



# Anterior Segment Update: 2013 Best Practices Vision Correction/Anterior Segment

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# Disclosures



- Consultant for:

**Alcon**

Speaker's Bureau for:

**Alcon, Diopsys, Heidelberg, Optos,  
Reichert, Zeavision**



*Photo credit - Mike Gustafson*

# Know Your Lecturer



- Loyola University of Chicago, 1984
- Illinois College of Optometry, 1988
- Associate optometrist private practice 1988-1992
- Solo practitioner after purchase of Chicago practice 1992
- Professional Eye Care Center, Inc.** is a full-scope, primary care setting-moved location in 2007 from 1900 sq. foot space to 5400 sq. foot facility, currently employ one full-time associate doctor, six full-time employees, and four part-time staff

# Lecture Objectives



- Look at trends that affect the profession
- Look at best practices for practicing optometry into the future
- Look at practical applications for implementing technologies
- Practicing good optometry is good/best for patients and good for business

# Optometric Oath



- “I will advise my patients fully and honestly of all which may serve to **restore, maintain or enhance their vision and general health.**
- I will strive continuously to broaden my knowledge and skills so that my patients may benefit from all **new and efficacious means to enhance the care of human vision.**”

# Trends in Optometry



- Profession roots based on optics
- Practice of optometry grew to behavioral/functional vision incorporating therapy other than spectacles
- Optometry scope of medical practice grows from diagnostic only to therapeutic
- We owe it to our profession, and, most importantly our patients, to advance with technology

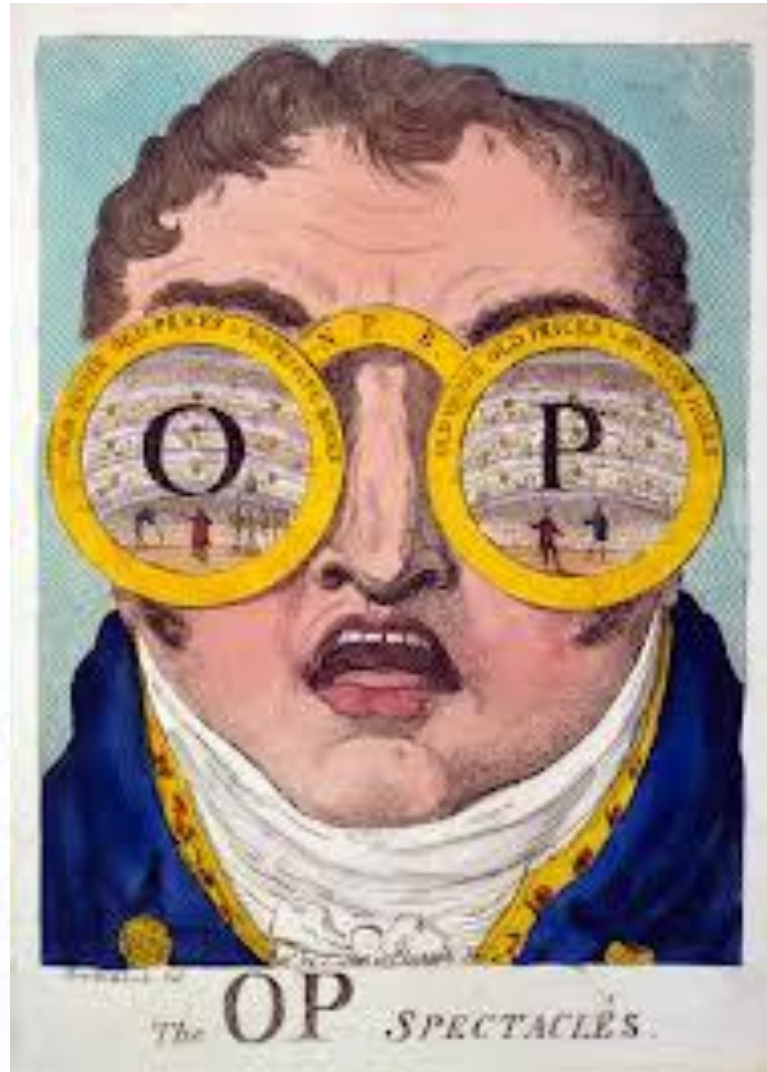
# Trends in Optometry



- With scope of practice expansion and market place trends making the “retail” side of optometry a “commodity” our practice models must change and adapt
- Practice growth will be based on advanced technologies and converting to a medical model



# Spectacle Correction



# Evolution of Spectacles



- Glass
- Plastic-lighter, thinner, safer (poly/hi-index)
- Photochromatic technologies
- Multifocal design changes, progressives
- Digital precision designs
- Custom lenses: correcting aberrations, point spread function refractions

# Internet Spectacle Sales



- It's here and it is a **growing** market



- Managed Care Vision Plans referring patients to websites---**VSP**
- What will happen to the brick and mortar dispensaries???

# Internet Spectacle Sales



- [Glassesusa.com](http://Glassesusa.com), SV-transitions/progressives \$167  
“Seller rating: 4.5 / 5 - Based on 2,430 reviews from the past 12 months”
- [Eyebuydirect.com](http://Eyebuydirect.com), progressives \$65.95-\$95.76,  
“perfect vision for less”
- [Framesdirect.com](http://Framesdirect.com), “The number one on-line retailer”: Silhoutte titanium rimless, AR, poly progressive (Essilor Elite) \$490.56 (\$186.56 frame, \$304 lenses)  
-my office retail to patient: \$800 (\$300 frame, \$525 lenses)

# Internet Spectacle Sales



- This is now how to take PD's online
- 3D scan apps coming out for virtual try-ons



# How to Keep Optical Profits



- Offer custom technology that can't be had on-line or commonly available
- Measure refraction with new technology:
  - \*Aberrometer: i.ProfilerPlus
  - \*VMax: point spread function

# i.Profiler® plus by ZEISS



- A 4-in-1 device that combines wavefront aberrometry, Atlas corneal topography, keratometry and autorefractometry
- Data calculations (wavefront, corneal topography, autorefractometry) in less than a minute



# i.Profiler® plus by ZEISS



- Access to the leading-edge lens technology of i.Scription, which provides the wavefront data necessary to create an Rx that is refined to 1/100th of a diopter, as well as a special analysis tool to support the consultation process





# i.Profiler® plus by ZEISS



- It takes only four easy steps to create i.Scription® by ZEISS lenses:
- i.Profiler<sup>plus</sup>® measurements
- Subjective refraction
- Utilization of measurement data and ZEISS patented algorithms to calculate the individual i.Scription®
- Production of the customized ZEISS precision lens with i.Scription® technology for excellent vision — even in changing light conditions



# i.Profiler® plus by ZEISS



- Capital outlay of instrument-\$25-\$28K
- Lens cost to patient-SV-\$300, Progressive \$550
- Lens profit to practice-\$150.00, Progressive \$200.00
- Practice Management Benefits:
  - within 1 minute capture=K's, topography, auto-refractor
  - customizes every Rx (not available elsewhere)
  - increases per pair revenue in optical
  - positions practice as technologically advanced
  - offers patients better quality vision**



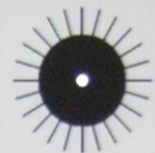
*Point Spread Function (PSF) (n): The most fundamental measure of any optical system; the advantage of using a point is that it is essentially a zero dimensional object.*

PSF Refractor™  
Point Spread Function





- 5x more accurate than phoropter
- Neutralizes aberrations
- Prevents over minusing
- Unique night vision correction
- Utilizes free form lenses=Enception™
  - 100% back surface free form technology to deliver sharp, clear vision with wider fields of view





- Capital outlay of instrument-financing approx. \$55/day
- Cost to patient-\$600+ SV, \$750+
- Net profit to practice-\$300+ SV, \$450+ Progressives
- Practice Management Benefits:
  - 1 minute/eye=2 minute refraction
  - customizes every Rx (not available elsewhere)
  - increases per pair revenue in optical
  - positions practice as technologically advanced
  - offers patients better quality vision**

# Future of Optical Dispensary



- In a down economy optical dispensaries can be affected the most-i.e, 2008
- Patients confronted with more options in the marketplace to obtain eyeglasses
- Relying on spectacle sales as the bulk of practice income has risks; especially for independent optometry
- **Need is greater to distinguish spectacle lens options with unique, custom technologies**

# Medical Optometry-Anterior



# Medical Optometry-Anterior



- Lashes-Hypotrichosis





# Medical Optometry-Anterior



- Lashes-what women really want



# Medical Optometry-Lashes



- Latisse has been standard since 2009
- Rx only
- Potential side effects, IOP lowering, permanent iris pigmentation, permanent lid pigmentation

**Latisse™**  
(bimatoprost ophthalmic solution) 0.03%



# Medical Optometry-Lashes

- New cosmetic Tx; no pharmacy Rx needed
- Zoria distributed through OcuSoft
- No side effects



From OCuSOFT®, the Leader In Eyelid Hygiene

# ZORIA™

*Boost*

LASH INTENSIFYING SERUM

Zoria™ Boost utilizes patented technology to naturally stimulate, strengthen and condition eyelashes creating a dramatically longer, fuller, darker look.

Before      After 2 weeks

*Hypoallergenic  
Ideal for Sensitive Eyes  
No Prescription Required*

Now Available Here

Look for additional products from Zoria™ at [www.zoriacosmetics.com](http://www.zoriacosmetics.com)

OCuSOFT®  
THE CARE

# BOOST Lash intensifying serum



- Lili Fan, M.D. is visionary scientist and entrepreneur whose list of achievements include:

- *Ophthalmologist*
- *Patents for polymeric and oligomeric biosurfactants*
- *President and Founder of Luksus<sup>®</sup> Skin Biomedical*
- *Founding Director of Owen Botanical Organics, Inc.*

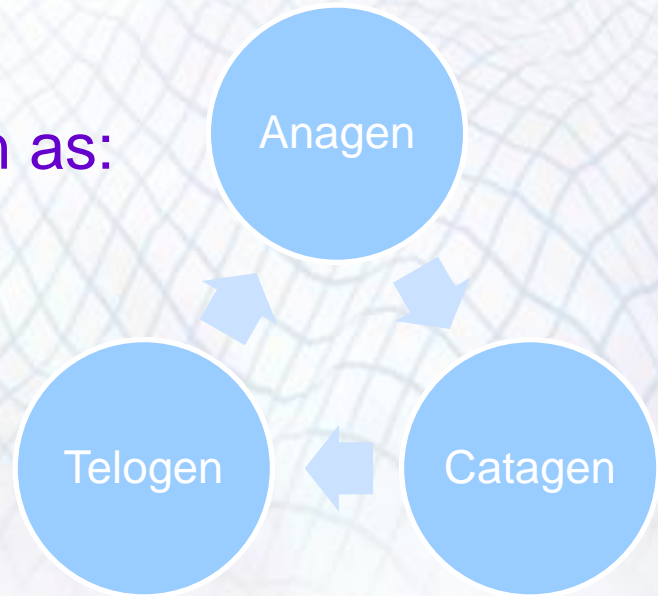


# How it works

- Zoria™ Boost Lash Intensifying Serum utilizes patented polypeptide technology to naturally enhance and support each of the three phases of the eyelash growth cycle. The result: dramatically longer, fuller and darker looking eyelashes.

- These three phases are known as:

1. Anagen (active growth)
2. Catagen (transition)
3. Telogen (resting)




# Eyelash GROWTH cycle



1. **The Anagen (active growth) Phase** - lasts between 30 -45 days. In this phase, the patented polypeptide technology in Zoria™ Boost stimulates keratin genes and hair follicles to support natural eyelash growth.
2. **The Catagen (transition) Phase** - lasts 2 -3 weeks. During this phase, the eyelash stops growing once it reaches its maximum length and volume. Zoria™ Boost strengthens, repairs and protects the eyelash in this transition phase.
3. **The Telogen (resting) Phase** - lasts approximately 100 days before the eyelash eventually falls out. Each individual eyelash undergoes each phase at different times. On average, complete replacement of an eyelash occurs between 4-8 weeks. Zoria™ Boost not only nourishes and conditions eyelashes to prepare for the next growth cycle, it also prolongs the Telogen phase creating the appearance of longer, fuller lashes.

