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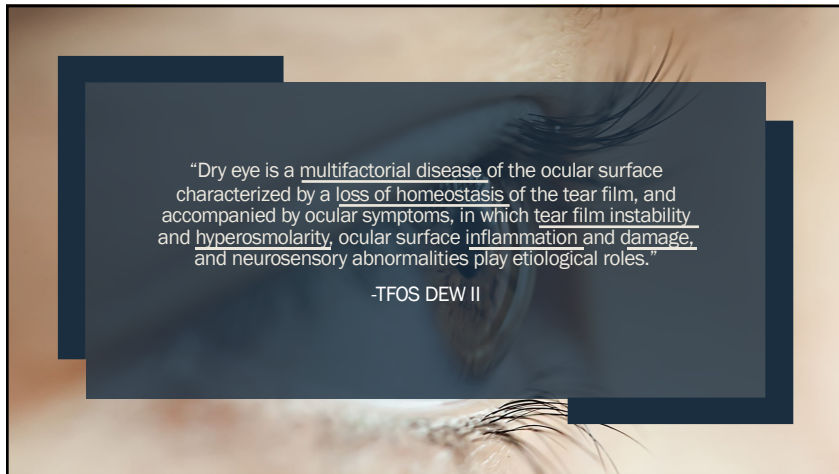
### Cecelia Koetting Financial Disclosures

*"All relevant relationships have been mitigated."*

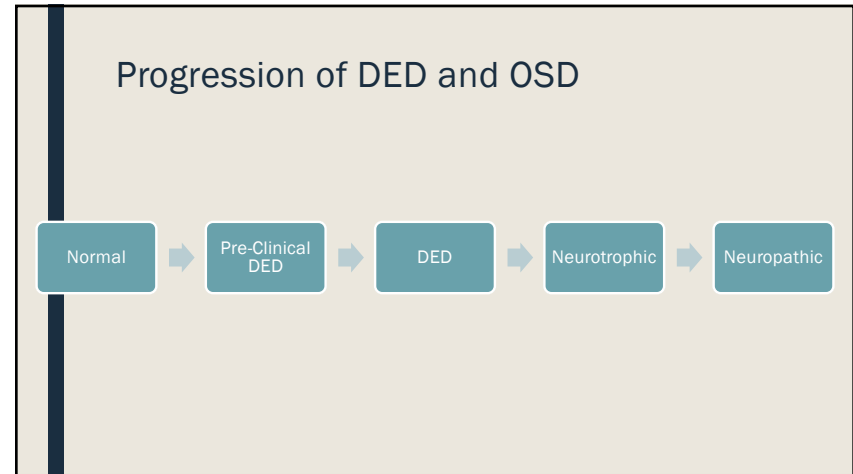
■ Ocular Therapeutix-C	+ Glaukos-C	■ Oyster Point/Viatris-C, S,R
■ Horizon-C	+ B +L- C,S	■ Allergan/Abbvie -C,S,R
■ Quidel-C	+ Iveric-C	■ Alcon-C,S
■ Ivantis-C	+ Aldura-C	■ Visus-C,S
■ Orasis-C	+ Claris Bio-C	■ Harrow-C,S
■ Otto-C	+ Aldeyra-C	■ Thea-C,R
■ Trukera-C	+ Twenty Twenty Therapeutics-C	■ Bruder-C
■ LENZ-C	+ Dompe-C,S,R	■ Blinkjoy-C
■ Tarsus-C,S,R		■ SCOPE-C

Intrepid

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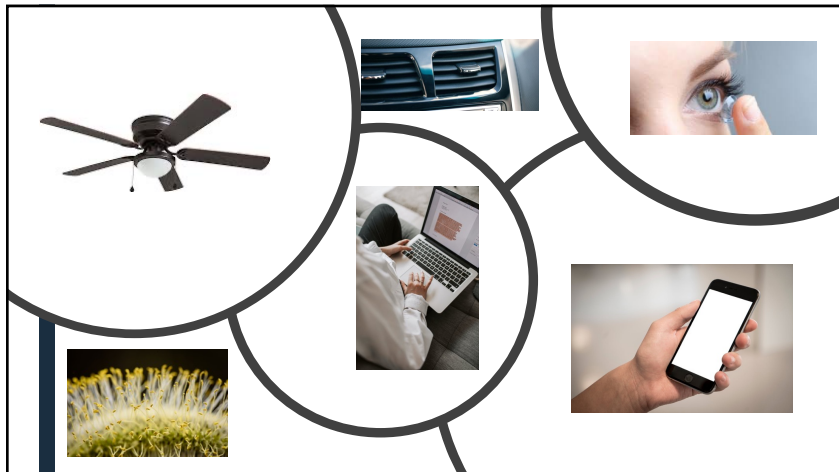
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## US PREVALENCE OF OSD and DED

- Estimated >16 million patients have been diagnosed with DED<sup>1</sup>
- Estimates ~33 million patients suffering from dry eye symptoms<sup>1</sup>
- Almost all adults experience dry eye signs and symptoms
  - DED is often underdiagnosed and undertreated<sup>2</sup>
  - DED is the most common reason for visits to eyecare practitioners (ECPs)<sup>3</sup>
  - ~33% of patients present with complaints about dry eye<sup>1</sup>
- Prevalence is projected to increase due to:
  - Aging population
  - Increased screen time (computers and handheld devices)

**REFERENCES:** 1. Farrand KF, Fridman M, Sallman JO, Schaumberg DA. Prevalence of Diagnosed Dry Eye Disease in the United States Among Adults Aged 18 Years and Older. *Am J Ophthalmol* 2017;182:90-8. 2. Craig JP, Nichols KK, Akpek EK, et al. TFOS DEWS II Definition and Classification report. *Ocul Surf*. 2017;15(3):276-283. doi: 10.1016/j.jtos.2017.05.008. 3. Casavant J, Ouster GW III, Wilcox Hagberg R, et al. A correlation between the signs and symptoms of dry eye and the duration of dry eye diagnosis. *IOVS*. 2005;46:8-abstract 4455.

7



8

## Types of dry eye disease

### Evaporative dry eye

- Resulting from excessive tear evaporation
- Evaporation leading to Tear hyperosmolarity
- Normally functioning lacrimal gland
- Eyelid related causes
  - Meibomian gland dysfunction
  - Inadequate lid closure/blink related

### Aqueous deficient dry eye (ADDE)

- Resulting from from decreased tear secretion
- Hyper-evaporative state leading to tear hyperosmolarity

9

NOT MUTUALLY EXCLUSIVE, IT CAN BE BOTH!


10

## Meibomian Gland Dysfunction


**Meibomian Gland Dysfunction (MGD)** is a chronic condition characterized by abnormal keratin production, leading to blocked glands

- Decreased meibum quality and quantity in the upper and lower eyelids
- Tear film changes
  - Reduced visual function/quality of vision
  - Dry eye disease
  - Contact lens discomfort / intolerance
- Gland complications
  - Gland blockage/dilation
  - Irreversible glandular atrophy/loss
  - Bacterial growth
  - Lead to Blepharitis
- Ocular Surface Inflammation
- Corneal scarring

**Normal Meibomian Glands**



**Blocked Meibomian Glands**



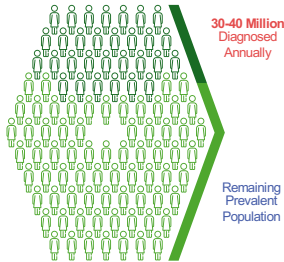
Sources:  
 • Hovav M, et al. Invest Ophthalmol Vis Sci. 2011 Mar; 52(1):1222-9.  
 • Knox E, et al. Invest Ophthalmol Vis Sci. 2011 Mar; 52(1):1230-7. 3. Roberts JM, et al. Eye & Contact Lens 2004 30(1): 14-19

Non-Confidential 11

11

## MGD Prevalence

- MGD affects approximately 100 million patients in the U.S. and can lead to Contact Lens Discomfort (CLD), Dry Eye Disease (DED), Blepharitis
- Near-term market opportunity of 30 to 40 million patients
- No currently FDA-approved medicines for MGD
- Approved treatments for downstream ocular conditions have not demonstrated efficacy for restoring function of the meibomian glands



MGD affects **100+ Million** in the US  
 Each icon represents 1 million affected people


30-40 Million Diagnosed Annually

Remaining Prevalent Population

Sources:  
 • MGD Prevalence: Mollan, J. F., & Stamer, S. (2005). Meibomian gland status comparison between active duty personnel and US veterans. Military medicine, 160(8), 591-593. from, M.M. (1995)  
 • Prevalence of meibomian gland dysfunction. Optom Vis Sci. 67(8), 710-712. Borchs C. A. Prevalence of meibomian gland dysfunction - a systematic review and analysis of published evidence  
 • [25] Investigative Ophthalmology and Visual Science - ARVO Abstract Topic: G019  
 • MGD Screening: American Ophthalmology Association - Source Primary Research

12

## Don't forget about Demodex



- Demodex folliculorum and Demodex brevis
- Reside in sebaceous glands in facial skin
  - Nose
  - Nasolabial folds
  - Eyelids
  - Cheek
  - Forehead
  - Chin
  - Neck

13

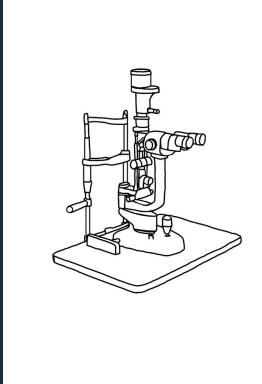
## Prevalence

- Lopez-Ponce et al, average age in study was 54.9 years old
- 84% prevalence in these patients
- 100% in patients over 70 years old

14

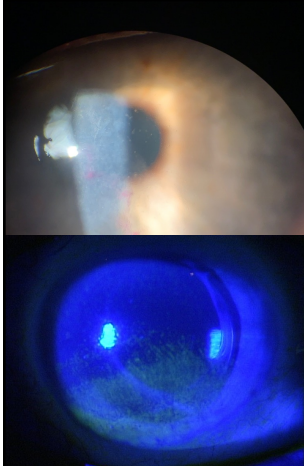
How do we determine the underlying causes?

