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Please be sure to complete your digital session evaluations for each course you attended! Your feedback is important to us as our Education Planning Committee considers content and speakers for future meetings to provide you with the best education possible.



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Differentiating Keratitis

Pamela Theriot, OD, FAAO
Public Awareness Sub-Committee Member
TFOS Lifestyle Workshop

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Financial Disclosures

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

Speaker Bureau:

Viartis Pharmaceutical
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Tarsus Pharmaceuticals
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KOL/Consultant:

Scope Eyecare
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Tear Film and Ocular Surface Society,
Public Awareness Committee Member
Twenty/Twenty Beauty
Mallinckrodt Pharmaceuticals
Bruder Healthcare Company
EyeDerm
Macula PM

*All relevant financial relationships have been mitigated. The content of this COPE-accredited CE activity was planned and prepared independently by Pamela Theriot, OD, FAAO without input from members of an ineligible company.

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Pam Theriot, OD, FAAO

- Lusk Eye Specialists
 - Clinical Director of Dry Eye Relief Center
- TFOS Lifestyle Workshop:
 - Public Awareness committee Member
- TEDx Grandview Heights – January 2025
 - 3 Tips to Preserve your Vision
- 2026 Dry Eye Columnist
 - Optometric Management
- Author
 - Alleviate Dry Eye
- Website / Blog / Courses
 - www.pamtheriot.com



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Learning Objectives

Keratitis can be hard to differentiate and Diagnose

Thygesons Keratitis (TSPK), Staph Marginal Keratitis (SMK), Neurotrophic Keratitis (NK), Filamentary Keratitis (FK), Herpes Simplex (HSK), Keratitis Sicca (KCS), Microbial Keratitis

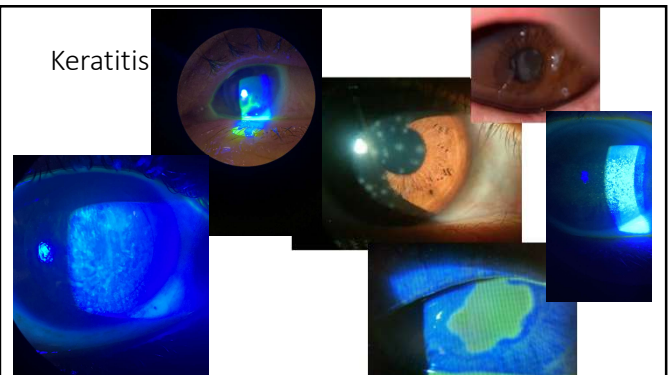
Learn their causes, signs, and symptoms

Deep dive into their differential diagnoses

Explore some newer treatment modalities

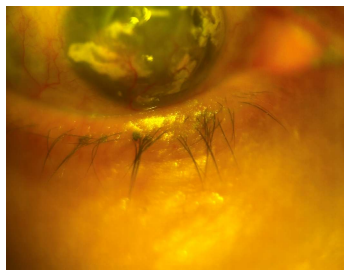
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Keratitis



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Failed Graft



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Thygeson's Keratitis

Like Uveitis for the cornea

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What the heck
is TSPK
anyway?

- Exact etiology remains unknown
- Auto-immune processes have been suspected
- Genetic association with HLA-DR3 – an antigen associated with several auto-immune disorders (like Sjogren's Syndrome)
- This antigen may alter the immune response in these patients which gives way to the prolonged disease course, and the fact that it waxes and wanes throughout years to decades

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Who Gets TSPK?

- Slight female predilection
- Ages 3 - 70, mean age 29
- No racial bias

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Signs

- Usually bilateral, but can be unilateral
- Multiple white-grey intra epithelial deposits,
- Lesions cause an elevation of the epithelium and classic negative staining with FL
- 1 – 50 lesions in the central cornea
- Typically 5 – 10 lesions


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Conjunctiva is Clear

- Corneal sensation remains Normal – unlike in HSK
- Minimal to no conjunctival involvement
- Can be stellate or snowflake in appearance
- Vision is minimally affected
- Does not respond to antibiotic treatment




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Symptoms

- Burning
- Irritation / foreign body sensation
- Tearing
- Photophobia


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Vision

- Slightly decreased vision
- Minimally affected despite central lesions

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Recurrence

- Frequent bouts of recurrence
- May reoccur despite medical treatment.
- Average recurrence ~11 years

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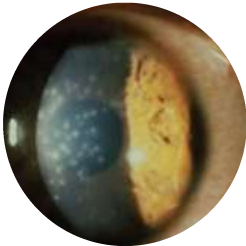
The Differentials

- Viral Conjunctivitis
- Superficial Punctate Keratitis
- Recurrent Corneal Erosion
- Staph marginal Keratitis
- Herpes Simplex Keratitis

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Epidemic Keratoconjunctivitis (EKC)

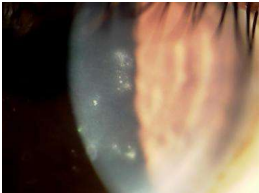
- Infectious keratitis
- Usually caused by Adeno virus
- Palpable PA Node
- Often has systemic flu like symptoms
- Spreads quickly from eye to eye (70% bilateral in 1 week)
- Spreads easily from person to person
- Redness, eyelid edema, tearing, irritation, foreign body sensation, and photophobia



