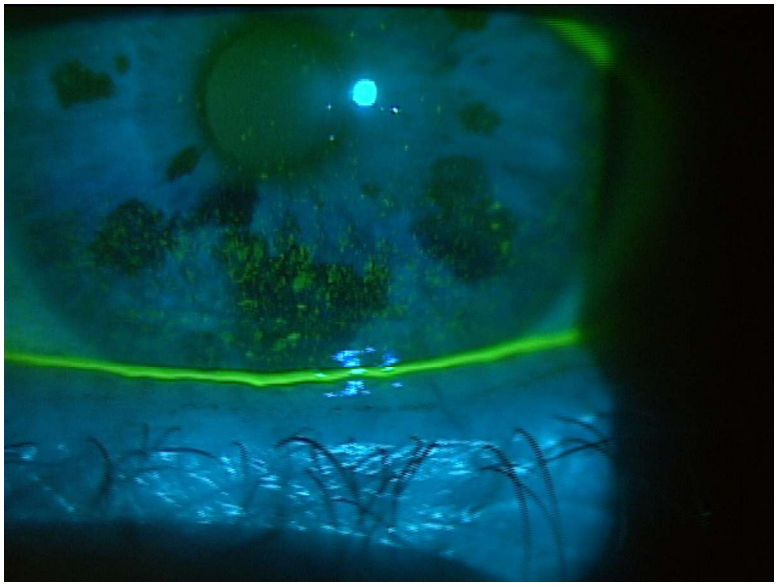
DEQ-5
OSDI

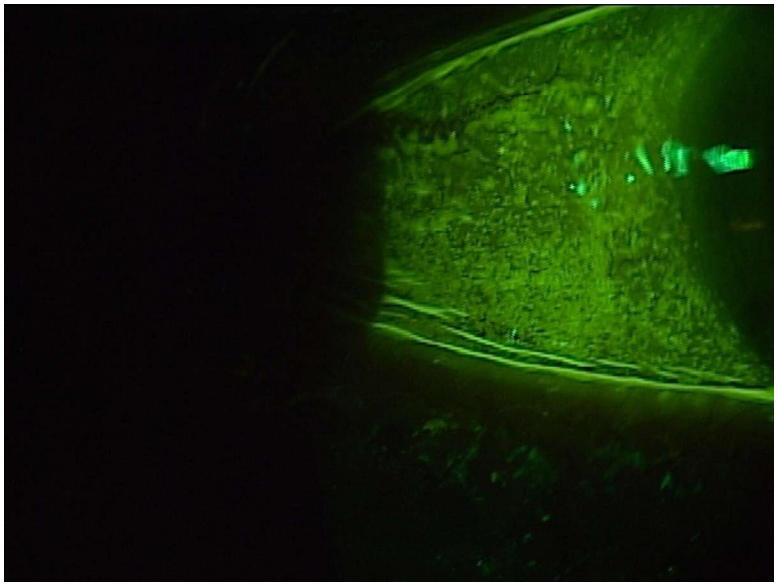
SPEED



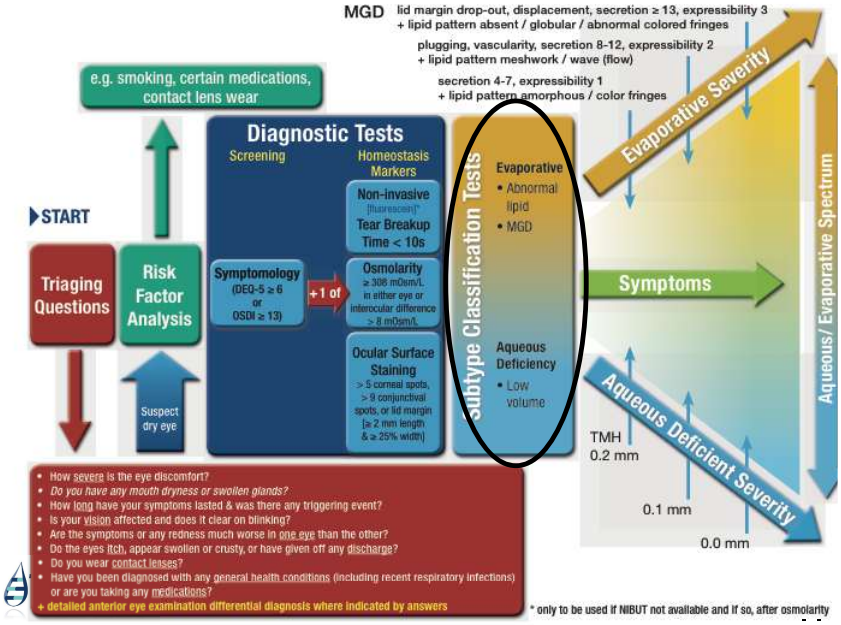


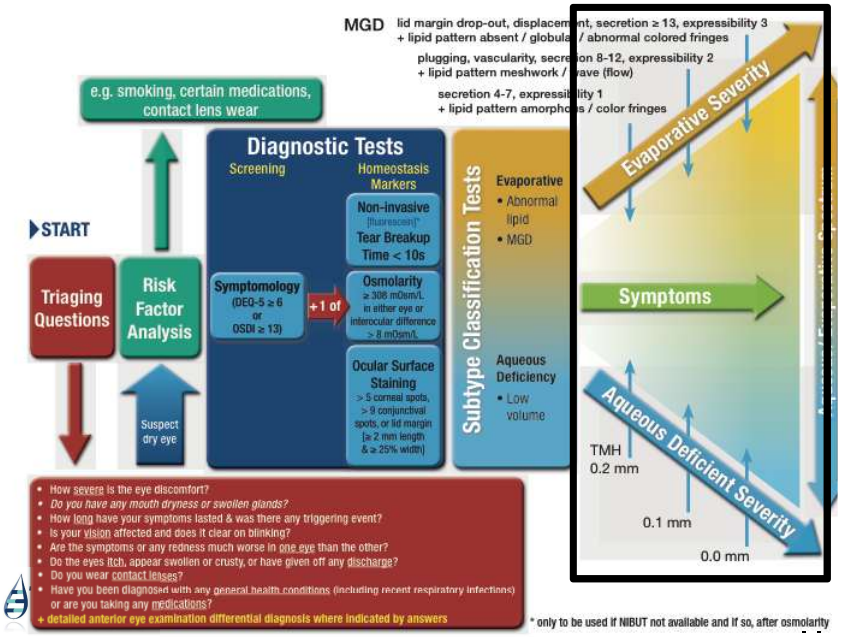


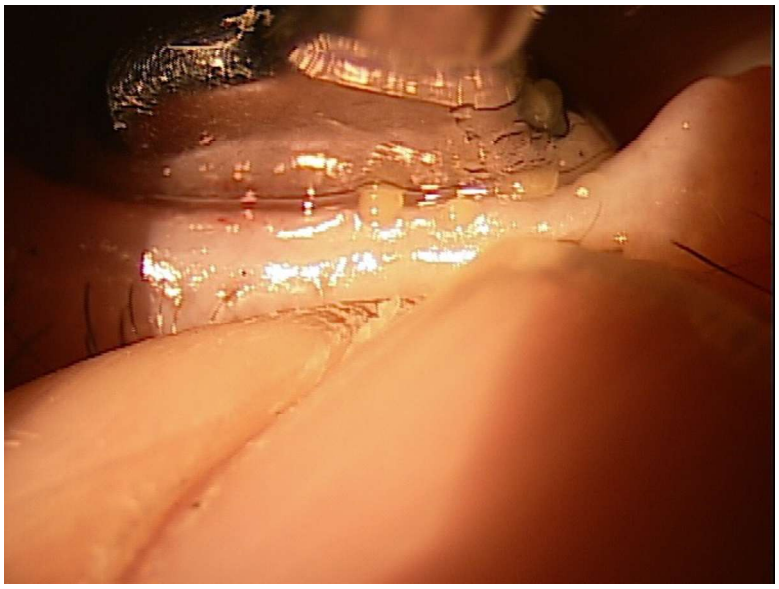


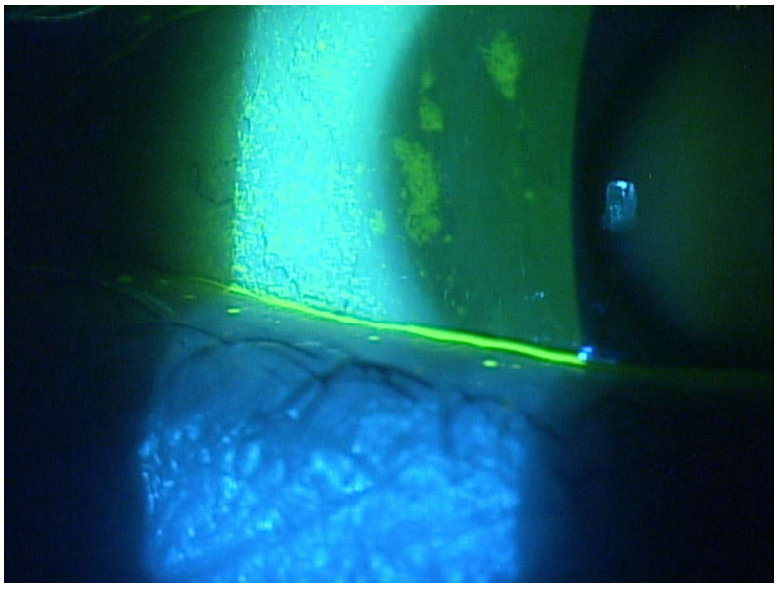


Identify the Sub-type of DED







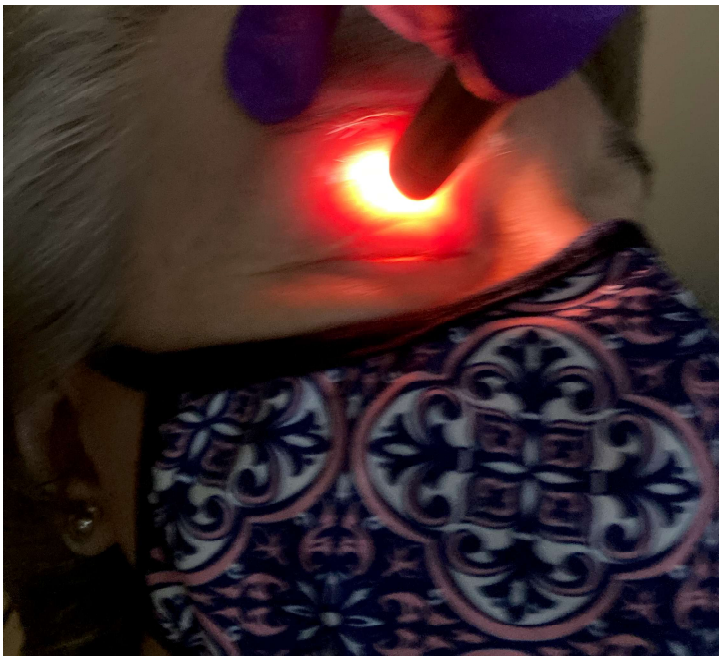


Diagnostic Summary

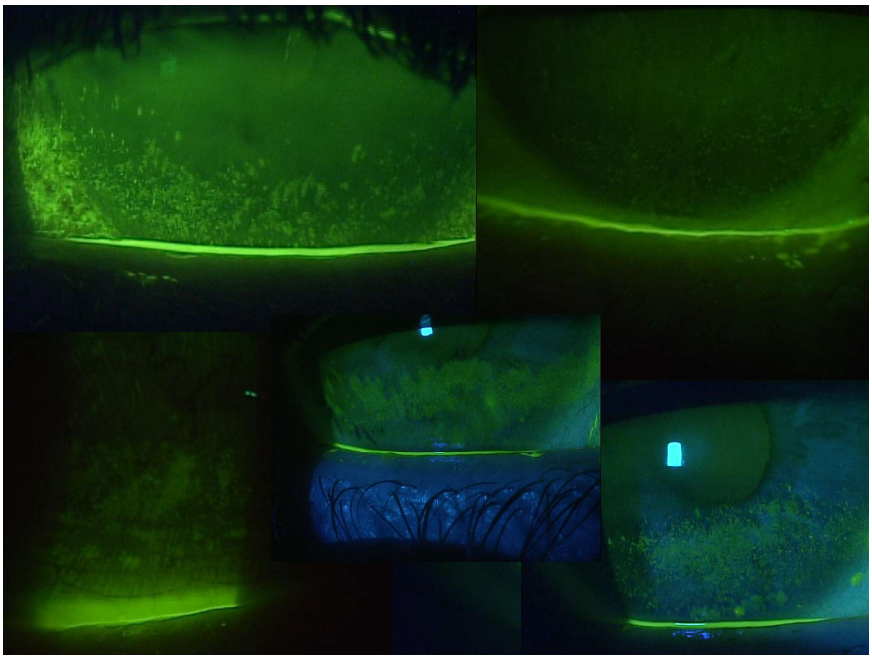
1. Questionnaires
2. Global test for homeostasis
    - Ocular surface staining or
    - TFBUT or
    - Osmolarity
3. Subtype
    - MG Expression
    - Meniscus height

In Chronological Order

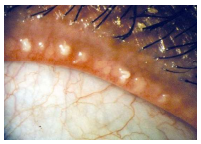
1. Symptoms (most significant and when?)
2. Eyelid assessment with MG expression
3. Ocular surface staining with NAFL (#15 yellow Wratten filter)
    - Corneal stain
    - Conjunctival stain
    - Tear meniscus height
    - TFBUT



KB Light Test

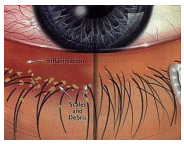


EVAPORATIVE DRY EYE

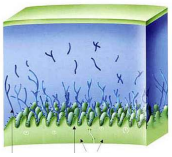


OBSTRUCTION

BLEPHARITIS



INFLAMMATION



TEAR FILM

Perflourohexyloctane

Indication

perfluorohexyloctane ophthalmic solution is a semifluorinated alkane indicated for treatment of the signs and symptoms of dry eye disease.

