

Communicating with the Dry Eye Patient

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Course Description

- ▶ Communication is Key. If our patients don't understand, they are not as compliant. We've all heard that patient that describes symptoms of dry eyes and the misery that comes with this disease. Contact lens wear may be impossible for them, but general vision difficulties are also most common. This course will present some of the causes of dry eyes, and ways to discuss the management with those patients.

Learning Outcomes:

At the completion of this course, the participant should be able to:

- ▶ Explain how environmental factors, systemic diseases, lifestyle, foods, cosmetics, ocular surgery and medications have an impact on dry eye and vision
- ▶ Discuss how to present valid information to patients of treatment options in a way they understand it
- ▶ Emphasize importance of compliance with patients regarding lifestyle influences of dry eye
- ▶ Explain how patients' understanding of their role in managing their dry eye symptoms impact outcome
- ▶ Understand that communication with EACH patient is personal and is not just a cookie cutter approach to managing dry eye
- ▶ Explain some of the most common causes of dry eye and how each must be managed differently

Introduction

- ▶ Communication with patients
 - ▶ Each section of this presentation will include the importance of communicating the information to the patient (the “WHY”)
- ▶ Patient History
 - ▶ Standard history
 - ▶ Relative to dry eye
- ▶ What is Dry Eye Syndrome or Dry Eye Disease
- ▶ Causes of dry eye

Introduction

- ▶ Ocular signs and symptoms
- ▶ Anatomy of the tear layer, and their function
- ▶ Different causes of dry eye require different management
- ▶ Misinformation on internet or well meaning friends and family
 - ▶ Regarding treatment options that include lid scrubs, OTC medications, etc.
- ▶ Discussing managing dry eye symptoms with your patients
- ▶ Communicating with dry eye patients

Statement

- ▶ This presentation will be presented such that it can be useful for Optometrists, Opticians and Technicians. As each eyecare professional will have differing roles in patient care, not all information will be pertinent to each one. In addition, as this course is for communicating with your patients, this course will introduce information for you to understand so that you **may** communicate with your patients better.
- ▶ Methods of treating dry eye disease will be left up to the practitioner.

Communication with Dry Eye Patients

- ▶ Treatments have significantly changed over the years
- ▶ That means that communication needs to change as well
- ▶ Well informed patients are better compliant
- ▶ That means staff needs to be better informed in all aspects of the patients' care

Dry Eye Disease - Dry Eye Syndrome

- ▶ Chronic condition
- ▶ Can be managed
- ▶ Must identify the cause

Communication with patients

- ▶ Misinformation is rampant
- ▶ **Verbiage should be consistent and in terms patients understand**
- ▶ Dry Eye
- ▶ Dry Eye Syndrome (DES)
- ▶ Dry Eye Disease (DED)
- ▶ Keratoconjunctivitis sicca (KCS)
 - ▶ Keratitis sicca
- ▶ Unstable Tear Film
- ▶ Ocular Surface Disease (OSD) - Often is lumped in with DES and DED
 - ▶ Not all OSD is caused by dry eyes
- ▶ Each team member must understand the importance of good communication with dry eye patients

Communication with patients

- ▶ Good history by technicians starts the communication
 - ▶ Education is key
 - ▶ Asking correct questions
 - ▶ Listening and observing
 - ▶ Chief complaints
- ▶ Doctors follow the chief complaint/complaints listed
- ▶ Staff (Technicians and Opticians) education
 - ▶ Understanding how each layer of the tear film can be affected adversely helps to communicate well
 - ▶ Well informed patients require educated staff

The “WHY”

The “Why” - Patient History

- ▶ Chief Complaint
- ▶ Dry Eye Disease (DED) - Symptoms
- ▶ ICD Codes - more than 40
- ▶ Starting with...
 - ▶ ICD 10 Code
 - ▶ H04.12...
 - ▶ ICD 9 Code
 - ▶ 375.15

The “Why” - Patient History

- ▶ Understanding that good patient history will help determine possible cause of DED
- ▶ What does the patient understand already about DED?
 - ▶ Ask them, tell them about “their” dry eye, ask if they understand
- ▶ This knowledge can be paramount to having a successful relationship with the patient

Patient History - Symptoms

- Redness
- Pain
 - Eye discomfort or irritation
 - Intermittent sharp pain
- Burning or stinging
- Itching
- Gritty or foreign body sensation
- Tearing
 - The reason many patients don't believe they have dry eyes
- Photophobia
- Visual disturbance
 - Blurring, or fluctuations in vision
- More later in presentation