# Clinical study – in vivo data i



- *Thicker, Darker and Longer Looking Eyelashes*
- **Panel:** 15 subjects, 24-82 years old
- **Test Product:** A conditioner with patented lipopeptide
- **Measurement:** EyeTest lash measurement by SigmaScan software

# Clinical study – in vivo data i



- After two weeks of use



After



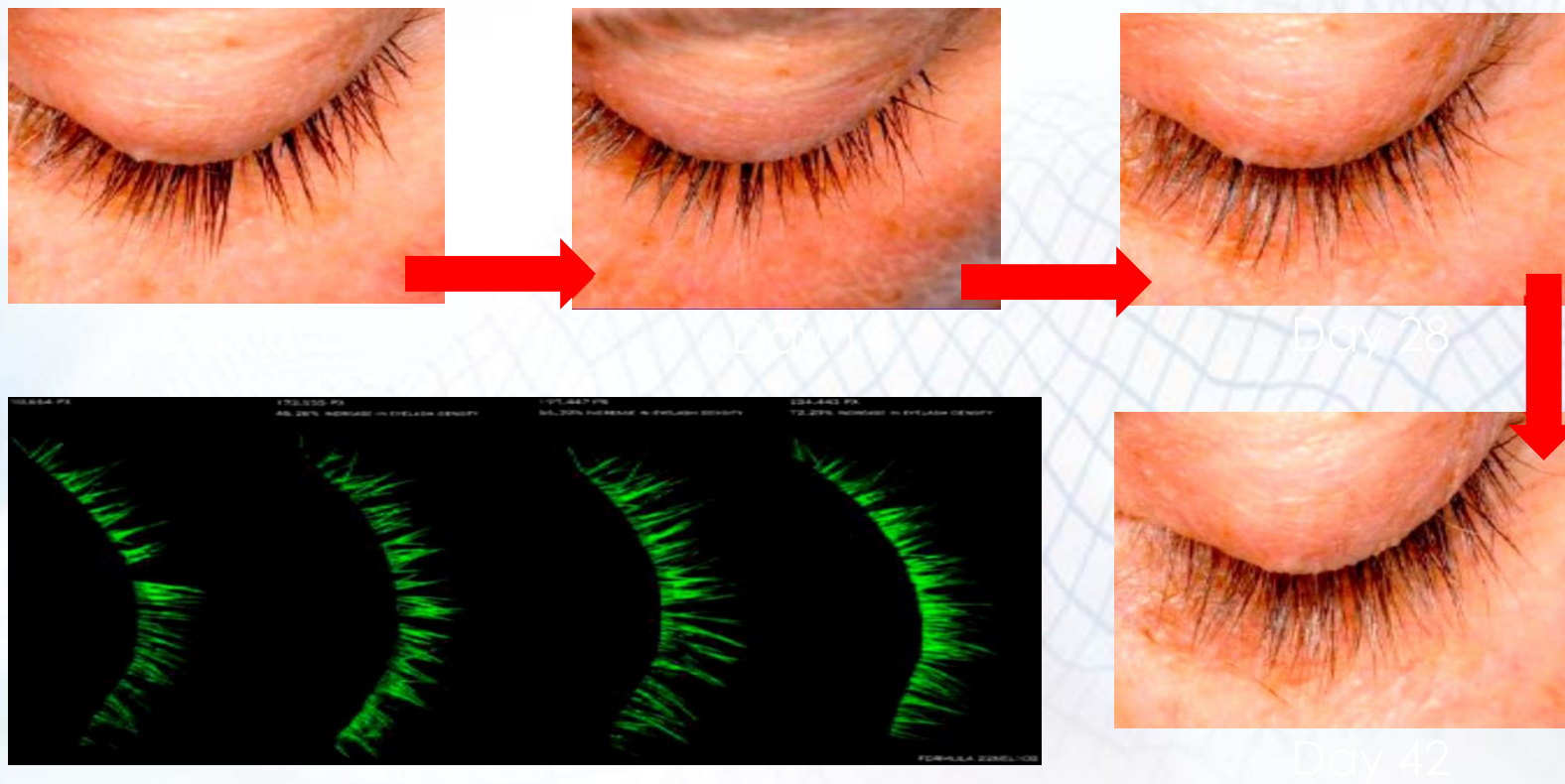
# Clinical study – in vivo data ii



- *Thicker, Darker and Longer Looking Eyelashes*
- **Panel:** 4 subjects
- **Test product:** Eyeliner serum applied on the root of the eyelashes once a day at night
- **Measurements:** 2, 4 and 6 weeks – Canon 5 – DMII calibrated with micrometers to accurately calculate distal length and width. Cameras mounted on permanently fixed tripods shooting directionally above the anterior eyelids. Patients are inclined on a physician lab chair to maintain subject stability. Software programs are a composite of commercially available Canfield, Hasselblad and proprietary programs to represent eyelash density analysis.

# Clinical study – in vivo data ii

- After 2-6 weeks of use



# Availability/Cost

- Zoria™ Boost Lash Intensifying Serum is exclusively available through eye care professionals through the optical dispensary.
- Cost per tube: \$60
- Suggested retail price: \$100 - \$120
- Item #720-5-01



# Key Points



- All-natural
- Patented Polypeptide Technology
- Cosmetic grade active ingredient whereas Latisse<sup>®</sup> is a prescription drug
- Cosmetically safe – no allergic response, iris or skin discoloration
- Lasts twice as long as Latisse<sup>®</sup> for the same price (Latisse<sup>®</sup> = \$120 for 3 mL fill and Zoria<sup>™</sup> = 6 mL fill)

# Marketing Materials

**NEW!**  
From OCuSOFT®, the Leader In Eyelid Hygiene

# ZORIA™

*Boost*

## LASH INTENSIFYING SERUM

Zoria™ Boost Lash Intensifying Serum utilizes patented polypeptide technology to naturally enhance and support each of the three phases of the eyelash growth cycle. The result:



*dramatically longer, fuller and darker looking eyelashes\**

Exclusively available through Eye Care Professionals.  
For more information and to order, call OCuSOFT® at (800) 233-5469.  
[www.zoriacosmetics.com](http://www.zoriacosmetics.com)



© 2018 OCuSOFT, Inc., Rosenberg, TX 77471  
#ZOR-6-53 R02/13

*\*Results may vary.*

3.5" x 11" Postcard with Purchase

From OCuSOFT®, the Leader In Eyelid Hygiene

# ZORIA™

*Boost*

## LASH INTENSIFYING SERUM

Zoria™ Boost utilizes patented technology to naturally stimulate, strengthen and condition eyelashes creating a dramatically longer, fuller, darker look.



*Hypoallergenic  
Ideal for Sensitive Eyes  
No Prescription Required*



**Now Available Here**

Look for additional products from Zoria™ at [www.zoriacosmetics.com](http://www.zoriacosmetics.com).



19" x 27" Poster with Purchase

# Interview with Dr. Marguerite McDonald



<http://www.youtube.com/watch?v=PI-ACQvEGBA&feature=youtu.be>

<http://www.youtube.com/watch?v=PI-ACQvEGBA&feature=youtu.be>

# Other Lash Product

- Zoria™ Mascara For Sensitive Eyes
  - Creates beautifully defined, natural looking eyelashes without any clumps or flakes
  - Safe for sensitive eyes and contact lens wearers
  - Hypoallergenic
  - Ophthalmologist Tested
  - Cost per 0.25 oz. tube = \$12.50
  - Suggested retail price = \$24.99



# Medical Optometry-Lashes

- New source of in office revenue along with patient convenience
- Huge savings for patients half the cost of Latisse (6ml \$120.00)
- Practitioner can charge office visit along with product revenue

From OCuSOFT®, the Leader In Eyelid Hygiene

# ZORIA™ Boost

LASH INTENSIFYING SERUM

Zoria™ Boost utilizes patented technology to naturally stimulate, strengthen and condition eyelashes creating a dramatically longer, fuller, darker look.

Before After 2 weeks

*Hypoallergenic  
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Now Available Here

OCuSOFT  
THE CARE  
EXPERT

Look for additional products from Zoria™ at [www.zoriacosmetics.com](http://www.zoriacosmetics.com)



# Medical Optometry-Lashes/Lids

New!

# OCuSOFT Baby™

Eyelid & Eyelash Cleanser



From the Maker of the **#1**  
Doctor Recommended  
Eyelid Cleanser!

# What is OCuSOFT Baby™?

•OCuSOFT Baby™ Eyelid & Eyelash Cleanser is a mild, tear-less formula that gently removes irritants and morning gunk that can contribute to discomfort associated with pink eye, allergies and other eyelid related conditions in infants and small children.



# OCuSOFT Baby™ is Ideal For...



- **Blocked Tear Ducts:** Caused by an obstruction in the tear drainage system, blocked tear ducts prevent tears from draining properly leaving eyes watery and irritated. Nearly 20% of newborn babies are born with blocked tear ducts, but it usually clears up within the first year without any treatment. However, **blocked tear ducts may lead to infection so it is important to keep the eyes and the skin around the eyes clean.**



# OCuSOFT Baby™ is Ideal For....



- **Pink Eye:** Conjunctivitis, commonly known as “pink eye,” is an inflammation of the outermost layer of the eye and the inner surface of the eyelids, and can be caused by allergens, other irritants, bacterial or viral infections. Several types of pink eye exist, so consult with your pediatrician to determine whether your baby has allergic, bacterial, viral or chemical “pink eye.”
- **Ocular Allergies:** Ocular allergies can cause tearing, crusting as well as irritation. Because babies have particularly sensitive skin, it is important to use products that are gentle enough for them, especially around their eyes and face.



# OCuSOFT Baby™ is Ideal For.....

- **Cradle Cap (Seborrheic Dermatitis):** A flaky or scaly skin condition occurring on the scalp of newborn babies, cradle cap does not usually bother the baby, but does require mild care. If the condition worsens, parents should seek the advice of their pediatrician. **Cradle cap affects about half of all babies born, and is often prominent around the ear, eyebrows and eyelids.**



# How do I use it?

- **Step 1:** Unfold pre-moistened towelette.
- **Step 2:** Gently cleanse eyelid and eyelashes using side-to-side strokes. No rinsing necessary. Repeat as needed.



# What are some key points?



- Clinically Trusted, Tear-less Formula
- Gently Cleanses and Removes Irritants From the Eyelids
- Contains Moisturizer for Baby's Delicate Skin
- No Parabens, Fragrances, Dyes or Quaternium-15
- Ideal for Children of All Ages



**Great for  
Baby's  
Delicate  
Skin!**

# How is it packaged?

- Individually Wrapped Pre-Moistened Towelettes
- Large 4" x 6" Size for Ease of Use
- 20 Towelettes Per Box
- Includes \$3.00 Point-of-Purchase Coupon!





# Where can patients find it?

- Online at [www.ocusoft.com/ocusoftbaby](http://www.ocusoft.com/ocusoftbaby)  
(coming soon)
- Through optometrist office
- Limited Retail Outlets
  - Walgreens starting August of 2012



# What is the cost?

- Physician Cost: \$7.50
- Suggested Retail Cost: \$14.99
- Great for pediatric practices



# What is product positioning?



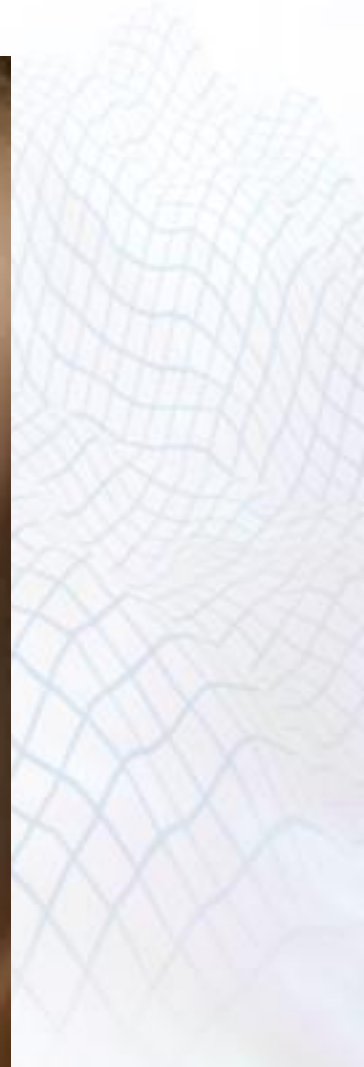
- OCuSOFT Baby™ is the only Eyelid & Eyelash Cleanser on the market specially designed to gently remove irritants and morning gunk that can contribute to discomfort associated with pink eye, allergies and other eyelid related conditions in infants and small children.
- OCuSOFT Baby™ was developed by the maker of the #1 Doctor Recommended Brand of Eyelid Cleansers.