Important Safety Information

- Should not be administered while wearing contact lenses. Contact lenses should be removed before use and for at least 30 minutes after administration
- Instruct patients to instill one drop of PFHO into each eye four times daily
- The safety and efficacy in pediatric patients below the age of 18 have not been established
- The most common ocular adverse reaction was blurred vision (1% to 3% of patients reported blurred vision and conjunctival redness)

Single-ingredient Formulation

100% perfluorohexyloctane

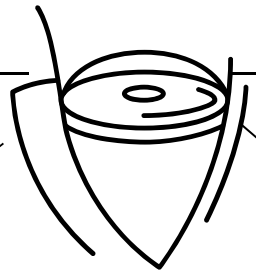
- No inactive ingredients

Water free

Preservative free

Steroid free

PFHO Inhibits Evaporation



Mimics key functions of **natural meibum**[1,2]

Promotes **healing** on the ocular surface[4-6]

Remains in tears for up to **6 hours** (PK rabbit study)[2,3]

Reduces friction[5,7]

MIEBO FORMS A MONOLAYER at the air-tear interface, which can be expected to reduce evaporation.

An in vitro study showed that MIEBO was **4X** more effective at inhibiting evaporation compared with meibum lipids.[1]

PFHO Demonstrated Rapid and Sustained Relief

In 2 large clinical trials where 100% of participants had clinical signs of MGD

Improvement in the Signs and Symptoms of DED

at Day 57 (primary endpoint) and

Total corneal fluorescein

Eye dryness score (visual analog

Excellent Tolerability

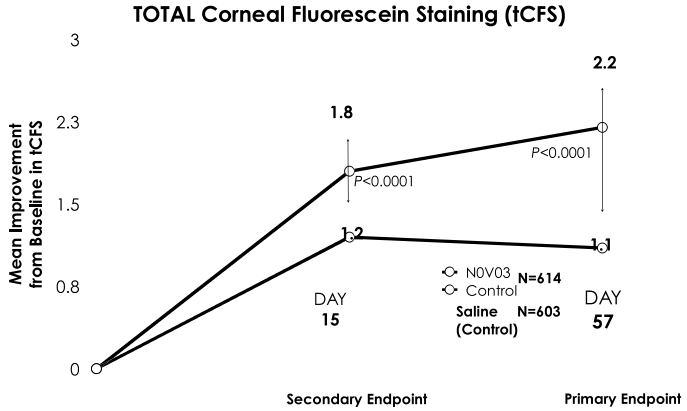
No serious ocular AEs

Low discontinuation rate due to AEs

Low rate of burning or stinging

Only 1 ocular AE with an incidence ≥2% (blurred vision, 2.1%)

Rapid and Sustained Improvement in Total Corneal Staining as Early as Day 15 Through Day 57



Pooled data | tCFS Grading Scale: 0-15 (0-3 in each of 5 areas)
Mean Baseline = 6.9

At day 57, Mean (SD) CFB
GOBI: –2.0 (2.6) for MIEBO (n=289) vs –1.0 (2.7) for saline (n=279) (*P*<0.001)
MOJAVE: –2.3 (2.8) for MIEBO (n=302) vs –1.1 (2.9) for saline (n=296) (*P*<0.001)

An Excellent Tolerability Profile

In 2 pivotal clinical studies of >1200 patients (>600 treated with PFHO)

0

Serious ocular AEs

0.2%

Low rate of discontinuation due to AEs

0.5%

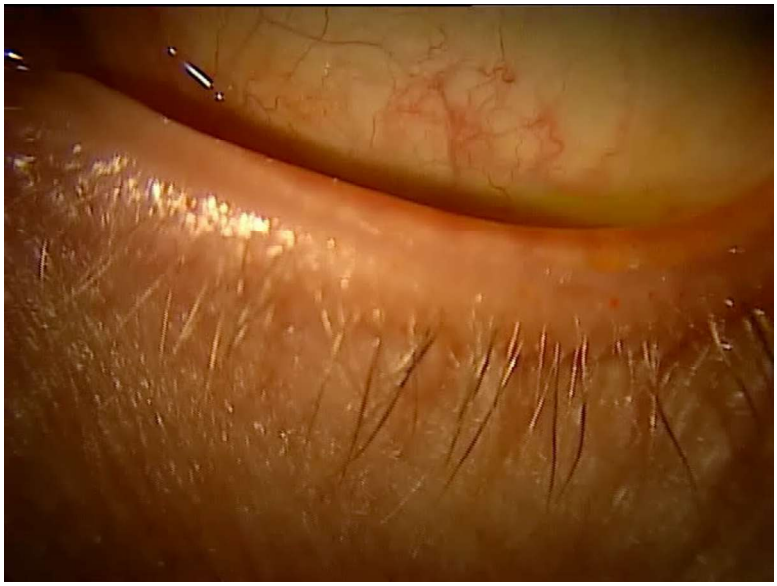
Low rate of burning or stinging

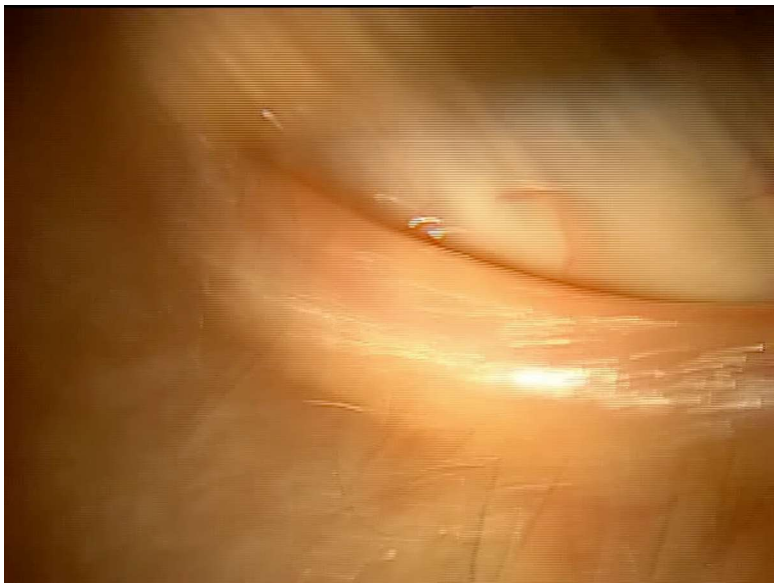
2.1%

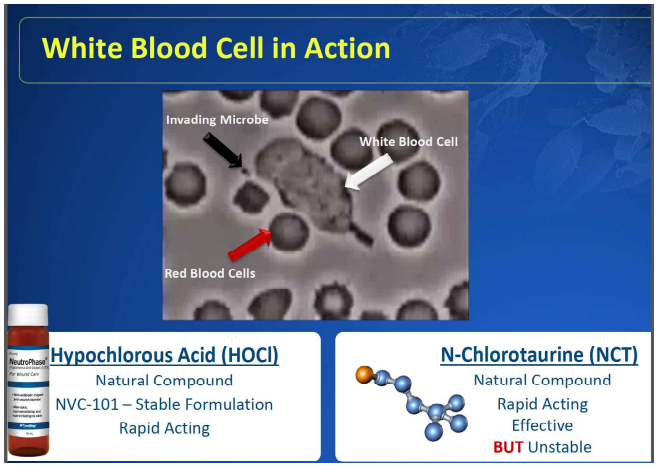
There was one ocular AE with an incidence ≥2% (blurred vision)

PFHO Offers a Comfortable Experience

- Small drop size (11 µL) means **MIEBO may feel different** from formulations containing water
- There may be **no ocular sensation or blink reflex** upon instillation






White Blood Cell in Action
Invading Microbe
White Blood Cell
Red Blood Cells
Hypochlorous Acid (HOCl)
Natural Compound
NVC-101 – Stable Formulation
Rapid Acting
N-Chlorotaurine (NCT)
Natural Compound
Rapid Acting
Effective
BUT Unstable

IPL and LLLT

- Intense Pulsed Light Therapy and Low Level Light Therapy
- Clear association between DED and lid margin inflammatory disease
- Widely accepted as a treatment for dermatological rosacea
- More than 80% of patients with rosacea have MGD
- 20% have ocular signs first

IPL and LLLT

- Telangiectatic vessels and skin erythema release inflammatory mediators
- IPL targets the abnormal erythematous blood vessels
- Affects mitochondrial activity
- Temperature effect on glands?
- Photomodulation affecting cytochrome C or activating fibroblasts and collagen synthesis

TREATMENT: Demodex

CONSISTS OF A PHASE 1 (WITH A SPECIFIC BLUE LIGHT MASK) AND A PHASE 2 (WITH THE STANDARD SUPPLIED RED LIGHT MASK)

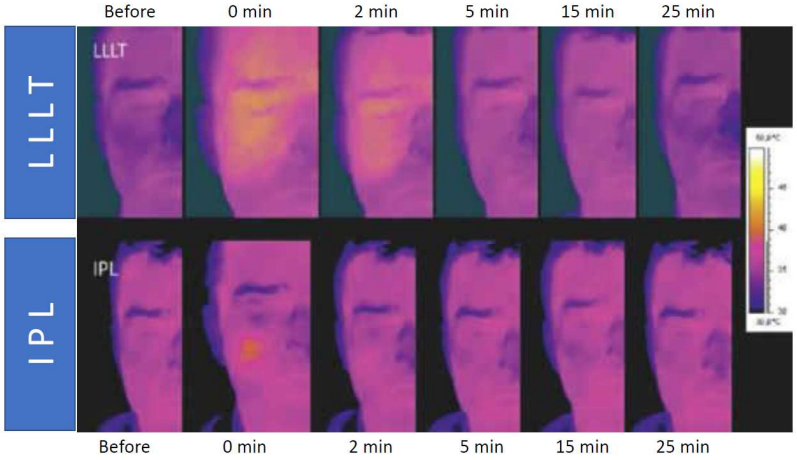
PHASE 1 – BLUE MASK

Blue light stimulates porphyrins and creates an anti-bacterial action.

PHASE 2 – RED MASK

Red light stimulates ATP by increasing and improving cellular activity, it reduces inflammation and oedema and works on Meibomian glands.

Endogenous Heat



Pult, H. Messung der Hauttemperatur nach Intense Pulse Light (IPL)-Anwendung sowie Low-Level-Light-Therapie (LLLT). die KONTAKTLINSE 4/2020.

Endogenous Heat

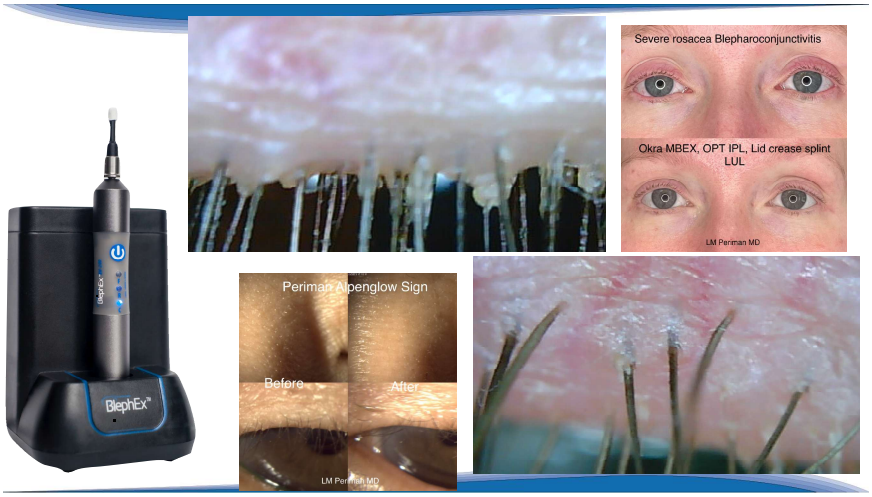
		Temperatures At Times After Treatment						Standard deviation and the p-values at specific times				
		Before	T = 0 min	T = 2 min	T = 5 min	T = 15 min	T = 25 min	T = 0 min	T = 2 min	T = 5 min	T = 15 min	T = 25 min
IPL	Lower Lid	36.2°C ±0.72	35.7°C ±0.64	35.8°C ±0.60	36.0°C ±0.71	35.9°C ±0.69	36.1°C ±0.68	**p=0.028**	p=0.100	p=0.270	p=0.177	p=0.326
	Upper Lid	36.5°C ±0.65	36.3°C ±0.69	36.7°C ±0.67	36.4°C ±0.73	36.5°C ±0.66	36.1°C ±0.72	p=0.257	p=0.253	p=0.371	p=0.500	p=0.103
	Cheek	35.5°C ±0.70	39.6°C ±0.72	37.1°C ±0.59	35.7°C ±0.68	35.6°C ±0.70	35.5°C ±0.71	**p<0.001**	**p<0.001**	p=0.262	p=0.320	p=0.323
	Temple	36.0°C ±0.67	37.6°C ±0.68	36.5°C ±0.63	35.9°C ±0.65	36.1°C ±0.64	35.8°C ±0.66	**p<0.001**	**p=0.016**	p=0.316	p=0.316	p=0.171
LLLT	Lower Lid	35.9°C ±0.69	40.4°C ±0.58	39.6°C ±0.60	37.1°C ±0.72	36.5°C ±0.63	35.3°C ±0.72	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.006**	**p=0.042**
	Upper Lid	36.2°C ±0.65	41.8°C ±0.65	40.7°C ±0.67	37.5°C ±0.69	37.5°C ±0.67	36.1°C ±0.70	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	p=0.371
	Cheek	35.4°C ±0.79	39.8°C ±0.75	38.8°C ±0.63	36.7°C ±0.67	36.5°C ±0.71	36.1°C ±0.76	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.012**
	Temple	35.0°C ±0.73	37.7°C ±0.70	37.1°C ±0.69	36.1°C ±0.70	36.1°C ±0.65	35.6°C ±0.69	**p<0.001**	**p<0.001**	**p<0.001**	**p<0.001**	**p=0.025**