Standard History



Patient History - Communication Begins Here

- ▶ Age
- ▶ Gender
 - ▶ Dry eyes occur more frequently in older women
- ▶ Medical history
 - ▶ Personal and family
- ▶ Ocular history
 - ▶ Personal and family
- ▶ Medications - Discuss thoroughly with patients
 - ▶ Prescribed
 - ▶ OTC
 - ▶ Herbal supplements
 - ▶ Recreational drugs

Patient History - Communication Begins Here

- ▶ Lifestyle history
 - ▶ Environmental
 - ▶ Poor air quality
 - ▶ Smog
 - ▶ Dusty
 - ▶ Windy
 - ▶ AC
 - ▶ Heating
 - ▶ Dry air
 - ▶ Low humidity
 - ▶ Computer, digital device usage
 - ▶ TV
 - ▶ Lighting
 - ▶ Smoking
 - ▶ Aerosol sprays
 - ▶ Chlorinated pool water

Patient Case History

- ▶ How important is good history?
 - ▶ Without a good history, exam flow will suffer
 - ▶ Poor information generates poor results

Patient Case History

- ▶ Standard case history
 - ▶ Isn't enough
 - ▶ Asking the right questions
 - ▶ Include contact lens related questions
 - ▶ Must have an accurate and complete case history when interviewing a patient regarding dry eye disease
 - ▶ Are your eyes dry?
 - ▶ Won't give correct answer
 - ▶ Many dry eye patients have excessive lacrimal tears
 - ▶ "How are your contact lenses doing?" isn't enough
 - ▶ If the patient is wearing contact lenses, they don't want to come out of them and may not tell everything

Patient Case History

- ▶ Relative to dry eye
 - ▶ When does dry eye occur?
 - ▶ What do they do for relief?
 - ▶ Does anything make it worse?
 - ▶ Does anything make it better?

Patient Case History - Contact lens patients

- ▶ Get an accurate VA
- ▶ If they wear contact lenses, what type of lenses are they currently wearing
 - ▶ What is the prescribed wearing modality...are they wearing as prescribed?
 - ▶ Continuous wear lenses???
 - ▶ Prescribed or not
 - ▶ How old are the current contact lenses?
 - ▶ How long are the contact lenses worn for a day?

Patient Case History - Contact lens patients

- ▶ What is the prescribed care system, and is the patient using what was prescribed?
- ▶ Does the comfort level change as the patient's day progresses?
 - ▶ Morning to evening

Patient Case History

- ▶ Must have a complete medical history
 - ▶ Including medical conditions and current medications being taken
 - ▶ All medications, prescribed, OTC and herbal supplements
 - ▶ Review completely
 - ▶ Not just are you taking the same as last year
 - ▶ Not just....anything changed???
 - ▶ Watch the patient
 - ▶ Allergies
 - ▶ Seasonal
 - ▶ Medications
 - ▶ Topical
 - ▶ Food

The “WHY”

The “Why” - Anatomy of the tear layer and function

- ▶ Why is this important in communication with patients?

Tear Film or Pre-Ocular Tear Film

- ▶ Important to communicate with patients regarding their dry eye condition, it is important to understand the layers and how various external factors can affect each layer.
- ▶ Lipid
- ▶ Aqueous
- ▶ Mucin

Tear Film or Pre-Ocular Tear Film

- ▶ Function
 - ▶ Provides smooth ocular surface
 - ▶ Provides lubrication
 - ▶ Acts as nutrient vehicle
 - ▶ Dilutes irritants
 - ▶ Flushes away debris
 - ▶ Provides antibacterial activity
 - ▶ Transports white blood cells

