


Makeup and the Ocular Surface

A captivating exploration of the complex relationship between beauty and the eye care world, where the line between the two is often blurred.

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Financial Disclosures For

Selina R. McGee, OD, FAAO is on the Speaker or Consultant for the following companies:

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All financial relationships have been mitigated.

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Pamela Theriot is on the Speaker or Consultant for the following companies:

Speaker Bureau: RVL Pharmaceuticals Viatris Pharmaceuticals Johnson & Johnson Vision Sun Pharma Lumenis Be Tarsus Pharmaceuticals Dompe Alcon Lenz Therapeutics	KOL/Consultant: Novartis Merakris Therapeutics Scope Eyecare NuLids Tear Film and Ocular Surface Society, Public Awareness Committee Member Twenty/Twenty Beauty NovaBay Mallinckrodt Pharmaceuticals Bruder Healthcare Company EyeDerm
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- BeSpoke Vision
 - Founder, Chief Optometrist
- TFOS Lifestyle Workshop:
 - Cosmetics Committee member
- Intrepid Eye Society
 - Vice President
- Oklahoma Association of Optometric Physicians
 - President 2019-2020
- Modern Optometry Journal
 - Co-Chief Medical Editor



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- Lusk Eye Specialists
 - Clinical Director of Dry Eye Relief Center
- TFOS Lifestyle Workshop:
 - Public Awareness committee Member
- TEDx Grandview Heights – January 2025
 - Daily Habits for Clear Vision in the Digital Age
- 2025 Dry Eye Columnist
 - Optometric Management
- Author
 - Alleviate Dry Eye
- Website / Blog / Courses
 - www.pamtheriot.com



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Why are we here?

Cosmetics and the Ocular Surface


Cosmetics and personal care products have become an integral part of many people's daily routines. However, the use of these products, especially around the delicate eye area, can have significant impacts on the health and function of the ocular surface.

Understanding the Risks

It is important to understand the potential risks associated with the use of cosmetics, such as the presence of carcinogens, endocrine disruptors, neurotoxins, and reproductive toxins in some formulations. These ingredients can have adverse effects on the eyes and surrounding tissues.

Promoting Ocular Health

By raising awareness about the potential issues and educating consumers on safer alternatives, we can help promote the overall health and well-being of the ocular surface and prevent long-term complications from the use of certain cosmetic products.



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A Brief History

- 1 **The Cosmetic Act - FDA 1938**
The Cosmetic Act was established by the FDA in 1938, laying the foundation for the regulation of cosmetic products in the United States.
- 2 **Lack of Safety Requirements**
Companies and individuals who manufacture or market cosmetics have a legal responsibility to ensure the safety of their products. However, the law does not require specific tests to demonstrate the safety of individual products or ingredients, nor does it require cosmetic companies to share their safety information with the FDA.
- 3 **Regulatory Differences**
The United States has only 11 banned chemicals in cosmetics, while the European Union has over 1,300 banned chemicals, highlighting the significant differences in cosmetic regulations between the two regions.



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MOCRA

- 1 **The Modernization of Cosmetics Regulation Act of 2022 (MoCRA) was signed into law on December 29, 2022.**
This law overhauls existing cosmetic regulations, requiring the FDA to establish Good Manufacturing Practices for all cosmetics manufacturers.
- 2 **It also mandates reporting of adverse health events and testing of asbestos levels.**
- 3 **Cosmetic listings will be made through an online portal without requiring Structured Product Labeling (SPL).**
- 4 **These requirements will be enforced on December 29, 2023.**
- 5 **This is the first major change to cosmetics regulations since 1938.**



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How will MoCRA affect Manufacturers?

Establishment/Facility Registrations

MoCRA creates new standards and requirements that cosmetic and personal care product manufacturers will be held to. These standards will be enforced by the FDA, including the need for establishment and facility registrations.

Product Listings

Manufacturers will be required to provide product listings to the FDA under the new MoCRA regulations.

Adverse Event Reporting

MoCRA mandates that manufacturers report any adverse events related to their cosmetic and personal care products to the FDA.

Version Tracking and Safety Tracking

Manufacturers will need to implement systems for tracking product versions and safety data to comply with the new MoCRA requirements.

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Additionally, failure to comply with certain FDA requirements

- 1 **Failure to comply with certain FDA requirements can lead to a cosmetic or personal care product being marked as misbranded, a consequence very familiar to pharmaceutical manufacturers.**
- 2 **MoCRA also gives additional powers to FDA in regulating cosmetics and personal care products, including:**
 - Establish Good Manufacturing Practices that all manufacturers need to follow
 - Ability to request records to substantiate a product's safety
 - Authority to request a mandatory product recall
 - Establish an asbestos testing method for talc-containing products
 - Assess the safety and use of PFAS (per- and polyfluoroalkyl) chemicals

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What is a cosmetic?

A cosmetic is any product that is intended to cleanse, beautify, enhance attractiveness, or change appearance without impacting the body's structure or functions.



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What does a Cosmetic do?

- 1 **Cleansing, anti-aging, and beautifying**
- 2 **Risks**
 - Containing carcinogens
 - Endocrine disruptors
 - Neurotoxins
 - Reproductive toxins
- 3 **Ocular surface**
An area of particular concern when it comes to the use of cosmetics



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What are the beasts?