15



## SLIT LAMP EXAM!

16

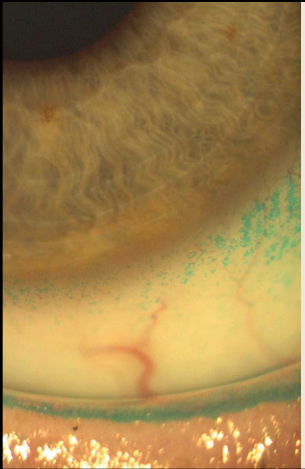


## Corneal Staining

- Sodium Fluorescein
  - Corneal staining
    - Pattern
    - Location
    - Severity
  - Tear break up time
  - Wratten #12 filter helps
- Rose Bengal
  - Corneal irregularities to rule out HSV

17





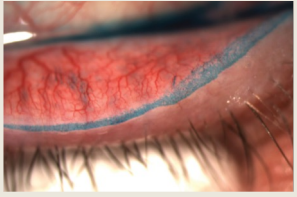
### Lid and Conjunctival Staining

- Lissamine Green
  - Stains dead and degenerate cells
  - Lid margin for lid wiper epitheliopathy
  - Conjunctival staining

18

### Lid Wiper Epitheliopathy

- Vital staining of the upper and lower lid margin regions that are in contact with the globe
- Inadequate lubrication results in frictional damage and inflammation of the marginal conjunctiva of the LWR, leading to epitheliopathy
- In a study by Korb, et al. 76% of symptomatic DED patients had LWE
- Treatment Options (treating inflammation and increasing lubrication):
  - Corticosteroids, artificial tears, punctal plugs, bandage contact lens, and Perfluorohexyloctane QID OU



Kamath V, Arvind A, Bhuvana K. Lid wiper epitheliopathy in symptomatic and asymptomatic dry eye subjects. Indian J Ophthalmol. 2023 Apr;71(4):1499-1502. doi: 10.4103/IJO.IJO\_2709\_22. PMID: 37026290; PMCID: PMC10276780. Korb DR, Herman JP, Greiner JV, Scaffidi RC, Finemore VM, Exford JM, Blackie CA, Douglass T. Lid wiper epitheliopathy and dry eye symptoms. Eye Contact Lens. 2005 Jan;31(1):2-8. Lang J, Junidi R. Putting a Lid on Epitheliopathy. Modern Optom. Nov 23.


19

Look → Lift → Push → Pull

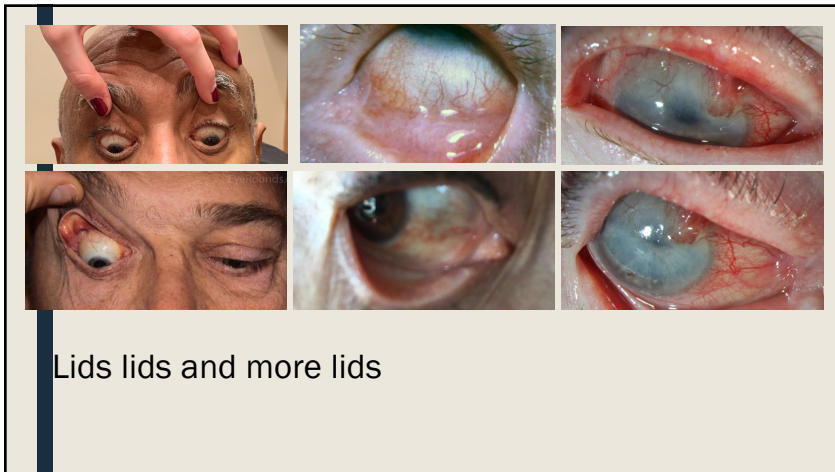
Don't forget about The Eyelids

20

### Lid Position



21



Lids lids and more lids

22



BLINKING AND LID CLOSURE

23

### Lid Seal: Korb- Blackie Lid Light Test

- Patient leans head back while seated in exam chair and closes eyes
- Pen light is shined onto patient's upper lid
- Light shining between lids = incomplete lid seal
- This sign is associated with ocular discomfort on awakening and inferior fluorescein staining.
- Discomfort may be linked to subtle ocular surface desiccation during sleeping.

Make sure to check in patients with floppy lids and CPAP wearers

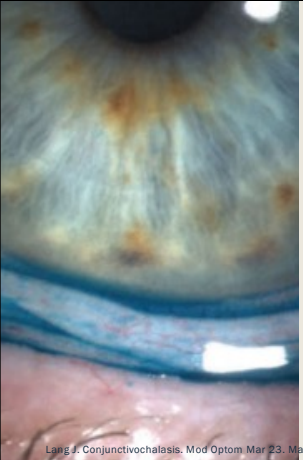
eyes on  
Blackie CA, Korb DR. A novel lid seal evaluation: the Korb-Blackie light test. Eye Contact Lens. 2015 Mar;41(2):98-100.

24

Take a break from the lids...Just kidding!

Flip it and look at the conjunctiva

25



### Conjunctivochalasis (CCH)

- Loose, redundant conjunctival tissue most commonly found in the inferior bulbar conjunctiva
  - 44% and 98% of individuals 60 years of age and older.
- Pain is worsened in downgaze or with blinking.
- Reproduce the pain of conjunctivochalasis by applying pressure on the lids over the area of the redundancy while the patient looks in the opposite direction
- Treatment:
  - Removing mechanical irritation and inflammation
    - topical steroids and frequent lubrication.
  - Excision and ligation
  - Cauterization or radio wave electrosurgery techniques
  - Shrinkage and coagulation of tissue can also be achieved with argon laser photocoagulation and radiowave electrosurgery.


Lang J. Conjunctivochalasis. Mod Optom Mar 23. Mare

26

- Any pitting?
- Any capping?
- Any lid structure abnormality?

Express the Gland Using:

- Cotton tip applicator
- Your clean finger
- Gland expressor
- Meibomian gland evaluator
  - Just do it!



### Express the Glands and Grade

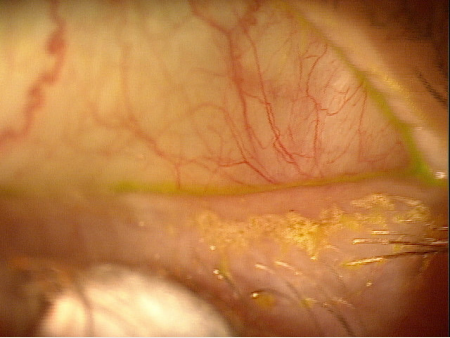
27

### Meibomian gland compression

- Grade expressibility
- Meibum quality can be described as clear, cloudy, granular or inspissated, grading as follows:
  - Grade 1: olive oil, clear
  - Grade 2: turbid, cloudy
  - Grade 3: cloudy with debris
  - Grade 4: toothpaste-like, or inspissated



28



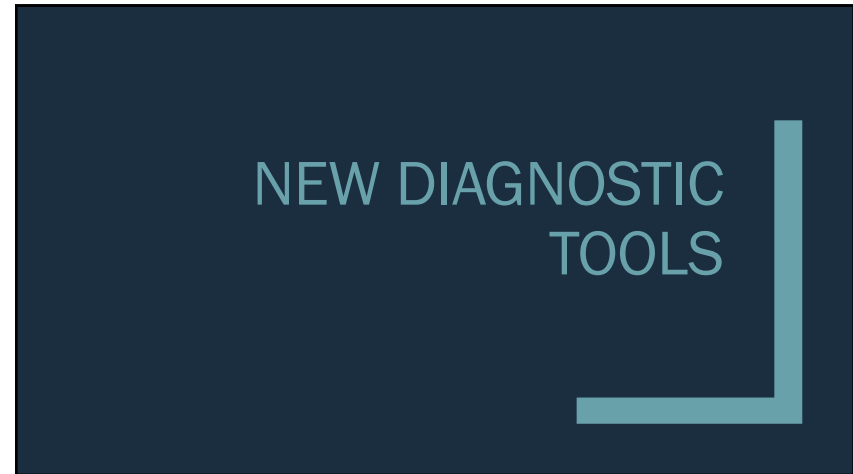
### Blepharitis and Demodex Blepharitis

- Saponification
- Lid margin debris
- Lid margin biofilm
- Collarettes
- Telangiectasia
- Lid margin thickening

29



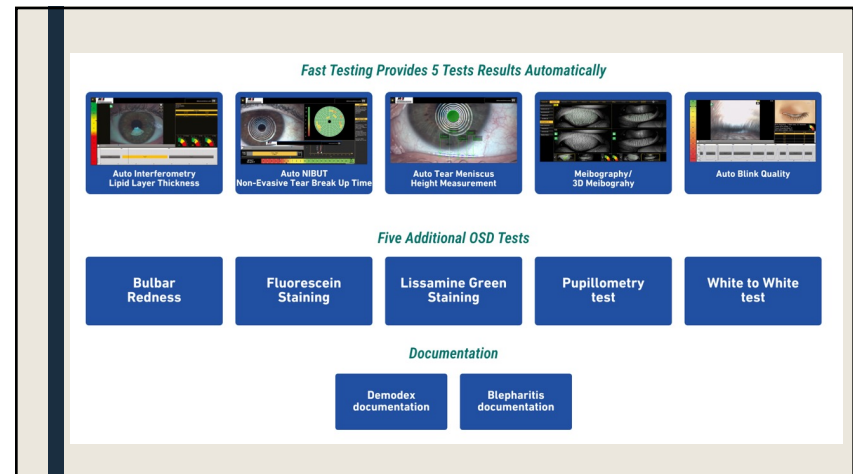
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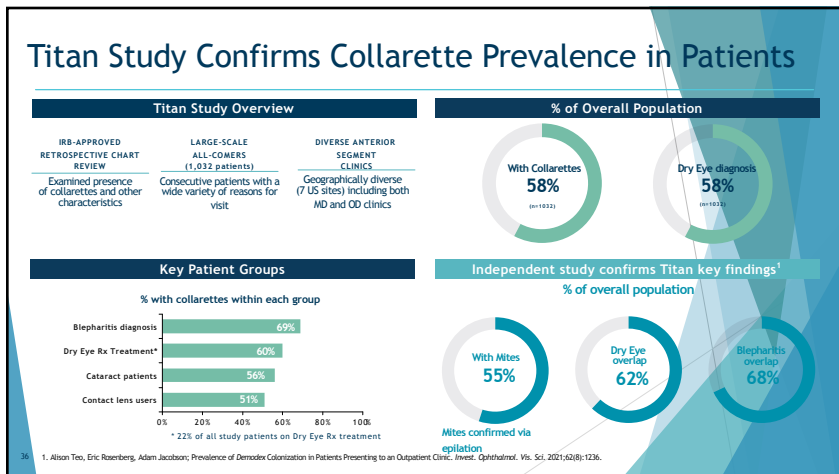
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# NEW AND IMMERSING OSD THERAPIES