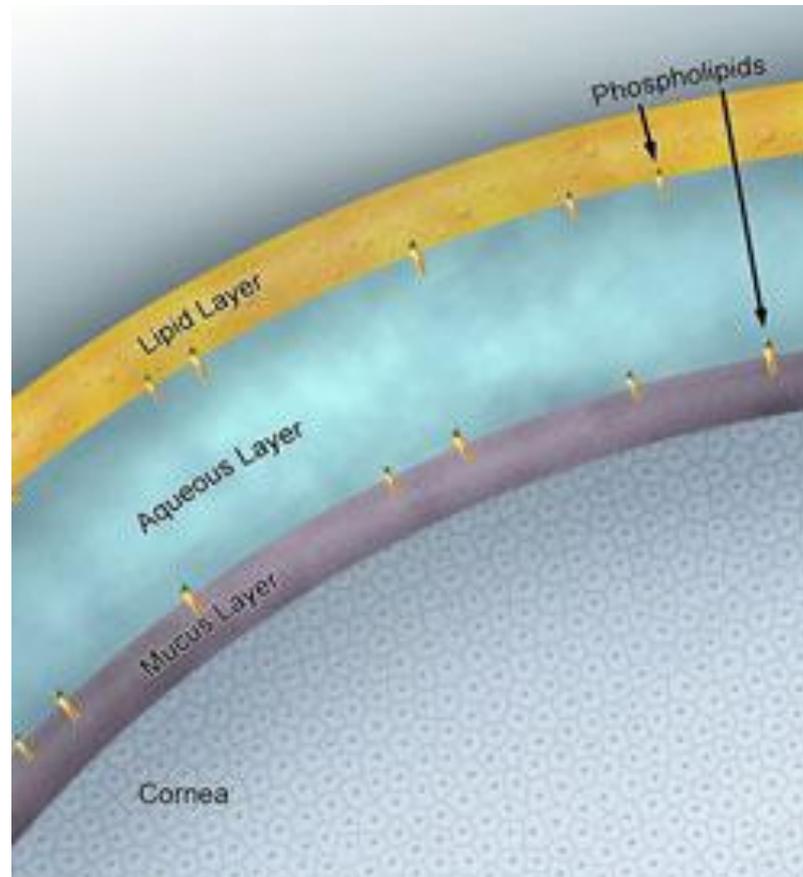
Anatomy of the Tear Layers, and Their Function