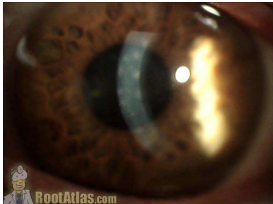
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TSPK vs. EKC

TSPK



EKC



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Signs of TSPK vs. EKC

Similar

- Lesion appearance
- Bilateral lesions
- Photophobia
- FB sensation

Different about EKC

- Spreads from one eye to other
- Vision significantly affected
- Can take a long time to respond to steroid treatment
- Conjunctival involvement- SCH
- Systemic flu like symptoms
- Adeno-Plus positive

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4-Step Procedure



In Office Testing

- Approximately 1 in 4 patients with acute conjunctivitis have confirmed adenoviral conjunctivitis
- Detects all known serotypes of adenoviral conjunctivitis.
- Early and accurate diagnosis of pink eye may prevent serious consequences including morbidity.
- Overlap exists in the clinical signs and symptoms of acute conjunctivitis
- Can be easily misdiagnosis by eye care professionals
- Help reduce antibiotic resistance

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Superficial Punctate Keratitis

Epi defects, FB sensation, redness

Photophobia, irritation and tearing

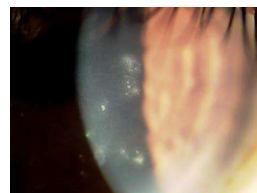
Causes:

- Exposure
- Chemical
- KCS
- Medicamentosa
- Allergy
- Infection: viral or bacterial

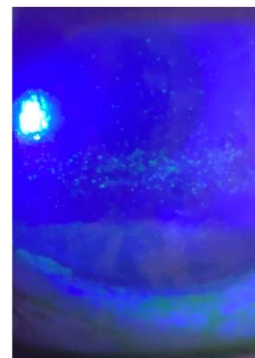
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TSPK vs. SPK

TSPK



SPK



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Signs of TSPK vs. SPK

Similar

- Lesion appearance
- Bilateral lesions
- Photophobia
- FB sensation

Different about SPK

- Lesion is superficial TSPK is intra-epithelial
- Lesions can be more confluent
- Appear in bands
- Vision may be more affected
- Usually conj involvement

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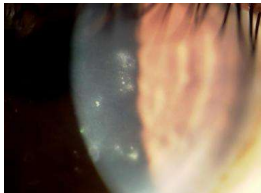
Recurrent Corneal Erosion

- Symptoms occur most often in the morning or middle of the night
- Usually only one lesion
- Significant sudden onset PAIN
- Sometimes resolve on their own
- May occur months after an initial abrasion

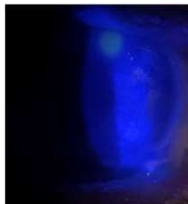
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TSPK vs. RCE

TSPK



RCE



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Signs of TSPK vs. RCE

Similar

- Lesion appearance
- Photophobia
- FB sensation

Different about RCE

- Usually only one lesion at a time
- Vision may be more affected
- Initial onset is sudden

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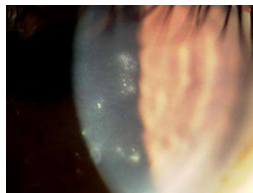
Staph Marginal Keratitis (SMK)

- Small round infiltrates at limbus
- Can be one or multiple
- Redness
- If untreated, lesions will coalesce into larger areas and stain
- Injection of bulbar conjunctiva adjacent to infiltrate
- Zone of clear cornea between limbus and lesion
- Red, watery, photophobia, FB sensation

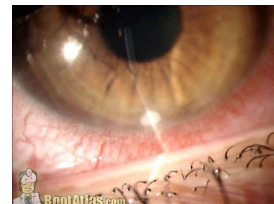
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TSPK vs. SMK

TSPK



SMK



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Signs of TSPK vs. SMK

Similar

- Lesion appearance
- Photophobia
- FB sensation
- Vision not significantly affected

Different about SMK

- Lesions are peripheral
- Presents with blepharitis as well

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Herpes Simplex Keratitis

- Check corneal sensitivity
- HSK will have decreased sensitivity
- Severe infection that can lead to scarring and blindness
- Worsens with steroid

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What triggers HSK

- Fever
- Hormonal changes
- Ultraviolet exposure
- psychological stress
- ocular surgery
- Ocular trauma
- Immunosuppression
- Pregnancy

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TSPK vs. HSK

TSPK	HSK
• Stellate or snowflake lesion	• Dendritic lesion
• Little conjunctival injection	• Conjunctival redness
• Normal corneal sensation	• Decreased corneal sensation
• Does not respond to antibiotic or antiviral treatment	• Responds to antivirals
• High rate of recurrence	• 50% recur in five years and 63% at 20 years
• Culture negative	• Can culture active lesion
• Usually no scarring	• High probability of scarring

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TSPK Management

- Not necessary to culture
- Can take slit lamp photos
- Follow up Q1week until lesions begin to resolve
- Q2-3 weeks to monitor IOP, depending on IOP elevation risk

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TSPK Treatment

- Artificial Tears to reduce irritation
- Topical Corticosteroids
- Therapeutic contact lenses in cases of severe FBS (with prophylactic antibiotic, but not to treat lesions)
- Topical Cyclosporin

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Topical Treatment

- Topical Steroids mainstay: QID until the deposits resolve, slow taper.
- Can use topical Cyclosporine when steroids are contraindicated
- Steroid responder
- Cataract formation
- Long term treatment safe with Cyclosporine

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TSPK Surgical Intervention?