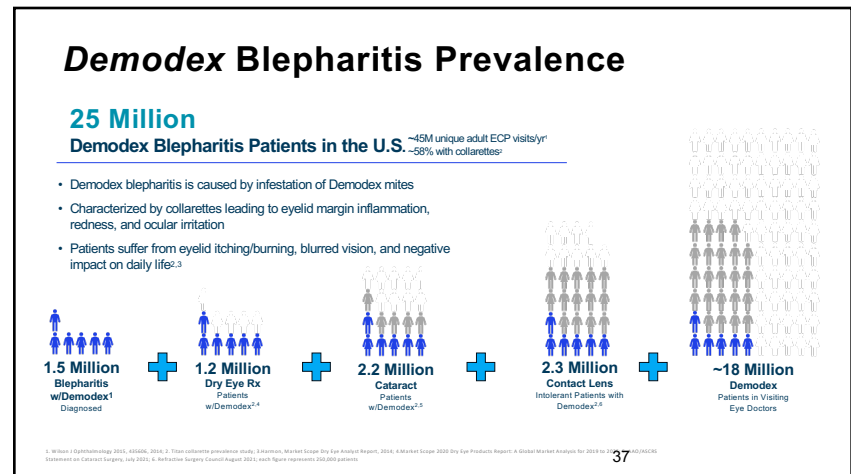
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# DEMODEX BLEPHARITIS

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36

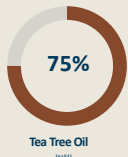


37




## Titan Study Also Confirmed TTO and Lid Wipes Are Ineffective at Treating DB

High percentage of collarettes observed in patient populations using tea tree oil and lid wipes



**75%**  
Tea Tree Oil  
(n=12)



**57%**  
Lid Wipes  
(n=22)

- Over the counter eye care treatments can also lead to ocular stinging/burning, driving discontinuation in many patients
- Tea tree oil toxicity may extend to human meibomian gland epithelial cells<sup>2</sup>
- There are currently no U.S. FDA approved therapeutics for Demodex blepharitis

39 1. The High Prevalence of Ocular Collarettes of Ocularity, November 2021. Ocularity. Current December 2021, Vol. 21, 154-160

39

## Manuka Honey

- Natural honey is well known for its anti-inflammatory and antimicrobial properties
- Theory is because it has low pH, high osmolality, hydrogen peroxide content, as well as non-peroxide constituents, including methylglyoxal (MGO)
- In recent years, New Zealand native Mānuka honey (*Leptospermum scoparium*) has received particular interest as a potential treatment for blepharitis
- Has higher concentration of methylglyoxal (MGO) than other honeys



40

40


## Study 2020

- Fifty-three participants with clinical signs of blepharitis
- The MHME eye cream (Manuka Health New Zealand) was applied to the closed eyelids of one eye (randomized) overnight for 3 months.
- Visual acuity, ocular surface characteristics, symptoms and tear film parameters were assessed at baseline, day 30, and day 90. Eyelid swab microbiology cultures were evaluated at baseline and day 90.
- Results
  - Topical overnight application of the MHME eye cream effected significant improvements in ocular surface symptomology, tear film stability and lipid layer thickness, and reduced lid margin staining, ocular Demodex and bacterial load.

41

41

# NEW LID WIPE WITH MANUKA



NeutraWipe ECO  
**Manuka Honey**

The TearRestore NeutraWipe ECO is formulated with premium 650MGO Manuka Honey, clinically proven to reduce bacteria and restore healthy eyelids. Only three natural ingredients.

42

42

## Okra Extract

- How Okra works?
  - Okra has been reported to exert anti-oxidative and anti-inflammatory effects by suppressing the Akt-mediated NF- $\kappa$ B pathway
  - Akt-mediated NF- $\kappa$ B pathway has been demonstrated to serve an important role in dry eye and blepharitis
  - Due to the curative and medicinal effects of okra, it could be speculated that okra may confer therapeutic effects in patients with blepharitis and dry eye.



43

## OKRA EXTRACT

EXPERIMENTAL AND THERAPEUTIC MEDICINE 23 (38), 2021

### Anti-demodectic effects of okra eyelid patch in Demodex blepharitis compared with tea tree oil

WENTING LIU<sup>1,2</sup> and LAN GONG<sup>1,2</sup>

<sup>1</sup>Department of Ophthalmology and Vision Science, The Eye, Ear, Nose and Throat Hospital of Fudan University; <sup>2</sup>Shanghai Key Laboratory of Myopia, Laboratory of Myopia, Chinese Academy of Medical Sciences, Fudan University, Shanghai 200031, P.R. China

Received January 7, 2020; Accepted January 18, 2021  
DOI: 10.3969/j.issn.2021.07969

**Abstract:** Demodex infection gradually develops to Demodex blepharitis, which is characterized as chronic inflammation of the eyelid and meibomian gland (MG) and ultimately leads to MG dysfunction. In the present prospective study, the anti-demodectic effects of an okra eyelid patch in patients (Demodex blepharitis) were investigated. A total of 12 patients with Demodex blepharitis with ocular discomfort were enrolled in the TBCU medium quality and MGQE between the two groups (P0105). TTD group has a significantly improve rate of complete Demodex eradication in the treatment group (11/12, 91.67%) was slightly lower than that in the control group (12/25, 48%), but there was no significant difference between the two groups ( $P=0.277$ , Post-Hoc). Regarding the other ocular parameters, no significant difference was observed in the TBCU medium quality and MGQE between the two groups (P0105). TTD group has a significantly improve

44

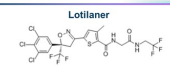
## Results

- The average survival time in the okra group was  $115.25 \pm 11.87$  min, which was significantly lower compared with the average ST of  $378.75 \pm 37.94$  min in the blank group ( $P < 0.01$ ).
- After 3 months of okra eyelid patch treatment
  - Demodex count was significantly reduced from  $10.15 \pm 4.53$  to  $1.30 \pm 1.41$  ( $P < 0.01$ )
  - OSDI score of the patients was reduced by  $16.84 \pm 10.17$  ( $P < 0.01$ ).
- There was no significant difference in the Demodex count ( $P = 0.716$ ) and OSDI ( $P = 0.873$ ) between the treatment and control groups.
- Okra eyelid patch treatment is able to significantly eradicate ocular Demodex as well as markedly alleviate ocular symptoms.
- Due to causing less irritation than TTD, the okra eyelid patch may be more suitable for sensitive patients with Demodex blepharitis.


45

## Tarsus- Lotilaner 0.25% ophthalmic solution- FDA approved and available 2023

**Lotilaner**



- Potent non-competitive antagonist of insect and arachnid GABA<sub>A</sub>-Cl channels
- Highly lipophilic molecule

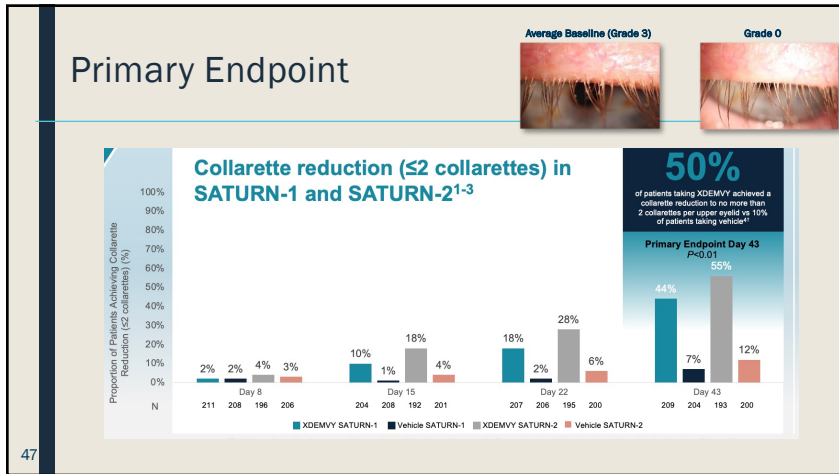


The lipophilic nature of the drop enables it to flow into the lash follicle. No scrubbing/rubbing was permitted in clinical trials.

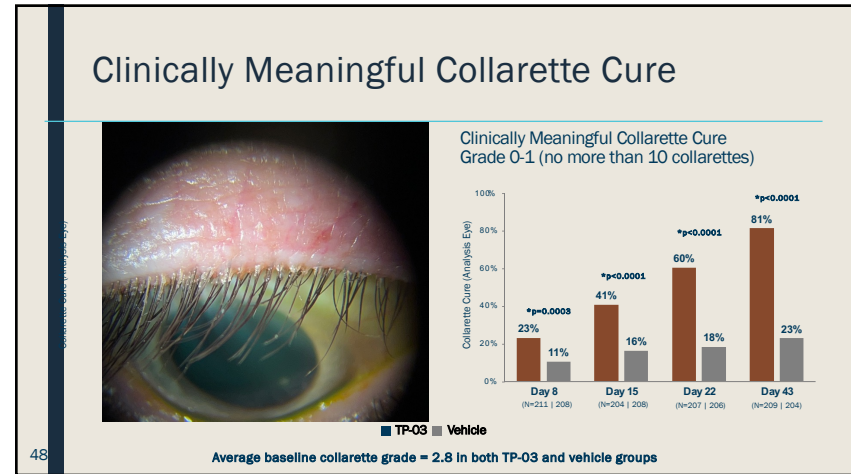
<b>Product Form</b>	Multi-dose eye drop solution bottle, preserved
<b>Targeted Use</b>	Treatment of Demodex blepharitis
<b>MOA</b>	Paralysis and death of Demodex mites
<b>Diagnosis</b>	Collarettes identified in standard eye examination
<b>Dosing</b>	BID* for 6 weeks
<b>Efficacy Goal</b>	1 <sup>o</sup> collarette cure rate, 2 <sup>o</sup> mite eradication, 2 <sup>o</sup> redness + collarette cure rate
<b>Safety Goal</b>	Well-tolerated safety profile