1 Cosmetics

As defined by the FDA: Product intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or function

2 Habits

Can be hard to break

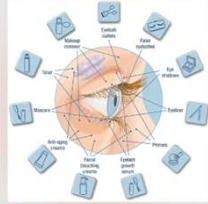
3 Lash Love

Lashes are more than adornment

Figure 1:

Sullivan et. al

TFOS Lifestyle: Impact of cosmetics on the ocular surface.--



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TFOS Lifestyle Workshop TOXIC INGREDIENTS

- Acetyl hexapeptide
- Acrylates
- 2-Bromo-2-nitropropane-1, 3-diol
- Benzalkonium chloride
- Benzophenone
- Butylated hydroxyanisole
- Butylated hydroxytoluene
- Butylene glycol
- Caffeine
- Carbon black (D&C Black No. 2)
- Carnauba wax
- Castor oil
- Chlorhexidine digluconate
- Chlorphenesin
- Cocamide diethanolamine
- Cocamidopropyl betaine
- Cyclopentasiloxane (cyclomethicone)
- Cysteamine
- Dehydroacetic acid
- Diamond dust/powder
- Diazolidinyl urea
- Diethanolamine
- DMDM-hydantoin [1,3-Bis (hydroxy-methyl)-5,5-dimethylimidazolidine-2,4-dione]
- Ethanolamine
- Ethylhexylglycerin
- Ferulic acid
- Formaldehyde-releasing compounds
- Gold
- Glycolic acid
- Imidazolidinyl urea
- Isopropyl alcohol
- Kohl (lead-containing)
- Kojic acid
- Lanolin

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TFOS Lifestyle Workshop TOXIC INGREDIENTS

- Methyltribromo glutaronitrile
- Methylisothiazolinone
- Nylon
- Paraben (for example, ethylparaben & methylparaben)
- Para-phenylenediamine
- Per- and poly-fluoroalkyl substances
- Petrolatum
- Phenoxyethanol
- Phenylethyl resorcinol
- Phthalate
- Polyethylene glycol
- Polymethyl methacrylate
- Prostaglandin analogues (for example, isopropyl cloprostenate)
- Quaternium-15
- Retinoids (Vitamin A metabolites, such as 13-cis retinoic acid; isotretinoin)
- Salicylic acid
- Shellac
- Sodium benzoate
- Sodium hydroxy-methylglycinate
- Sodium laureth sulfate
- Sorbic acid
- Talc
- Tea tree oil and terpinen-4-ol
- Thimerosal
- Triclosan
- Triethanolamine

Sullivan DA, da Costa AX, Del Duca E, Doll T, Grupcheva CN, Lazreg S, Liu SH, McGee SR, Murthy R, Narang P, Ng A, Nistico S, O'Dell L, Ross J, Shen J, Maskouli M. TFOS Lifestyle: Impact of cosmetics on the ocular surface. *Ocul Surf*. 2023 Jul;29:77-130. doi: 10.1016/j.jtos.2023.04.005. Epub 2023 Apr 13.

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Formaldehyde Donors

High formaldehyde-emitting products

To be aware of include hydroxymethyl glycinate, DMDM Hydantoin, ureas, and Quaternium-15. These ingredients can release formaldehyde, a known carcinogen, into cosmetic products.

Myristoyl pentapeptide-17

Reported to stimulate keratin gene expression, promoting increased keratin protein production and enhancing eyelash growth. However, there is a concern that myristoyl pentapeptide-17, even at concentrations permitted in cosmetics, could also increase ductal keratinization. Chronic use of this pentapeptide could potentially promote the development of meibomian gland dysfunction and ocular surface disease.



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- Toxic ingredients cause:
- Redness, irritation, inflammation and allergic reaction
- Minimal irritation over time can lead to bigger problems overtime
- Chronic inflammation causes conjunctival chalasis, papillary reaction, increased osmolality of the tears, and dry eye disease

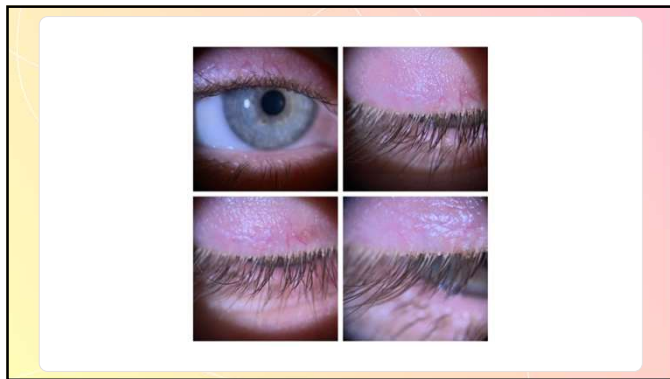
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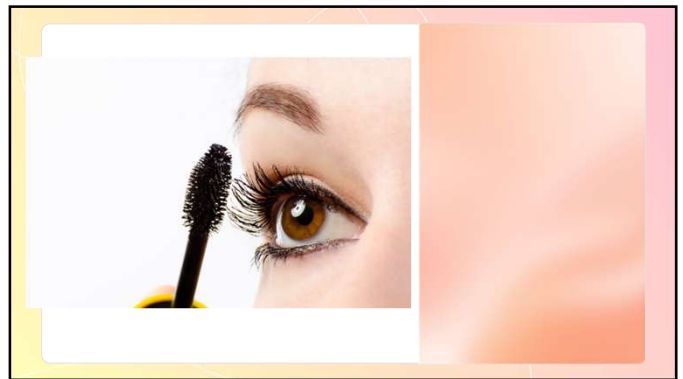
Eyelid Health