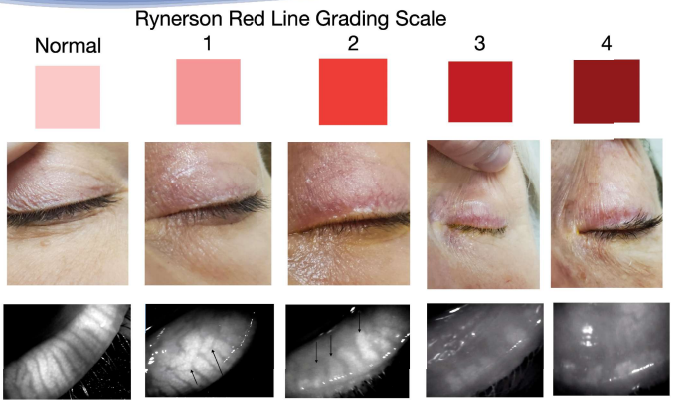
Pult, H. Messung der Hauttemperatur nach Intense Pulse Light (IPL)-Anwendung sowie Low-Level-Light-Therapie (LLLT). die KONTAKTLINSE 4/2020.

Intense Pulse Light (IPL) Therapy

- Telangiectatic vessels and skin erythema release inflammatory mediators
- IPL targets the abnormal erythematous blood vessels
- Affects mitochondrial activity
- Temperature effect on meibum?
- Photomodulation affecting cytochrome C or activating fibroblasts and collagen synthesis

Microblepharoexfoliation (MBE)





Direct correlation between intensity of RRL and meibomian gland damage

DC current
Very low voltage & amperage

Courtesy Montana State University Center for Biofilm Engineering

The doctor uses a this technology to deliver a 6 volt current (equivalent of 2 AA batteries) through a specialty contact lens that is harmonically tuned to separate the bonds of a bacterial polysaccharide biofilm

3 in 1 Systems

Debrider, massager, expresser - all heated.

Debrider, Massager, Expressor

- The Only Triple Modality System for MGD
  - No disposables
  - Triple modality for MGD
  - 0 - 12 minutes of Clinician time

Tri-Modal Treatment

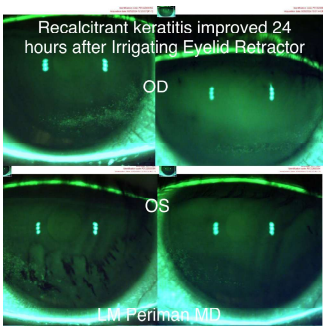
1: Thermal Debridement
- 'Decaps' glands, remove biofilm
- 2 minutes

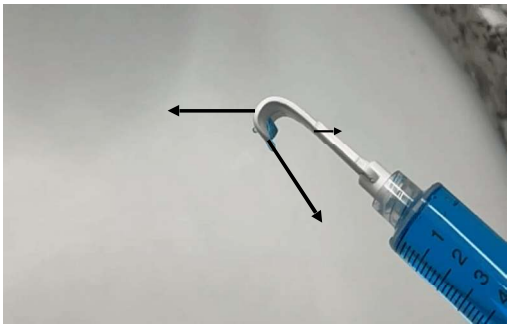
2: Thermal Lid Massage
- liquifies meibum
- 5 minutes (2 minutes per eye)

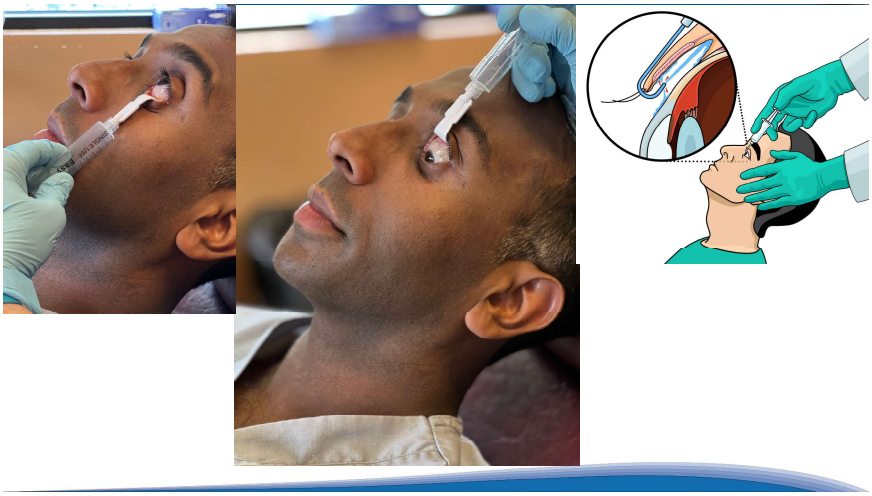
3: Thermal Expression
- Maintains heat for effective expression
- 2-3 minutes

Irrigating Eyelid Retractor

Fixed to a syringe, the retractor has 5 ports which aim fluid at the palpebral conjunctiva, bulbar conjunctiva and conjunctival fornix.

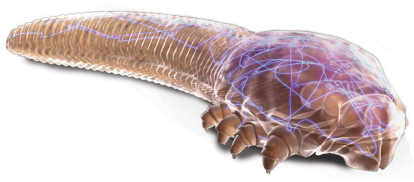






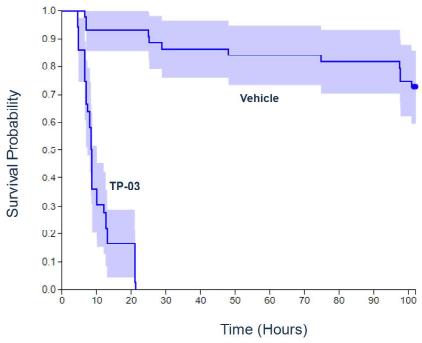
First in Class Novel Drug Designed to Eradicate Mites and Treat Blepharitis

Lotilaner 0.25% is designed to paralyze the mite nervous system through parasite-specific GABA inhibition



Mercury Study:
TP-03 Works by Killing Mites

Ex-vivo mites extracted from the lashes of blepharitis patients



Cure of Collarettes with BID use of TP-03

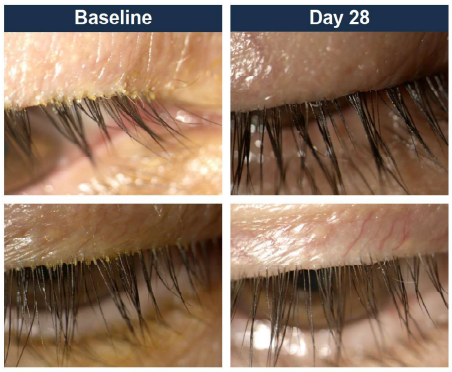
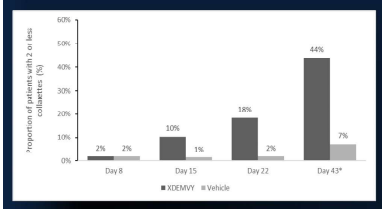


Figure 1. Saturn-1:

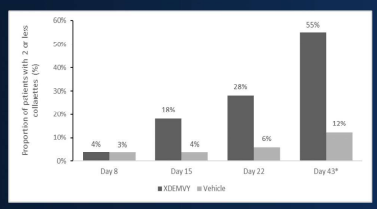
Proportion of patients with 2 or less collarettes for the upper eyelid



*Day 43 Primary Endpoint; XDEMVY N=209, Vehicle N=204, p-value <0.01

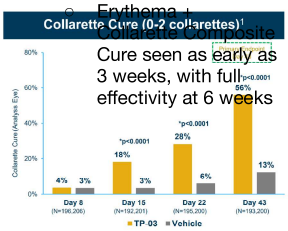
Figure 2. Saturn-2:

Proportion of patients with 2 or less collarettes for the upper eyelid



*Day 43 Primary Endpoint; XDEMVY N=193, Vehicle N=200, p-value <0.01

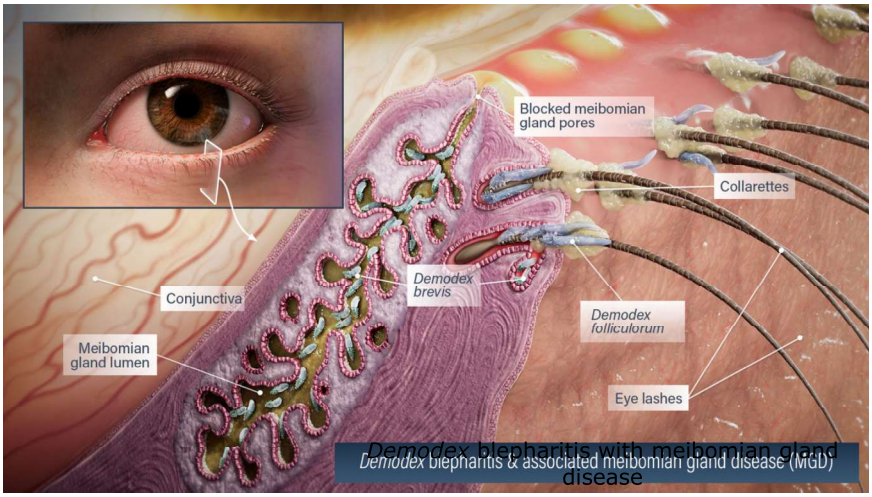
- Primary Endpoints (p> 0.0001)
  - Complete Collarette Cure (0-2 collarettes per eyelid total by Week 2!
  - 90% reduction in collarettes by Week 2 - Clinically meaningful at overall grade scale of 0-1
- Secondary Endpoints (p> 0.0001)
  - 50% of patients had mites down to grade 0 (zero) by Week 6, but it was statistically significant at week 2!
  - Erythema Cure by Week 3
  - Erythema + Collarette Composite Cure seen as early as 3 weeks, with full effectivity at 6 weeks



FDA, Food and Drug Administration; GABA, gamma aminobutyric acid.
1. Dailymed Credelio. Accessed June 28, 2022. https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=427f2ebc-ce24-452b-bbb3-43d4ef8b63b0 2. Gonzalez-Salinas R et al. *J Ophthalmol*. 2021:3862684. 3. LianBio. Accessed June 28, 2022. https://www.globenewswire.com/news-release/2022/05/03/2434549/0/en/LianBio-Partner-Tarsus-Pharmaceuticals-Announces-Positive-Topline-Data-from-Second-Pivotal-Trial-of-TP-03-for-the-Treatment-of-Demodex-Blepharitis.html
4. ChemSrc Lotilaner. Accessed June 28, 2022. https://www.chemsrc.com/en/cas/1369852-71-0_1262257.html 5. Yeu E et al. *Cornea*. 2022; In Press.

- Over 90% Reported the Drop to be Neutral to Very Comfortable

Treatment related ocular AE rates ≥ 1%		
	TP-03 (n=203)	Vehicle (n=209)
Installation site pain/burning/stinging	16 (7.9%)	14 (6.7%)
Visual acuity reduced	1 (0.5%)	3 (1.4%)
Dry eye	3 (1.5%)	1 (0.5%)
AE Severity	Two moderate All others mild	One moderate All others mild



Demodex blepharitis with meibomian gland disease

Omega fatty acids and Dry Eye

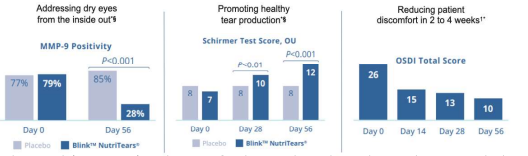
- LA / GLA (ω-6)
  - Increase "good" PG (PGE-1)
    - Against ocular surface inflammation
    - Increase tear production
- Positive action on lipid layer (Graham RH. There's nothing fishy about omega-3 fatty acids for Dry Eye Syndrome. www.medscape.com/viewarticle/707984. Sep 3, 2010.)
  - Positive action on tear volume (Roncone M, Bartlett H, Eperjesi F. Essential fatty acids for dry eye: A review. *Cont Lens Anterior Eye* 2010; 33(2):49–54.)
- Help to maintain MG function (Macsai, 2008)

Supplemental GLA for Dry Eye:
7 Controlled Clinical Trials

- Aqueous-deficient (Barabino S et al. Cornea 22: 97–101, 2003.)
- PRK (Macri A et al. Graefes Arch Clin Exp Ophthalmol 241:561-6, 2003.)
- Sjögren's (Aragona P, et al. Ophthalmol Vis Sci 46:4474-9, 2005.)
- Contact lens (Kokke KH et al. Contact Lens Ant. Eye 31:141-6, 2008.)
- MGD (Pinna et al. Cornea 26:260-264, 2007.)
- Mild-moderate DE (Brignole-Baudouin et al. Acta Ophthalmologica 89:e591-7, 2007.)
- Post-menopausal women (***HydroEye***) (Sheppard JD, Pflugfelder SC, et al. Cornea 32 :1297-1304, 2013.)