46





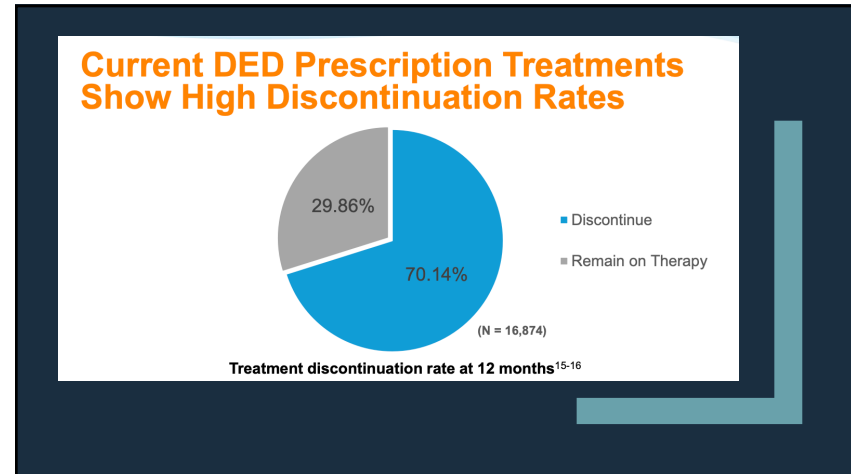
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48

KERATOCONJUNCTIVIS  
SICCA  
AQUEOUS DEFICIENT DED

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50

### Current FDA-Approved Cyclosporine Formulations





U.S. Launch Date	2023	2002	2019
Active Ingredient	Cyclosporine 0.1% Inactive: Perfluorobutylpentane	Cyclosporine .05%	Cyclosporine .09%
Indication	Signs and Symptoms of Dry Eye Disease	Increased Tear Production	Increased Tear Production
Primary Endpoint	29 Days	6 months	84 Days
pH	None	6.5-8.0	6.5-7.2
Osmolarity	None	230-320 mOsmol/kg	160-190 mOsmol/kg
Tolerability Instillation Site Pain	8% (99.8% no or mild)	17%	22%

[https://www.fda.gov/oc/oc/default.aspx?source=/int/2023/20230323/230323arpedkposter.pdf?form=4&id=4&\\_id=0](https://www.fda.gov/oc/oc/default.aspx?source=/int/2023/20230323/230323arpedkposter.pdf?form=4&id=4&_id=0)

51

### Harrow: Its NOT just another cyclosporine!

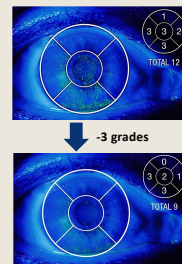
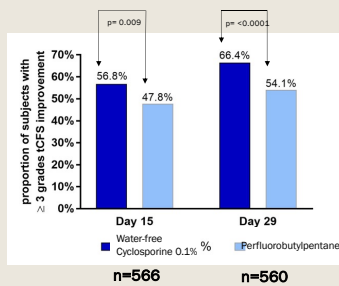
- Cyclosporine 0.1% dissolved in a semi-fluorinated alkane (Perfluorobutylpentane) solution for treatment of signs and symptoms of dry eye disease dosed BID
- free of oils, surfactants, or preservatives with superior spreading properties
- no pH, no osmolarity

<b>Perfluorobutylpentane (SFA) vehicle</b>	
<b>Spreading and API penetration</b>	 <b>~22x</b> Higher concentration that other cyclosporine emulsions approved for DED <sup>1</sup>
<b>Surface residence time</b>	 <b>up to 8 hours</b> On the ocular surface <sup>2,3</sup>
<b>Comfort</b>	 <b>99.8%</b> of patients experienced either no or mild instillation site pain <sup>4</sup>

Note: <sup>1</sup> development name of the water-free ophthalmic cyclosporin solution, 0.1 % in perfluorobutylpentane  
<sup>2</sup> ARVO 2018, Poster: Klotzer S, et al.; <sup>3</sup> Agawal P, et al., Int J Pharm. 2018 Mar; <sup>4</sup> Sheppard JD, et al. Cornea. 2021 Oct; <sup>5</sup> Akpek EK, et al. JAMA Ophthalmol. 2023 Apr

52

### Majority of Patients Benefit from Cyclosporine 0.1% Within 2 Weeks



Note: TCFs: Total Corneal Fluorescein Staining, scale ranges from 0 - 3 (highest), per every of 5 regions  
 TCFs: Change from baseline, N=0: National Eye Institute

<sup>1</sup> ARVO 2018, Poster: Klotzer S, et al.; <sup>2</sup> Agawal P, et al., Int J Pharm. 2018 Mar; <sup>3</sup> Sheppard JD, et al. Cornea. 2021 Oct; <sup>4</sup> Akpek EK, et al. JAMA Ophthalmol. 2023 Apr

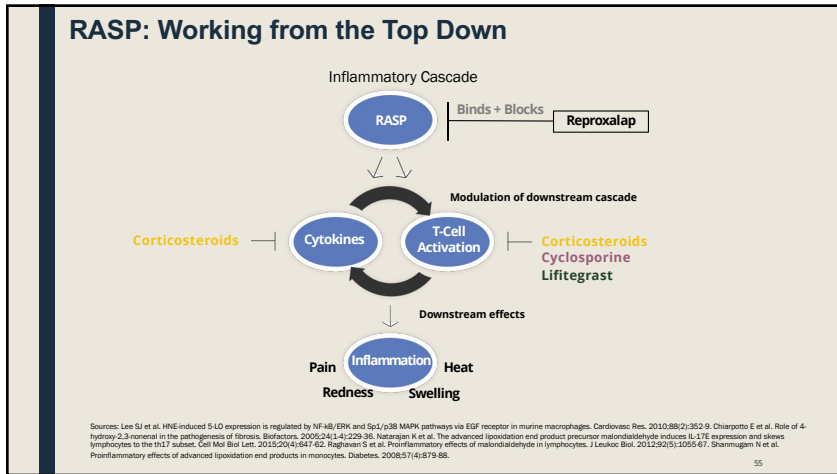
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### RASP (Reactive Aldehyde Species)

- RASP are:**
- Pre-cytokine systems-based mediators of inflammation that covalently bind to cellular biomolecules on receptors and kinases
  - The most well-characterized RASP, malondialdehyde (MDA), has been associated with inflammatory ocular diseases, including autoimmune diseases, allergic conjunctivitis, and dry eye disease

Sources: Esterbauer H et al. Chemistry and biochemistry of 4-hydroxynonenal, malondialdehyde and related aldehydes. Free Radic Biol Med. 1991;11(1):1-61.  
 reactive lipid species: new concepts and molecular mechanisms. Biochem J. 2012;442(3):453-64. Clark D et al. A Randomized, Double-Masked Phase 2a Trial to Evaluate Activity and Safety of Topical Ocular Rescestatap, a Novel RASP Inhibitor, in Dry Eye Disease. J Ocul Pharmacol Ther. 2021;37:189-99. Clark D et al. Early Onset of Ocular Inflammation and Broad Activity of Rescestatap in a Randomized, Double-Masked, Vehicle-Controlled Phase 2b Trial in Dry Eye Disease. Am J Ophthalmol. 2021;226:22-31.

54



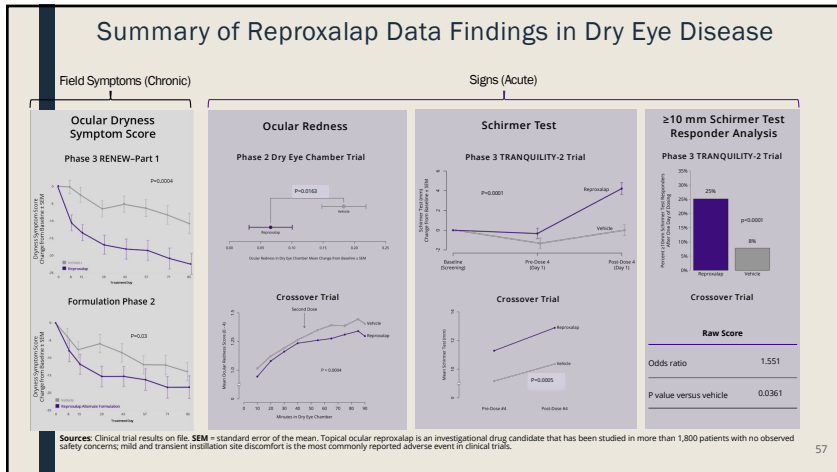
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### Abbvie-Aldeyra- Reproxalap 0.25% Topical Ocular

- ...is a first-in-class **RASP (Reactive Aldehyde Species)** inhibitor currently being investigated in clinical trials for dry eye disease and allergic conjunctivitis
- ...represents a new systems-based pharmacological target of inflammation
- ...has been shown to out-compete biological targets of inflammation in several animal models
- Currently:
  - Phase 3 dry eye chamber clinical trial of topical ocular 0.25% reproxalap
  - The trial is designed to enable potential resubmission of a dry eye disease New Drug Application (NDA) in the second half of 2024.

Sources: Clark D et al. A Randomized Double-Masked Phase 2a Trial to Evaluate Activity and Safety of Topical Ocular Reproxalap, a Novel RASP Inhibitor, in Dry Eye Disease. J Ocul Pharmacol Ther. 2022;37:1339-93. Clark D et al. Early Onset and Broad Activity of Reproxalap in a Randomized, Double-Masked, Vehicle-Controlled Phase 2a Trial in Dry Eye Disease. Am J Ophthalmol. 2022;226:22-31.

56



57

### Aldeyra Therapeutics Receives Complete Response Letter from the U.S. Food and Drug Administration for the Reproxalap New Drug Application for the Treatment of Dry Eye Disease

November 27, 2023

[PDF Version](#)

- Additional Trial Required to Demonstrate Positive Effect on the Treatment of Ocular Symptoms in Dry Eye Disease
- Special Protocol Assessment Submitted on November 16, 2023 for Dry Eye Disease Chamber Crossover Clinical Trial
- Proposed Trial Top-Line Results and Potential NDA Resubmission Anticipated in First Half of 2024
- Cash Runway Extended into Late 2025

LExINGTON, Mass.-(BUSINESS WIRE)-Nov. 27, 2023- Aldeyra Therapeutics, Inc. (Nasdaq: ALDX) (Aldeyra), a biotechnology company devoted to discovering and developing innovative therapies designed to treat immune-mediated diseases, today announced receipt of a Complete Response Letter from the U.S. Food and Drug Administration (FDA) for the New Drug Application (NDA) of reproxalap, an investigational drug candidate, for the treatment of dry eye disease. Although no safety or manufacturing issues with reproxalap were identified, the FDA stated in the letter that the NDA did not demonstrate "efficacy in treating ocular symptoms associated with dry eyes" and that "at least one additional adequate and well-controlled study to demonstrate a positive effect on the treatment of ocular symptoms of dry eye" should be conducted.