For more information, call **(800) 233-5469**  
or visit [www.ocusoft.com](http://www.ocusoft.com)



# Medical Optometry-Lids



# Medical Optometry-Lids

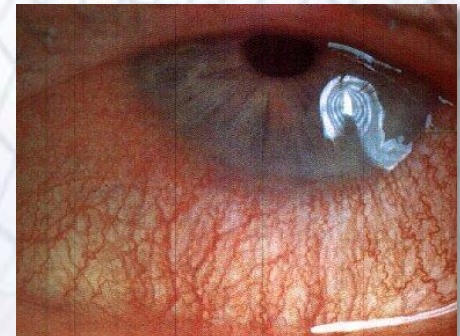


- Blepharitis; Anterior/Posterior
- Demodex Mites (Underdiagnosed)
- Meibomianitis
- All conditions lead to **dryness** (Tears need lids!)

# What is Blepharitis?



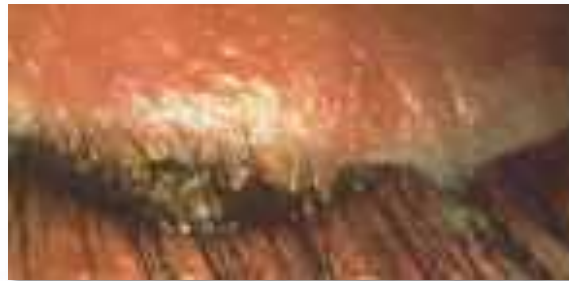
- **Blepharitis** is an inflammation of the eyelids causing red, irritated, eyelids and the formation of dandruff-like scales on the eyelashes.
- Symptoms include itching, burning and foreign body sensation.
- Reoccurrence is common and may lead to Trichiasis.



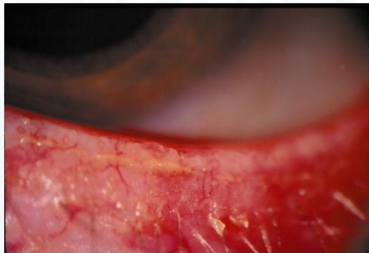
# Two Types of Blepharitis



- Anterior Blepharitis: Occurs at the outside front edge of the eyelid where the eyelashes are attached.



- Posterior Blepharitis: Affects the inner edge of the eyelid that comes in contact with the eyeball.





# What Causes Blepharitis?



- Allergic
- Seborrheic (Dandruff)
- Bacterial (Staph Infection)
- Demodex Mites (**under diagnosed**)
- Irregular Oil Production by the Glands
- Other Skin Conditions Such as Acne Rosacea and Scalp Dandruff

# What Treats Blepharitis?



- Blepharitis cannot be cured but it can be treated and controlled through proper eyelid hygiene
- Gentle scrubbing of the eyes with a mixture of water and baby shampoo or an over-the-counter lid cleansing product – **OCuSOFT® Lid Scrub®** *is often recommended*
- Warm compresses can be applied to loosen the crusts
- In cases involving bacterial infection, an antibiotic may also be prescribed.

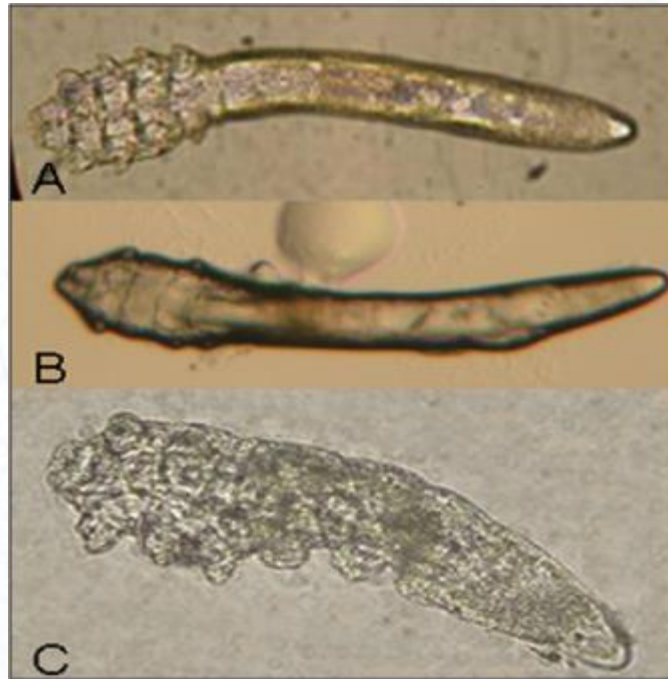
# Blepharitis Treatment Options



- Chronic condition needs to be monitored depending on it's severity
- Those on oral meds need to be monitored every 3-6 mos.
- Patients need to be well educated on importance of maintaining this chronic condition

# Demodex Mites

Demodex mites at 400x magnification: (A) *D. folliculorum* adult, (B) larva, and (C) *D. brevis*.



# Life Cycle and Risk Factors



- The life-span of the *Demodex* mite is very short, about 14 to 18 days from the egg to the larval stage followed by five days in the adult stage.
- Because of the limited life-span of the adult mites, mating plays an important role in perpetuating *Demodex* infestation. For transmission of mites, direct contact is required.
- The rate of *Demodex* infestation increases with age, being observed in 84% of the population at age 60 and in 100% of those older than 70 years.
- Rosacea predisposes patients to blepharitis mainly by creating an environment on the skin that congests all the oil-producing glands necessary for a healthy dermis and epidermis.
- Once *Demodex* infestation establishes in the face, it is likely to spread and flourish in the eye, leading to blepharitis and ocular inflammation. Again, this is because the eye is generally inaccessible by daily facial hygiene.

# Demodex Mites



## Did You Know?

- Over 75% of patients over age 45 test Demodex-positive<sub>1</sub>
- Over 40% of blepharitis patients test Demodex-positive<sub>1</sub>
- 30-fold higher count of Demodex mites in patients with cylindrical dandruff (CD) than without CD<sub>2</sub>
- Strong correlation between the number of Demodex and the severity of ocular discomfort<sub>3</sub>

References: 1. Inceboz T, Yaman A, Over L, et al. Diagnosis and Treatment of Demodectic Blepharitis. *Turk Society for Parasitology*. 2009 33(1):32-36. 2. Gao Y-Y, Di Pascuale MA, Li W, et al. High prevalence of ocular demodex in lashes with cylindrical dandruffs. *Invest Ophthalmol Vis Sci*. 2005;46:3089-3094. 3. Lee SH, Chun YS, Kim JH, et al. The Relationship between Demodex and Ocular Surface Discomfort. *Invest Ophthalmol Vis Sci*. 2010;51:2906-2911. 4. Liu J, Sheha H, Tseng SC. Pathogenic role of Demodex mites in blepharitis. *Curr Opin Allergy Clin Immunol*. 2010 Oct;10(5):505-10.

# Demodex Mites



## How to Identify Demodex® Mites<sub>1</sub>:

1. **Clinical History:** Blepharitis, conjunctivitis or keratitis in adult patients or blepharoconjunctivitis or recurrent chalazia in young patients who are refractory to conventional treatments, or when there is madarosis or recurrent trichiasis
2. **Slit-lamp Examination:** Identification of CD (cylindrical dandruff) at root of lashes
3. **Microscopic Confirmation:** Detection of Demodex eggs, larvae and adult mites on epilated lashes.

1. Liu J, Sheha H, Tseng SC. Pathogenic role of Demodex mites in blepharitis. *Curr Opin Allergy Clin Immunol*. 2010 Oct;10(5):505-10.

# Demodex Mites



## Demodex in Skin Destroys Natural Beauty

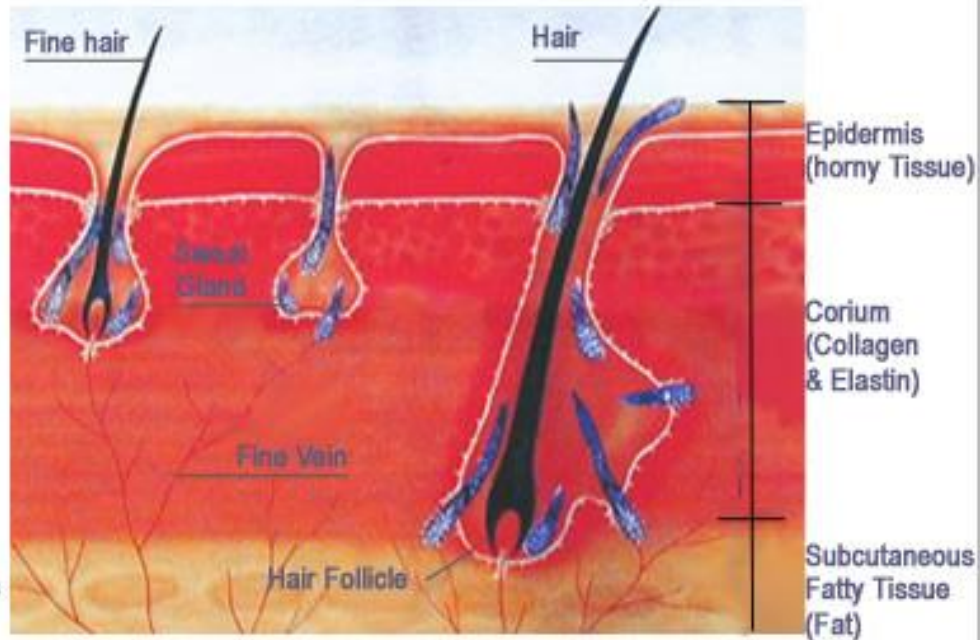
[ Demodex Mite size ]  
0.1 - 0.3 mm



Demodex Folliculorum  
(in hair follicles)



Demodex Brevis  
(in sebaceous glands)





# Demodex Mites



# Demodex Mites

- **Figure below. The clinical features of Demodex blepharitis include: (A) cylindrical dandruff at the root of the lashes (yellow arrow) and inflamed eyelid, (B) conjunctival inflammation, and (C) a corneal lesion (yellow arrow).<sup>1</sup>**



1. Do You Know Demodex? These mites, an overlooked cause of ocular inflammation, can be the root cause of your toughest blepharitis cases.

By Jingbo Liu, MD, PhD, and Scheffer C. G. Tseng, MD, PhD

# Demodex Mites

## *Treatment Goals:*

- Remove adult mites and their offspring
- Help prevent re-infestation
- Alleviate patient's symptoms



# Demodex Convenience Kit



- **Kit includes:**
- Demodex® Topical Solution
- OCuSOFT® Lid Scrub® PLUS
- Tears Again® Ointment
- Tears Again® **advanced** Liposome Spray
- BlephBrush™



# Demodex Convenience Kit

## Why Demodex® Convenience Kit?

- First and only kit designed to help practitioners remove Demodex mites in-office with an easy 2 step process
- Helps patients control re-infestation at home with daily cleansing and ongoing maintenance



# Demodex Mites-Treatment



## For the practitioner:

1. Cleanse eyebrows, eyelids and eyelashes using OCuSOFT® Lid Scrub® PLUS Pre-Moistened Pads. No rinsing necessary.
2. Place a small amount of Demodex® Topical Solution on the included BlephBrush™ and gently apply to the eyebrows, edge of the lower eyelid and lower eyelashes, then upper eyelid and upper eyelashes, rewetting the BlephBrush™ with more solution as needed. **AVOID DIRECT CONTACT WITH THE EYE OR STINGING/BURNING MAY RESULT.**
3. Wait 2 minutes and remove Demodex® Topical Solution along with softened debris from the eyebrow, eyelid and eyelashes using a fresh OCuSOFT® Lid Scrub® PLUS Pre-Moistened Pad. The smaller squared brush of the Bleph Brush™ may also be useful in removing excessive debris.
4. Repeat Steps 2-4.
5. Remove any remaining Demodex® Topical Solution with OCuSOFT® Lid Scrub PLUS. Patient may also rinse face and eye areas with water if desired.