Tear Film

▶ Three Layers

- ▶ Lipid
- ▶ Aqueous
- ▶ Mucin



Tear Film / Precorneal Film

▶ Composition

▶ Glucose

- ▶ 2.5 to 4.1 mg/100ml

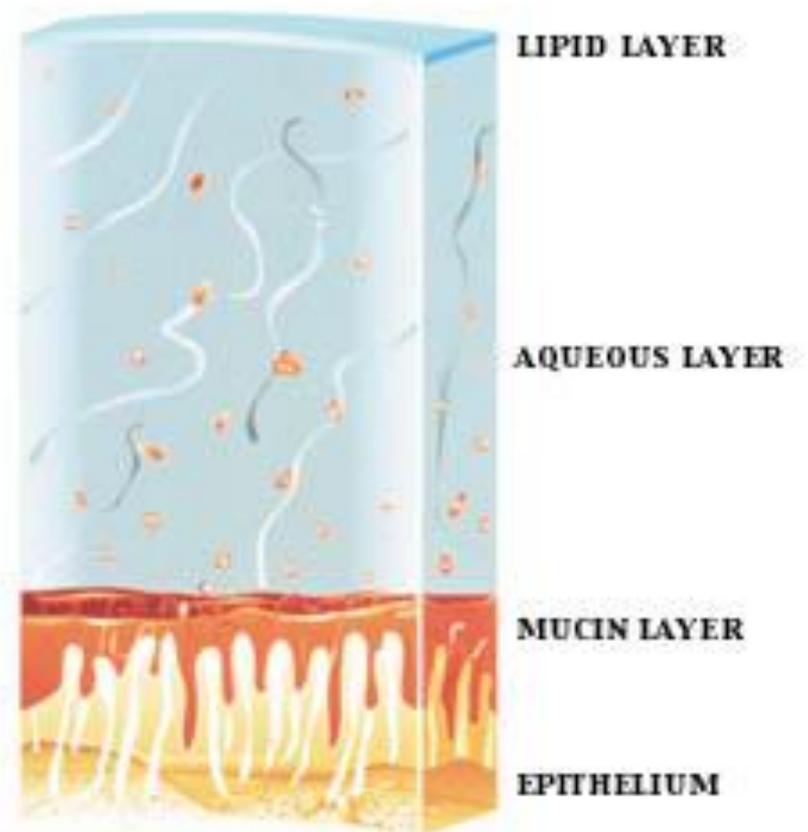
▶ Protein

▶ Enzymes

- ▶ albumin, globulin, and lysozyme

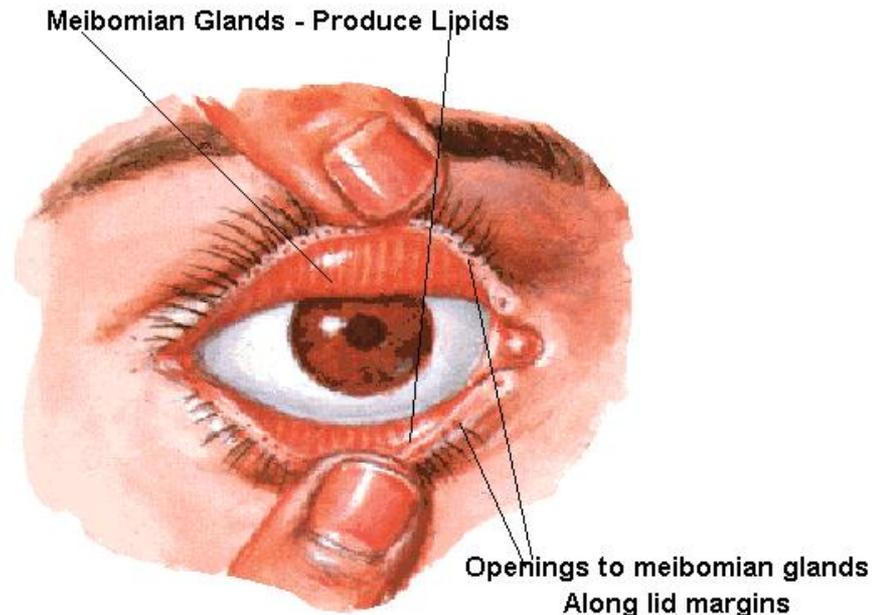
▶ pH

- ▶ 7.4
- ▶ between 7.3 to 7.7



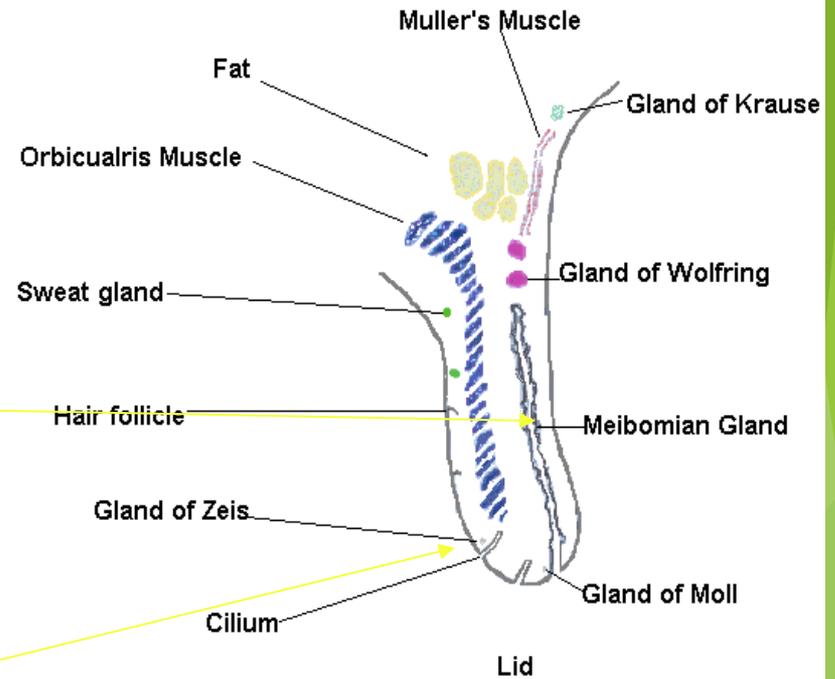
Lipid Layer is produced by glands in the eyelids

- ▶ Outer Layer - Oily
 - ▶ Lipid Layer of the Tear Film
 - ▶ LLTF



Outermost layer - Lipid layer

- ▶ Produced by
 - ▶ Meibomian glands
 - ▶ Located in upper and lower eyelids
 - ▶ Openings on the lid margins
 - ▶ Sebaceous glands of Zeis
 - ▶ Located along the lids next to the cilia