58

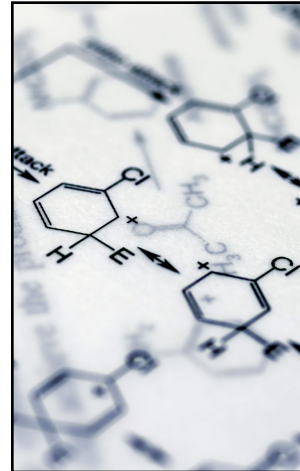
## Invirs- INV-102



- Treatment of ocular conditions associated with DNA damage
  - Occurs daily
  - Rate of damage can exceed our cells ability to completely repair
  - Leads to persistent cellular dysfunction and poor healing
- High level of DNA damage corresponds to inflammation and dysfunction

59

## INV-102



- INV-102 is based on modified naturally occurring compound p53 protein that activates the master regulator of the DNA damage response
- In preclinical studies, INV-102 showed potent healing activity with an excellent safety profile across a wide-variety of severe conditions associated with DNA damage.
- Currently in Phase 2
  - Also being looked at for Fuchs and adenovirus acute infectious keratoconjunctivitis

60

## Alcon- AR-15512



- NDA has been FDA submitted?
  - Completed Both Phase 3 clinical Trials COMET-2 and COMET 3 Topical transient receptor potential melastatin 8 (TRPM8) agonist
- Transient receptor potential cation channel subfamily M (melastatin) member 8 (TRPM8), also known as the cold and menthol receptor 1 (CMR1), is a protein that in humans is encoded by the TRPM8 gene. first-in-class product candidate for the treatment of the signs and symptoms of dry eye disease
- Found on Corneal surface
- In both pivotal efficacy and safety studies (COMET-2 and COMET-3), the primary endpoint was achieved (p <0.0001)
  - At least a 10-mm increase in unanesthetized Schirmer's score

61

## Allysta Pharmaceuticals- ALY688

- ALY688 peptide
  - multi-modal mechanisms-of-action that include **broad anti-inflammatory activity**
  - **enhancement of corneal and conjunctival epithelial regeneration**
  - Sterile and preservative-free eye drop
- Reduces levels of pro-inflammatory cytokines and activated T cells on the ocular surface,
  - Reduction in corneal damage as well as improvements in tear volume/tear integrity.
  - Accelerates epithelial healing
- Currently Phase 2b/3 completed (OASIS-1), not released



62

## TearSolutions- Lacriprep

### Lacritin - DEFICIENT in ALL Dry Eye Disease

Thesis: Lacritin is to DED as Insulin is to Type I Diabetes...if they are deficient, you have the disease

Unbiased biochemical screen of 1800+ proteins in tear proteome

~30 are deficient in Dry Eye

**Lacritin** → **Lacriprep™**

Lacriprep addresses ALL major unmet market needs:

- MOA is well characterized; repairing and regenerating cells in the presence of inflammation
- Heals the ocular surface quickly (within 2 weeks) and has best-in-class safety & comfort profile
- Works in a majority of patients

ONLY 2 proteins are deficient in ALL forms of DED

➤

**LACRITIN**  
+ PRR4

PRR4 = Proline rich 4

63

## Lacriprep: Restoring ocular health...Naturally

Lacriprep addresses the cause of dry eye via a unique and potent mechanism of action

**TEAR FILM HOMEOSTASIS**

- Stabilizes tear lipid layer
- Replenishes aqueous layer by stimulating basal tearing
- Upregulates mucin on corneal epithelial cells

**NEURONAL CELL REPAIR & REGROWTH**

- Promotes corneal neuronal regrowth
- Restores sensory control of physiologic tear production

**EPITHELIAL CELL REPAIR & REGROWTH**

- Immuno-protective against inflammatory cytokines and bacterial infections
- Promotes corneal & conjunctival cell growth, survival and regeneration

INDEPENDENTLY VALIDATED

>20 years of research and characterization

---

>50 publications

---

>100 global collaborations/independent labs

65

## Statistical Improvement in Signs & Symptoms...Rapidly

PRE-CLINICAL:

3 weeks of treatment with Lacriprep

Control (vehicle)

Lacriprep

Restoring HOMEOSTASIS in Mouse Model of Sjögren's Syndrome

**SIGNS**

**SYMPTOMS**

ICFs: Inferior Corneal Fluorescein Staining  
 BIS: Burning/Stinging

Pre-clinical and FIRST-IN-HUMAN TRIAL experience: primary Sjögren's Syndrome (pSS)

66

## Surface Ophthalmics- SURF-100 and SURF-200

- SURF-100
  - Klarity + Betamethasone (BSP) + mycophenolate sodium (MPA)
  - For treatment of chronic dry eye disease
- SURF-200
  - low dose betamethasone+ Klarity
  - For treatment of acute dry eye flares
- Mycophenolate
  - Inhibits both T-Cell and B-Cell lymphocytes
  - Stimulates mucin production on the eye,
- Klarity
  - Vehicle reduces cellular oxidative stress and edema
  - Enhance viscosity, surface lubrication and contact time
- Betamethasone
  - Corticosteroid, low incidence IOP spike

67

# MEIBOMIAN GLAND DYSFUNCTION AND EVAPORATIVE DED

72

# WHAT NEEDS EXIST IN EYELID THERAPY FOR 2024 AND BEYOND?

73

## Treatment Strategies in 2024

- Lubricants**
  - Tears (emulsions, solutions), gels, ointments, sustained-release formulation
  - Ingredients
    - Hyaluronic acid, Carboxymethylcellulose (CMC), Lipid-based
- Nutrition**
  - Oral essential fatty acids
  - Vitamin A ointment
  - Lutein, zeaxanthin, curcuminoids, vitamin D

74

## Treatment Strategies in 2024

- Anti-inflammatory agents**
  - Topical corticosteroids
  - Topical cyclosporine A emulsion (CSA) 0.05%, 0.09%, 0.10%
  - Topical lifitegrast, 5%
  - Oral tetracyclines or macrolides
  - Topical azithromycin
- Amniotic membrane products: anti-inflammatory and promote wound healing**
- Neurostimulation**
  - Intranasal neurostimulation
  - Extranasal neurostimulation

75



**Treatment Strategies in 2024: Lid Margin Disease Management**

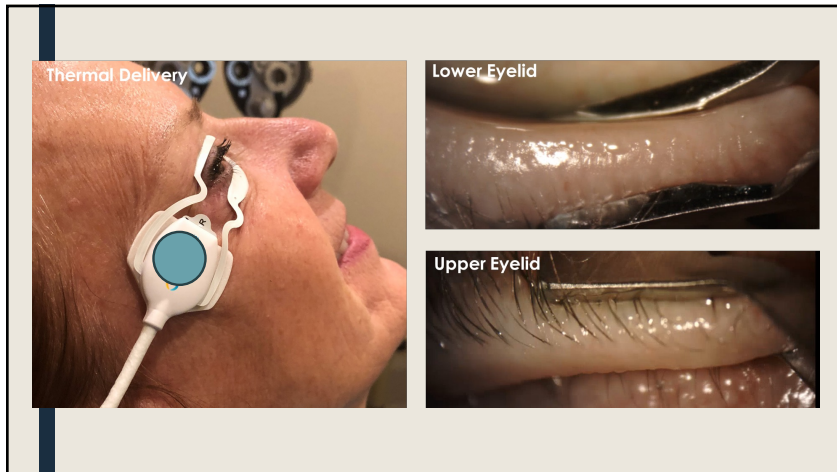
- Warm compress and lid massage
  - Difficult to maintain adequate temperature; poor compliance
- Lid scrubs
  - Commercial soap scrubs
  - Tea tree oil in Demodex mite infestation<sup>1</sup>
- In-office lid margin cleansing / meibomian gland procedures
  - Manual cleansing or otorized/mechanical devices<sup>2</sup>
  - Thermal and thermal pulsation<sup>3</sup>
  - Intraductal probing<sup>4</sup>
  - Intense pulsed light<sup>5</sup>
  - Low level light therapy
- Rx Therapy
  - Lotilaner
  - Azithromycin/diclofenac

76



Nocturnal Lagophthalmos: SleepTite, SleepRite

77



Thermal Delivery

Lower Eyelid

Upper Eyelid

78

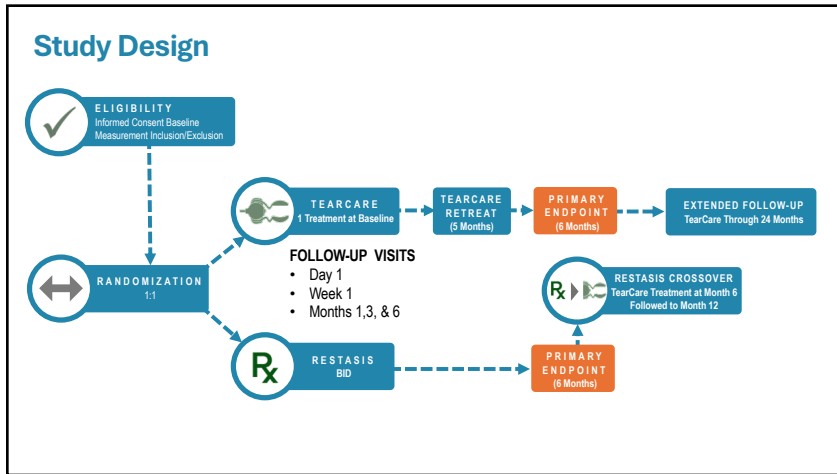
### Sahara RCT Background

The aim of this study was to compare the effectiveness of branded Restasis twice-daily versus TearCare technology (2 procedures, baseline and month 5) at 6 months after initiation of treatment on improvement of signs and symptoms of DED.

