

A Deep Dive into Eyelid Health and Ocular Surface Wellness

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Financial Disclosures

Cory J. Lappin, OD, MS, FAAO

- Bausch + Lomb
- Dompé
- Lumenis
- Myze
- NuLids
- PRN Vision Group
- Tarsus Pharmaceuticals
- Vital Tears

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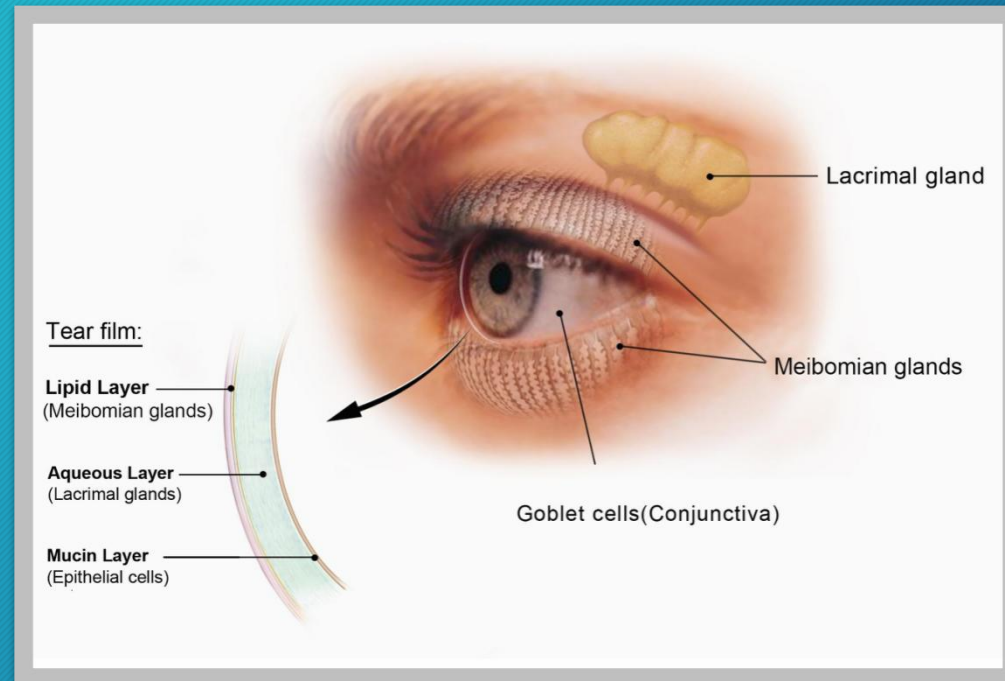
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Eyelids & Lashes

- Protection
 - Blinking
 - Debris shield
- Tear
 - Production
 - Secretion
 - Spreading



Structures Involved in Tear Production. <https://medialibrary.nei.nih.gov/sites/default/files/media-images/NEI-medialibrary-3842733.jpg>. Accessed September 3, 2021.

Diseases of the Eyelids

Blepharitis - Bacterial

- Staph bacterial overgrowth
- Enzymes
 - Lipases
- Saponification
- Biofilm
- Lid margin changes



Blepharitis - *Demodex*

- 69% of blepharitis cases are due to *Demodex* infestation leading to *Demodex* blepharitis¹⁻⁴
 - *Demodex* mites are implicated in other diseases of the lid and lid margin, including blepharitis and meibomian gland dysfunction^{2,3}
 - *Demodex* mites are associated with acne vulgaris, folliculitis, rosacea, seborrheic dermatitis, perioral and scalp hair loss, and basal cell carcinoma^{1,3}
- Overpopulation
 - *Demodex folliculorum*
 - Lash follicles
 - *Demodex brevis*
 - Meibomian glands