- Bacteria and Bugs-Blepharitis
- Habits
- Ocular Eyelid Hygiene

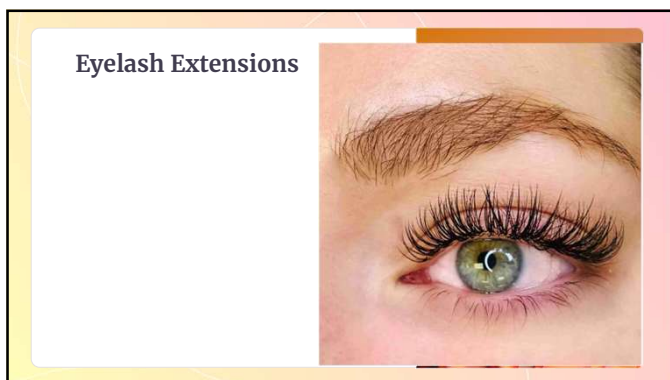
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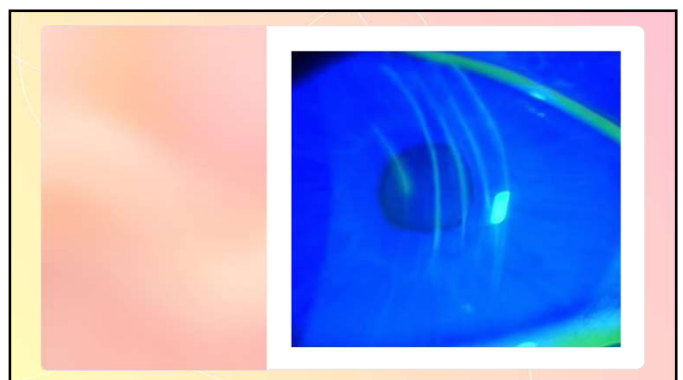
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Nylon Fibers in Mascara

- Moodstruck 3D Fiber Lashes
- several 1mm long fibers on the conjunctiva
- 6 fibers lodged in the subconjunctival space
- sharp enough to enter sub conjunctival space
- reactivity could be partly due to the chemicals coating the nylon fibers
- \$3M CLASS ACTION LAWSUIT FOR FALSE CLAIMS: "NATURAL FIBERS"

Dowlut et al, JAMA Ophthalmic 2018;136(1)

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MASCARA and ingredients To Avoid

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Eyelash Extensions

- 1 **The process of getting eyelash extensions**
Takes 1-3 hours to glue single lashes to the natural lashes
- 2 **Filling process**
Occurs every 2-4 weeks to remove and replace old extensions
- 3 **Average life cycle of a natural lash**
Ranges from 4-11 months
- 4 **Potential issues**
The glue solvents and fragrances used during the filling process can end up on the ocular surface and may cause problems



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Extensions Complications

- 73% of patients had ocular side effects
 - Itching (45.8%)
 - Redness (45.5%)
 - Pain (43.9%)
 - Heavy eyelids (41.6%)

Contact Dermatitis
Toxic Conjunctivitis
Conjunctival Erosion
Allergic Blepharitis

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Toxic Conjunctivitis
Conjunctival Erosion
Allergic Blepharitis



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Glue Adhesive Formidable Formaldehydes

Cyanoacrylate-based containing latex and ammonia

Cyanoacrylate-based adhesives used in eyelash extensions often contain latex and ammonia, which can be irritating to the delicate eye area.

High formaldehyde- emitting product

Many eyelash extension adhesives contain formaldehyde-releasing preservatives like DMDM Hydantoin, ureas, and Quaternium-15, which can emit high levels of formaldehyde and cause irritation.

Sodium Hydroxymethylglycinate

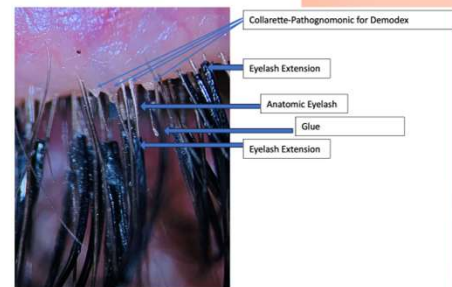
This is another formaldehyde-releasing preservative that can be found in eyelash extension adhesives and pose risks to the ocular surface.

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Mechanical Consequences

- Lagophthalmos during sleep
- Collection of bacteria under the lash bed
- Constraints to physical hygiene and cleansing of the lids
- Calcification of the lash base
- Preservative methylisothiazolinone (MI)

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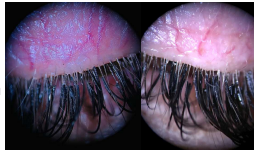
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Eyelash Extension Care

The problem with eyelash extensions is that they can lead to a build up of oil, debris and infection-causing bacteria, as well as mite infestation. Many extension wearers avoid cleansing their lashes for fear of breaking down the adhesive and causing the extensions to fall out prematurely.