- Restasis (cyclosporine .05%, CsA) Rx has been broadly utilized in the treatment of dry eye for the past 15 years, without regard for etiology
- Compliance and adherence challenges with all pharmaceutical and at home treatments hinder their overall effectiveness
- TearCare is an office-based ECP administered therapeutic thermal eyelid technology for the treatment of evaporative DED due to MGD
- Providers, Payors and Patients are interested to understand effectiveness of targeted interventional treatments compared to legacy pharmaceutical agents

79





80

### Conclusions

- TearCare treatment is superior to branded Restasis in improving TBUT and multiple measures of meibomian gland function
  - Both treatments produce significant improvements in patient reported symptoms
- TearCare administration and therapeutic effect in SAHARA RCT is consistent with "real-world"
  - Compliance to branded Restasis in SAHARA RCT was atypical of "real-world" patient behavior (on average 5.7 bottles over 6 months)
- Results of SAHARA RCT may warrant earlier intervention with TearCare
  - Equal patient access to TearCare may be justified

81

### Intense Pulsed Light

- The specific mechanism of action is not well understood but is believed to be partially due to the thermal heating of the meibum coupled with the therapeutic effects of treating superficial telangiectasia

82

### PEER-REVIEWED LITERATURE ON IPL FOR MGD/DED

Slide Courtesy of Selina McGee, OD, FAAO

Authors	Year	P/R	Publication	N	Key Findings
Seo KY et al	2018	P	Cont Lens Anterior Eye. 41(5):430-435.	17	OSDI, TBUT, NIBUT, staining, LM irregularity, meibum quality, meibomian expressibility
Anta R et al	2018	P	Cornea. 37(12):1566-1571.	31	SPEED, TBUT, NIBUT, interferometric pattern, meibum grade, lid margin abnormality scores, CFS
Yue Y et al.	2018	P	Curr Eye-Res. 43(3):308-313.	35	OSDI, TBUT, MGE, MG morphology (confocal)
Riang B et al.	2017	P	Zhonghua Yan Ke Za Zhi. 53(9):675-681.	44	MWRS, SPEED, TBUT, staining, meibography
Liu R et al.	2017	P	Am J Ophthalmol. 153:81-90.	44	IL-17A, IL-6, PGE2, MGVCS (clear secretions)
Dell SJ	2017	P	Clin Ophthalmol. 11:1167-1173.	40	TBUT, SPEED, osmolarity, staining, MG score
Albretz JM et al	2017	P	Clin Exp Optom. 101(1):23-33.	26	OSDI, Ocular Comfort Index, AFI use, TBUT, staining
Grata PK et al.	2016	R	Can J Ophthalmol. 51(4):249-253.	100	Lid margins, MG flow, meibum quality, TBUT, OSO, evisci
Vegunta S et al.	2016	R	Cornea. 35(3):318-322.	35	SPEED2, MGE (liquid secretions)
Jiang X et al.	2016	P	J Ophthalmol. 2016:1910694.	40	TBUT, TMK, staining, lid margin, MGA, meibography
Toyos R et al.	2016	P	J Clin Exp Ophthalmol. 7(6):619.	16	Tear film osmolarity

83

## PEER-REVIEWED LITERATURE ON IPL FOR MGD/DED

Slide Courtesy of Selina McGee, OD, FAAO



Authors	Year	P/R	Publication	N	Key Findings
Craig JP et al.	2015	P	Invest Ophthalmol Vis Sci. 56(3):1160-1165 2015	28	Lipid layer grade, NBUU, tear evap, rate, TMH, MG, SPEED
Vera Gri et al.	2015	R	Curr Opin Ophthalmol. 26(4):314-318	37	TBUU, lid margins, eyelids, MG oil flow, meibum quality, OSDI
Tayss R et al.	2015	R	Photomed Laser Surg. 33(1):41-46	78	TBUU, patient satisfaction, meibum quality, lid margin
Viegonza S et al.	2014	R	ARVO, published in Invest Ophthalmol Vis Sci. 55:2018	43	SPEED2, MGE
Shen L et al.	2015	R	ARVO PH 4441/PBN A0067	9	SPEED2, OSDI, MGE, Schirmer test, staining, TBUU, lipid tear film analysis, TMH, meibography
Kim et al.	2015	R	ARVO PH 6193/PBN C0264	63	OSDI
Craig et al.	2015	P	ARVO PH 6193/PBN C0265	28	Lipid layer grade, NBUU
Shen JF	2014	R	ARVO, published in Invest Ophthalmol Vis Sci. 55:2017	5	SPEED2, OSDI, MGE, Schirmer test, staining, TBUU, lipid tear film analysis, TMH, meibography
Gupta	2014	R	ASGRS	37	Lid margin edema & vascularity, facial telangiectasia, meibum quality, OSDI, TBUU, oil flow score
Tayss R	2013	R	ARVO, published in Invest Ophthalmol Vis Sci. 54:966	91	TBUU, self-satisfaction, physician-judged improvement

84

## Radiofrequency

FDA cleared (K130689) and indicated for use in dermatological and general surgical procedures for electrocoagulation and hemostasis; creation of lesions in nerve tissue.

Associated with improving skin laxity and wrinkle reduction using a **Radio Frequency Thermistor Heating Device**

Slide Courtesy of Drs. Christensen and Hauser

85

## RF for MGD??

- Chelnis J, Garcia CN, Hamza H. Multi-Frequency RF Combined with Intense Pulsed Light Improves Signs and Symptoms of Dry Eye Disease Due to Meibomian Gland Dysfunction. Clin Ophthalmol. 2023 Oct 20;17:3089-3102.
  - Combination of multi-frequency RF and IPL+MGX improves signs and symptoms of MGD. In comparison to a historical control, improvements were generally larger. A randomized controlled study comparing the combination of RF and IPL+MGX with IPL+MGX alone is required to further elaborate the relative contribution of RF.

86






## DRY EYE DISEASE MANAGEMENT VIA TECHNOLOGICAL METHODS - A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

Dror Ben Ephraim Noyman<sup>1</sup> MD, Clara C. Chan<sup>2</sup> MD, Itamar Arbel<sup>3</sup> MD, Or Yosefi<sup>4</sup> MD, Michael Mimouni<sup>5</sup> MD, Margarita Safir<sup>5</sup> MD

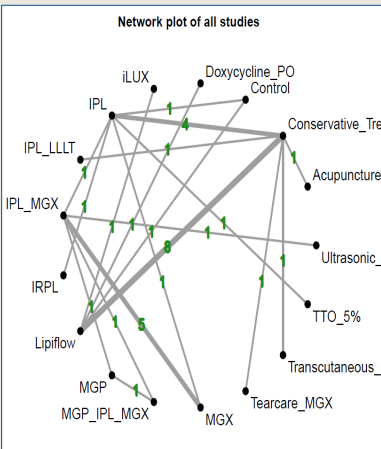
1-Ophthalmology Department, Rambam Health Care Campus, Ruth Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel.  
 2-Department of Ophthalmology and Vision Sciences, University of Toronto, Toronto, Ontario, Canada.  
 3- Ophthalmology Department, Meir Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel.  
 4- Department of Military Medicine, Faculty of Medicine, The Hebrew University of Jerusalem, Jerusalem, Israel.  
 5- Ophthalmology Department, Yitzhak Shamir Medical Center, Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

**WE HAVE NO FINANCIAL INTEREST TO DISCLOSE**

87

### METHODS

- A systematic search of the electronic databases of PubMed, Scopus, and Embase, for all peer-reviewed published randomized control trials which included **clinical outcomes of technological methods for DED management**.
- Individual study data were extracted and Standardized Mean Differences (SMDs) were evaluated in a network meta-analysis.
- Data were extracted included **total symptom scores, meibomian gland secretion score, corneal fluorescein staining (CFS) score and tear breakup time (TBUT)**.
- Treatment effectiveness was evaluated compared to placebo using forest plots and league tables examining combined direct and indirect comparisons.



The network plot shows various treatments as nodes connected by lines representing indirect comparisons. Nodes include iLUX, Doxycycline\_PO, Control, IPL, IPL\_LLLT, IPL\_MGX, IRPL, Lipiflow, MGP, MGP\_IPL\_MGX, MGX, Tearcare\_MGX, Conservative\_Tre, Acupuncture, Ultrasonic\_, TTO\_5%, and Transcutaneous\_.

88

### Results 3 Months

#### TBUT Top 6 Methods

1. TearCare+MGX
2. IPL+MGP+MGX
3. IPL
4. MGP
5. IPL+MGX
6. IRPL

#### Corneal Fluorescein Stain Top 6 Methods

1. TearCare+MGX
2. Transcutaneous electrical stimulation
3. TTO 5%
4. IPL
5. IRPL
6. Lipiflow

89

### Results 3 Months

#### MG Secretion Grading

1. TearCare +MGX
2. IPL+ MGX+ MGP
3. MGP
4. Ultrasonic atomization
5. IPL+ MGX
6. IPL

#### Total Symptoms

1. IPL+ MGX+ MGP
2. IPL+ MGX
3. MGP
4. Tearcare
5. Ultrasonic atomization
6. IPL

90

### DISCUSSION

- In this study, **all examined DED parameters** (TBUT, CFS, meibomian gland secretion and total symptoms) **showed significant improvement with TearCare+MGX and IPL-based treatments at 1 and 3 months**.
- IRPL, Lipiflow, MGP and transcutaneous electronic stimulation showed improvement of some but not all DED parameters.
- The single study assessing TearCare which was included for analysis had a potential conflict of interests- results should be interpreted with caution.

91

## B & L- Perfluorohexyloctane

- 100% perfluorohexyloctane
  - For treatment of signs and symptoms of dry eye disease in association with MGD
- Semi-fluorinated alkane:
  - NO vehicle
  - water free
  - preservative free
    - pH free?!
  - 20ul drop size
  - enhanced surface adhesion



92

- FDA Approved
- Primary endpoints
  - At Week 8, change from baseline in tCFS was statistically significantly greater in the NOV03 arm compared to the control saline group (least-squares [LS] mean treatment difference, -0.97; (95% confidence interval [CI]: -1.40 vs. -0.55) (P<0.001)).
  - At Week 8, eye dryness VAS score was statistically significantly improved in the NOV03 arm compared to control group (LS mean treatment difference, -7.6; (95% CI: -11.8 vs. -3.4) (P<0.001).