Anti-inflammatory and Anti-oxidant Supplements

- Carotenoids
- Vitamin D3
- Turmeric/curcuminoids
- Lutein
- Zeaxanthin



In the U.S. study (NCT05481450), supplement significantly improved tear volume and OSDI total score, versus placebo, from Baseline to end of study (Day 56; p<0.001 for both). There were also significant improvements in TBUT, SPEED, ocular staining scores (p<0.0001 for each outcome), tear osmolarity (p<0.0005), and presence of MMP-9 (p<0.0017).

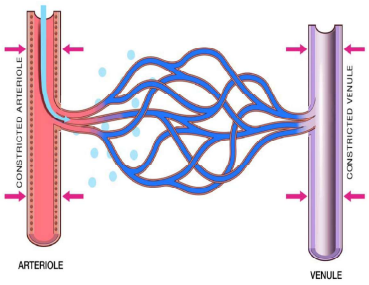
Redness Relievers

- Current OTC vasoconstrictors are α1- or α1/α2-adrenergic receptor (α-AR) agonists[1,2]
  - Selective α1-AR agonists (phenylephrine, tetrahydrozoline)
  - Mixed α1/α2-AR agonists (naphazoline, oxymetazoline)
- Long-term use restricted by:[3-6]
  - Tachyphylaxis
  - Redness rebound upon discontinuation (worsening vs. baseline)
  - Systemic side effects (e.g. somnolence, dizziness)
- α1-ARs predominantly expressed in arteries (vs. α2-ARs in veins)[7,8]
  - Internalization/downregulation of α1-ARs (tachyphylaxis)
  - Vasoconstrictor-induced tissue ischemia and vasodilator release (rebound redness)

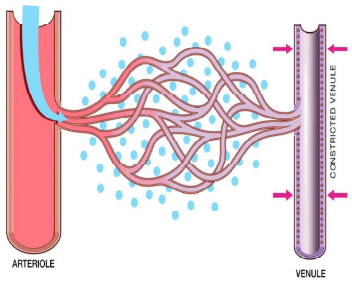
1. Haveles EB . In: Applied Pharmacology for the Dental Hygienist 7th ed. 2016 p 44. 2. Shanbhag T. In: Pharmacology. 2008 p 73. 3. Spector SL, Raizman MB. *J Allergy Clin Immunol.* 1994;94:134-6. 4. Tappeiner C et al. *Eur J Ophthalmol.* 2009;19:129-132. 5. Vaidyanathan S et al. *Am J Respir Crit Care Med.* 2010;182:19-24. 6. Soparkar CN et al. *Arch Ophthalmol.* 1997;115:34-8. 7. Corboz et al *Pulm Pharmacol Ther.* 2008;21:449-54. 8. Fratelli M, De Blasi A. *FEBS Lett.* 1987;212(1):149-53.

Mechanism of Action

- α-1 or mixed α-1/α-2 Effect Generalized Arteriolar/ Venular Constriction Creates Ischemia



Selective α-2 Effect
Preferential Venular Constriction
Reduced Ischemia



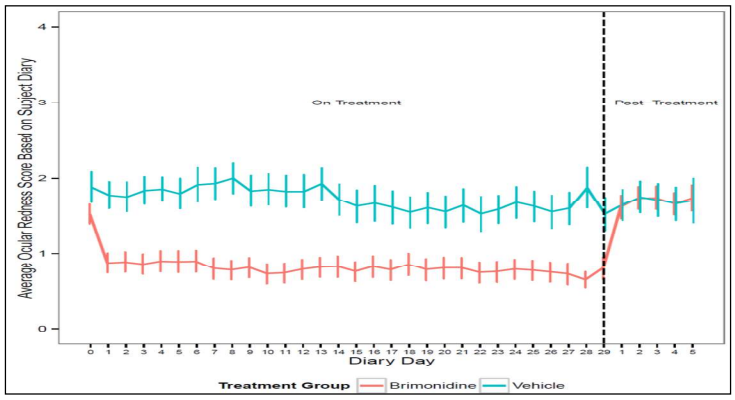
Clinical Study Efficacy

- Eyes before treatment (baseline)

Brimonidine 0.025% OD
Oxymetazoline OS
(5 minutes post-dose)

Phase 3 Efficacy (BL861) – Patient Diary Assessments

- Sustained efficacy across treatment period without tachyphylaxis
- No evidence of rebound after cessation of treatment



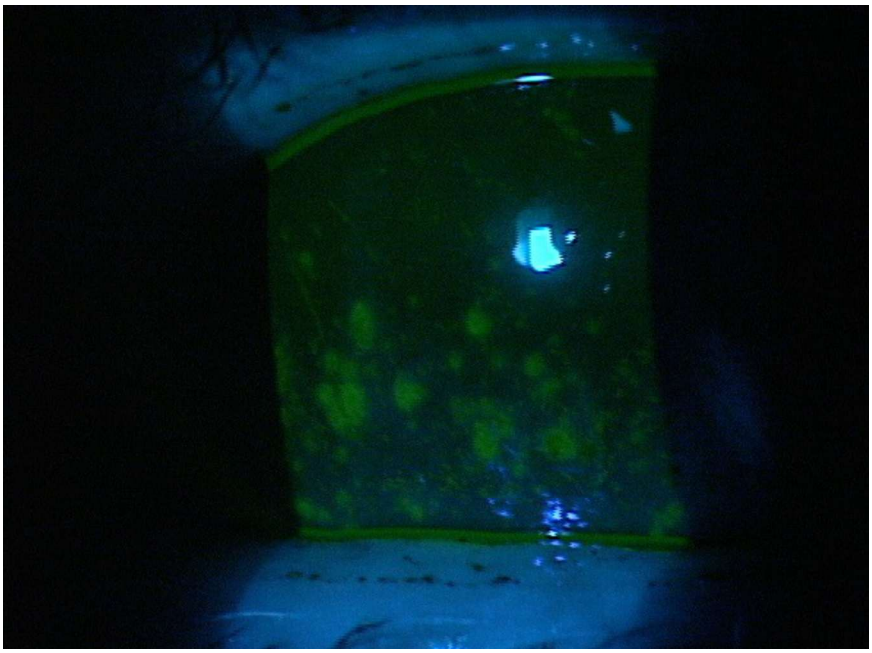
Mean redness scores drawn from patient diary assessments

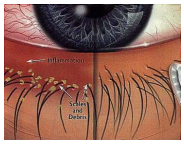
Low dose brimonidine now Preservative-Free

- α2-ARs in veins no arteries
  - Internalization/downregulation of α1-ARs (tachyphylaxis)
  - Vasoconstrictor-induced tissue ischemia and vasodilator release (rebound redness)
  - "Oxygenation", potential neuroprotection
  - Use in mild hyperemia with DED or AC
  - Use in mild/moderate CCH
  - Removal of BAK offers a good option for OSD patients

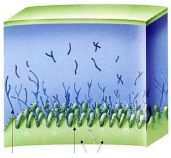
1. Haveles EB . In: Applied Pharmacology for the Dental Hygienist 7th ed. 2016 p 44. 2. Shanbhag T. In: Pharmacology. 2008 p 73. 3. Spector SL, Raizman MB. *J Allergy Clin Immunol.* 1994;94:134-6. . 4. Tappeiner C et al. *Eur J Ophthalmol.* 2009;19:129-132. 5. Vaidyanathan S et al. *Am J Respir Crit Care Med.* 2010;182:19-24. 6. Soparkar CN et al. *Arch Ophthalmol.* 1997;115:34-8. 7. Corboz et al *Pulm Pharmacol Ther.* 2008;21:449-54. 8. Fratelli M, De Blasi A. *FEBS Lett.* 1987;212(1):149-53.

Aqueous Deficient Dry Eye Disease Management





INFLAMMATION

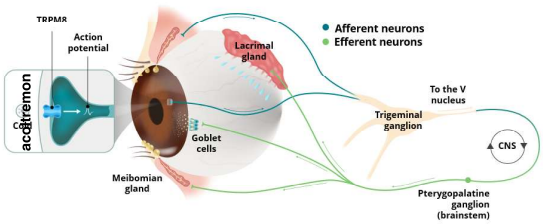


TEAR VOLUME

Monitor for MGD

www.ophthalmicresources.com

ACOLTREMON: A TRPM8 AGONIST



Acoltremon is a potent and selective TRPM8 agonist that activates the trigeminal nerve to stimulate tear production[1,2]

TRPM8, transient receptor potential melastatin 8.

1. Sherkheli MA, et al. *Pak J Pharm Sci.* 2008;21:370-378. 2. Wirta DL, et al. *Ocul Surf.* 2022;26:166-173.

THE TRPM8 AGONIST ACOLTREMON

Acoltremon (previously AR-15512) is a first-in-class, potent, and selective TRPM8 agonist[1]

Mechanism of Action

- Highly selective for TRPM8 receptors[1]
- Does not activate other TRP receptors at therapeutic concentrations[1]
- Stimulates TRPM8 receptors at nanomolar to low micromolar concentrations[1,2]
- Does not desensitize TRPM8 after repeated exposure[1]

Clinical Development Program

COMET-1

- In a large phase 2b study, topical acoltremon 0.003% led to a rapid increase in tear production and reduction in DED symptoms[3]

COMET-2 and COMET-3

- Based on the totality of data from COMET-1, two identical, pivotal phase 3 studies were designed to evaluate the safety and efficacy of topical acoltremon 0.003% compared with its vehicle administered twice daily for 90 days in subjects with DED[4,5]

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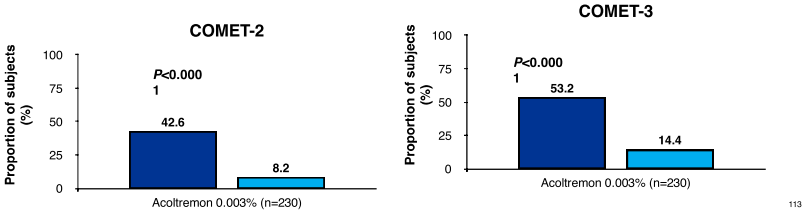
DED, dry eye disease; **TRP**, transient receptor potential; **TRPM8**, transient receptor potential melastatin 8.
1. Sherkheli MA, et al. *Pak J Pharm Sci.* 2008;21:370-378. 2. Beck B, et al. *Cell Calcium.* 2007;41:285-294. 3. Wirta DL, et al. *Ocul Surf.* 2022;26:166-173. 4. https://clinicaltrials.gov/study/NCT05285644. Accessed July 30, 2024. 5. https://clinicaltrials.gov/study/NCT05360966. Accessed July 30, 2024.

ACOLTREMON 0.003% MET THE PRIMARY ENDPOINT IN BOTH PIVOTAL STUDIES

- Proportion differences were 34.4% (*P*<0.0001) and 38.8% (*P*<0.0001) for COMET-2 and COMET-3, respectively
- In the pooled analysis, the proportion of subjects who achieved a ≥10-mm increase in unanesthetized Schirmer score at day 14 was 47.9% for acoltremon 0.003% vs 11.4% for vehicle, yielding a difference of 36.5% (*P*<0.0001)

Proportion of subjects who achieved a ≥10-mm improvement from baseline in unanesthetized Schirmer score on day 14



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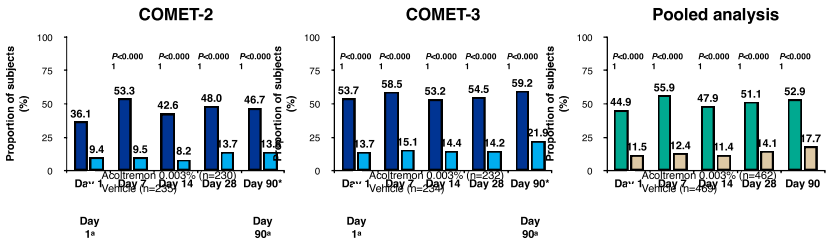
Acoltremon 0.003% (n=230)
Vehicle (n=235)

Acoltremon 0.003% (n=232)
Vehicle (n=234)

ACOLTREMON 0.003% LED TO AN INCREASE IN TEAR PRODUCTION AS EARLY AS AFTER THE FIRST DOSE AND SUSTAINED THROUGH DAY 90

Proportion of subjects who achieved a ≥10-mm improvement from baseline in unanesthetized Schirmer score over the 90-day treatment period



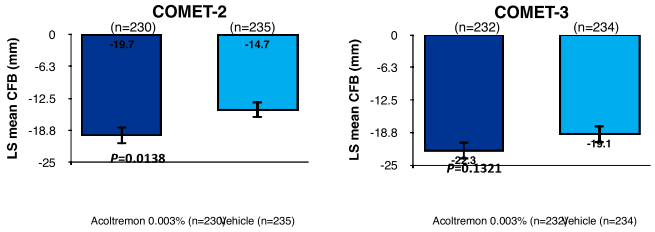
114

[a]Time points for secondary endpoints are highlighted in purple.