The solution is to use hypochlorous acid twice daily along with a clean lash brush. This not only keeps the lashes clean, but also helps them last longer.

If demodex is present then treat with lotilaner 0.25%



Glue Adhesive Formidable Formaldehydes

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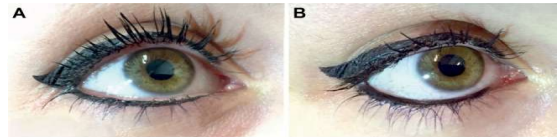
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Habits can be harmful

- Sleeping in make-up
- Tight-lining
- Not throwing make-up away in a timely fashion



Quiz: Which is Better? A or B?



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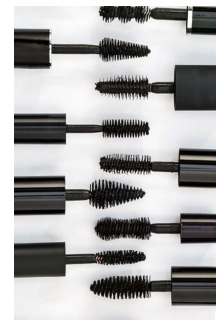
Makeup Rules for Best Ocular Health

- Always remove makeup nightly
- No water-proof makeup
- No glitter in your eye shadow
- Avoid powdered eye shadow
- Apply primer to lids before shadow and liner
- Pencil eye liners are best
- No water-lining or tight-lining
- Avoid toxic and irritating ingredients
- Toss out your makeup on time
- Never share your eye makeup
- Never Moisten cosmetics with saliva
- Never alter your makeup with heat
- Never apply makeup on the go
- Never put a product not intended for the eye on the eye



Don't Use Contaminated Makeup

- Liquid foundation and Primer – 1-2 years
- Primer – 1-2 years
- Lipstick – 1 year
- Mascara – 3 months
- Liquid Eyeliner - 3 months
- Eye Shadow pallets - 2 years
- Pencil Eyeliner - sharpen daily
- Nail Polish – 2 years
- Sunscreen – 2-3 years



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5 Types of Makeup Removers

- Micellar Water
- Oil-Free Makeup Remover
- Oil-based Makeup Remover
- Makeup Remover Wipes
- Makeup Remover Cloths



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Micellar Water

- PROS:
 - Gentle on skin
 - Does not require heavy rubbing
 - Does not need to be rinsed or washed off
 - Readily available at grocery stores and pharmacies
- CONS:
 - Not all brands are created equally
 - Please read the labels for toxic ingredients
 - Difficult to find one without EDTA
 - This newer technology can be a little pricey



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OIL – FREE MAKEUP REMOVER

PROS:

- Gentle on skin
- Does not require heavy rubbing
- Water based
- Readily available at drug stores and on Amazon
- Great for Contact Lens Wearers

CONS:

- Not all brands are created equally
- Please read the labels for toxic ingredients
- May dry skin

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Oil Based Makeup Remover

- PROS:
 - Melts away tough makeup with oil in the formulation
 - Penetrates deep into the pores to dissolve impurities
 - Infuses the skin with good, natural oils
- CONS:
 - Can leave skin feeling oily and need to use a cleanser to remove
 - Can dissolve the glue on eyelash extensions.



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Makeup Remover Wipes

- PROS:
 - Can be used to clean both the eyes and the entire face
 - Individually wrapped
 - Great for travel
- CONS:
 - Depending on the cloth, may need to rub more firmly.
 - Check the ingredients carefully, many drug store brands contain alcohol.
 - Dispose of after each use, so maybe considered wasteful
 - Do not interchange a makeup remover wipe with a baby wipe. Your face is more sensitive than a baby's bottom.



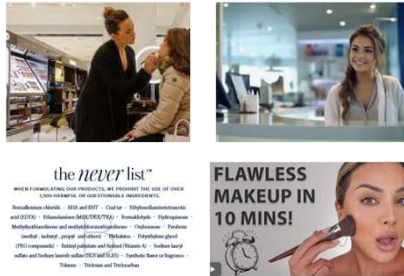
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MAKEUP REMOVER CLOTHS

- PROS:
 - No chemicals included at all
 - Can be washed and reused over and over again
 - Environmentally friendly
- CONS:
 - Depending on the cloth, may need to rub more firmly
 - More expensive in the short run
 - (Buying 3 - 7 clothes at first, but keep these cloths for years to come)

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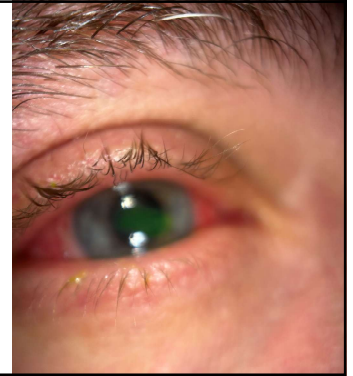
If not you,
then who...