93

## Azura Ophthalmics- AZR-MD-001

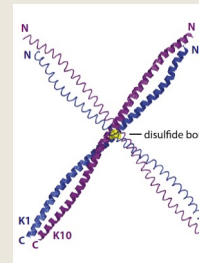
- Formula harnesses the power of selenium sulfide (SeS2) in an ophthalmic ointment preparation applied directly to the meibomian glands in the lower eyelid
- Multi-modal mechanism of action that treats the pathophysiology of meibomian gland dysfunction (MGD) along with the resulting ocular surface symptoms



94

## Targeting Aberrant Keratin

Unblocking Glands and Disruption of Keratin Plaques Within Meibum Matrix



Keratins are helical structural proteins that make up hair, nails, and skin



Extremely resilient and insoluble




Disulfide bond cross linking hardens structures to give strength and durability

95

## What are Keratolytics?

Agents that soften and shed the skin epithelium or horny outer layer of skin through the process of breaking down keratin



Similar to the lid margin, secretory gland hyperkeratinization plays an important role in various skin disorders

Comedonal lesions in acne are inspissated hair follicles, filled with corneocytes, sebum, and other debris

Keratolytic treatments are used to shed dead corneocytes, loosen the sebum plug, and prevent the formation of inflammatory papules and pustules

96

## AZR-MD-001 is a novel, potent keratolytic with a unique MOA targeting the root cause of MGD

**A first-in-class, triple MOA for the treatment of MGD**

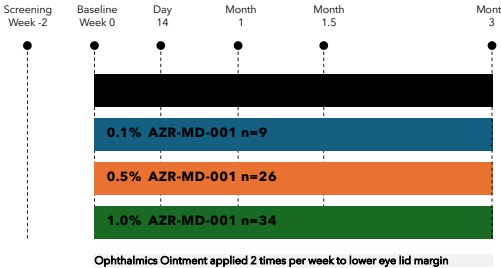
- Keratostatic** – decreases hyperkeratinization of meibomian glands  
Slows down the rate of keratinocyte proliferation and keratin production slowing meibomian gland plug formation and obstruction
- Keratolytic** – loosens meibomian gland blockages  
Softens keratin aggregates by breaking down disulfide (S-S) bonds, opening obstructions, improving meibum quality and flow through the meibomian glands
- Lipogenesis** – increases meibomian gland secretion to promote healthy gland function  
Stimulates lipogenesis to increase the quantity of lipids produced by the meibomian glands

Non - Confidential 97

97

### AZR-MD-001 Phase 2 program—Study design and overview

- Multicentre, randomized, double masked vehicle controlled clinical trial to evaluate safety and efficacy of signs and symptoms of meibomian gland dysfunction



**Primary Sign Endpoints**

- Change from baseline to month 3 in MGS
- Change from baseline to month 3 in MGYSL
- Either can serve for approval

**Primary Symptom Endpoints**

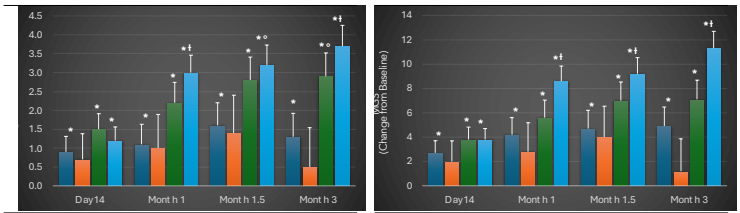
- Change from baseline to month 3 in total OSDI
- Change from baseline to month 3 in Eye Dryness VAS

Ophthalmic Ointment applied 2 times per week to lower eye lid margin

98

### Statistically significant improvement in signs

- Meibomian Gland Yielding Liquid Secretion (MGYLS) and Meibomian Gland Score (MGS) – change from baseline



**Number of Open Glands**  
\*Statistically Significant Difference from Baseline (P<0.05)

**Quality of Meibum**  
\*Statistically Significant Difference from Baseline (p<0.05)

\* significantly different from control (p < 0.05) | \* significantly different from control (p < 0.10) | \* significantly different from baseline (p < 0.05)

99

## Robust, Consistent Clinical Effect across Multiple Clinically & Commercially Relevant Endpoints

- AZR-MD-001 Phase 2b 3-month clinical trial results


<b>Strong Trial Efficacy</b>	<ul style="list-style-type: none"> <li><b>U.S. Regulatory requirements achieved</b></li> <li>Co-Primary Endpoints met statistical significance and clinically meaningful benefit for 0.5% over vehicle<sup>1</sup></li> <li><b>First Investigational drug</b> to achieve a Sign (MGYLS) and Symptom (OSDI<sup>®</sup>) Outcome for MGD</li> <li>Safe and well-tolerated</li> </ul>
<b>Restored Gland Function</b>	<ul style="list-style-type: none"> <li><b>45.7%</b> of patients had their glands opened to a normal level<sup>2</sup></li> <li><b>68.7%</b> of patients had their meibum quality return to normal levels<sup>3</sup></li> </ul>
<b>Improved Patient Symptoms</b>	<ul style="list-style-type: none"> <li><b>46.9%</b> of patients became asymptomatic as measured by Total OSDI<sup>®</sup> responder rate</li> <li>Improved tear stability</li> <li><b>Significantly improved patient symptoms</b> across patient-reported outcome measures (SPEED and average VAS)</li> </ul>

<sup>1</sup> In a single study in ITT population (all randomized patients)  
<sup>2</sup> MGYLS responder rate, p<0.0005 compared to vehicle at month 3, improvement from baseline of 4.2 glands (p<0.0001)  
<sup>3</sup> MGD responder rate, p<0.0005 compared to vehicle at month 3, improvement from baseline of 33.3 (p<0.0001)

Non - Confidential 100

100

## Cloudbreak Therapeutic CBT-008




- Cyclodextrine**
  - Methyl beta cyclodextrin*
  - Applied topically in repeat dosing as eye drops, CBT-008 will dissolve potential cholesterol crystals deposited at the orifice of meibomian glands to improve meibum quality, which further enhances tear film stability.
- Finished and Results submitted Phase 2 FDA
  - 2.5% CTB-008 vs 10% vs placebo**
- Indication:** Meibomian Gland Dysfunction associated Dry Eye Disease (MGD-DED)
- Objectives:** To evaluate the safety and effect of CBT-008 ophthalmic solution dosed in both eyes topically TID for 1 month in patients with MGD-DED. To evaluate the pharmacokinetics of CBT-008 ophthalmic solution dosed once in one eye in patients with MGD-DED or healthy volunteers.

101

## EYEDetec- ELM (Eyelid Lipid Mobilizer)

- Awaiting FDA clearance
- Heat mask with vibrations
  - Specific frequency and amplitude inducing shear friction helping to liquify and evacuate meibum from meibomian glands*
- In office treatment and or at home use for patients



### HOW ELM WORKS

- 1
- 2
- 3

**HEAT**  
The gentle heat assists in lowering meibum viscosity to improve gland function, enhancing oil distribution to the tear film, thereby stabilizing the tear film and reducing evaporation of natural tears.

**VIBRATION**  
Carefully engineered vibrations transfer energy to the Meibomian Glands to induce shear-stretching, resulting in lipofaction and mobilization of the meibum.

**NEURO - MODULATION**  
Using targeted delivery of gentle mechanical stimulation, the lacrimal functional unit is activated and results in active lipid expression from the Meibomian Glands.

103

## Choose Where and How to Treat Your Patients

In Office




At Home



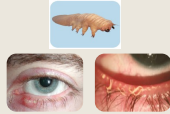


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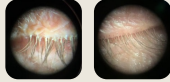
## NuLid Pro Information



**NuLids PRO** is a patented, automated device that operates by **oscillation** to professionally clean eyelids while massaging **meibomian glands**. A technician applies the single use tip onto the closed eyelids for **3 minutes**.



NuLids PRO uniquely enables **fast, effective, comfortable and affordable** preventative care which is **greatly needed for all** but previously unavailable to practices.



Representative before and after results of a **single NuLids PRO treatment**. Exceptional eyelid and eyelash cleaning including complete **elimination of collarettes**.

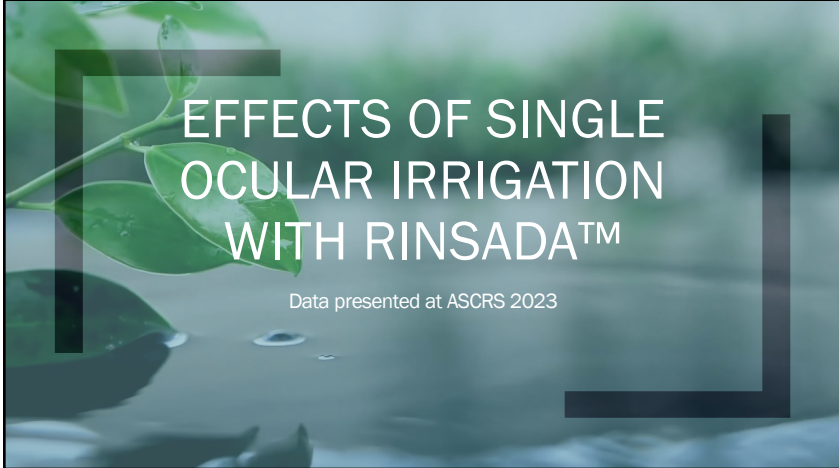
82% more glands yielding clear liquid secretions after a 30 day course of home therapy.

- In theory meibum is a non-Newtonian fluid which liquify quickly in the presence of increased shear forces
- Because NuLids applies sub-sonic vibration at a rate of 200Hz, it is ideal for transmitting vibrational energy through the closed eyelids through the MG's.