Blepharitis - *Demodex*

Demodex folliculorum and *Demodex brevis* - only 2 species found in humans⁵

- The life cycle of the *Demodex* mite is approximately 14 to 18 days from the egg to the larval stage followed by the adult stage⁵
- The life span of the mite is limited outside the living body; direct contact is required for transinfestation⁵

D. folliculorum



0.3-0.4 mm length
Colonizes the base of the
lash follicle²



D. brevis



0.1 mm length
Colonizes the
meibomian gland²



Collarettes are pathognomonic sign of *Demodex* blepharitis

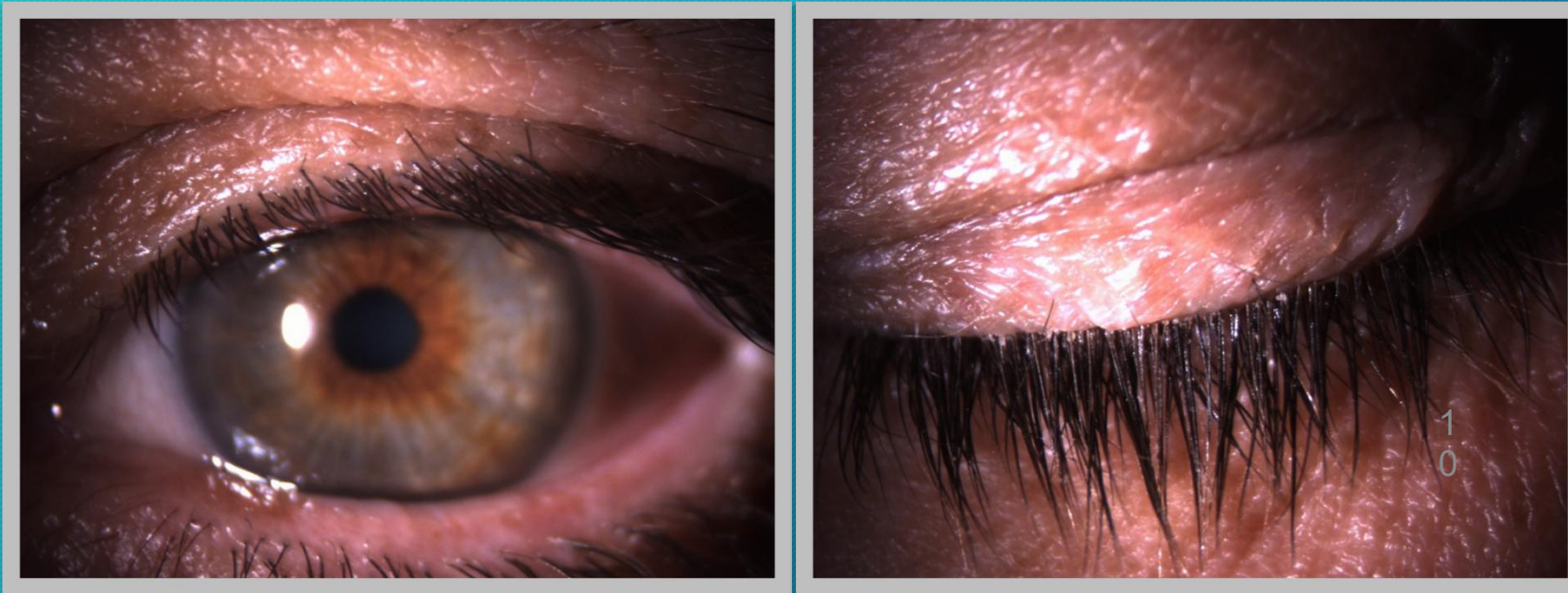
Collarettes, or cylindrical dandruff, are composed of mite waste products and eggs¹

- Collarettes are translucent, solidified exudative excretions that form a cylindrical collar that cuffs around the base of the eyelash follicle¹⁻³
- Collarettes are displaced along the shaft of the lash as it grows, and they are also displaced due to bacterial overgrowth⁴
- Collarettes are composed of regurgitated undigested mite waste combined with epithelial cells, keratin, mite eggs, and secreted proteases and lipases that cause irritation³
- **100%** of patients with collarettes have *Demodex* blepharitis^{2,5}