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#1 Cosmetic Concern of Your Patients: Redness

- Causes:
- Inflammation
- Allergy
- Irritation
- Toxicity
- Rosacea
- Demodex
- Bacteria
- BioFilm



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Four Stages of Ocular Biofilms

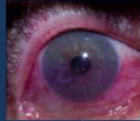
Blepharitis



MGD



Lacrimalitis



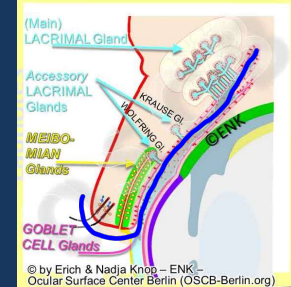
Lid Destruction



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Biofilms extend past the lid margin into the palpebral conjunctiva and fornix
Treat with high powered lavage of sterile saline or BSS.

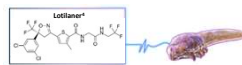
Glands of the Human Ocular Surface



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Lotilaner ophthalmic solution 0.25%

- Lotilaner functions as a noncompetitive antagonist of mite and arachnid GABA-gated chloride channels^{1,2}
- Directly paralyzes the mite nervous system through parasite-specific GABA inhibition, leading to death^{1,2}
- The lipophilic nature of the drop suggests its ability to flow into the oily sebum of the lash follicle where the mites reside³



Product form⁴
Preserved (sorbate) multidose eye drop solution in bottle



Dosing⁵
Twice daily for 6 weeks

FDA, Food and Drug Administration; GABA, gamma aminobutyric acid.
1. Darymond C. *Ophthalmol*. Accessed June 28, 2022. <https://doi.org/10.1016/j.ophtha.2022.06.001>
2. Darymond C. *Ophthalmol*. Accessed June 28, 2022. <https://doi.org/10.1016/j.ophtha.2022.06.001>
3. Darymond C. *Ophthalmol*. Accessed June 28, 2022. <https://doi.org/10.1016/j.ophtha.2022.06.001>
4. ChemRx Lotilaner. Accessed June 28, 2022. <https://chemrxiv.org/chemrxiv/10.26434/chemrxiv-2022-06-001>
5. ChemRx Lotilaner. Accessed June 28, 2022. <https://chemrxiv.org/chemrxiv/10.26434/chemrxiv-2022-06-001>

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COLLARLETTE SCALE USED TO DETERMINE SEVERITY OF DEMODEX BLEPHARITIS

Grades 2-4 Indicate Clinically Significant Disease

GRADE 4	GRADE 3	GRADE 2
<ul style="list-style-type: none"> • >2/3 of lashes on lid with collarettes • Approximately 150 collarettes/lid* 	<ul style="list-style-type: none"> • Between 1/3 to 2/3 of lashes on lid with collarettes • Approximately 100 collarettes/lid* 	<ul style="list-style-type: none"> • Between 10 collarettes to 1/3 of lashes on lid with collarettes • Approximately 50 collarettes/lid*

Grades 0-1 Indicate Clinically Meaningful Cure

GRADE 1	GRADE 0
<ul style="list-style-type: none"> • 3 to 10 collarettes on the lashes • FDA primary endpoint: Complete cure of collarettes 	<ul style="list-style-type: none"> • 0 to 2 collarettes on the lashes • Complete cure of collarettes


*For an upper eyelid with 150 eyelashes (number of eyelashes on the upper eyelid may vary from 90 to 160). Photos are images taken of patients in Saturn-1 with the corresponding

Chances of Demodex infestation increase with >10 collarettes. Food and Drug Administration.


AVERAGE BASELINE GRADE 3 FOR SATURN-1 AND SATURN-2 STUDIES.
1. Foul et al. *Ocul*. 2022; in Press. 2. Data on file. Tarsus Pharmaceuticals, Incorporated; 2022. 3. Gonzalez-Salinas R et al. *J Ocul Pharmacol Ther*. 2021;37(8):479-484. 4. Gao YY et al. *Invest Ophthalmol Vis Sci*. 2005;46(9):3089-3094

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GRADE 3




GRADE 2



GRADE 1



GRADE 0



3 (Severe)*

2 (Moderate)

1 (Mild)


0 (None)

AVERAGE BASELINE = 1.6 FOR SATURN-1 and SATURN-2 STUDIES


*Image reproduced with permission from Jiang et al.²
Grades 0, 1, and 2 images are from patients in Saturn-1.
1. Hosseini K et al. *Health Qual Life Outcomes*. 2018;11:16(1):11. 2. Jiang X et al. *Drug Des Dev Ther*. 2018 ;12:1269-1279.

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SATURN-1 and SATURN-2 | PIVOTAL CLINICAL STUDIES of TREATMENT for DEMODEX BLEPHARITIS




Consistent cures and responses demonstrated in 2 pivotal trials, the largest clinical program for Demodex blepharitis, involving 833 patients




The primary and all secondary endpoints (collarette cure, mite eradication, lid erythema) met with high statistical significance




Clinically and statistically significant effects seen as early as 2 weeks



Very high responder rate to Lotilaner: 96% of patients improved at least 1 collarette grade; 89% achieved a clinically meaningful cure



Efficacy goal
1° collarette cure rate,
2° mite eradication,
2° redness + collarette cure rate



Safety goal
Well-tolerated safety profile

1°, primary; 2°, secondary; NDA, New Drug Application.
Data on file. Tarsus Pharmaceuticals Incorporated; 2022

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TWO SUCCESSFUL PIVOTAL TRIALS WITH CONSISTENCY ACROSS ENDPOINTS

Consistency and high statistical significance expected to result in definitive standard of care therapy for Demodex blepharitis


Combined Pivotal Data (N=833) at Week 6	
Primary Endpoint: Complete Collarette Cure (Grade 0)	50% vs 10%
Clinically Meaningful Collarette Cure* (Grade 0 or 1)	85% vs 28%
Secondary Endpoint: Mite Eradication	60% vs 16%
Lid Erythema Cure	25% vs 8%
Safety	Generally safe and well tolerated

85% of the patients achieved a Clinically Meaningful Collarette Cure by Week 6

*As a measure of diminished chances of infestation.
1. Yeu E et al. *Cornea*. 2022; In Press. 2. Data on file. Tarsus Pharmaceuticals, Inc. 2022.