- PRK and epi ebridement have shown to be insufficient in alleviating the inflammation in these patients

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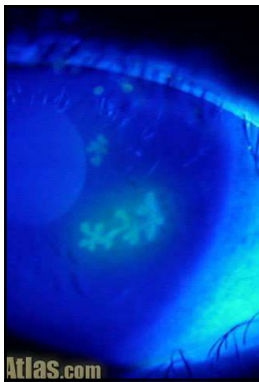
Case Report JG

- 45 yo Caucasian Male
- Referred in from local optometrist
- Pain, light sensitivity OD X 3 weeks
- VA = 20/30
- Current Medications: Moxifloxacin TID

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Most Important Differential

- Rule Out Herpes Simplex Keratitis
- History of fever blister
- Previous HSK infection
- Lesions on lids



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Treatment Plan 1

- Oral Anti-viral
- Review of Dosages:
- Acyclovir – 400mg 5x/day
- Valacyclovir – 500mg TID
- Famciclovir – 250mg TID
- 7 - 10 days

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Treatment Plan 2

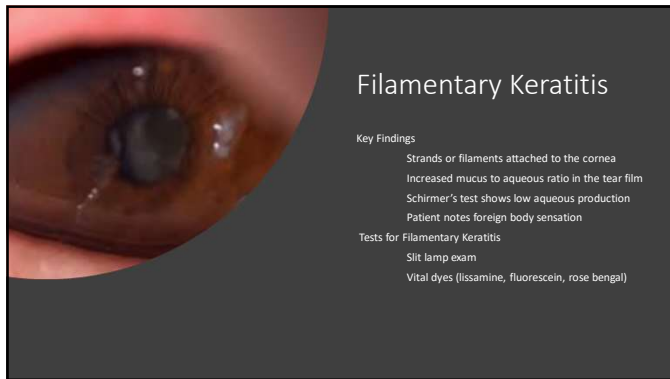
- Pt did not respond to oral Acyclovir
- HSK Ruled Out!
- Now okay to add steroid
- Pred Forte QID until the deposits resolve
- Slow taper
- Can Rx QD or QOD steroid long term to reduce recurrences

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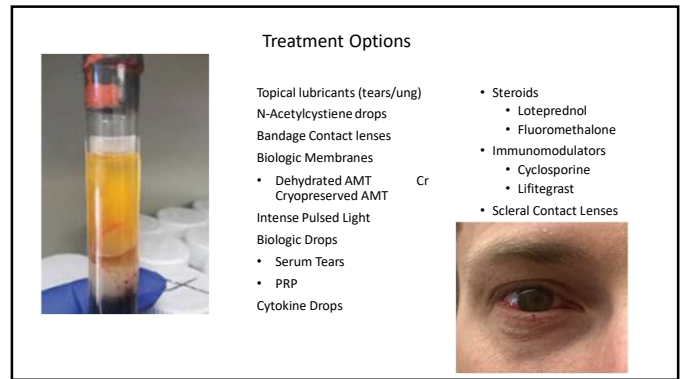
Filamentary Keratitis

New Treatments

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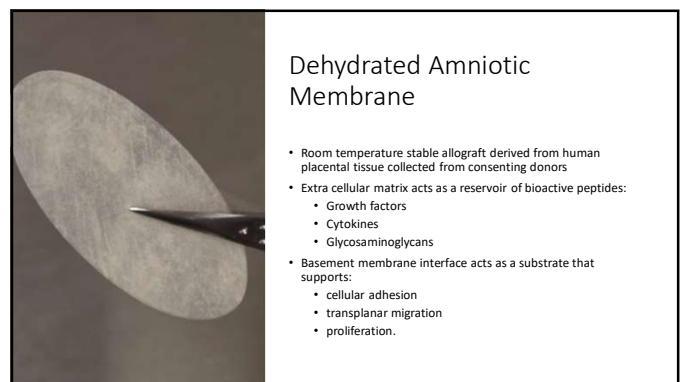
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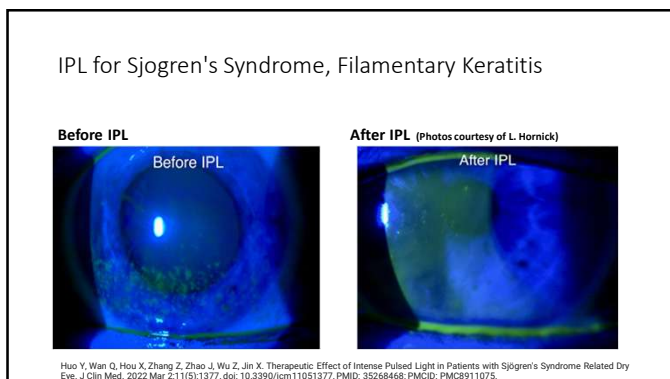
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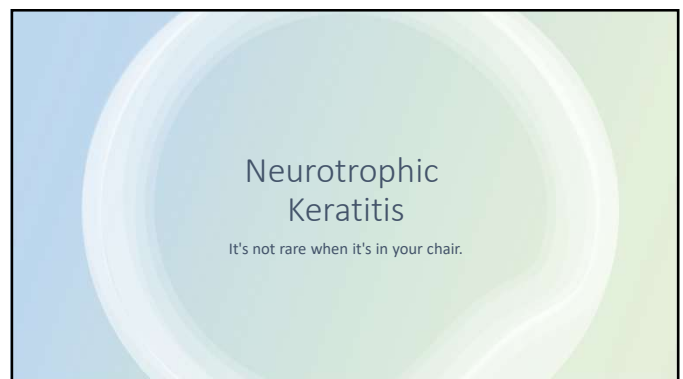
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Neurotropic Keratitis Definition