FIRST (KEY) SECONDARY ENDPOINT: CHANGE FROM BASELINE IN SANDE SCORE ON DAY 28

- Met in COMET-2 (*P*=0.0138); directionally in favor of acoltremon 0.003% in COMET-3 (*P*=0.1321)

Change from baseline in SANDE score on day 28



Acoltremon 0.003% (n=230)/vehicle (n=235) Acoltremon 0.003% (n=232)/vehicle (n=234)

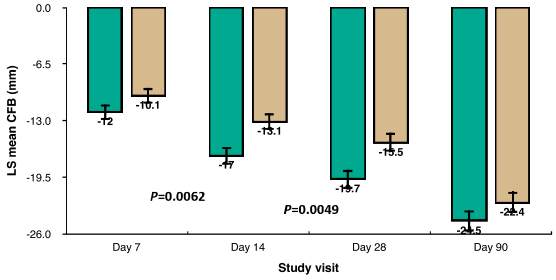
115

CFB, change from baseline; **LS**, least-squares; **SANDE**, Symptom Assessment iN Dry Eye.

POOLED (COMET-2 AND COMET-3) DATA: CHANGE FROM BASELINE IN SANDE SCORE

- Difference in favor of acoltremon 0.003% observed from day 7 through day 90 *(P*<0.05 at both days 14 and 28)

Pooled analysis



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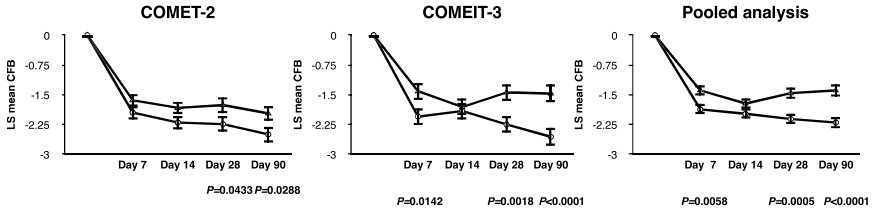
Acoltremon 0.003% (n=462)/vehicle (n=469)

CFB, change from baseline; **LS**, least-squares; **SANDE**, Symptom Assessment iN Dry Eye.

REDUCTIONS IN TOTAL CORNEAL STAINING CONSISTENTLY OBSERVED IN INDIVIDUAL STUDIES AND POOLED ANALYSIS WITH ACOLTREMON 0.003% OVER 90 DAYS

Change from baseline in total corneal staining (modified NEI scale [0-20])[a]

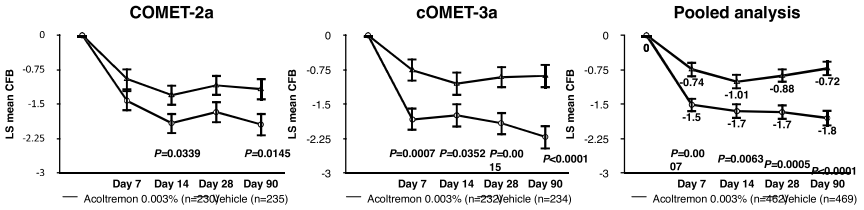


Acoltremon 0.003% (n=230)/vehicle (n=235) Acoltremon 0.003% (n=232)/vehicle (n=234) Acoltremon 0.003% (n=462)/vehicle (n=469)

[a]**Total corneal staining data were investigated as exploratory endpoints.**
CFB, change from baseline; **LS**, least-squares; **NEI**, National Eye Institute.

REDUCTIONS IN TOTAL CONJUNCTIVAL STAINING CONSISTENTLY OBSERVED IN INDIVIDUAL STUDIES AND POOLED ANALYSIS WITH ACOLTREMON 0.003% OVER 90 DAYS

Change from baseline in total conjunctival staining (modified NEI scale [0-24])



[a]**Total conjunctival staining data were investigated as exploratory endpoints.**
CFB, change from baseline; **LS**, least-squares; **NEI**, National Eye Institute.

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ACOLTREMON 0.003% SAFETY PROFILE

- The most common ocular treatment-emergent adverse event (TEAE) with acoltremon 0.003% was instillation site burning/stinging, with an incidence of ≅51%
  - Of the subjects who reported burning/stinging, 98% reported it as mild
  - A total of 2 subjects discontinued from COMET-2 and COMET-3 due to burning/stinging
- In a separate, 12-month safety study (COMET-4), for subjects who experienced the sensation of burning/stinging, on average 86% of these subjects reported a duration of 1 minute or less

	COMET-2		COMET-3	
	Acoltremon 0.003% n=230	Vehicle n=235	Acoltremon 0.003% n=232	Vehicle n=234
Number of serious ocular TEAEs	0	0	0	0
Study discontinuation rate, %	8.7	9.4	7.3	6.8
Percentage of subjects discontinuing study due to any TEAE, %	1.3	1.3	2.2	2.1
Number of ocular TEAEs >2.5%	1	1	1	1
Incidence of burning/stinging, %	53.0	3.8	50.9	2.6
Percentage of TEAE burning/stinging related events in severity, %	98.4	100.0	97.5	100.0
Number of subjects discontinuing study due to burning/ stinging	0	0	2	0

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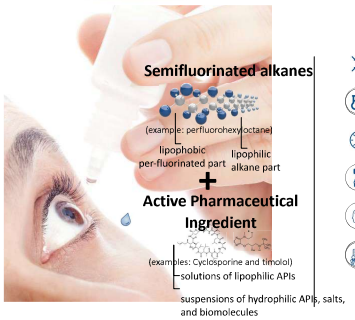
Water-free Novel Drug Products: P4H5 and PFHO



Drug Attributes:

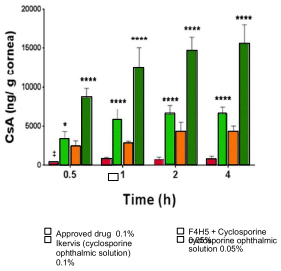
- Increased **bioavailability** of APIs
- Drug products of **instable/sensitive APIs**
- Up to **60x longer residual time** on the eye
- High **patient comfort** and **satisfaction**
- Enables **composition-of-matter IP**[1]
- Broad **applicability across indications**

- **Fully validated and qualified technology**
- **Physically, chemically & physiologically inert**
- **No catabolism or metabolism**
- **100% water- and therefore preservatives-free**
- **Expand universe of applicable medicines**
- **Highly biocompatibility, no accumulation**

Perfluorobutylpentane Vehicle and Cyclosporine Delivery

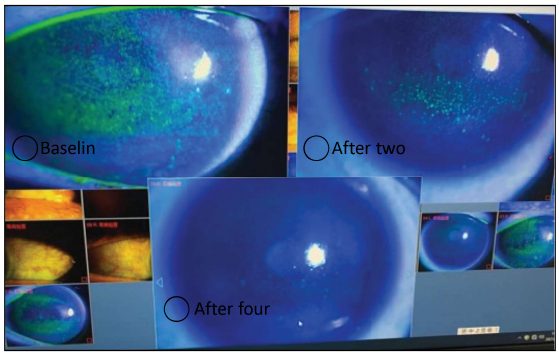
Perfluorobutylpentane + CsA 0.1% delivered

~22x more CsA into the cornea than cyclosporine ophthalmic emulsion 0.05%.*[21]



*Ex-vivo porcine corneal penetration study using 50µl of tested formulations. Clinical relevance is unknown.

Impressive Therapeutic Effect on the Ocular Surface



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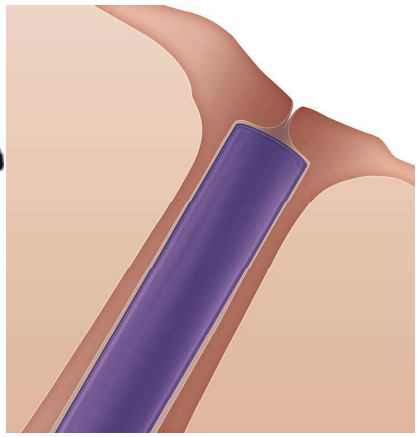
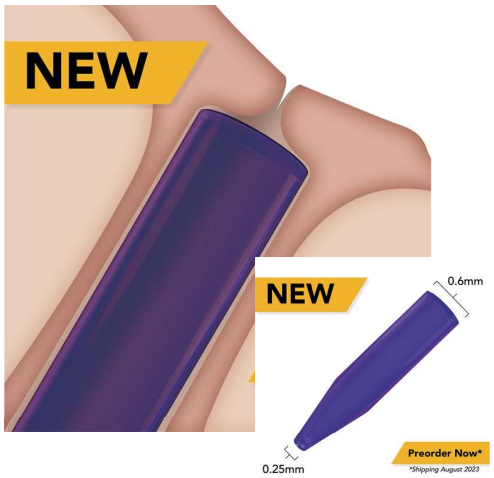
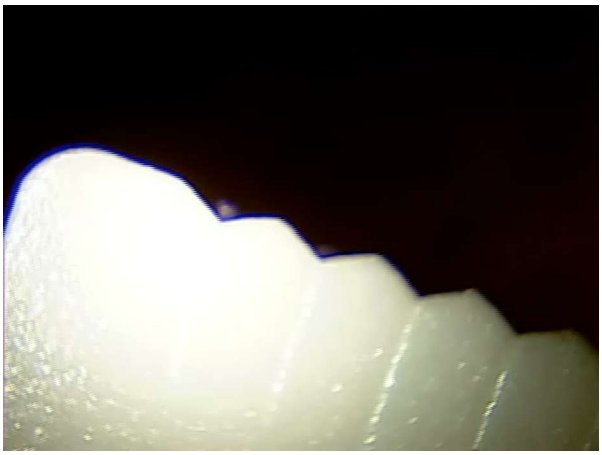
180 Day Extended Duration Punctal Plugs



Tapered Extended Duration Plugs

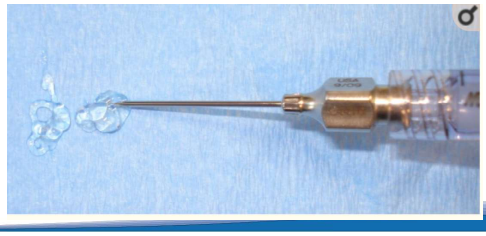
- 

Tapered Extended Duration Plugs



Canalicular Gel

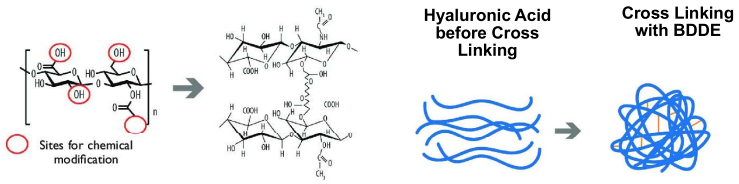
- Cross-linked hyaluronic acid gel that allows patient's eyes to be bathed in their own natural tears
- Customized for each individual patient or provide full fill of the canalicular system



Intra-Canalicular Gel

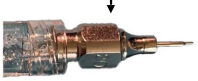
- Cross-linked hyaluronic acid gel that allows patient's eyes to be bathed in their own natural tears
- Customized for each individual patient
- Single patient administration syringe provides a full fill of the canalicular system
- Remains in place until removal at 6 months

Intricate Crossing of Hyaluronic Acid Chains to Create Gels

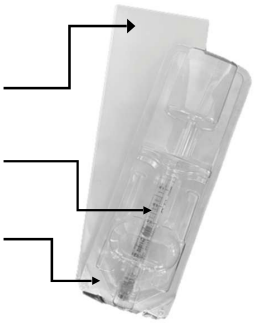


Kit Configuration

Reusable Cannula (supplied separately)

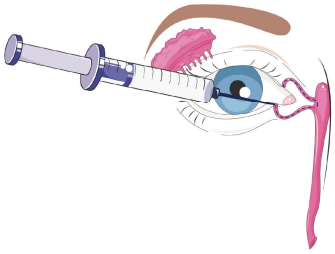


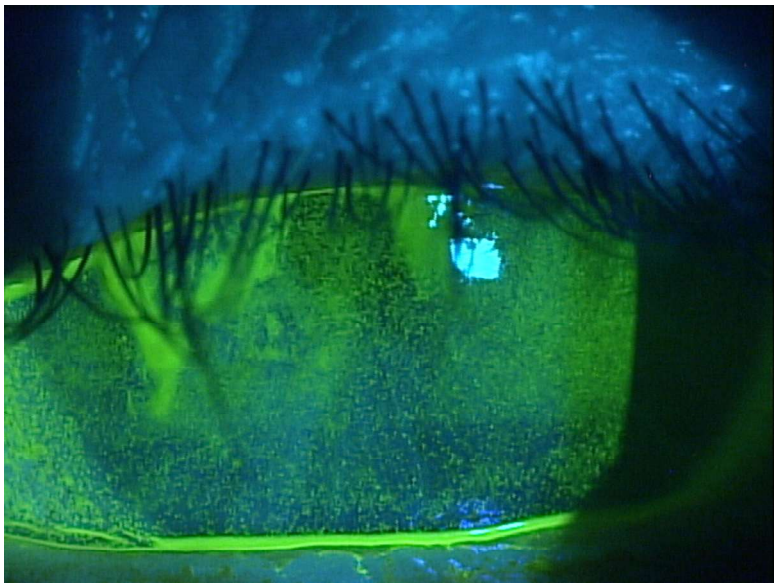
Easy delivery of gel into canaliculus. "Dilate, Dock, Deliver" functions



Instructions for Use

1. Comes in a pre-filled injector with enough gel to treat the lower and upper canaliculi.
2. A cannula tip††† is placed in the punctum and the HA CXL gel is inserted.
3. The gel flows through the punctum into the lacrimal sac.
4. If you see the gel extruding from the upper punctum, you know that both the upper and lower puncta have been blocked.