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American Academy of Dermatology

- At least SPF 30, broad spectrum (UVA and UVB), water resistant
- Chemical sunscreens work like a sponge, absorbing the sun's rays. They contain one or more of the following active ingredients: oxybenzone, avobenzone, octisalate, octocrylene, homosalate, and octinoxate. These formulations tend to be easier to rub into the skin without leaving a white residue.
- Physical sunscreens work like a shield, sitting on the surface of your skin and deflecting the sun's rays. They contain the active ingredients zinc oxide and/or titanium dioxide. Opt for this sunscreen if you have sensitive skin.
- Current FDA regulations on testing and standardization do not pertain to spray sunscreens. The agency continues to evaluate these products to ensure safety and effectiveness.

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Eyelash Serums

- Latisse-only FDA approved lash serum
- Active ingredient: Synthetic prostaglandins
- Isopropyl cloprostenate
- Side effects: Ptosis, Relative Enophthalmos, Inferior Scleral Show, Periorbital Fat Atrophy, Involution of dermatochalasis, Meibomian Gland Dysfunction, Hyperpigmentation, Redness, Pruritus



Mocan MC, Uzunomanoglu E, Kocabeyoglu S, Karakaya J, Irkeç M. The association of chronic topical prostaglandin analog use with meibomian gland dysfunction. *J Glaucoma* 2016 Sep;25(9): 770-4

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9

10

Magnetic Liner False Lashes

- Utilizes metallic liner
- Magnets on Lash Strip
- Magnetic Eyeliner is typically safe for people with sensitive skin. Formula contains no heavy metals or parabens. It contains iron powder, which is non-toxic according to the EWG



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Double Magnet Lashes

- Magnets on top of the lash adhere to magnets under your lashes
- Make a sandwich effect with your natural lashes in between
- Multiple magnets on each strip
- Heavy?



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When can you use them?



- Safer Lash Practices
- Consider a sparse fill
- Formaldehyde free glue
- More Natural length of lash
- Avoid
- Super long lashes
- Other Materials – feathers, wings

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Blepharopigmentation (Eyeliner Tattooing)

- "Permanent" Tattooed eyeliner
- Dermatitis
- Body's reaction to the ink
- Allergic Blepharitis
- Allergic reaction to the pigment
- Misapplication of the ink
- Tear Film Instability




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Brows are trendy

Eyebrows have become a major focus in the beauty industry in recent years. From microblading to lamination, there are many treatments and products available to help shape, fill, and enhance the brows. This trend reflects the desire for a more polished, defined look that frames the eyes and face.



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Terminology


- **Hypoallergenic-Fragrance Free-Paraben Free**
- In one study that evaluated 187 products labeled as "hypoallergenic", "dermatologist recommended/tested", "fragrance free" or "paraben free", 167 (89%) products contained at least 1 contact allergen and 117 products (63%) contained 2 or more contact allergens present in the North American Contact Dermatitis standard screening
- **Hamann CR, Bernard S, Hamann D, Hansen R, Thyssen JP.** Is there a risk using hypoallergenic cosmetic pediatric products in the United States? J Allergy Clin Immunol 2015;135:1070-1.

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Toxins in Cosmetics: What does the published literature say?

Benzalkonium Chloride BAK	Butylene Glycol at high concentrations
Ethylenediaminetetraacetic acid (EDTA)	Formaldehyde donating preservatives, even at low concentrations
Isopropyl Cloprostenate, PGAs. Unknown conc in OTC ELGS	Parabens (methyl-, isobutyl-, propyl- and others) at certain concentrations
Phenoxyethanol: at certain concentrations	Cis-retinoic acid: impairs survival and differentiation of HMGEc in cell culture but not HCEC

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The Power of Retinoids in Skincare

Retinoids regulate the cell apoptosis, differentiation and proliferation. Anti-wrinkle properties of retinoids **promote keratinocytes proliferation**, strengthen the protective function of the epidermis, restrain transepidermal water loss, protect collagen against degradation and inhibit metalloproteinases activity, by regulation of cell growth and differentiation

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Retinoids-Derivatives of Vitamin A

Retinoids regulate the cell apoptosis, differentiation and proliferation. Anti-wrinkle properties of retinoids promote keratinocytes proliferation, strengthen the protective function of the epidermis, restrain transepidermal water loss, protect collagen against degradation and inhibit metalloproteinases activity, by regulation of cell growth and differentiation	Retinoic acid: Rx Klingman et al, demonstrated the effects of tretinoin on photodamaged skin.	When identifying the ideal topical agent for periorbital rejuvenation, damage to the delicate meibomian glands, ocular cornea and conjunctiva must be taken into account. One study shows exposure to 13- <i>cis</i> , RA inhibits cell proliferation, increases cell death, alters gene expression, changes signaling pathways, and promotes inflammatory mediator and protease expression in meibomian gland epithelial cells. These effects may be responsible, at least in part, for the 13- <i>cis</i> RA-related induction
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Understanding Retinoid Bioavailability

1 Retinoic Acid Retinoic Acid-Rx-Tretinoin-most bioactive available	2 Conversion Process Every type of retinoid must be converted into bioavailable retinoic acid, which can mean going through longer or shorter convergent stages dependent on the original form
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What Questions do I ask?