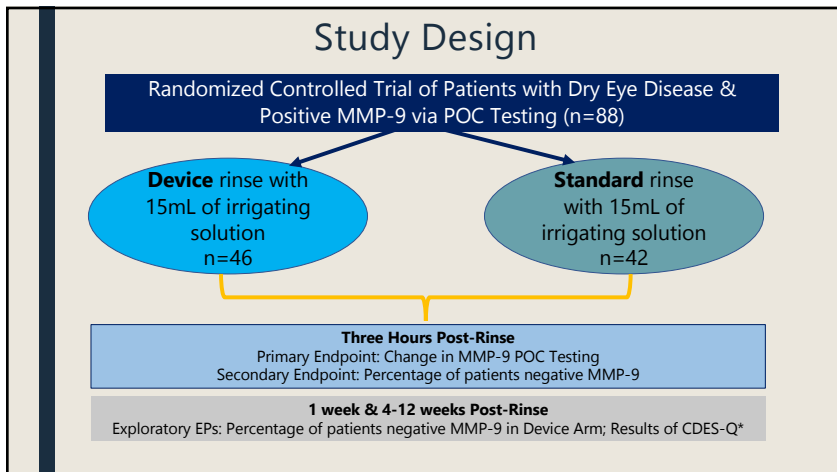
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## EFFECTS OF SINGLE OCULAR IRRIGATION WITH RINSADA™

Data presented at ASCRS 2023



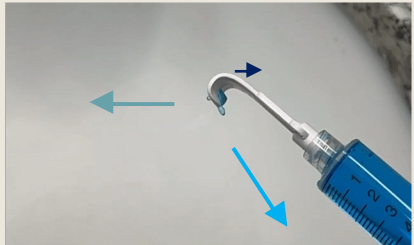
106



107

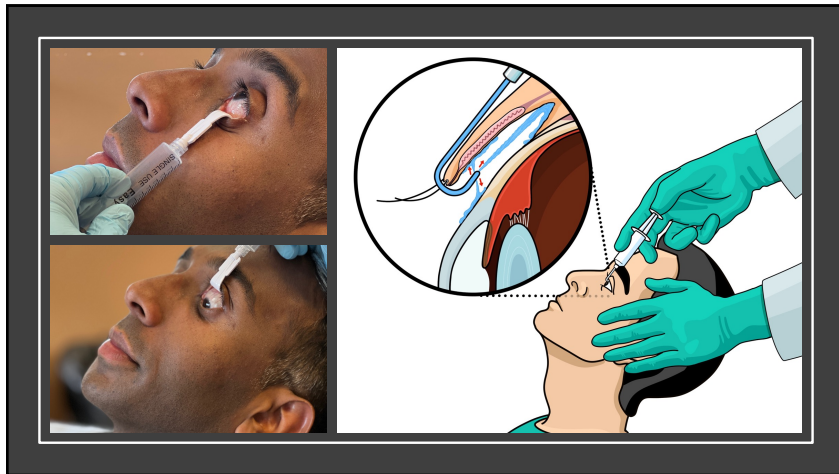
### Irrigating Eyelid Retractor

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

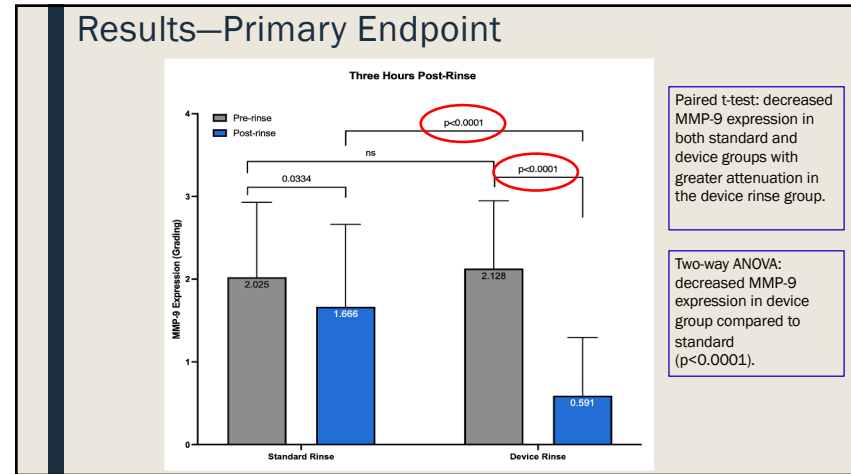


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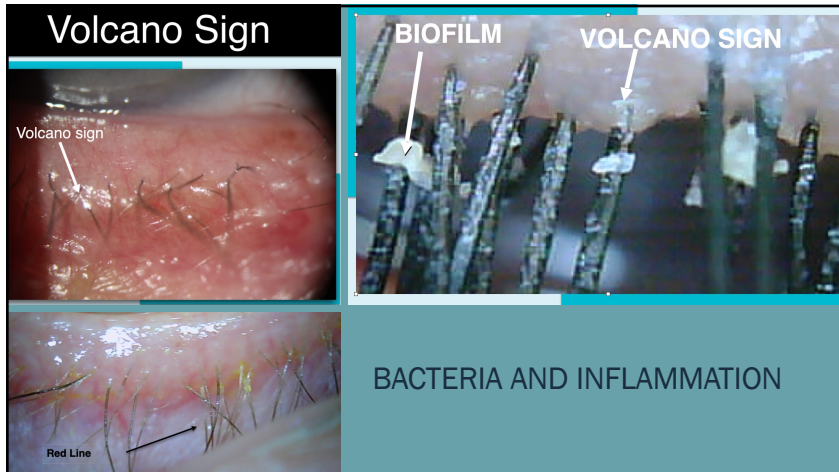




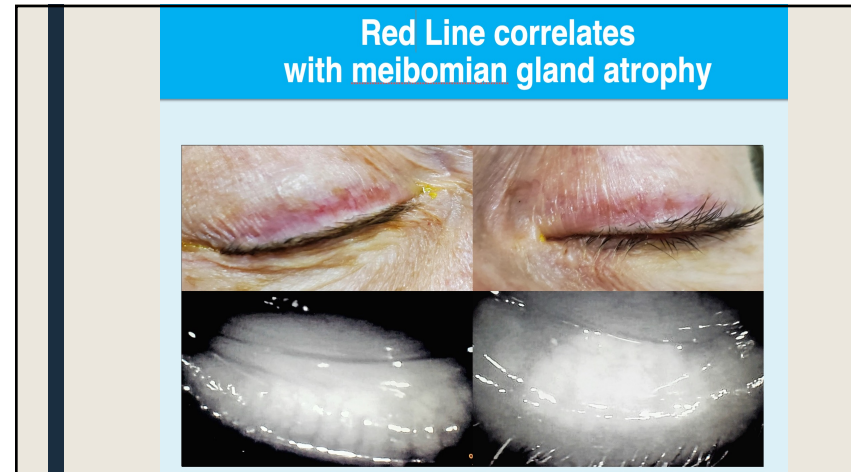
109



110



111



112

Staph will produce biofilm on any surface if moisture is present, allowing them to then produce toxins

Toxins trigger the immune system  
**inflammation**

Inflammation slowly and painlessly destroys the Meibomian glands

Dryness & redness Are the result from years of disease

113

# REVE

Recognize Exfoliate Vaporize Vibrate Express

How do we fix this?

**REVVE Protocol - 4 STEPS**

1. Recognize
2. Blepharize (MBE)
3. Vaporize
4. Mobilize

114

**Biofilm has an Achilles heel**

DC current  
Very low voltage & amperage.

The doctor uses an **OptiVize** to deliver a 6 volt current (equivalent of 2 AA batteries) through a specialty contact lens that is harmonically tuned to blow apart the bonds of a bacterial polysaccharide biofilm

Source: Montana State University Center for Biotech Engineering

115

Relieve the Crisco-obstructed glands

**Perform heat and manual vibratory expression**

Observe the expressed contents to guide future Tx intervals

**OptiVize Vaporizes Intraglandular Biofilm In Less than One Minute**

Biofilm first to exit during expression if vaporized

Granules of polysaccharide compare to melted Crisco

116

# REVVE

**Regular Exfoliation Vaporization Vibratory Expression**

1. Exfoliation 2. Vaporize 3. Heat/Vibrate Express  
Treatments are monthly until clear oil expressed, then slowly extend intervals

**Home Treatment**

1. Heat - Twice/day
2. Vaporize - Once a day
3. Massage/Scrub - Twice a day

Can be augmented by XEMO Pro at home biofilm vaporization device



117



Initial Exam      Treatment #5 OD REVVE

Initial Exam      Treatment #5 OS REVVE

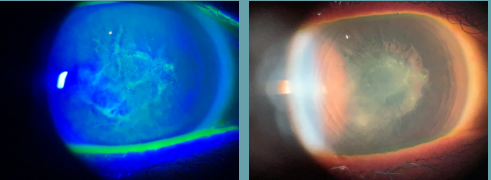
BlephEx

118

# NEUROTROPHIC KERATITIS



119



# NK FROM RCE

120

## Kala/Combango KPI-012-C-001

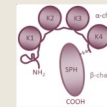
- Patients with Persistent Corneal Epithelial Defect (**PCED**)
- A persistent non-healing corneal defect or wound. KPI-012 is a novel, human bone-marrow derived human mesenchymal stem cell (hMSC) secretome composed of biologically active components,
  - *Have been shown in preclinical studies and early clinical trials to facilitate corneal healing.*
  - *investigate the efficacy and safety of KPI-012 eye drops 4 times daily for 8-weeks for healing of PCED.*
- Ongoing recruitment for CHASE study for Phase 2b study



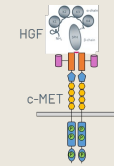
121

## Claris Bio- CSB-001

**CSB-001 is 5 amino acid deleted hepatocyte growth factor (HGF)**



- > A paracrine growth factor, secreted by mesenchymal cells
- > Heterodimeric molecule
  - 69 kD  $\alpha$ -chain [K1-K4 Kringle domains]
  - 34 kD  $\beta$ -chain
- > dHGF is an isoform of full length HGF
- > A single receptor - c-MET, present in cornea



Therapeutic benefits of dHGF are well suited to NK

- Epitheliotropic – Accelerates healing
  - Anti-fibrotic – Reduced scarring Improves vision outcomes
  - Neurotrophic – Promotes corneal nerve regeneration
  - Anti-inflammatory – Reduces nerve damage
- Currently recruiting for Phase 2 clinical study

Hepatocyte Growth Factor

Nat Rev Mol Cell Biol. 2003 Dec;4(12):915-25.

122

## Recordati- REC-0559 Udonitrectag

- REC-0559 is the drug udonitrectag
  - synthetic peptido-mimetic of human nerve growth factor (NGF)
- Phase 2 clinical study recruiting
  - *Looking at patients with stage 2 or stage 3 NK*

123

## Oyster Point

- Enriched Tear Film (ETF™) Gene Therapy has shown in preclinical models to deliver target genes to cells using adeno-associated virus (AAV) vectors, non-replicating DNA delivery vehicles that are not known to cause disease.
- In preclinical models, it has been shown that the protein-producing machinery in the lacrimal gland can be harnessed to secrete selected proteins, peptides, and enzymes in the body's own natural tear film to potentially treat diseases of the ocular surface.

124

## University of Alberta- Topical Insulin

- Used currently off label in UK
- Phase 2 recruiting
  - Last updated 10/5/2022
- Topical insulin drops for Tx of NK
  - Humulin R compounded 25IU/ml QID vs tarsorrhaphy
  - Primary time to re-epithelialize with <0.5mm epi defect
  - MOA poorly understood

125



126

# THANK YOU!

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Click to edit footnote information

127

SESSION 5  
 CECELIA KOETTING, OD, FAAO  
 COPE Event 128399  
 COPE Course # 95364-TD : Forrest  
 Gump's Dry Eye Clinic: Life is Like a  
 Box of Treatments



128