# Demodex Mites-Treatment



## . For the patient:

- Continue at-home hygiene regimen and help prevent mites from returning by cleansing eyebrows, eyelids and eyelashes with OCuSOFT® Lid Scrub® PLUS Pre-Moistened Pads twice daily.
- Spray Tears Again® advanced Liposome Spray onto closed eyelids throughout the day to soothe and relieve irritation. Use as needed according to package directions.
- Apply Tears Again® Eye Ointment to inner eyelids/eyelash margins at bedtime to relieve dryness and protect against moisture loss. Use according to package directions.

# Demodex Mites-Treatment



## . Do not use

- on unhealthy, numb, damaged, broken skin or areas with no sensation of feeling
- on eyelids that do not close
- on areas of bruising or swelling
- on children under the age of 18 or elderly patients with reduced sensation of feeling

## When using this product

- check skin frequently for signs of excessive skin irritation
- do not place extra pressure or warmth over the product
- do not apply more than once in any seven (7) day period



# Demodex Mites-Treatment



. Long term therapy/maintenance:

**Tea Tree Oil is the key!**

**Cliradex-**

**Metaleuca Alternifolia**



**Cliradex<sup>®</sup>**

The Essential, All Natural & Effective Way  
To Clean Lashes, Eyelids & Face



# Cliradex-Maintenance Tx



. 4-Terpineol, an organic compound that safely and effectively cleans and soothes the skin

**Naturally: antifungal  
antiseptic  
antibacterial**

# Cliradex-Maintenance Tx



**.Indications: Dry eye**  
**Rosacea**  
**Blepharitis**



# Cliradex-Maintenance Tx



**.Directions: 1-2x/day**

**1 pad/use**

**-apply to lids/face and  
do not open eyes for at  
least 1 minute after lid  
contact**

**-tightly closed lids but  
no squinting**



# Cliradex-Availability

[www.directdermacare.com](http://www.directdermacare.com) - **\$42.99**

or

**Doctor's office only**- Biotissue (refers to OD)

[www.cliradex.com](http://www.cliradex.com)

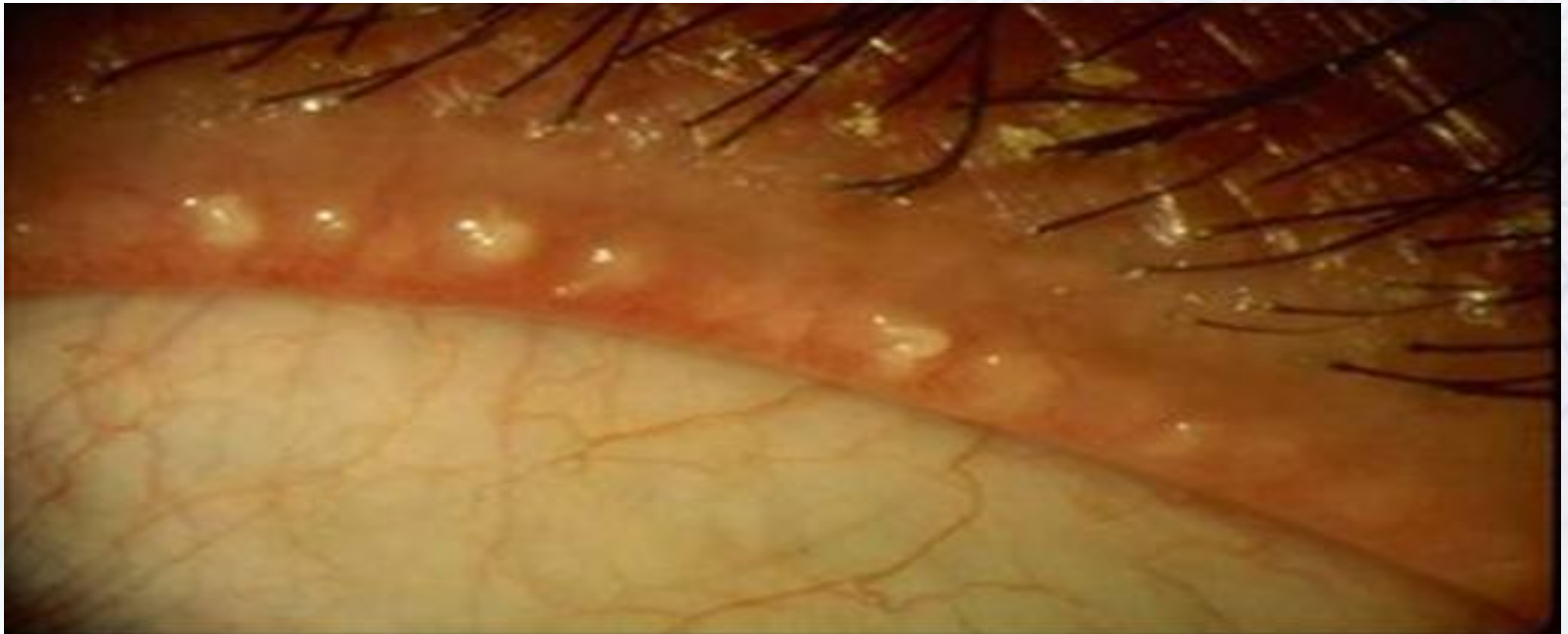
**-cost to practice \$24.00**

**-retail price \$39.00**



# Meibomianitis

Meibomian glands have waxy secretions instead of oily usually due to a diet rich in saturated fat and not enough fish oil



# Meibomianitis



Waxy meibomian secretions contribute to eye discomfort in at least 3 separate ways:

1. Watery tears evaporate too quickly, leaving the eye too dry, especially inside heated rooms and automobiles, and outside in hot, dry or windy conditions; the poor lid film results in very small but painful superficial erosions of the corneal epithelium.
2. The wax actually distends the meibomian gland itself, giving a feeling of dull pain which is poorly located, so the actual pain may be felt in the eye or behind the eye.
3. The third is that the lid margins can become raw and irritated, without the protective oil components to protect it,

# Meibomianitis-Treatment



- Start fish oil supplements immediately.
- Use artificial tears four times a day to get immediate relief. Can also use liposome spray for irritated lids.
- Lid scrubs qAM and qPM
- Use heated goggles about twenty minutes a day for about a week.
- Return to the office after a week with goggles for lid expression immediately after an in-office lid warming.
- Return in three months for dry eye measurements and repeat lid expression, if needed. Most patients have so much relief from the initial treatment that repeat lid expression is not needed.



# Meibomianitis-Treatment



- EZ Tears fish oil supplement-2 tabs PO QD:

-A long term protocol of daily consumption of Omega-3 oil also has many benefits not related to dry eyes, but we use it to allow the meibomian glands to make oily secretions again

-2000 IU of Vitamin D (important for general immunity/health

-Other nutrients that are anti-inflammatories





## EyePromise EZ Tears Formulation (dry eye)

Vitamin A (Retinyl Palmitate)	1,000 IU
Vitamin D3	2,000 IU
Fish Oil EE 70%	1,480 mg
Total Omega 3's	1,100 mg
EPA	590 mg
DHA	440 mg
Proprietary Blend	220 mg (see below)
Evening Primrose Oil	100 mg
Turmeric Extract	50 mg
Green Tea Extract	50 mg
Tocotrienol/Tocopherol	20mg/60 IU

# Meibomianitis-Treatment

- Retaine MGD QID-PRN
  - just out 1 year
  - 30 Sterile Single-Dose Containers (0.4 mL Each)
  - Preservative Free\*\*
- Tears Again Advanced Liposome Spray BID to PRN
  - soothes lids/margins
  - spray with eyes closed



# What is Retaine® MGD™?

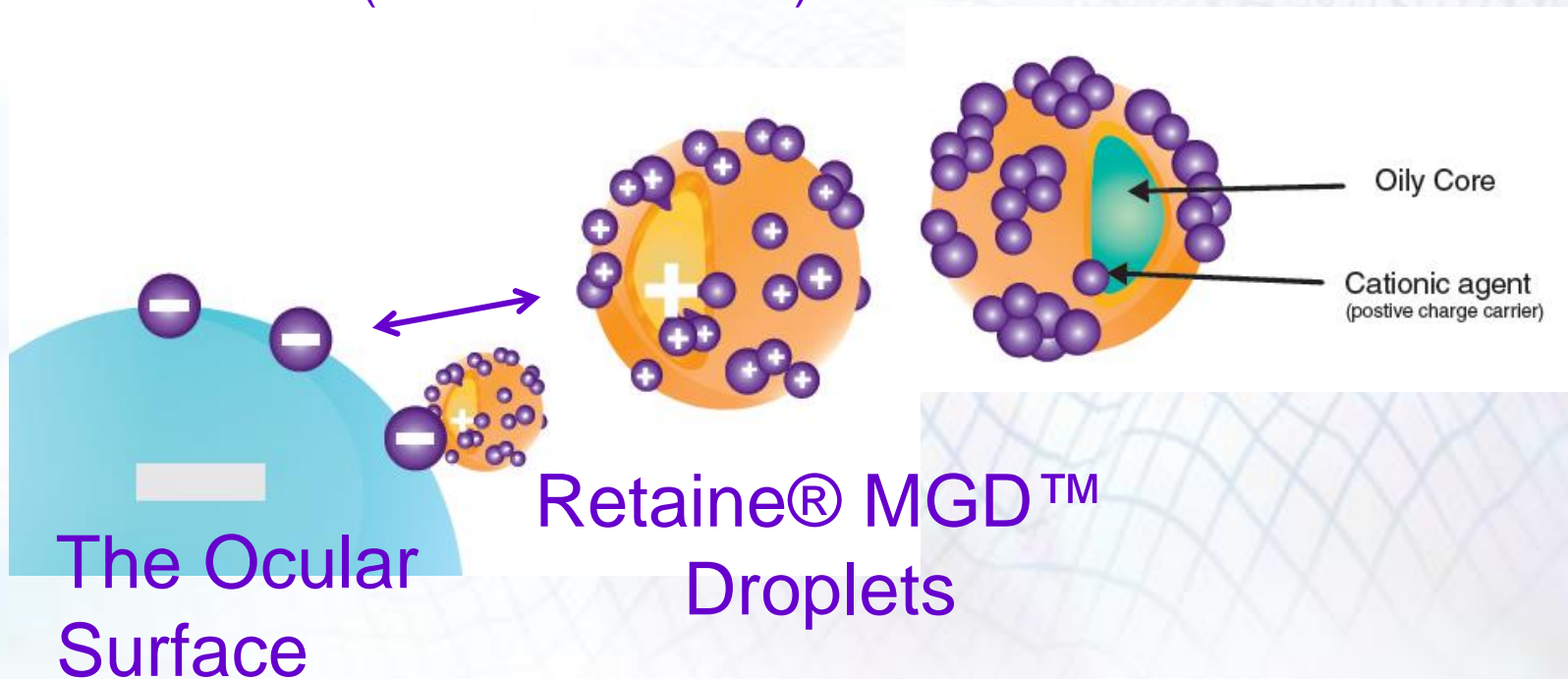
Retaine® MGD™ is a revolutionary preservative-free ophthalmic emulsion that moisturizes, lubricates and protects moderate to severe dry eyes.