1 Long Lashes Are they natural or is a serum like Isopropyl cloprostenate being used?	2 Cleaning Extensions How are they being cleaned?	3 Eye Make-Up Is it being worn?
4 Make-Up Removal How is it being removed?	5 Sleeping in Make-Up Is it being slept in?	6 Eye Health Did you know many eye products can cause health issues in the future?
7 Eyelid Issues Do your eyelids bother you?	8 Open Eyes Do you want your eyes to be more open?	9 Eye Health Risks Did you know skin cancer is common around the delicate eye area?

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Use this not that

Not this	This
Prostaglandin Analog-Isopropyl Cloprestonate	Polypeptide/Lipopeptide Lash Conditioner
Waterproof Mascara	Non-waterproof*
Glitter Eyeshadows	Shimmer/Matte Eyeshadows
Retinol-if dry eye dx then don't use. If no dry eye dx, then can use, but stay two finger widths away from eyelid margin to avoid migration-MUST USE SUNSCREEN	Caffeine, Vitamin C, Vitamin E, Ferulic, Hyaluronic Acid, Niacinimide
False Lash Strips with Latex and Formaldehyde	Individual False lashes with non-formaldehyde and Latex lash glue
Eyelash Extensions	Individual False lashes with non-formaldehyde and Latex lash glue
Oil based eye-makeup remover cleansers	Micellar Water*
Eyeliners on the water line	Eyeliners on the dry side*

*Be mindful of ingredients

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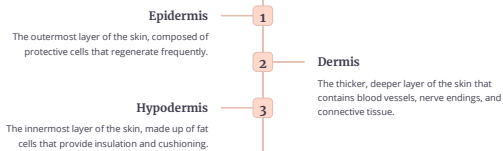
Desiccating Stress

Dry Eye Disease: When the Ocular Surface Structures Fail to Protect Itself
from Desiccating Stress



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Skin Fundamentals



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Topical Skin Care

- Cleanse
- Hydrate
- Exfoliate
- Even skin tone
- Combination of the above
- **THAT is all they do-they do not remove wrinkles, or eye bags, or any other claim**
- *Retinoic Acid: Vitamin A secreted in tear film and metabolized by cornea and conjunctiva are necessary for ocular surface health



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Topicals

- **Vitamin C** - Available in 10%, 15%, and 20% concentrations, vitamin C is a powerful antioxidant that helps build collagen and protect the skin from environmental stressors.
- **Vitamin E** - Another important antioxidant that works synergistically with vitamin C to neutralize free radicals and support healthy skin.
- **Ferulic Acid** - This potent antioxidant enhances the efficacy of vitamins C and E, providing even greater protection against oxidative damage.
- **Phloretin** - A plant-derived compound that helps even skin tone, reduce the appearance of fine lines and wrinkles, and provide broad-spectrum protection.
- **Building Collagen** - Topical products containing ingredients like retinoids, peptides, and growth factors can help stimulate collagen production for firmer, more youthful-looking skin.
- **Cosmeceuticals** - This category of skincare products combines cosmetic and pharmaceutical ingredients to target specific skin concerns, often with clinical-grade formulations.

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What About These Circles?



Dark Circles

Dark circles can be tough to treat. They are partially the result of oxygenated blood pooling in the veins underneath the thin under-eye skin. Dark circles can be exacerbated due to fatigue, aging, and allergies.



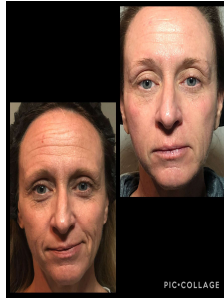
Topical Treatments

Topical eye cream with retinol can stimulate collagen production, helping to thicken the skin and improve the appearance of dark circles.