Degenerative corneal disease
Damage to the trigeminal nerve (cranial nerve V)
Loss of corneal sensation
Breakdown of the corneal epithelium
Impaired corneal healing
Persistent epithelial defect → corneal ulceration → stromal melting and perforation

Hallmark: decreased sensation, decreased or no pain

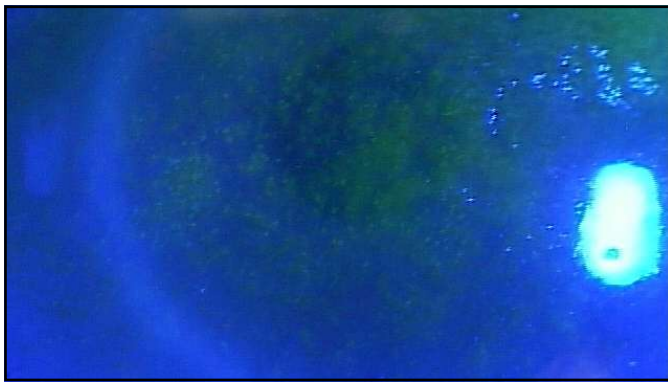
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Severity-Based Therapy

Stage	Therapy
1	<ul style="list-style-type: none"> Preservative-free artificial tears formulations Punctal occlusion Hydrogel contact lens (consider large diameter) Recombinant human NGF (rhNGF, cenegermin) Serum/plasma/platelet rich plasma tears
2	Supportive therapies plus: <ul style="list-style-type: none"> rhNGF Scleral lens (± serum/plasma/PRP tears) Amniotic membrane Botulinum induced ptosis, Tarsorrhaphy
3	<ul style="list-style-type: none"> rhNGF Keratoplasty + scleral lens, tarsorrhaphy, neurotization

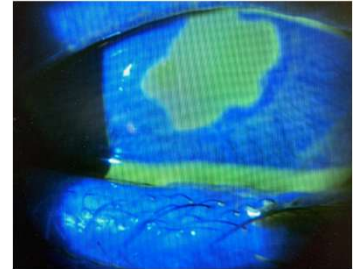
Sachetti M, Lamba A. Diagnosis and management of neurotrophic keratitis. Clin Ophthalmol. 2014;8:571-579. Sheha H, Tighe S, Hashem O, Hayashida Y. Update on cenegermin eye drops in the treatment of neurotrophic keratitis. Clin Ophthalmol. 2019;13:1975-1980. Published Oct 7, 2019.

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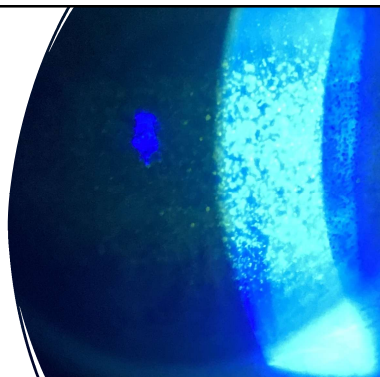
Central K Ulcer - Bacterial



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Dense NK

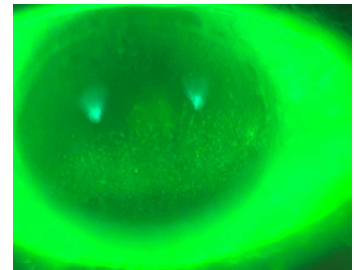
- Pre-treatment photo



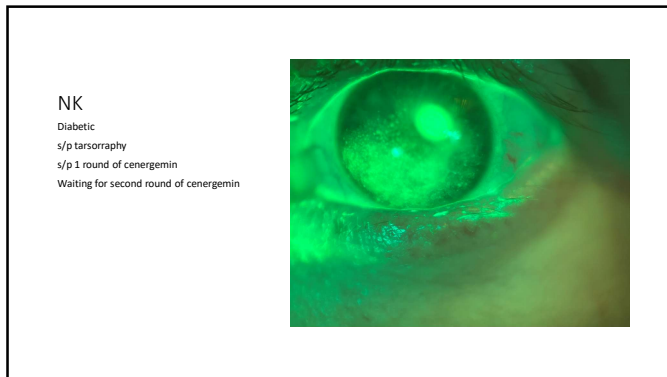
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NK