Utilizing a proprietary cationic oil-in-water emulsion technology (Novasorb®), Retaine® MGD™ effectively binds to the surface of the eye to deliver immediate relief and long-lasting comfort.



# How Does It Work?

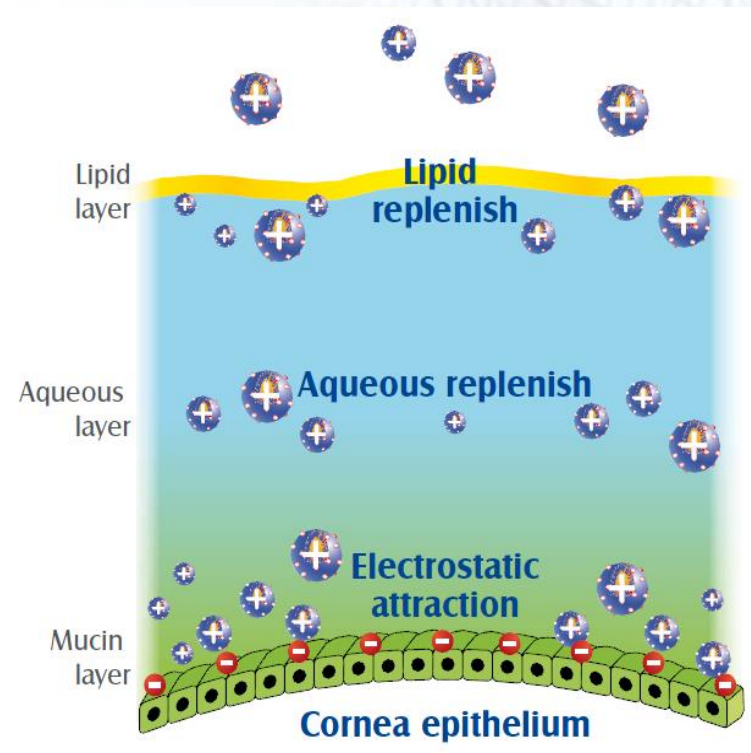
Cationic emulsion is the delivery of two or more immiscible liquid ingredients (i.e. oil and water) through the electrostatic attraction between a positively charged substance (Retaine® MGD™ droplets) and a negatively charged substance (the ocular surface).



# How Does It Work? (cont.)

The innovative formulation combines with the main mechanisms found in tears and acts on every layer of the tear film to provide enhanced comfort.

- Moisturizes the ocular surface by adding water and reducing evaporation
- Lubricates the eye by replenishing the lipid layer of the tear film
- Protects the ocular surface by lowering the friction caused by eyelid blinking



# What are the Main Ingredients?

## *Active Ingredients:*

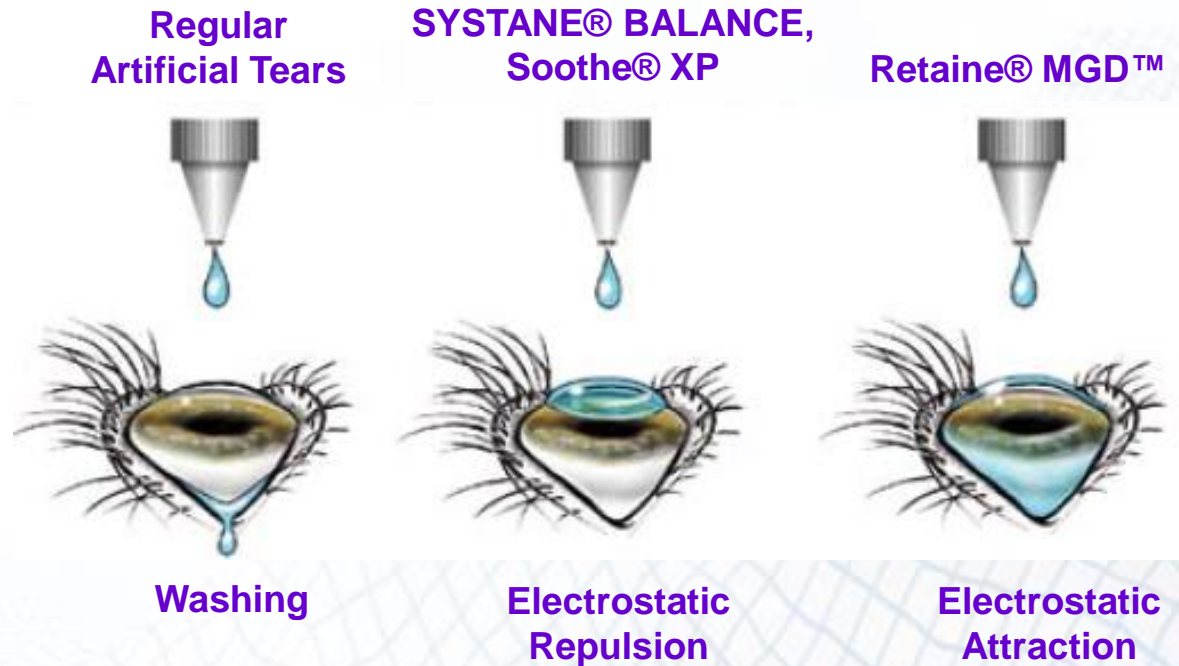
- Light Mineral Oil (0.5%)
- Mineral Oil (0.5%)

## *Inactive Ingredients:*

- Cetalkonium Chloride (gives positive charge to emulsion)
- Glycerol
- Polaxamer 188
- Tromethamine
- Tris Hydrochloride
- Tyloxapol
- Water for Injection



# How Is Retaine MGD Different From Other Drops?



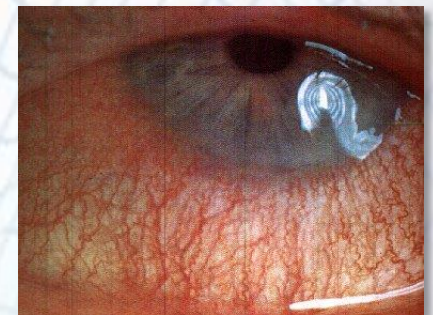
- Regular artificial tears wash out and evaporate quickly providing temporary relief only.
- SYSTANE® BALANCE Lubricant Eye Drops (Alcon) utilizes LipiTech™ System, an emulsion technology of mineral oil and anionic phospholipid which binds to the ocular surface and restores the lipid layer, **but does not disperse evenly**.
- Soothe® XP Emollient Eye Drops (B+L) contains a mineral oil formulation utilizing Restoryl® to re-establish the lipid layer but **does not have the anionic or cationic technology to adhere and prolong contact with the ocular surface**.



# When Should it be Recommended?

Retaine® MGD™ should be used throughout the day as needed to relieve irritation of the eyes. It is ideal for use in patients with:

- Moderate to Severe Dry Eyes
- Meibomian Gland Dysfunction



# What is the Recommended Dosage?

- Instill 1 or 2 drops in the affected eye(s) as needed (drops appear as a milky white solution, shake well before using)
- Not recommended for contact lens wearer's



# What are Some Key Benefits?



- Preservative-Free
- Sterile Single-Doses
- Immediate Relief
- Long-Lasting Comfort
- Does Not Blur Vision
- Reproduces the Physiology of Natural Tears
- Restores the Lipid Layer
- Stabilizes the Tear Film
- Spreads Evenly on the Ocular Surface
- Affordable Alternative to Rx Therapies

# What is the Cost?

- The Cost to Physicians: \$12.50
  - Special 10% Off Introductory Offer
- Suggested Retail Price to Patients: \$24.99



# Meibomianitis-Treatment



- Tears Again Advanced Liposome Spray
  - soothes the lids and margins
  - Liposomes are microscopic molecules that have been used for years in cosmetics and drug delivery. Vital nutrients and antioxidants that include Vitamins A, C, and E have been added to provide long-lasting comfort with minimal application.



# Meibomianitis-Treatment

- Lid Scrubs qAM and qPM to treat the unhealthy lid margins with cleaning foam to remove any toxic or necrotic residue



# Meibomianitis-Treatment

- Tranquileyes goggles; 20 min/day x 1 week to treat the meibomian glands with a short term protocol of warming with special heated goggles to help liquify the waxy oils and in-office lid expression to return the meibomian glands to their normal anatomy.

-gel packs easily heat in microwave and give a nice, concentrated heat



# Meibomianitis-Treatment



- Lid expression after an in office warming goggles 20 minute session
  - drop of topical anesthetic for comfort
  - slip Mastrotta Meibomian Paddle behind lid on palpebral conjunctiva and gently press outer lid (over tarsal plate) to express glands

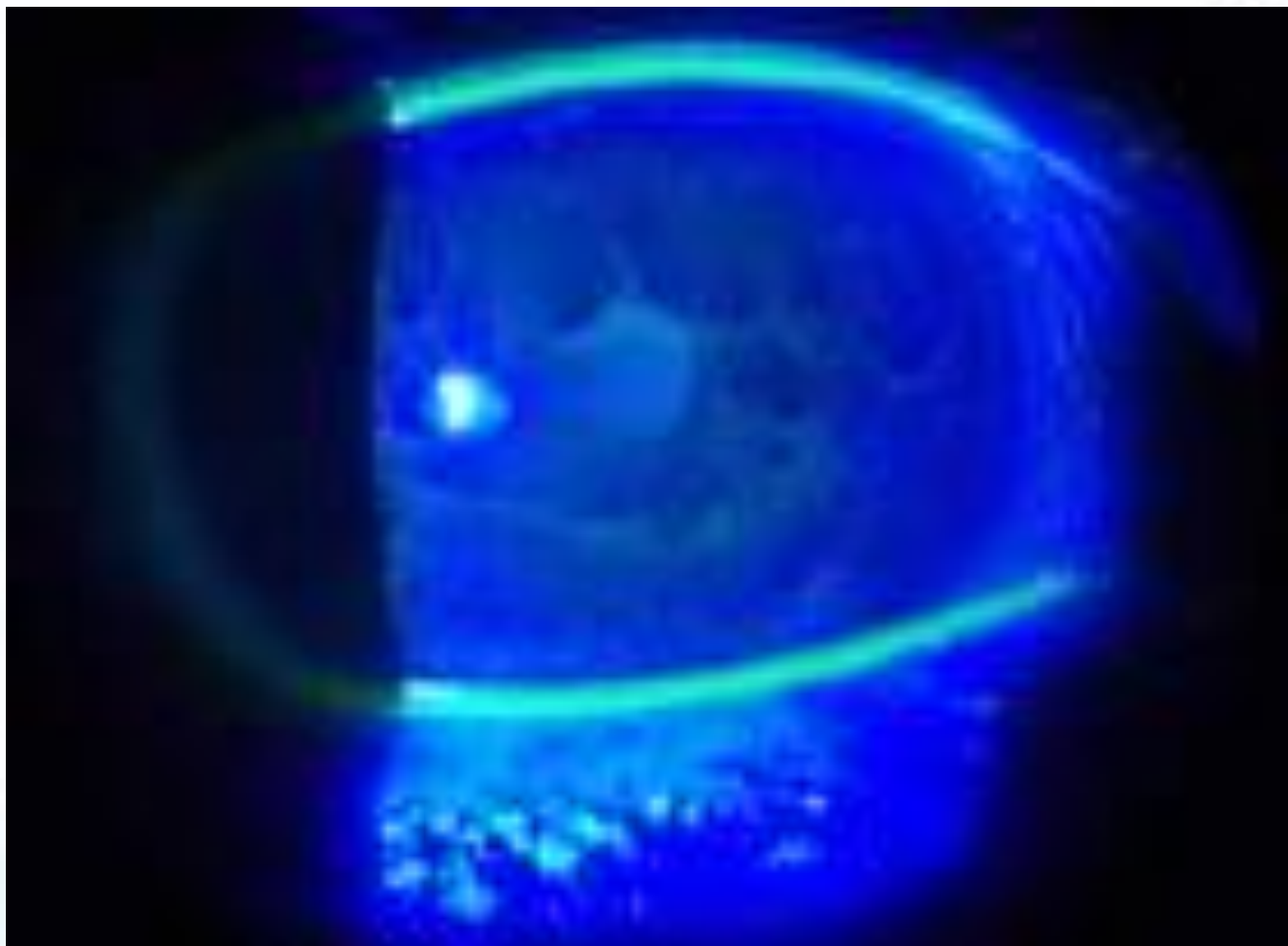




# Rosacea

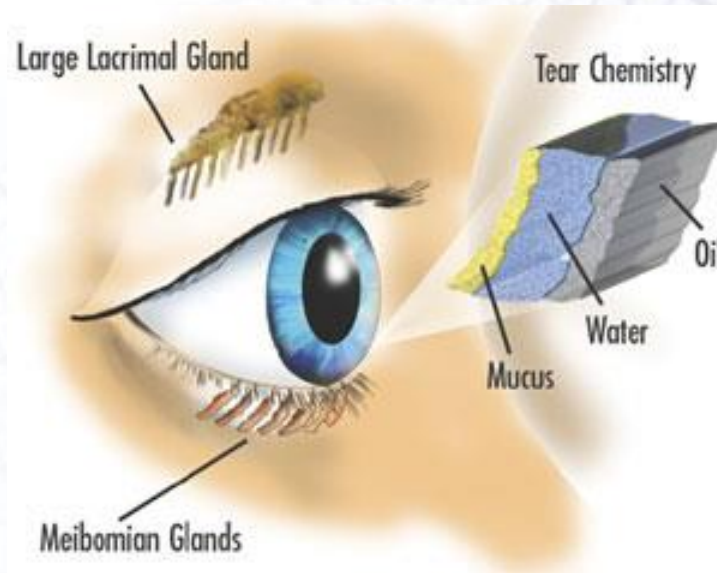


# Lids to Tears-Dry Eye



# A Brief Introduction

- Tears: Complex mixture
- Mucus, Water, Oils
- Healthy tears essential to good vision