Collarettes at the base of eye lash

Diagnosing Demodex blepharitis (DB) is as simple as having your patients look down¹



Images c/o Marc Bloomenstein, OD, FAAO

Blepharitis - Allergic

- Type I hypersensitivity
 - Environmental allergens
- Flaking, scaling of skin
- Edema
- Papillary reaction



Dr. Cory J.
Lappin

Meibomian Gland Dysfunction (MGD)

- Multifactorial
 - Obstructive
 - Inflammatory
- Gland
 - Inspissation
 - Hypertrophy
 - Inflammation



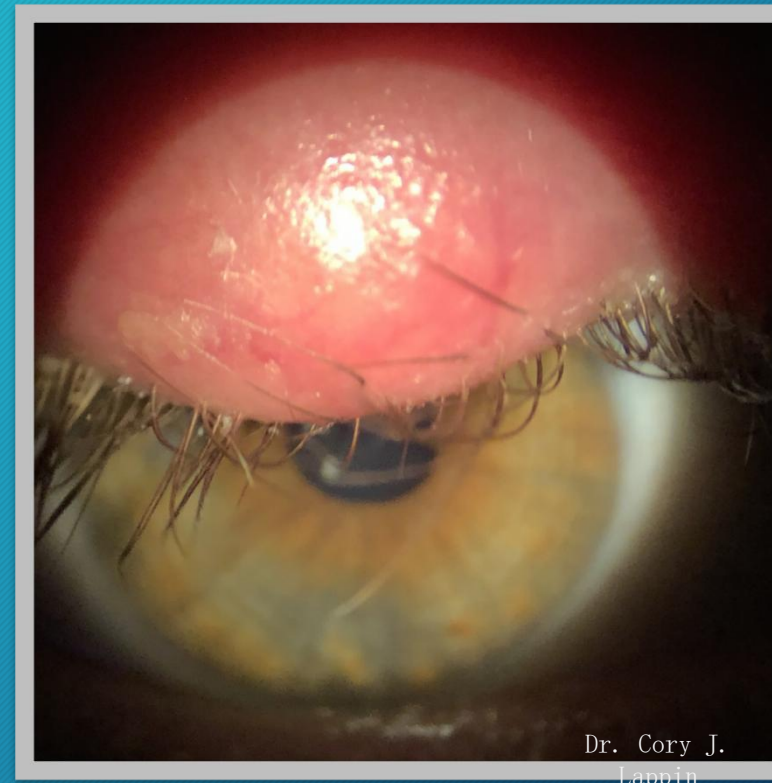
Mechanical Eyelid Issues

- Lagophthalmos
- Poor lid seal
- Lid laxity
 - Aging
 - Floppy eyelid syndrome
- Ptosis
- Malposition
 - Ectropion
 - Entropion