4 weeks of cenegermin treatment



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Corneal Innervation

The cornea is the most sensitive and densely innervated tissue in the human body^{1,2}

Corneal innervation is essential. Corneal epithelial cells act in a mutually supportive relationship with corneal nerves¹⁻⁴

Corneal nerves: maintain corneal integrity
Protective functions: blinking and tearing
Trophic support: neuropeptides (eg, substance P) promote epithelial cell proliferation, migration, adhesion
Epithelial cells: neurotrophic factors (neuronal extension and survival)

Corneal nerve damage = loss of corneal sensation, epithelial breakdown, poor healing^{1,2}

1. Shaha H. Clinical Ophthalmology. 2019;13:1973-1980.
2. Versura P, et al. Eye and Brain. 2018;10:37-45.
3. Dua HS, et al. Prog Retinal Eye Res. 2018;66:107-131.
4. Saad S, et al. Ocular Surf. doi:10.1016/j.jtos.2019.11.008.

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Etiology

INFECTIOUS^{1,2}

- Herpes (simplex, zoster)
- Leprosy

IATROGENIC^{1,2}

- Trauma to ciliary nerves by laser treatment and surgery
- Corneal incisions
- LASIK

SYSTEMIC DISEASE^{1,2}

- Diabetes
- Multiple sclerosis
- Vitamin A deficiency

CORNEAL DYSTROPHIES^{1,2}

- Lattice
- Granular

TOXIC^{1,2}

- Chemical burns
- Carbon disulfide exposure
- Hydrogen sulfide exposure

TOPICAL MEDICATIONS^{1,2}

- Anesthetics (abuse)
- Timolol
- Betaxolol
- Sulfacetamide
- Diclofenac sodium
- Ketorolac

MISC²

- CTL
- Increasing age
- Dark eye color
- Adie syndrome
- Limbic stem cell failure (chronic)

FIFTH-NERVE PALSY^{1,2}

- Trigeminal neuralgia surgery
- Neoplasia (acoustic neuroma)
- Aneurysms
- Facial trauma
- Congenital
- Riley-Day syndrome
- Goldenhar-Gorlin syndrome
- Möbius syndrome
- Familial corneal hypesthesia

1. Dua HS, et al. Prog Retinal Eye Res. 2018;66:107-131.
2. Medscape. Neurotrophic keratitis. <https://reference.medscape.com/article/1194889-overview>

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Endogenous nerve growth factor (NGF) and its role in NK:

Neurotrophic keratitis (NK) is a result from impaired trigeminal corneal innervation

- ↓ Lacrimation and blink reflex
- ↓ Epithelial cell vitality, metabolism, mitosis
- ↓ Epithelial trophism and repair
- ↑ Stromal and intracellular edema
- ↓ Microvilli
- ↓ Development of the basal lamina

Machtripsa et al. (2017) J Cell Physiol 232:717-24

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Endogenous NGF Maintains Corneal Integrity By Three Mechanisms

Endogenous nerve growth factor acts through specific high-affinity (ie, TrkA) and low-affinity (ie, p75NTR) nerve growth factor receptors in the anterior segment of the eye to support corneal innervation and integrity.¹

SHOWN IN PRECLINICAL MODELS¹

CORNEAL INNERVATION

NGF plays a role in nerve function and stimulates the regeneration and survival of the sensory nerves¹⁻³

TEAR SECRETION

NGF binds receptors on lacrimal glands and promotes sensory-mediated reflex tearing secretion¹⁻⁴

CELL PROLIFERATION AND DIFFERENTIATION

NGF stimulates proliferation, differentiation, and survival of corneal epithelial cells⁵

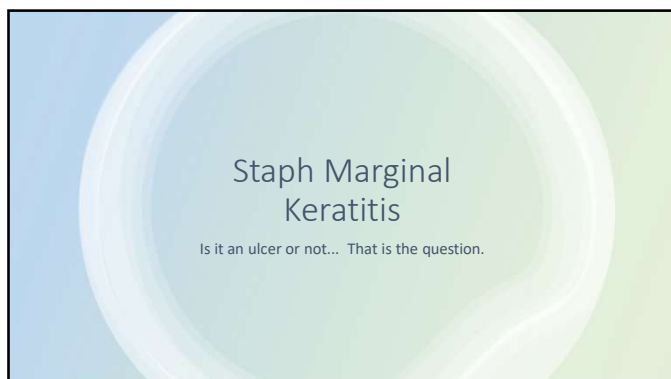
1. Machtripsa L, Muscarelli-Dardane G, Nalio M, Sacchetti M. Understanding the pathogenesis of neurotrophic keratitis: the role of corneal nerves. J Cell Physiol. 2017 Apr;232(4):717-724. 2. Müller U, Marfurt CF, Kruse F, Tervo TM. Corneal nerve structure, contents and function. Exp Eye Res. 2003 May;76(5):521-42. 3. Sacchetti M, Lambiase A. Diagnosis and management of neurotrophic keratitis. Clin Ophthalmol. 2014;8:575-9. 4. Mui S, Colafemmina V, Serrero T, et al. Nerve Growth Factor in the Developing and Adult Lacrimal Glands of Rat With and Without Inherited Retinitis Pigmentosa. Cornea. 2010;29:1569-1580.