# Causes of Dry Eye Syndrome



- Blepharitis
  - Meibomian Gland Dysfunction (MGD)
  - Medications
  - Environment
  - Post-Surgical
- 

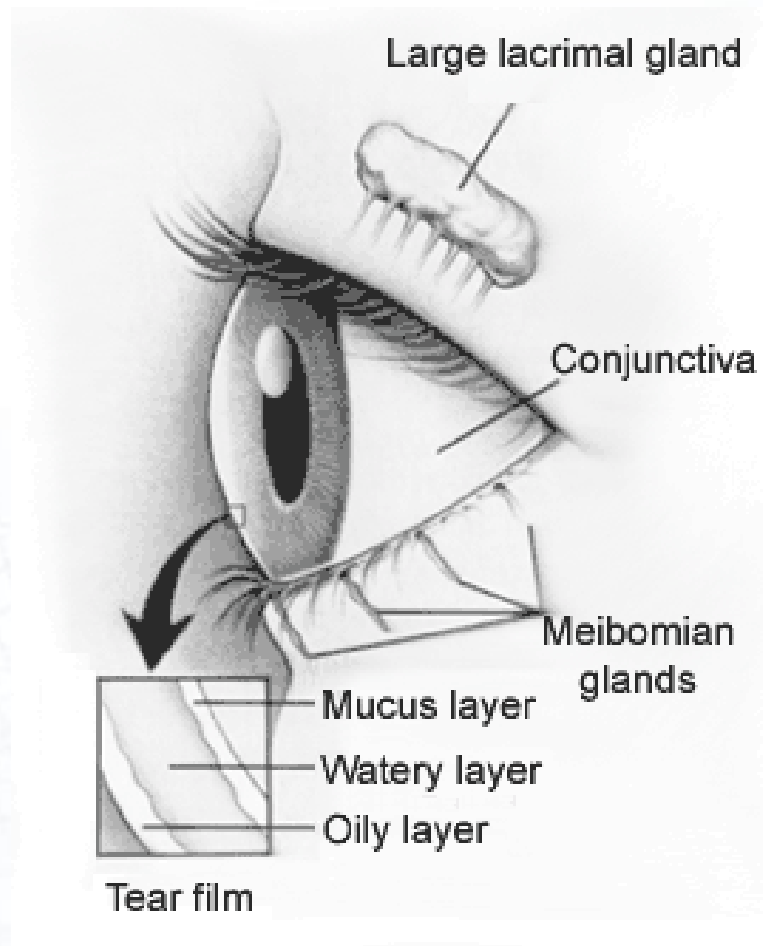
# Characteristics of Dry Eye



- Stinging or burning
- Scratchiness
- Foreign body sensation
- Stringy mucus
- Pain and redness
- Blurred vision
- Excessive tearing



# The Tear Film



Large lacrimal gland

Conjunctiva

Meibomian glands

Mucus layer

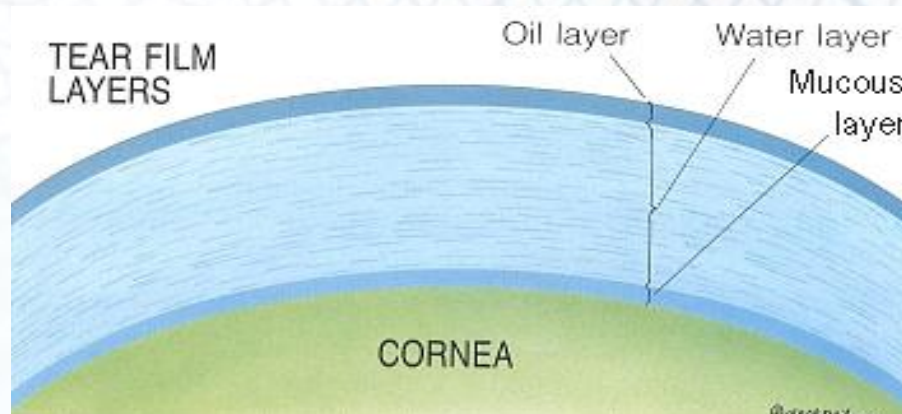
Watery layer

Oily layer

Tear film

# The Tear Film

- Tear film has 3 distinct layers: mucin layer, aqueous layer, and lipid layer
- Produced from glands located on eyelids or eyes
- All 3 layers must work together
- Deficiency or excess is labeled Dry Eye



# The Outer (Oil) Layer

- Produced from meibomian glands
- Oil seals in water
- Decreased oil results in evaporation

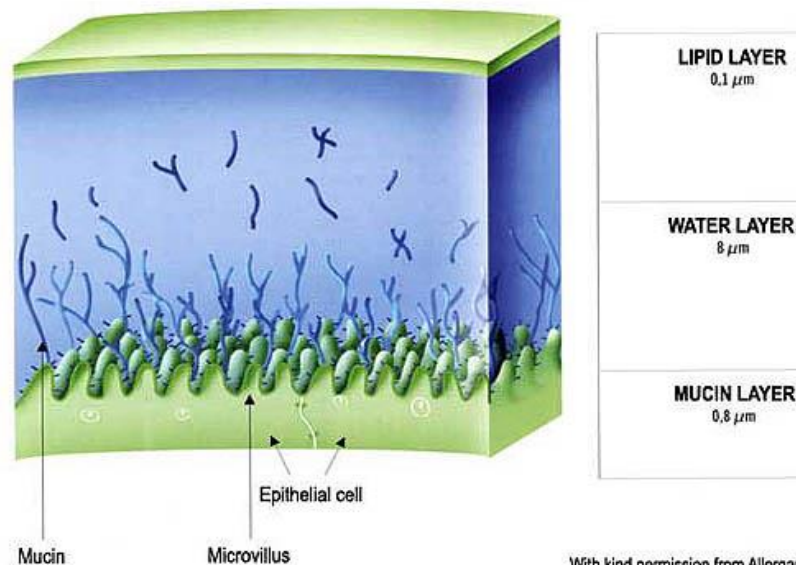




# The Middle (Aqueous) Layer

- Produced by Lacrimal Gland
- Washes away foreign particles
- Inadequate water produces stringy mucous

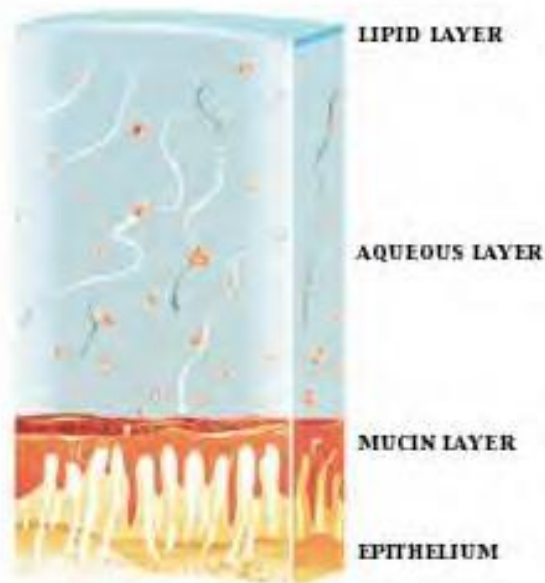
TEAR FILM



With kind permission from Allergan

# The Inner (Mucin) Layer

- Produced by goblet cells on cornea
- Allows tears to spread evenly
- Without mucus, water would not adhere



# Potential Treatments



- Lid/lash hygiene
- Warm Compress
- Artificial Tears
- Nutritional Supplements –Omega 3's
- Punctal Occlusion
- Prescription Eye Drops (Restasis, new Rx gtts)



# Choosing a Dry Eye Tx



- Choice needs to be targeted to cause of dryness/Sx's
- Just recommending an OTC lubricant is not the most effective approach
- Need to find out patient's lifestyle/habits/environment (home, work, hobbies, etc.)
- Educate the patient on why you are choosing Tx options give them an active role in their care
- Don't forget about nutrition!! Caffeine intake critical-up to two servings is okay for tears; over depletes
- Enough omega 3's in diet???



# EyePromise EZ Tears Dry Eye Study

## 2011 – 2012 (4 Practices)

- Dr. Sean Mulqueeny
- Dr. Erin Sullivan
- Dr. Jack Melton
- Dr. Connie Copeland
- **Total**

## # Patients Given EZ Tears

- 22 patients
- 14 patients
- 12 patients
- 8 patients
- **56 patients**

# ***EZ Tears Dry Eye Study***



- 96% described symptoms as moderate to severe
- 86% reported symptomatic relief
- 93% reported no after taste
- 89% reported little or no GI side effects
- All patients were able to take the softgels

# ***EZ Tears Dry Eye Study***



- Onset of dry eye symptom relief
  - 54% reported relief within 2 weeks
  - 75% reported relief within 3 weeks
  - 86% reported relief within 4 weeks

# ***EZ Tears Contact Lens Comfort Study***



## **Participating Doctors (Patients with CL discomfort)**

- Dr. Wayne Cannon
- Dr. Rob Davis
- Dr. Jeff Gerson
- Dr. Robert Owens
- Dr. Dorothy Hitchmoth
- Dr. John Herman
- Dr. Anna Hopkins
- Dr. Christopher McDowell
- Dr. Greg Hicks

**\* Study ongoing**



# ***EZ Tears Contact Lens Comfort Study***



- 86% of patients reported improved CL Comfort
- 46% reduction of eye drop use
- 38% improvement in hours/day of comfortable wear (2.6 hrs.)
- 29% reduction of CL removal
- 11 day avg. onset of improved CL comfort
- 84% likely to keep taking EZ Tears
- 74% said they would recommend to others

# ***EZ Tears Contact Lens Comfort Study***



- Onset of improved CL Comfort
  - **46%** reported improved comfort within **2 weeks**
  - **65%** reported improved comfort within **3 weeks**
  - **86%** reported improved comfort within **4 weeks**

# Supplements to Enhance



- Opportunity to grow practice for young & old who are sports active and motivated for better performance!
- Practice growth through medically optimizing vision with supplements instead of just visual correction