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RadioFrequency

- 1 **RF**
Monopolar, Bipolar, Tripolar
- 2 **Benefits**
Improve fine lines, wrinkles
- 3 **Non-invasive**
Targeting Dermal Layer of skin
Heat to 42 degrees Celcius



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Radiofrequency

- Monopolar and Bipolar Radiofrequency for Dry Eyes
- Heats deep into the skin
- Regenerated collagen
- Reduces wrinkles
- Reduces telangiectasia
- Safe for all Skin Types
- Heats Meibomian glands
- Increases meibum expression
- Improves blink



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Effects of RadioFrequency on MGD

- 32 Patients at 3 Sites across US
- The total treatment time was 12 minutes per side
- Followed by manual expression
- Treatment was found to be safe and effective:
- Primary study endpoints (1, 3, and 6 months):
- Symptoms: SPEED and OSDI
- Signs: TBUT, CFS, MGS
- Secondary endpoints:
- Subjective improvement and subjective satisfaction with the treatment
- Paul S, Cohen A, Parsa K, et al. Transcutaneous radiofrequency-mediated meibomian gland expression is an effective treatment for dry eye: a prospective cohort trial. Open Ophthalmol J. 2023



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Intense Pulsed Light (IPL)

- 1 **MGD, Rosacea**
- 2 **Benefits**
Target Chromophore: Oxyhemoglobin, Melanin
- 3 **Non-invasive**
Skin Types I, II, III easily, IV carefully, V rarely, VI-neverly®



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IPL: Intense Pulsed Light



- April 2021 FDA approved for treatment of Dry Eye Disease
- Treating signs of dry eye disease due to meibomian gland dysfunction
- Several mechanisms of action:
 - Reduces inflammatory mediators
 - Closes abnormal blood vessels
 - Kills Microorganisms including Demodex
 - Melts meibum / eases manual expression

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LLLT

- LED lights to deliver focused light of a specific color that targets the mitochondria
- Photobiomodulation stimulates the production of ATP – the energy that powers the cell
- Non-invasive, pain and stress-free Meibomian Gland & Dry Eye Treatment
- Regardless of skin type
- Does not require gel
- 15-min application / 1-2 treatments recommended
- Available Treatments with LLLT Technology
 - Dry Eye / MGD
 - Chalazion
 - Rosacea
 - Demodex
 - Blepharitis
 - Post Blepharoplasty



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- 40 patients
- Randomly assigned with a 1:1 allocation ratio to receive LED-LLLT or placebo treatment
- Treatment twice a week for 3 weeks, for a total of 6 treatment sessions.
- The primary endpoint was the changes in the fluorescein corneal staining (FCS) score.
- The secondary endpoints were changes in:
 - Ocular surface disease index (OSDI) score,
 - Lissamine green conjunctival staining (LGCS)
 - Tear film break-up time (TBUT)
 - Schirmer test
 - Meibomian gland dysfunction (MGD) index.

Results:

- Evaluated before treatment and 4 weeks
- Mean difference of score change in primary endpoint revealed significant improvement in the LLLT group, compared to the placebo.
- The use of LED-LLLT for the treatment of dry eye and MGD appears to be safe and beneficial
- Secondary endpoints showed significant improvements:
 - LGCS, Schirmer's test, upper meibography scores
- Slight improvements
 - TBUT, lid debris, lid swelling, lid telangiectasia, meibomian gland secretion and expressibility scores

Park Y, Kim H, Kim S, Cho K.J. Effect of low-level light therapy in patients with dry eye: a prospective, randomized, observer-masked trial. *Sci Rep.* 2022; Mar 4;12(1):3579.


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Screening Process

- 1 Identify Concerns**
The first step in the screening process is to have an open conversation with the patient about their specific concerns and goals. This allows you to understand their unique needs and tailor the treatment plan accordingly.
- 2 Comprehensive Evaluation**
Conduct a thorough examination to assess the patient's ocular health, skin condition, and any underlying medical factors that may be contributing to their concerns. This comprehensive evaluation is crucial for developing an effective treatment strategy.
- 3 Customized Recommendations**
Based on the findings from the evaluation, provide the patient with personalized recommendations that address their specific needs. This may include a combination of topical treatments, lifestyle modifications,

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How Do We Incorporate Aesthetics Into Our Practices?

- These patients are already in our practices**
These patients are already in our practices, just waiting to have a conversation about eye beauty.
- Offer a consultation**
Offer a consultation, they still have the power to say no.
- Ask the right questions**
Do your lids bother you? Do you want your eyes to be more open? Have you noticed...? Do you experience...? Are your eyes tired? Do you suffer from red eyes?

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Be the Trusted Advisor for Your Patients' Journey to Confidence and Beauty

- Help them Discover Transformative Treatments**
Explore the power of cosmetic innovations to enhance your natural beauty and boost your self-assurance.
- Embrace Healthy Habits**
Adopt skincare and beauty routines that nourish your skin and eyes, ensuring lasting radiance. Health eyes are BEAUTIFUL EYES.
- Connect with Trusted Experts**
Consult with our team of experienced professionals to develop a personalized plan tailored to your unique needs.

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Resources

- 1 Peer-Reviewed Literature**
Staying up-to-date on the latest research and clinical studies is crucial for providing the best care for patients. Regularly reviewing peer-reviewed journals and publications can help identify new treatment approaches, understand the latest evidence-based practices, and ensure you are delivering the most effective and safe treatments.
- 2 Continuing Education**
Participating in continuing education courses, workshops, and conferences is essential for expanding your knowledge and skills in the field of eye care. These educational opportunities allow you to learn from experts, network with colleagues, and stay informed about the latest advancements in the industry.
- 3 Online Resources**
Leveraging online resources, such as professional organization websites, educational platforms, and industry blogs, can provide valuable information, tools, and insights to support your practice and patient care. These resources can offer practical tips, case studies, and expert advice to enhance your understanding and decision-making.

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Thank you!

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

Vision Expo Has Gone Green!

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