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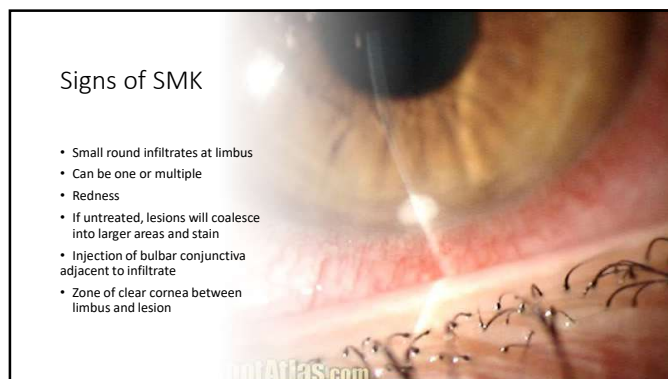
Treatment

- Continue:
 - Cyclosporine 0.05% BID OU
 - Heat Mask
- Stop
 - Oral ceterizine - antihistamine
- Order
 - Cenegermin 20 mcg/mL – Patient to call once meds come in to review meds / demo proper usage
 - Ceterizine ophth sol BID OU
- Follow Up
 - 3-4 months glaucoma / Dilate OCT - G

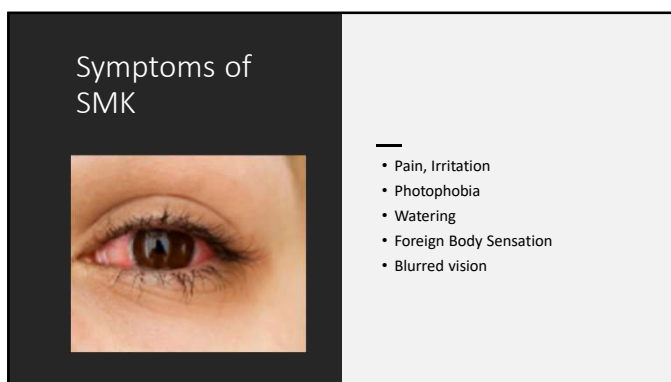
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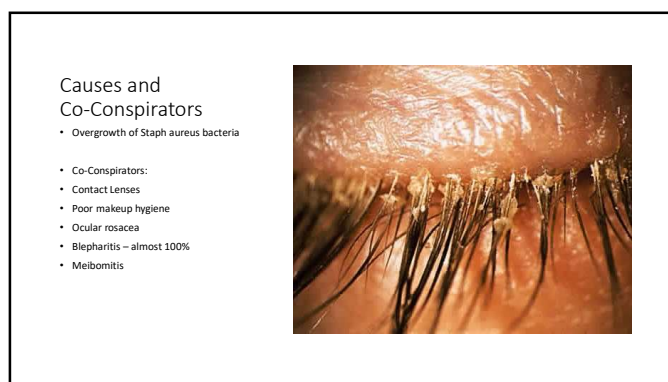
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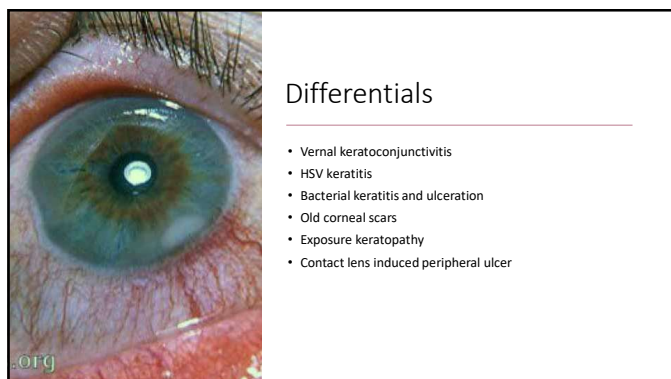
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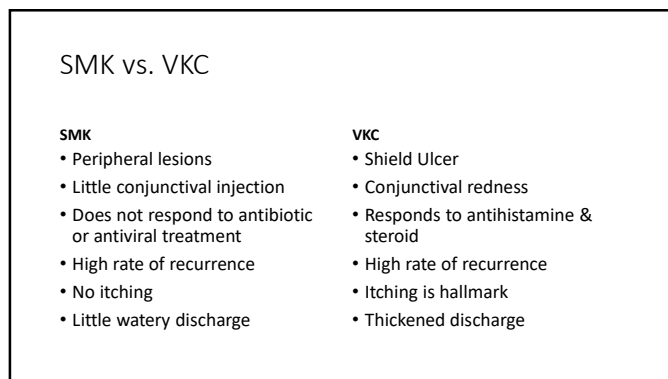
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SMK vs. Exposure Keratopathy

SMK

- Lesions scattered on cornea
- Lesions do not stain
- Mild conjunctival injection
- High rate of recurrence
- Symptoms same all day

Exposure

- Lesions grouped in band
- Band of staining
- May have sig conj Injection
- Recurs until exposure eliminated
- Usually worse in am

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Differentiating an Infiltrate from an Ulcer

SMK - Sterile Infiltrate

- Small lesion <1mm
- Peripheral location – at limbus
- No mucus discharge
- No A/C reaction
- Foreign body sensation
- Mild photophobia
- Mild to no epi defect