Amniotic Membrane Types

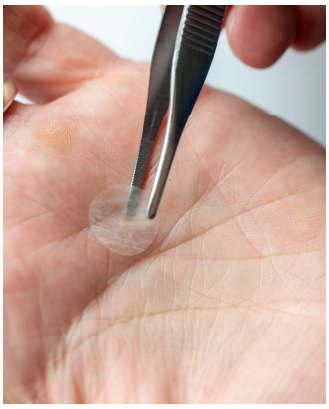
- **Cryopreserved**

Pros
- FDA Approved
- Proprietary Freezing Process
- Ease of use (fitting a contact lens)

Cons
- Requires refrigeration and space in office
- Has to be thawed before use
- Ring placement can be uncomfortable
- Shorter shelf-life
- Price

Amniotic Membrane Types

- **Dehydrated**
  - Pros
    - Patient comfort
    - Variety of sizes
    - Reduced cost
    - Ease of use
  - Requires BCL for retention or Lid Seal
  - BCL can cause hypoxia
  - Amniotic Membrane
    - Sizes: 8mm, 10mm, 12mm &14mm
    - Stored at room temperature
    - Shelf life of 5 years
    - Product can be placed either side down on ocular surface



Neurotrophin-3/Neurotrophin-4	NT-3/NT-4
Basic fiberblast growth factor	bFGF
Beta nerve growth factor	β-NGF
Epidural growth factor/Epidermal growth factor receptor	EGF/EGF-R
Glial cell line-derived neurotrophic factor	GDNF
Heparin binding growth factor	HB-EGF
Hepatocyte growth factor	HGF
Platelet-derived growth factor	PDGF-AA/PDGF-BB
Placenta growth factor	PIGF
Stem cell factor	SCF/SCF-R
Transforming Growth Factor Alpha	TGFa/TGFb1/TGFb3
Vascular endothelial growth factor	VEGF

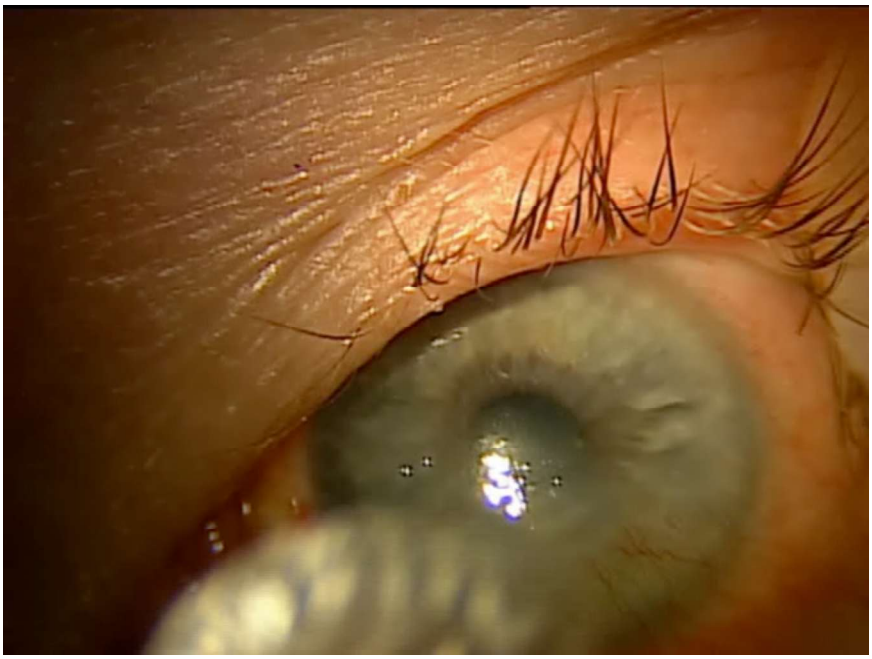
Protein	Abbreviation
Growth differentiation factor 15	GDF-15
Interleukin 1α	IL-1α
Interleukin 1 Beta	IL-1β
Interleukin 1 receptor antagonist	IL-1ra
Interleukin 12 p40	IL-12p40
Interleukin 17	IL-17
Osteoprotegerin	OPG
Interleukin 8	IL-8
Intercellular adhesion molecule 1	ICAM-1
Tumor necrosis factor	TNF
Interleukin 4	IL-4
Interleukin 5 receptor	IL-6R
Macrophage colony stimulating factor 1 receptor	MCSF R
B lymphocyte chemoattractant (CXCL 13)	BLC
Eotaxin 2	Eotaxin-2

Ocular Surface Disorders

Diseases with Pre-existing Epithelial Defects to promote wound healing and reduce complications (debridement is optional)	Diseases without Epithelial Defects to prevent further damage and promote regeneration (no debridement/PTK)	Diseases with Unhealthy Epithelium or Basement Membrane to promote regeneration (after debridement/PTK)
• neurotrophic persistent corneal epithelial defect • post-infectious recalcitrant corneal ulcers (e.g. herpetic, vernal, and bacterial) • non-healing epithelial defect after PRK/PTK • acute chemical/thermal burns • acute Stevens-Johnson syndrome/toxic epidermal necrolysis	• dry eye syndrome • superficial (punctate) keratitis • filamentary keratitis • radiation keratitis; whorl pattern indicative of limbal stem cell injury • exposure (Graves) keratopathy	• recurrent corneal erosion, EBMD • Salzmann's nodular degeneration • bullous keratopathy during/following DSEK • haze after PTK • *partial* limbal stem cell deficiency • corneal dystrophy (e.g., Reiss Buckler)

Amniotic Membrane Insertion

Removal



Action of Growth Factors in Serum

- Cellular proliferation
- Migration
- Differentiation
- Apoptosis
- Intercellular communication

Autologous Serum Tear Substitutes

First described 1984 by Fox et al (for KCS), more after success in eyes with persistent epithelial defects (Tsubota et al 1999)

	TEARS	SERUM
Ph	7.4	7.4
Osmolality	298	296
Albumin (mg/l)	54	35-55
EGF (ng/ml)	1.5	0.7
TGF-b (ng/ml)	2-10	6-33
Vitamin A (mg/ml)	0.02	46
Lysozyme (mg/ml)	1.4	6
SIgA (ug/ml)	1190	2
Fibronectin (ug/ml)	21	205
Hepatocyte GF, NGF, IGF-1, Substance P, Complement, Fibroblast GF, cGRP, other Ig, etc.		✓

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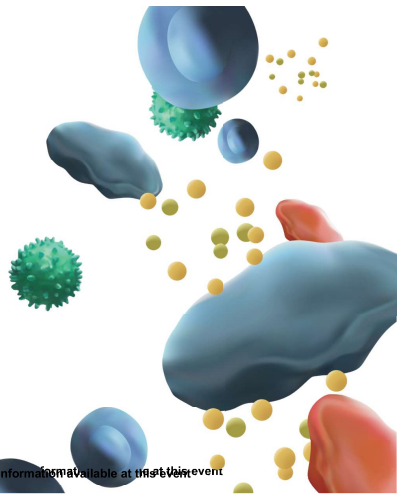
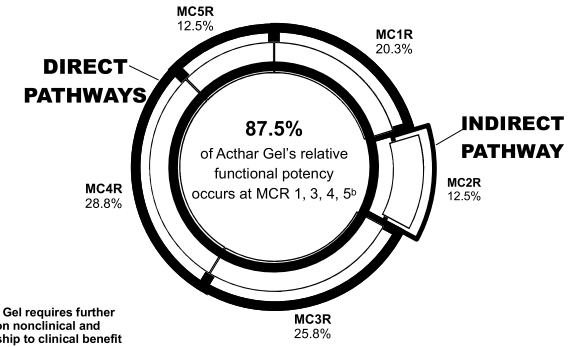
Current Understanding of the Proposed ACTH Mechanism of Action



ACTH Gel Engages MCRs for Potential Dual Anti-Inflammatory and Cell Modulation Effects

Relative Functional Potency on MCRs[30,a]

ACTH engages MCRs expressed on immune cells and other tissues an INDIRECT anti-inflammatory effect and a DIRECT cell modulation effect[12,29-33]



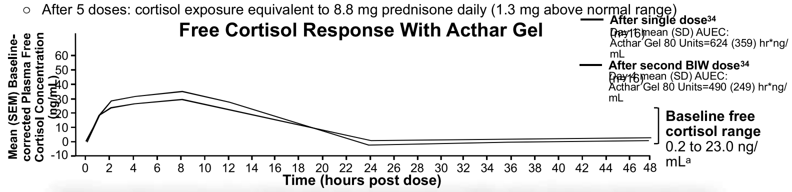
The exact mechanism of action of Acthar Gel requires further investigation. This information is based on nonclinical and pharmacodynamic data, and the relationship to clinical benefit is unknown.

cAMP, cyclic adenosine monophosphate.
[a]Receptor densities and the induction of cAMP are assumed to be equivalent for all receptors. Acthar Gel was observed to be a partial agonist at MC5R. Numbers may not sum to 100 due to rounding.[30]
[b]These data are a result of *in vitro* studies where the relative functional potency of MCRs was measured.[30]

ACTH Engaged MCRs to Secrete Free Cortisol to Levels Slightly Above Normal Endogenous Range

- In a pharmacodynamic study, Acthar Gel engaged MCRs on the adrenal cortex to secrete free cortisol at levels slightly above normal endogenous range, which is thought to produce an indirect anti-inflammatory effect[34]
- Acthar Gel administered at 80 units twice weekly in study with healthy adults[34,35]
  - After 2 doses: cortisol exposure equivalent to 10 mg prednisone daily (2.5 mg above normal range)
  - After 5 doses: cortisol exposure equivalent to 8.8 mg prednisone daily (1.3 mg above normal range)

Free Cortisol Response With Acthar Gel



ACTH was shown to have a low cortisol peak when administered to healthy adults. Elevated cortisol levels have the potential to amplify steroidogenic side effects[34]

Please see Important Safety Information on slides 6, 26-29 and full Prescribing Information available at this event or at ActharHCP.com.

Data presented are from clinically relevant doses in healthy adult subjects.[34]

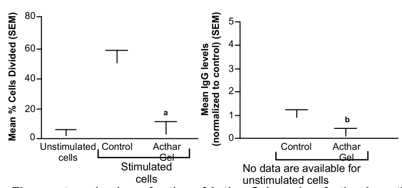
AUEC, area under the effect curve; BIW, twice weekly; SD, standard deviation; SEM, standard error of the mean.

[a]The baseline plasma free cortisol concentration range for all treatment groups is represented by the gray shaded area (0.2-23.0 ng/mL).

ACTH Has Shown a Direct Effect on Immune Cell Modulation[29,31,36]

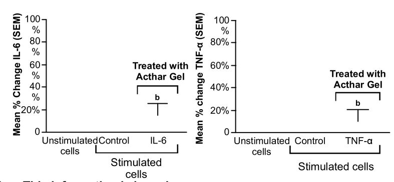
In *in vitro* studies using human B cells, Acthar Gel significantly reduced B-cell proliferation and IgG production independent of cortisol release[29,36]

ACTH reduced B-cell proliferation and IgG production[29,36]



In an *in vitro* study using human MDMs, Acthar Gel inhibited the production of pro-inflammatory cytokines IL-6 and TNF-α, indicating a potential anti-inflammatory effect independent of cortisol release[31]

ACTH has been shown to inhibit production of pro-inflammatory cytokines IL-6 and TNF-α from MDMs[31,c]



The exact mechanism of action of Acthar Gel requires further investigation. This information is based on nonclinical and pharmacodynamic data, and the relationship to clinical benefit is unknown.

IgG, immunoglobulin G; IL, interleukin; MDM, monocyte-derived macrophage.

[a]$P<0.05$ vs stimulated control. [b]$P<0.0001$ vs stimulated control. [c]Data adapted from Healy et al. 2017[31] are presented as percent change vs stimulated control. Only results for Acthar Gel are reported above.

Please see Important Safety Information on slides 6, 26-29 and full Prescribing Information available at this event or at ActharHCP.com.

ACTH for the 4 R's

- Treatment **R**esistant
- **R**ebounders
- Steroid **R**esponders
- **R**eimbursement Issues

Please see Important Safety Information on slides 6, 26-29 and full Prescribing Information available at this event or at ActharHCP.com.

National Outfit for ASED

- Present in almost every major city in the US
- Blood draw at patients home or work
- Processing
- Regular replacement
- Doctors must specify concentration
  - 20% for most patients
  - 40% for GVHD etc.