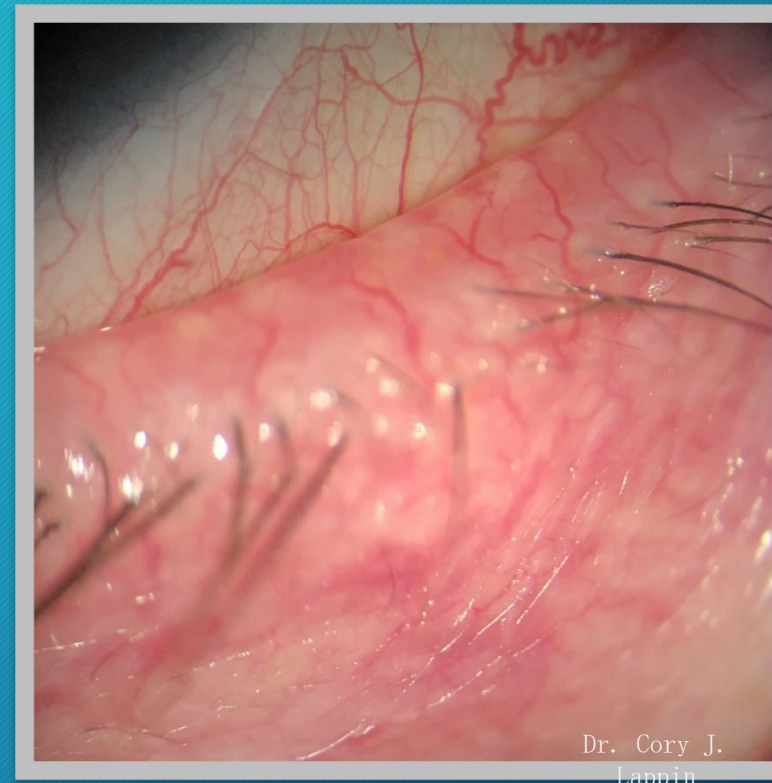
Internal Eyelid Lesions

- Chalazion
 - Inflammatory
- Hordeolum
 - Infectious



Rosacea

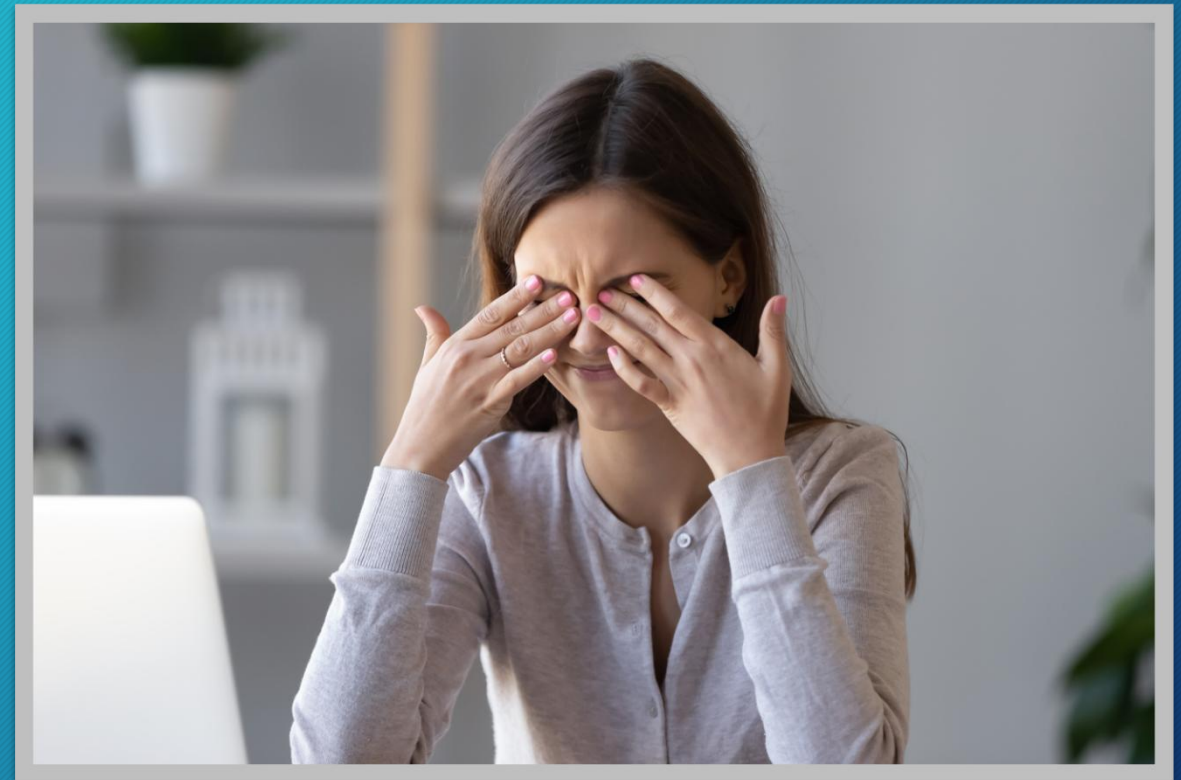
- Ocular rosacea
 - Subtype 4
- Lid telangiectasia
- Flushing
 - Exacerbation caused by environmental triggers