**EyePromise Vizual  
EDGE & Sports Vision**



# *EyePromise is NSF Certified For Sports*

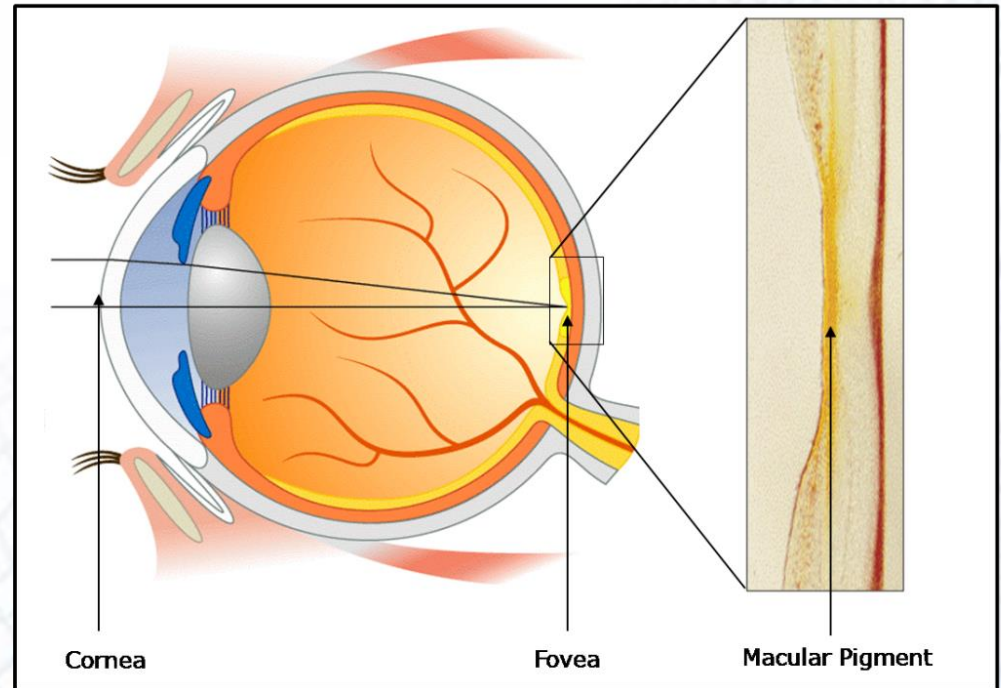
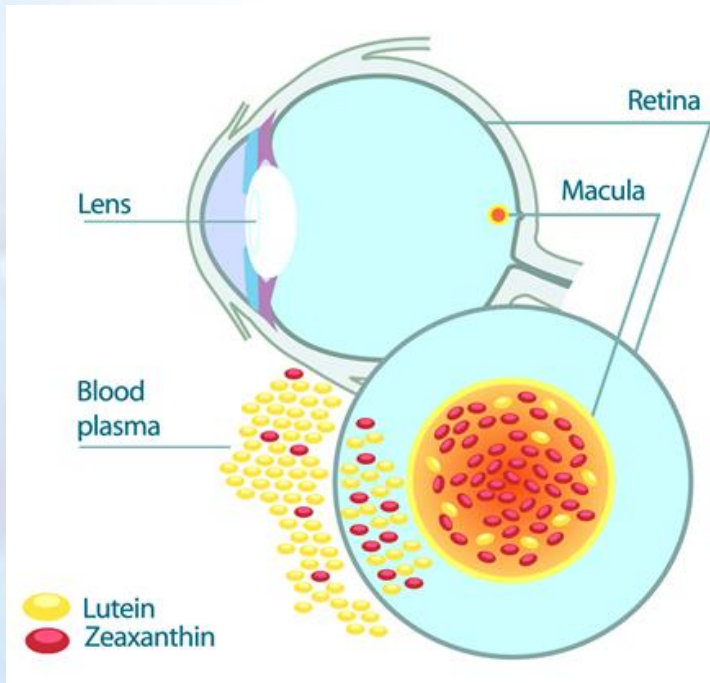


- NSF International's Certified for Sport<sup>®</sup> program:
  - Certifies that supplement is free of banned substances and unsafe levels of contaminants.
  - Recognized by major sports organizations including:
    - National Football League (NFL)
    - Major League Baseball (MLB)
    - National Hockey League (NHL)
    - Ladies Professional Golf Association (LPGA)
    - Professional Golf Association





## Zeaxanthin + Eye Health



ZeoVision  
**EyePromise**<sup>®</sup>

See Better.  
React Faster.

**viZual EDGE**

## Ingredients: 2 EyePromise Restore 1 Zeaxanthin



**Zeaxanthin (26 mg)** A superior photo-protectant and antioxidant due to its chemical structure. Primarily found in the central part of the Macula, low levels are associated with increased risk of AMD.

**Lutein (8 mg)** Primarily found in the peripheral part of the Macula, an important photo-protectant that helps filter damaging blue light as it enters the eye.

**Omega-3 (190 mg, total Fish Oil, 250 mg)** Fatty acids from fish are a vital and seriously lacking nutrient – significant structural components of tissues' cell membranes throughout the body – especially rich in the brain and particularly important in the retina where deficiency can result in decreased vision.

**Vitamin C (120 mg)** A major antioxidant nutrient – strengthens blood vessels, aids in iron absorption, and is required for the synthesis of collagen, the intercellular “cement” which holds tissues together. Excellent healing agent that helps the body resist infection.

**Vitamin D3 (1,000 IU)** D3 maintains adequate levels of vitamin D in the body – regulates the body's inflammatory response; immune health; joints and muscles; and more.

**Vitamin E (60 IU)** Major antioxidant that slows cellular aging due to oxidation, strengthens blood vessels, and may help combat Wet AMD.

**Zinc (15 mg)** Very important in human metabolism – more than 100 specific enzymes require zinc for their catalytic function. Recommended upper tolerable level of zinc is 40 mg per day.

**Mixed Tocopherol (6 mg)** Play a significant role in systemic inflammatory adjustments.

**Alpha Lipoic Acid (10 mg)** A powerful antioxidant that works most effectively in synergy with Vitamins C & E – fighting free radicals that can damage cell structures, impair the immune system, and may contribute to vision loss.



## *Reduced glare*





# ***Glare Effects in Baseball***

- Judgment of ball speed and trajectory can be affected by
  - Sun angle and intensity
  - Stadium lighting
  - Visual recovery after leaving dugout (day)
    - **Research: Athletes > Non-athletes**
- Glare sensitivity and slow glare recovery may contribute to errors in certain game conditions





## *Improved contrast sensitivity*



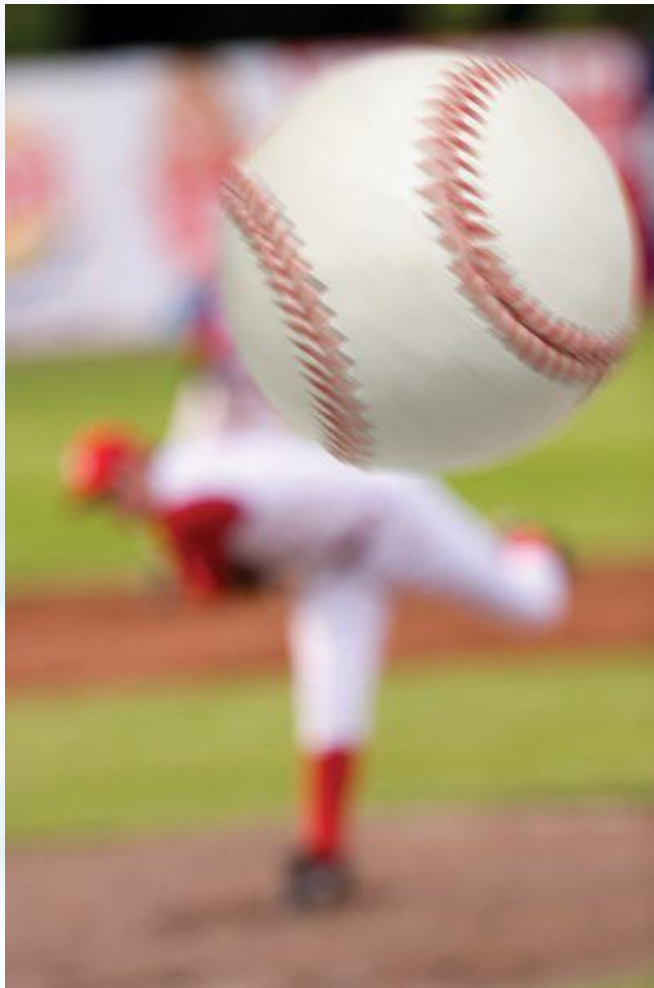


# ***Contrast Sensitivity in Baseball***

- Judgment of subtle differences in contrast:
  - between the ball and its background
  - the spinning red seams on the white ball
- helps to better judge speed & trajectory
  - **Research: Athletes > Non-athletes**
- Reduced sensitivity may contribute to performance inconsistency due to variable lighting conditions in baseball



*Increased visual  
processing speed*





# **Visual Processing Speed in Baseball**

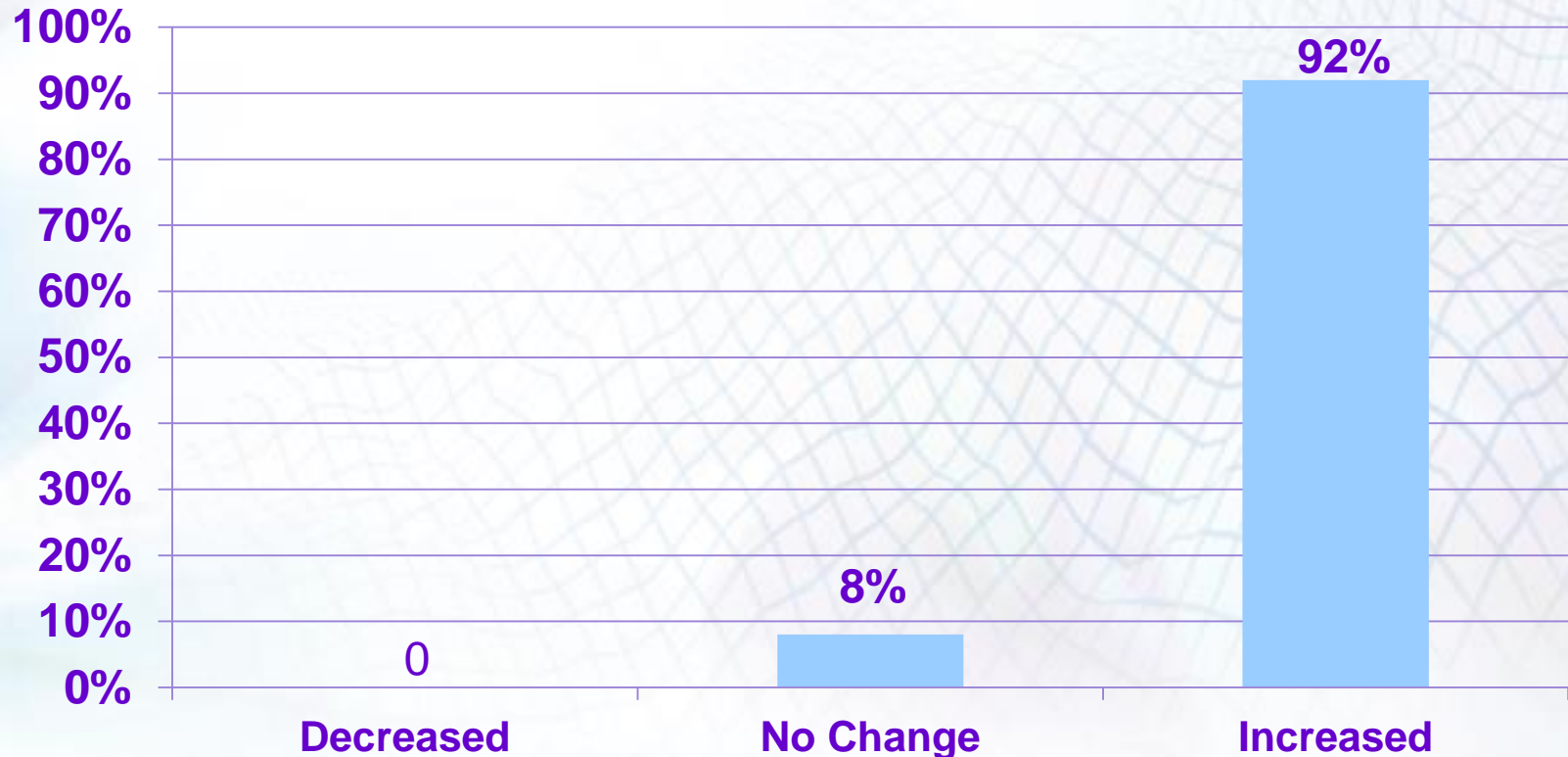
- Visual quickness with recognition of critical information
  - Pitch type (speed and trajectory) in batting
  - Speed and trajectory of a hit in fielding
- Quick and accurate decision making in pressure situations
  - **Research: Athletes > Non-athletes**
- Enhanced processing speed allows more time to perform optimally