KOL Serum Tears Survey Results

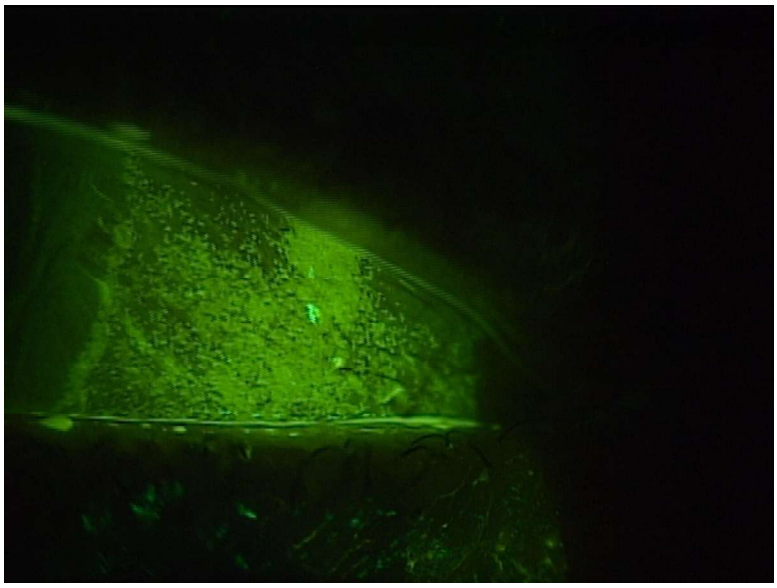
What is the preferred starting formulation?

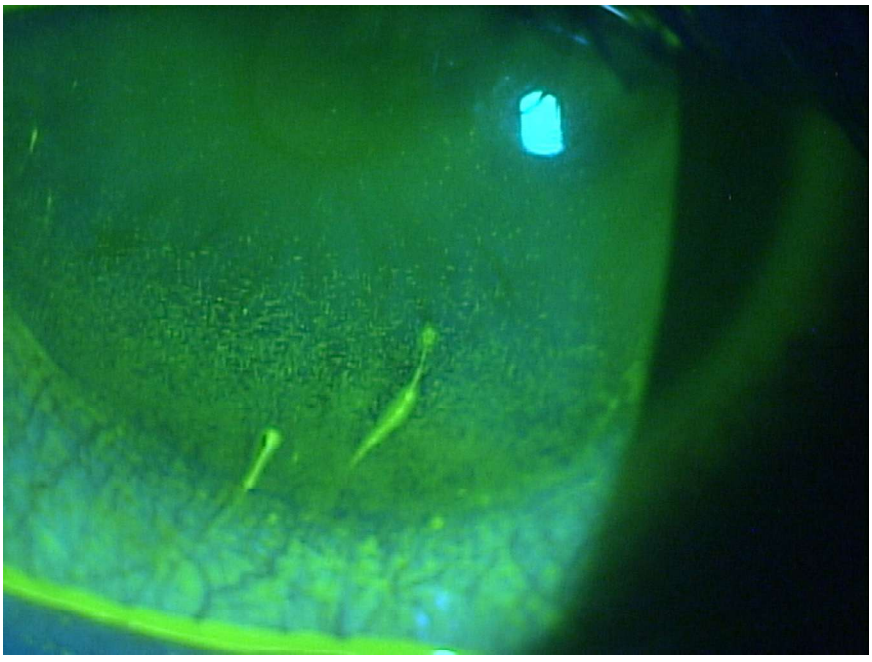
01	02	03	04	05	06
40 % 4 Times/Day	75% 8 Times/ Day	20% 8 Times/ Day	40% 6 Times/ Day	50% 6 Times/Day	40% 6 Times/Day

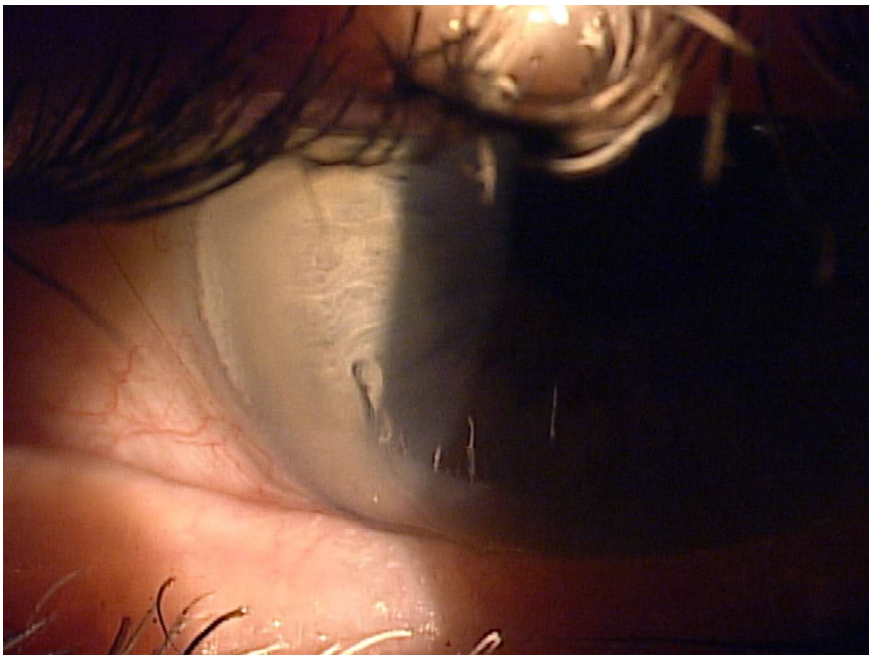
SCLERAL LENSES

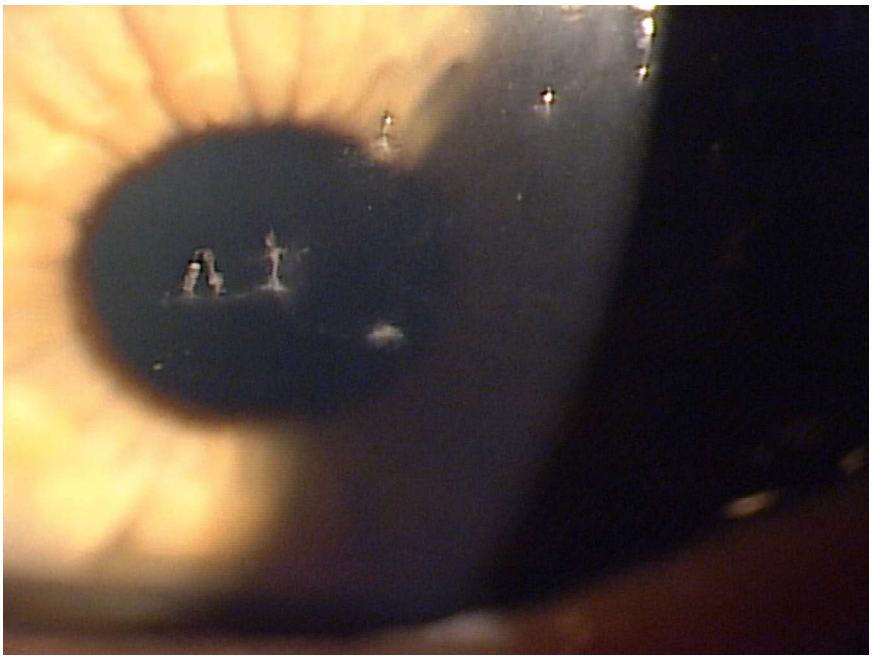
Mucin Deficient DED

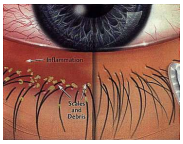
- Stage 1: Conjunctival staining
- Stage 2: Mucin strands
- Stage 3: Filamentary keratitis



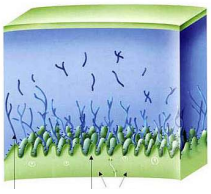








INFLAMMATION/MUC EXPRESSION



MUCIN QUALITY

Category: Lubrication

What makes a tear effective?

- Preservative free
- Your Patient's experience

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Category: Lubrication

- Preservative free formulations are required
- Good PFMD bottle
- Multi-use for extended period of time

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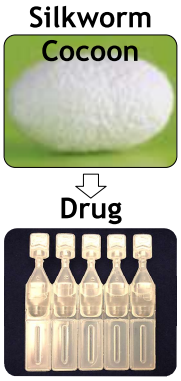
Active Ingredients	White Petrolatum (90%), Lanolin (6.9%), Light Mineral Oil (1.4%)
Inactive Ingredients	Retinol Palmitate (Vitamin A)
Preservative Free	✓
Phosphate Free	✓
Sterile Period (from first opening)	6 months
Presentation	0.18 fl. oz. (5g)
No of Applications	300
Indications	Moderate to Severe Forms of Dry Eye which require a more viscous ointment. Recommended for night time use

SDP-4:L SILK PROTEIN DERIVED

Differentiated Biologic Product with Unique Properties:

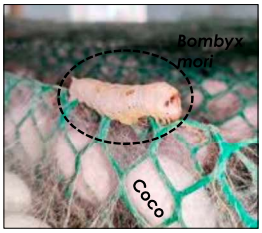
- Highly soluble protein in aqueous formulation
- Broad acting anti-inflammatory activity
- Prolonged wetting without increased viscosity
- Absence of toxicity & immunogenicity
- Transparent, preservative free & single unit dose format
- Highly stable at room temperature



Silk Protein is "Insect Concrete"

Creates external structure for most arthropods

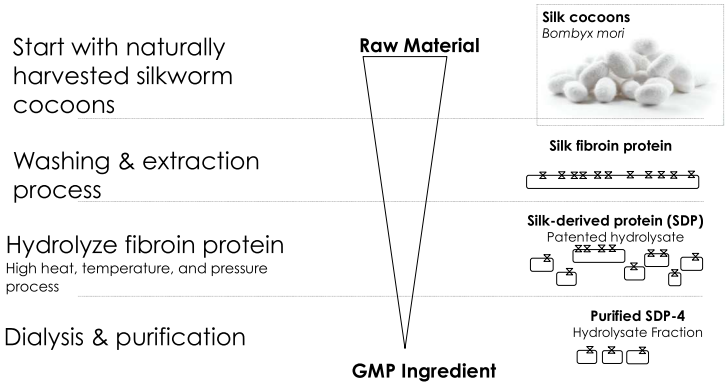
- Evolved over 400M years
- Produced by hundreds of thousands of species



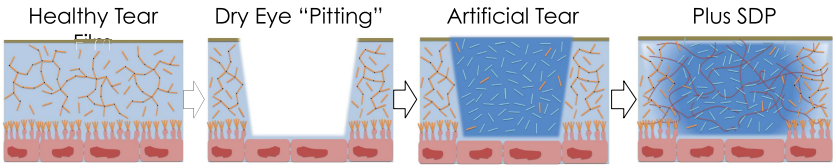
Commercial silk produced by one species

- Domesticated by humans ~10,000 years ago
- >600,000 tons produced annually

Fibroin is Hydrolyzed into Silk-Derived Protein (SDP)



SDP-4 Enhances Tear Coating & Stability



The healthy tear film maintains a protective and lubricating coating over the ocular surface.

When dry eye occurs the tear film is compromised leaving dried areas on the waxy ocular surface.

Artificial tears fill the pits but do not provide an interface between the natural tear film components.

SDP stabilizes the natural tear film and creates long lasting, anti-inflammatory protection on the ocular surface.

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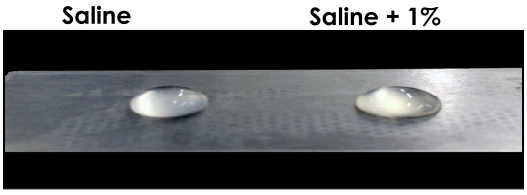
SDP Enhances Formulation Wetting & Coating

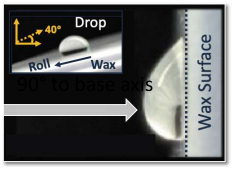
Effective wetting & coating agent



Surface

Increases surface coating adhesion

Saline + 1% SDP



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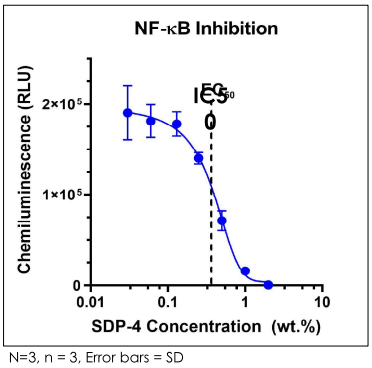
SDP-4 NF-kB Inhibition Bioassay

Human Embryonic Kidney (HEK) reporter cells

- NF-kB-RE-luc2P HEK293 cell line (Promega®, WI)
- NF-κB activated by TNF-a dosing (1-ng/mL)
- NF-kB driven luciferase & chemiluminescence