Impact of Eyelid Disease on Ocular Surface

Ocular Surface Dysfunction

- Tear film instability
 - Poor tear secretion
 - Inflammation
 - Corneal and conjunctival damage
 - Fluctuating vision
- Impaired protection
 - Exposure
 - Abnormal blinking
- Cosmetic concerns
 - Erythema
 - Lash loss



Eyelid Disease Treatments

Hygiene

- Traditional
 - Hypochlorous acid
 - Tea tree oil
 - Okra-based cleansers
 - Baby shampoo
 - Avoid
- Warm compresses
 - Primarily palliative
 - Caution in rosacea
- Dietary supplements
 - Omega-3 fatty acids
- Prescription
 - Lotilaner (Xdemvy)
 - Ivermectin cream

In-office Treatments

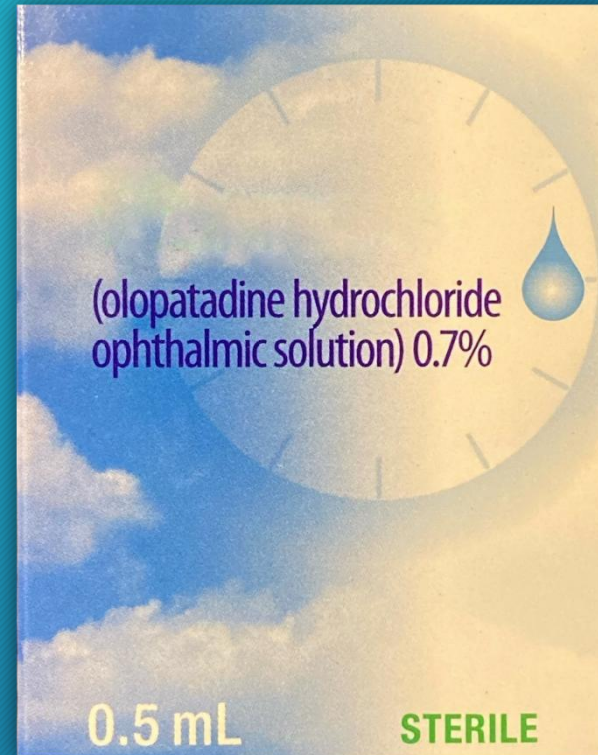
Microblepharoexfoliation & Cleansing

- BlephEx
- NuLids
- ZEST
- Rinsada
- Thermal Pulsation/Expression
 - Liquefies and evacuates meibum
 - Devices
 - LipiFlow
 - iLux
 - TearCare

- Intense Pulsed Light
 - Reduces microbial burden
 - Destroys telangiectatic vessels
 - Improves skin quality
 - Chalazion treatment
- Radiofrequency (RF)
 - Liquefies meibum
 - Improves skin quality

Allergy & Atopy Treatments

- Antihistamine-mast cell stabilizers
 - Olopatadine
 - Lastacaft
- Preferential exclusion
 - Ectoin
- Antiinflammatory
 - Topical steroids
 - Caution
 - Tacrolimus



Matrix Metalloproteinase Inhibitors

- Tetracyclines
 - Doxycycline
- Macrolides
 - Azithromycin
 - Oral
 - Topical



Ocular Surface Exposure

- Nocturnal exposure
 - Gels and ointments
 - Sleep goggles
- Daytime exposure
 - Scleral lenses
 - Moisture chamber specs

Thank you!