Infectious Ulcer

- Large Lesion >1mm
- Central >2mm of limbus
- Mucus discharge
- + A/C reaction
- Significant pain
- Significant photophobia
- Large epi defect

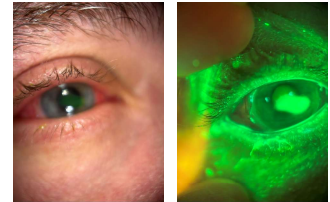
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Differentiating SMK vs CL related Ulcer

- | | |
|---|---|
| <ul style="list-style-type: none"> • Sterile • Localized Conjunctival injection • Always at limbus • Not necessarily a CL wearer • Blepharitis | <ul style="list-style-type: none"> • Infectious • Overall conjunctival injection • Can be further into cornea • Always related to CL wear • Giant Papillary Conjunctivitis |
|---|---|

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Contact Lens related Keratitis



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Contact Lens and Anterior Eye
Available online 20 December 2021, 101543
In Press, Corrected Proof



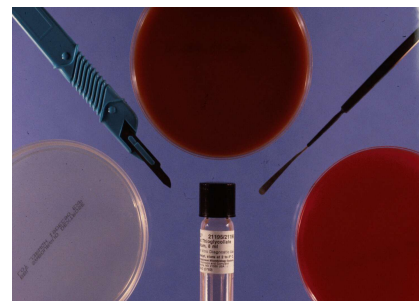
Clinical factors associated with positive corneal culture in suspected microbial keratitis

Matthew Green ^a, Susan Zhang ^{b,*, 1}, Thomas Nadivulath ^c, Andrew Apel ^d, Fiona Stapleton ^e

Conclusions

In this series positive cultures were associated with poor presenting VA contact lens keratitis (CLK), older age, anterior chamber reaction and no prior treatment with antibiotics.

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Corneal Scrapings

Be certain to remove excess mucous to avoid false negatives (necrotic tissue and PMNs)

Kimura spatula: culture the edge and base of the ulcer, serves to debride the lesion

Gram stain: only 12-60% accurate at predUseful to use **two solid media** (blood and chocolate). Helps to R/O contaminants and aids in ID if there's sparse growth. If only one is used chocolate is preferred. Plate Sabouraud's last!

✓ Add Lowenstein/Jensen, amoeba culture or HSV swab if necessary.

✓ Hold fungal cultures **longer** to assure there is no growth.

✓ If you use non-solid medias such as thioglycolate broth use a cotton-tip applicator that's **plastic, not wood** broken into the tube/cutting organism

Giemsa stain: provides better morphologic characteristics of organisms and helps to distinguish bacteria from fungi

Culture Media

STANDARD MEDIA

✓ **Blood:** aerobic organisms, saprophytic fungi

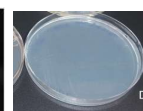
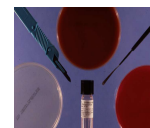
✓ **Chocolate:** Neisseria, Moraxella, Haemophilus

SPECIALTY MEDIA

✓ **Sabouraud:** fungi (or Inhibitory Mold Agar)

✓ **Thioglycolate broth:** aerobic and anaerobic bacteria

✓ **Lowenstein-Jensen/slant test or Middlebrook 7H-9:** Nocardia, Mycobacteria species



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Two Treatment Arms for SMK

Resolve Corneal Infiltrate



Decrease Bacterial Overgrowth



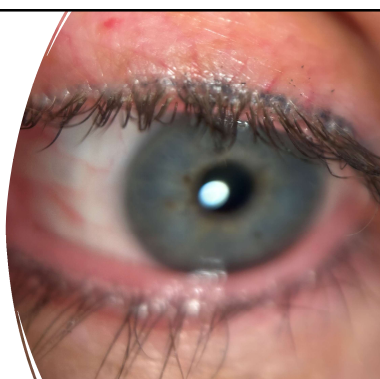
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Resolve Corneal Infiltrate

- Antibiotic followed by a steroid if there is significant epi defect
- Antibiotic / Steroid Combo
- Steroid Alone



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Treat Bacterial Overgrowth

- D/C Contact lens wear
- In office Treatment- Microblepharoexfoliation
- Topical Antibiotic drops or ointment – azithromycin, bacitracin, erythromycin
- Topical Antiparasitic - lotilaner
- Oral Doxycycline 20mg BID
- Lid Cleansers – Daily maintenance
- Makeup Removal
- Makeup Hygiene



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Treatment Options

Prescription medications

At-home treatments

In-office treatments

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Prescription Treatments for Blepharitis

- **Antibiotic Drops:**
 - Moxifloxacin 0.5% ophthalmic solution
- **Antibiotic /Steroid Combination Drops:**
 - Tobramycin/Dexamethasone suspension
 - Tobramycin/Loteprednol Suspension
 - Neomycin-polymyxin-dexamethasone
- **Ointments: antibiotic or antibiotic steroid combination**
 - Erythromycin, Neomycin-polymyxin-dexamethasone, tobramycin-dexamethasone
- **Topical Anti-parasitic**
 - Lotilaner 0.25% solution


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Mechanism of Lotilaner 0.25%