# 2012 MLB Minor League Baseball Trial

## 12 Minor League Players

### Contrast Acuity





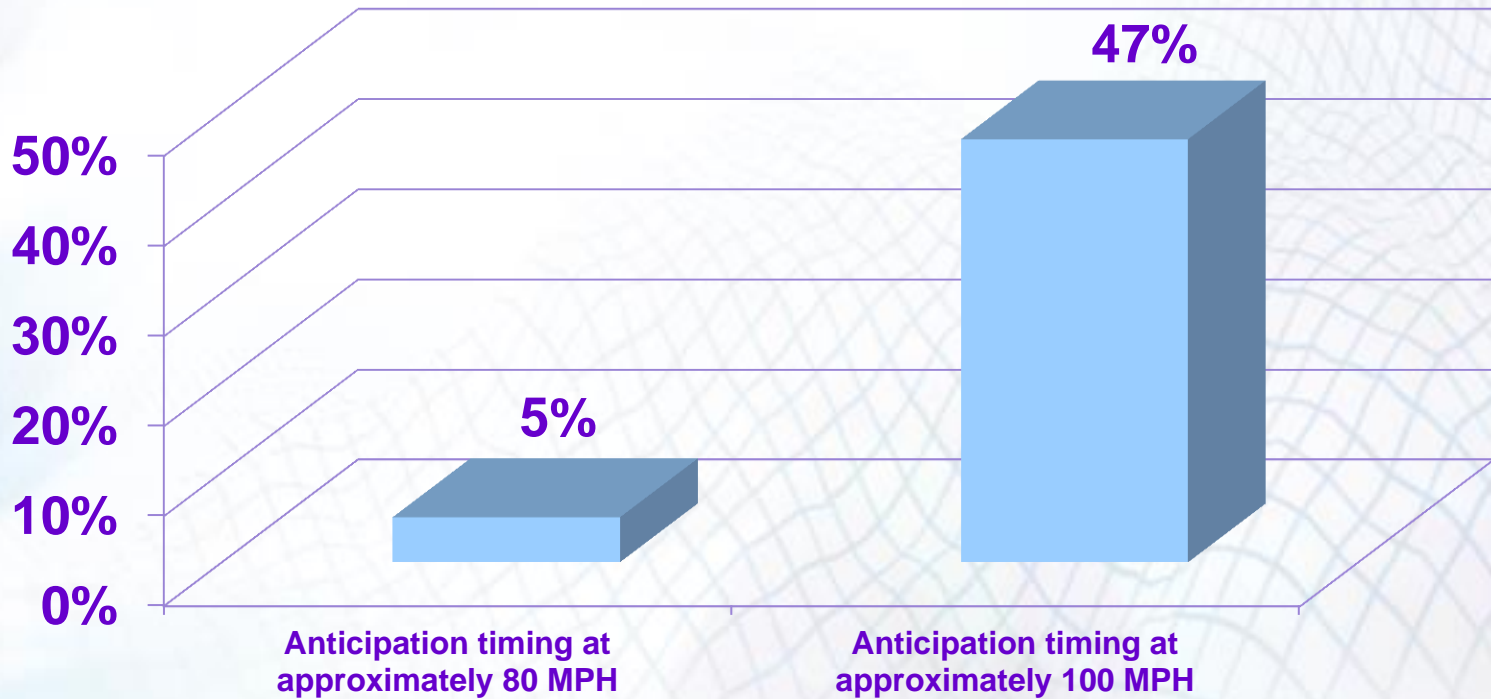
Self reported data - 12 Minor League Players **2012 MLB Season - Minor League Trial**

- **92%** of players reported less need for sunglasses when outside.
- **75%** of players reported less sensitivity to light.
- **67%** of players reported fewer issues of “losing the ball in the sky.”
- **83%** of players reported improved ability to find the ball in the night sky and/or stadium lights.
- **82%** of players reported better ability to pick up on the ball’s rotation and/or see the threads on the ball.



## 2012 MLB Season Trial

### Improvements in Anticipation Timing





## **2012 MLB Season - Major League Trial** Self Reported Data

- **9** Major League players (54 were given the supplement)
- **4** months of vizual EDGE supplementation
- **89%** of players reported less sensitivity to light
- **63%** of players reported improved ability to locate baseball in sky
  - Day & night games (Sun and artificial lighting)
- **71%** of players reported improved ability to see ball's rotation and/or see the threads on the ball better.





# Ongoing Studies

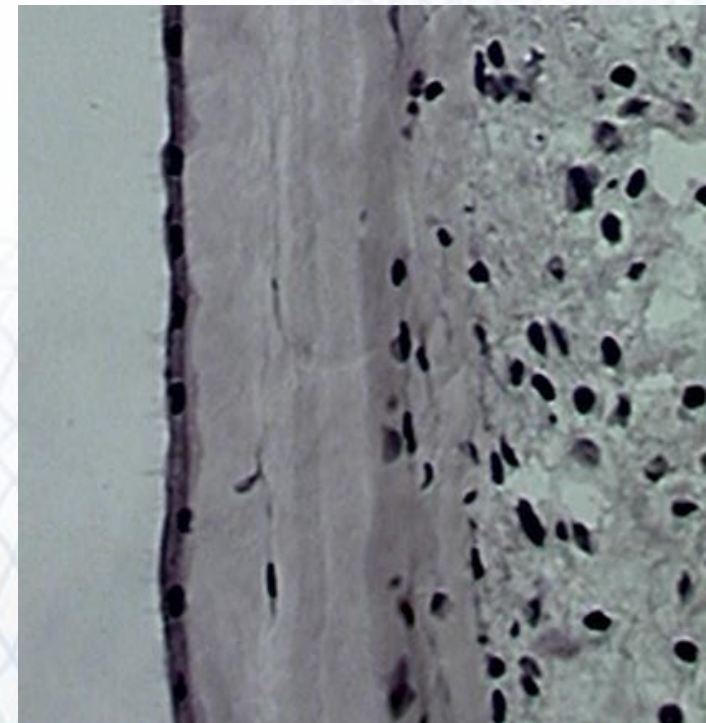
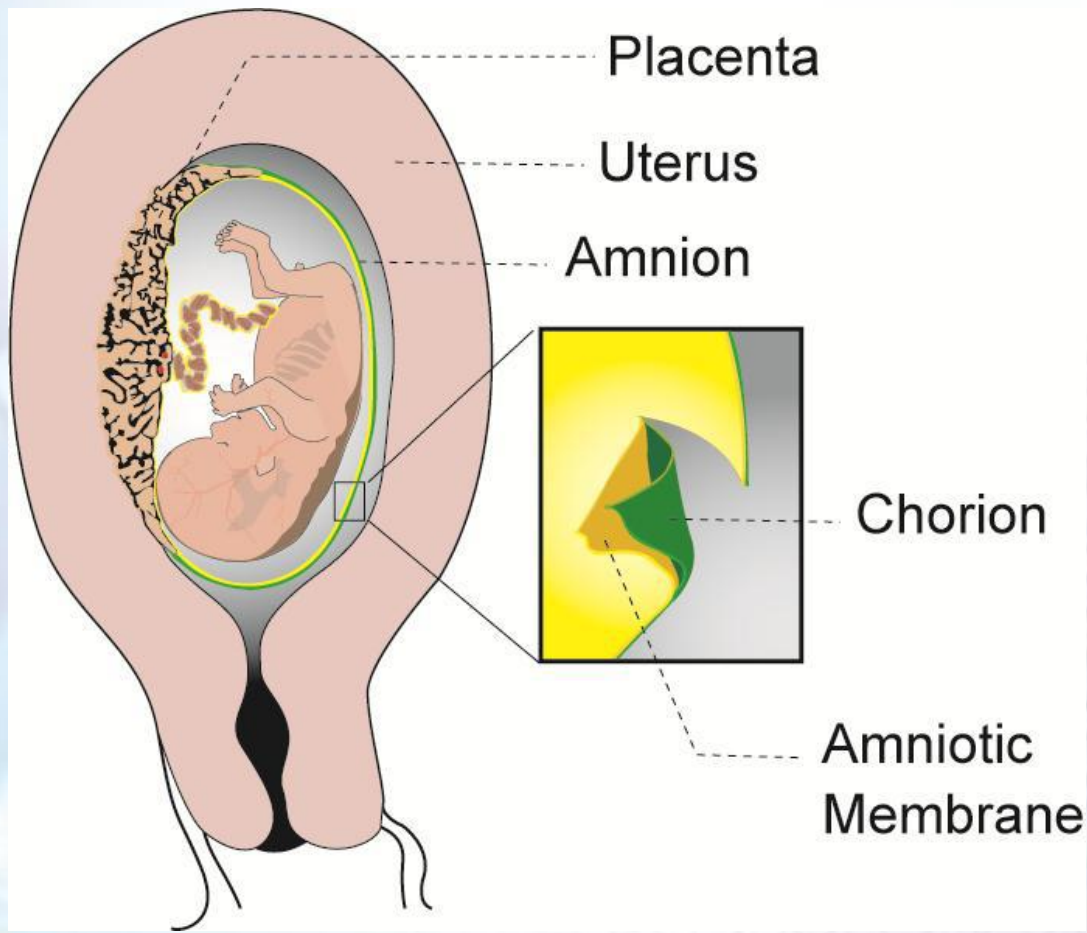
- Randomized controlled trial underway
  - University of Georgia Vision Sciences lab
  - Effect of supplementation on visual processing speed and reaction time

# Practice Management/Anterior Segment



- Better patient management and convenience when dispensing anterior segment therapies in office
- Revenue stays in office instead of marketplace; i.e. if **2 products** were sold each day that would generate **\$5000/year profit** for practice
- Even increased practice revenue with vitamin supplements

# Amniotic Membrane Tx



# Amniotic Membrane Tx-Attributes



- Anti-scarring
- Anti-inflammatory
- Anti-angiogenic
- Wound healing
- Thick basement membrane & an avascular stroma
- Unique biologic actions
- Transparent
- Tensile strength

# Amniotic Membrane Tx-Indications



- Used in ocular surface disease treatment since 1940s
- In 1997 Bio-Tissue patents a cryopreservation method which preserves the biological actions
- The **only** amniotic membrane designated as a 361 HCT/P meeting both the homologous use & minimal manipulation criteria for ocular wound repair and healing
  - with recognized claims for
    - –anti-scarring
    - –anti-inflammation
    - –anti-angiogenic
    - –wound healing functions
- Over 200 publications support its use

# Amniotic Membrane Tx-Clinical Prep



# Amniotic Membrane Tx-Insertion



- Easy to use in office or bedside (sutureless) avoiding treatment delay & costs of surgery
- Improves Corneal Disease outcomes via the Wound Healing abilities of cryopreserved Amniotic Membrane
- New CPT Code: 65778 for in-office placement of PROKERA®

# Amniotic Membrane Tx-Insertion



- Hold with blunt forceps or fingers
- The Membrane is already properly oriented within the device
- Remove PROKERA® from Inner Pouch





# Amniotic Membrane Tx-Maintenance



# Amniotic Membrane Tx-Removal



# Amniotic Membrane Tx-Medical Billing



# Amniotic Membrane Tx-Practice Management