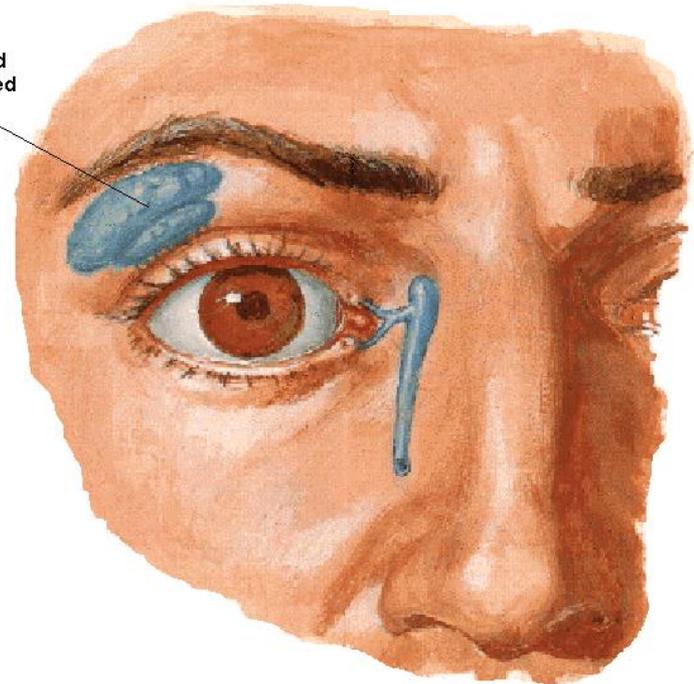
Lipid Layer - Oily Layer

- ▶ Function
- ▶ Prevent evaporation
- ▶ Form barrier along lid margins
 - ▶ Rests on lid margin to prevent tears from spilling out of eye

Middle Layer

- ▶ Aqueous
 - ▶ Volume
 - ▶ Provides oxygen
 - ▶ Provides nutrients
 - ▶ Reflex aqueous produced by Lacrimal glands
 - ▶ Basic aqueous produced by Glands of Wolfring and Krause
 - ▶ Basic tears contain proteins and lysozymes which contain bactericidal property