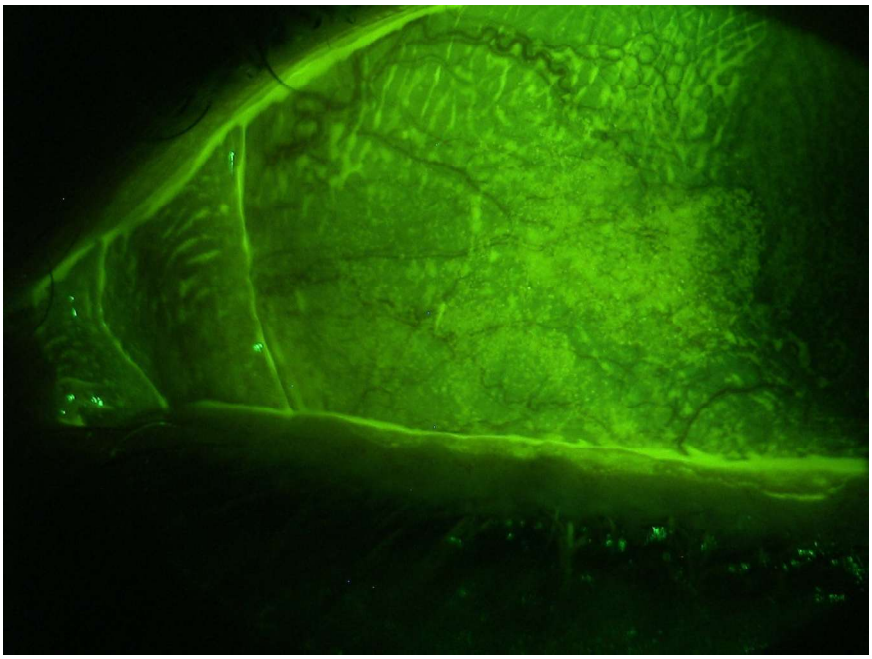
SDP-4 reduces NF-kB activity dose dependently

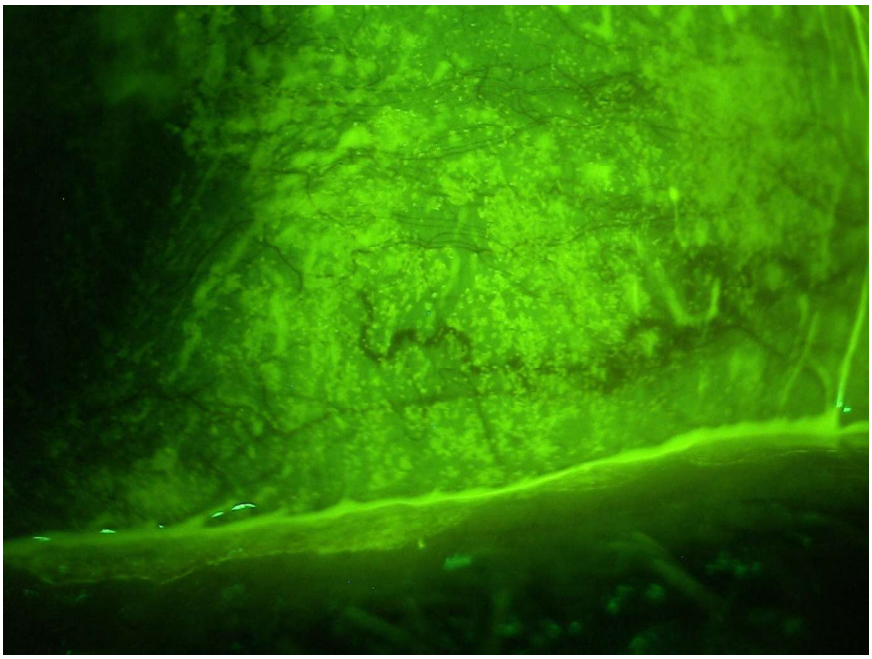
- ~20-fold reduction in activity
- Highly repeatable from batch-to-batch

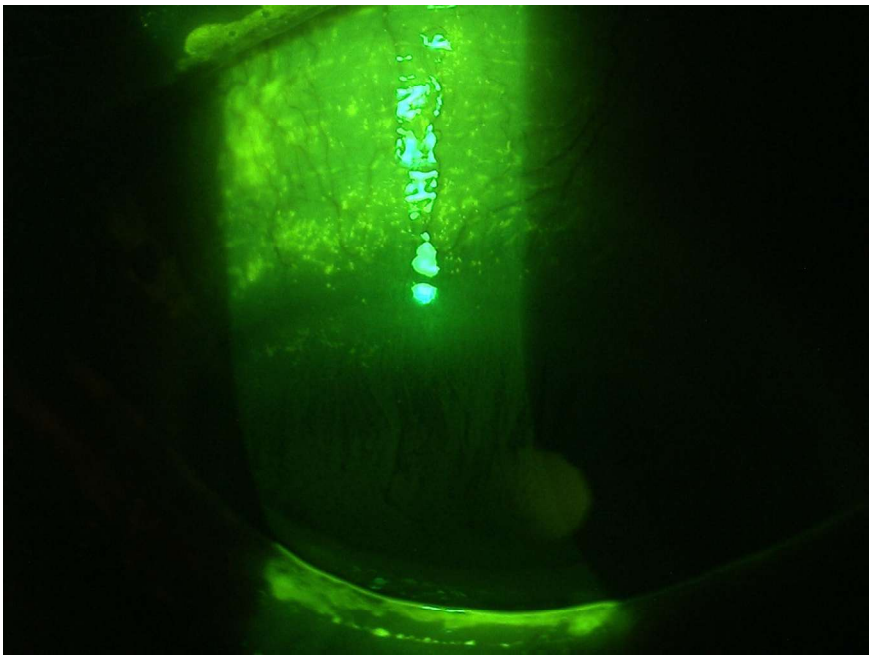


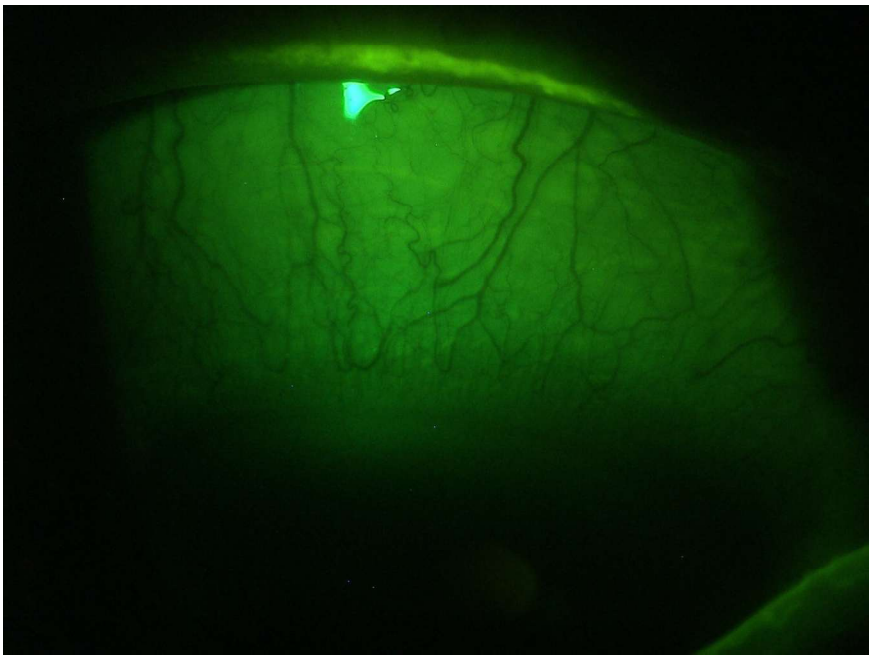
N=3, n = 3, Error bars = SD

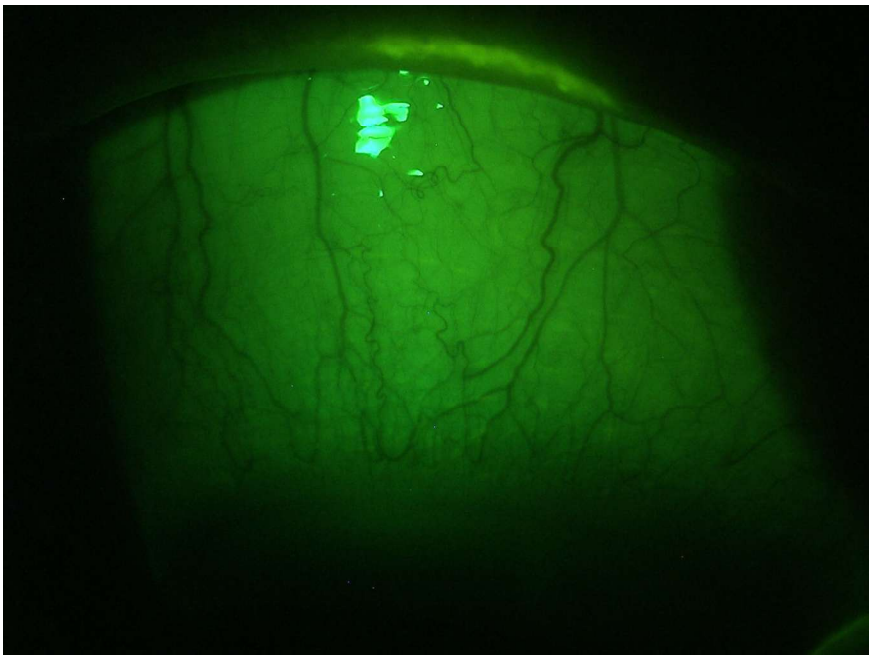
168



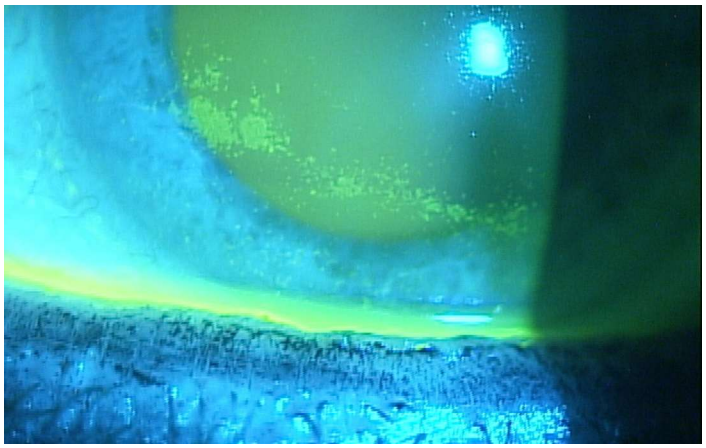




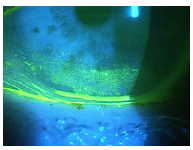




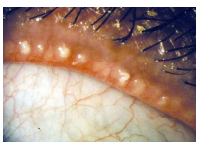
Exposure Keratitis: Inadequate Lid Seal (ILS)



Inferior Stain indicates non-lid seal (ILS)

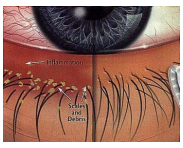


ILS



OBSTRUCTION

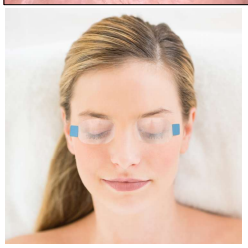
BIOFILM



INFLAMMATION

Morning Symptoms: Think ILS (Nocturnal Exposure)

- And leads to desiccative stress, MGD, blepharitis, exposure keratitis etc.
- It is NOT lagophthalmos
- ILS - is an overnight inadequate lid seal
- Overnight eye seals
- Hypoallergenic
- Oxygen permeable
- Adequate mild adhesive
- Sensitive and regular



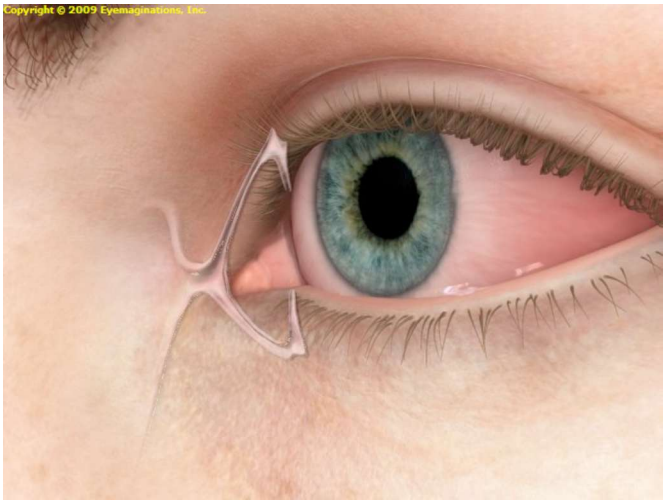
LOTEMAX® Ointment

LOTEMAX® ointment is a new **preservative-free** steroid ointment.

LOTEMAX® ointment is a corticosteroid indicated for the treatment of post-operative inflammation and pain following ocular surgery.

Loteprednol ung attributes

- Established efficacy in post-operative inflammation and pain[1]
- Low risk of significant intraocular pressure (IOP) elevation seen in clinical studies[2]
  - <1% of patients experiences intraocular pressure elevation ≥ 10 mm Hg
  - If product is used 10 days or longer IOP should be monitored
- Preservative-free[1]
- As with other ophthalmic corticosteroids, LOTEMAX® ointment is contraindicated in most viral diseases of the cornea and conjunctiva including herpes simplex keratitis (dendritic keratitis), vaccinia, and varicella, and also in mycobacterial infection of the eye and fungal disease of the ocular structures[1]



Patient Education and Tracking + Anterior Segment Photography

Slit Lamp Imaging Systems

OSD CONCLUSIONS

- Start with the LID in mind
- Follow a straight forward diagnostic algorithm
- Incorporate new and effective technologies
- Communicate effectively

Thank You

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