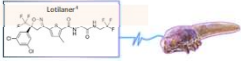
- Lotilaner functions as a **noncompetitive antagonist** of mite and arachnid GABA-gated chloride channels^{1,2}
- Directly paralyzes the mite nervous system through parasite-specific GABA inhibition, leading to death^{1,2}
- The lipophilic nature of the drop suggests its ability to flow into the oily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



Product form³
Preserved (sorbate) multidose eye drop solution in bottle



Dosing⁵
Twice daily for 6 weeks



FDA, Food and Drug Administration; GABA, gamma-aminobutyric acid.
1. Dabney C, et al. Accessed June 26, 2023. <https://doi.org/10.1016/j.jamaophth.2023.05.004>.
2. Dabney C, et al. Accessed June 26, 2023. <https://doi.org/10.1016/j.jamaophth.2023.05.004>.
3. Lotilaner. Tarsus Pharmaceuticals. Accessed June 26, 2023. <https://www.tarsuspharm.com/lotilaner>.
4. Lotilaner. Tarsus Pharmaceuticals. Accessed June 26, 2023. <https://www.tarsuspharm.com/lotilaner>.
5. Lotilaner. Tarsus Pharmaceuticals. Accessed June 26, 2023. <https://www.tarsuspharm.com/lotilaner>.

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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: **96%** of patients improved at least 1 collarette grade; **89%** achieved a clinically meaningful cure

FDA Approved July 25, 2023

Efficacy goal
1* collarette cure rate, 2* mite eradication, 3* 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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In Office Procedure: Lid Cleansing with Micro Blepharo Exfoliation

- Easy to use in office procedure
- Out of pocket patient cost
- Removes Biofilm from lashes and inner lid margin
- Great for Contact lens wearers
- Can be repeated Q3-6 months



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In Office Lid Treatment



Eyelid treatment System to treat Blepharitis and Inflammation

In office procedure for Blepharitis Treatment

Takes <10 minutes to complete

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Kill the Bacteria / Mites

•At Home OTC Tx: Lid Cleansers

- Prescription Medications:
 - Oral Doxycycline 20mg BID
- Topically:
 - Apply (azithromycin, erythromycin, or steroid/antibiotic combo drops) directly to lid margins with clean fingertip
 - QHS OU x 30 nights
 - Lotilaner 0.25% ophthalmic solution
- Hypochlorous Acid Spray
- Foaming Lid Cleanser
- Lid Scrubs Pads:
 - **NEVER USE BABY SHAMPOO!!!**

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Blepharitis: At-Home Cleansing

- Remove Contact lenses
- Makeup Removal
- Lid Cleansers – Daily maintenance
 - Wipes
 - Foams
 - Spray

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Lid and Lash Hypochlorous Acid Cleansing Sprays

- Hypochlorous Acid sprays: naturally produced in the cells of our body
- Natural defense against micro-organisms
- Great for killing staph bacteria around eyes

- Start with clean face
- Remove makeup or moisturizers
- Spray directly to closed lids
- Allow to air dry

PROS:

- Great for all skin types
- Found to kill COVID-19 virus
- Can also be applied to face
- Non-drying, Non-irritating
- Can also help to remove dust, dirt and pollens from lashes

CONS:

- Will not effectively eliminate Demodex when used alone
- Some concentrations can be irritating to very sensitive skin

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Foaming Cleanser PROS and CONS

• PROS:

- Great to use in the shower
- Can be used after makeup removal to cleanse lids
- Better for oily skin types

• CONS:

- Can be drying to the skin as many contain soap
- May Contain Tea Tree Oil

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Eyelid Wipes PROS and CONS

• PROS:

- Convenient
- Easy to carry with you

• CONS:

- Extra waste products due to individual packaging
- Most still need to be rinsed away
- May Contain Tea Tree Oil



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5 Categories of Makeup Removers

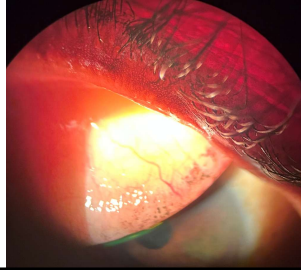
- Micellar
- Oil-Free
- Oil-Based
- Wipes
- Cloths

Must Remove Eye Makeup Every Night

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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

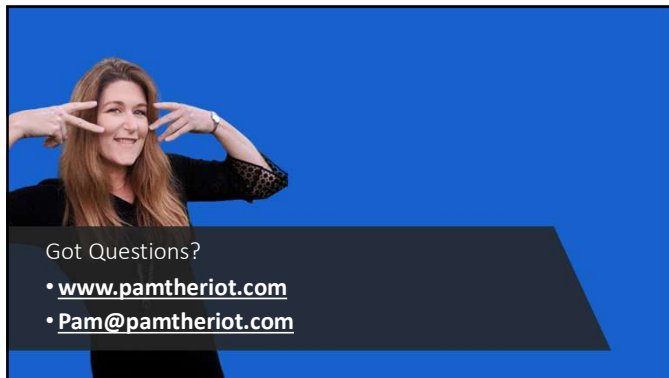


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If not you,
then
who...



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Thank You



- Vision Expo
- All of the Meeting Sponsors
- Attendees

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