Lacrimal Gland
Aqueous Produced
Here



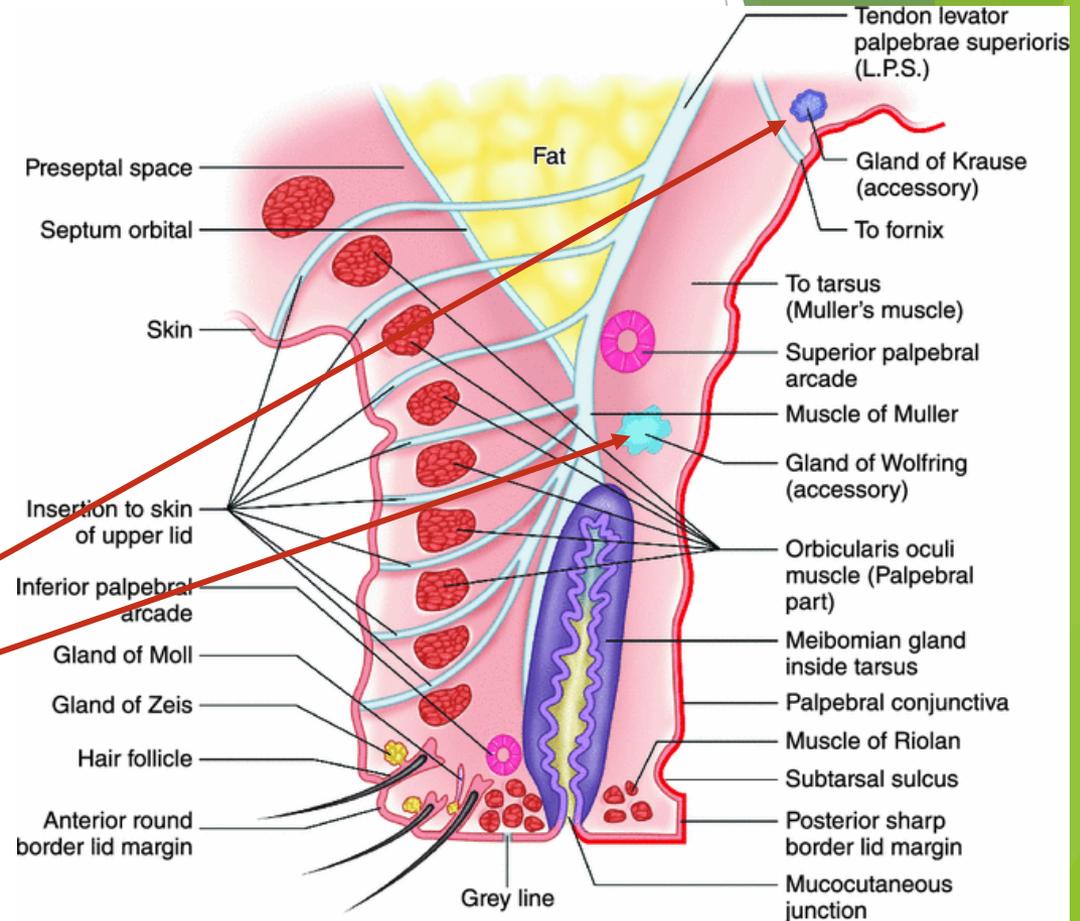
Middle Layer

▶ Aqueous

▶ Volume

- ▶ Provides oxygen
- ▶ Provides nutrients

▶ Basic tears are produced by Glands of Krause and Wolfring

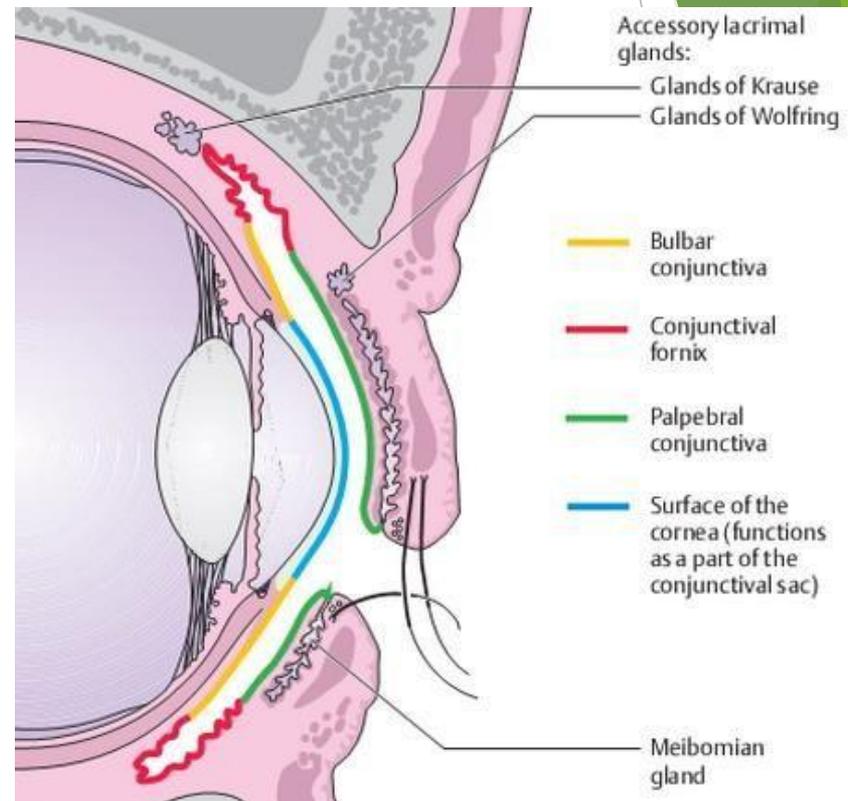


Innermost Layer - Mucin Layer

- ▶ Mucoïd or mucous layer
- ▶ Produced by goblet cells
 - ▶ Located in conjunctiva
- ▶ Provides
 - ▶ Lubrication
 - ▶ Acts as wetting agent
 - ▶ Decreases surface tension
 - ▶ Attaches tears to cornea

Innermost layer - Mucin layer

- ▶ Produced by goblet cells
- ▶ Attaches tears to cornea
- ▶ Decreases surface tension



Tear Film

- ▶ The tear film covers the cornea and conjunctiva
- ▶ Tears are removed from the anterior segment via the puncta and evaporation

Importance of Tear Layer to Corneal Health

- ▶ Interruption of three layers could result in dry eye
- ▶ Could make difficult or impossible to wear contact lenses
- ▶ Could affect corneal health
 - ▶ Both contact lens wearers and non-contact lens wearers

The “WHY”

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What is Dry Eye?

- ▶ One of the common forms of Ocular Surface Disease
 - ▶ Not all OSD is caused by dry eye
- ▶ According to Mayo Clinic
 - ▶ Condition when tears cannot provide adequate lubrication for the patient's eyes
 - ▶ Could be inadequate
 - ▶ Could be unstable
 - ▶ Could lead to inflammation and damage to the eye's surface
 - ▶ OSD

So, What Causes Dry Eye?

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Prevalence of Dry Eye Disease

- ▶ According to American Academy of Ophthalmology
 - ▶ Approximately 20 million in USA
 - ▶ Approximately 344 million worldwide
 - ▶ Increasing
- ▶ Some studies show higher numbers
 - ▶ So varied

Causes of Dry Eye

- ▶ Aqueous deficient dry eye (ADDE)
- ▶ Evaporative dry eye disease (EDE)
- ▶ Rheumatoid arthritis
- ▶ Diabetes
- ▶ Graves disease
- ▶ Sjögren syndrome
- ▶ Systemic
- ▶ Blepharitis
- ▶ Rosacea
- ▶ Eczema
- ▶ Lupus
- ▶ Vitamin Deficiency
- ▶ Medications

Causes of Dry Eye

- ▶ Environmental
 - ▶ Dry environment
 - ▶ Cold environment
 - ▶ Dusty environment
 - ▶ Allergies
 - ▶ Other exposures

Causes of Dry Eye

- ▶ Hormonal Changes
- ▶ Smoking
- ▶ Contact lens and contact lens solutions
 - ▶ Contributing factors
 - ▶ Patient non-compliance
 - ▶ Others
 - ▶ Cosmetic use/removal
- ▶ Toxicity/burns, etc.
- ▶ Sun exposure with no eyewear protection
- ▶ Screen time
- ▶ Other causes of dry eye
 - ▶ Poor blinking habits

Most Common Types of Dry Eye



Evaporative Dry Eye

- ▶ Most common cause of lipid layer dysfunction is meibomian gland dysfunction (MGD)
 - ▶ Could be affected by cosmetics
 - ▶ Obstructive MGD
 - ▶ Liner on lid margin
 - ▶ Clogging meibomian gland openings
 - ▶ Use of improper cosmetic removal

Evaporative Dry Eye

- ▶ Most common type of dry eye
 - ▶ Associated by systemic and ocular conditions
 - ▶ Could be associated by environmental factors
 - ▶ Could be affected by medications

Evaporative Dry Eye

- ▶ MGD can be caused by lid margin keratinization, which obstructs the gland's opening
- ▶ Micro trauma
- ▶ Toxicity
- ▶ Can be affected by inflammation of the eyelid (blepharitis)
- ▶ Puckering of meibomian gland openings
 - ▶ Occurs as one ages
- ▶ Can be affected by diet
 - ▶ Thickened lipids

Evaporative Dry Eye

- ▶ Decreased meibum secretion
 - ▶ More common in older patients
- ▶ Reduced blinking
 - ▶ Computer use
 - ▶ Excessive concentration such as driving
 - ▶ Parkinson's Disease
 - ▶ Also medications used to treat Parkinson's Disease such as amantadine (used to treat involuntary movements or tremors)
- ▶ Eyelid conditions
 - ▶ Ectropion
 - ▶ Entropion

Evaporative Dry Eye

- ▶ Ocular allergies
 - ▶ Use of systemic medications
- ▶ Preservatives in eye drops
 - ▶ Prescribed and OTC
- ▶ Environmental
 - ▶ Wind, smoke, or dry air
- ▶ Vitamin A deficiency
- ▶ Other diseases and conditions: Such as Sjögren's disease, rheumatoid arthritis, and diabetes

Aqueous Deficient Dry Eye

- ▶ Not enough aqueous is produced
- ▶ Could be due to aging
- ▶ Could be due to medications or foods
 - ▶ Any medication that dehydrates could dehydrate the aqueous component of the tear film
 - ▶ Foods and beverages that dehydrate
- ▶ Could be systemic
 - ▶ Could be due to conditions such as Sjögren's syndrome, rheumatoid arthritis,

Mixed Dry Eye

- ▶ More difficult to treat as it combines increased evaporation and reduced aqueous production
- ▶ May require more communication regarding compliance to manage dry eye symptoms

Reduced Mucins

- ▶ Goblet cell dysfunction
- ▶ Reduced mucin production
- ▶ Change in mucin production

- ▶ Reduces tear adhesion
 - ▶ Tears slid off surface of epithelium
- ▶ Increases surface tension

- ▶ Can be systemic
- ▶ Can be contributed to by medications
- ▶ Can be contributed to by patients

The “WHY”

Ocular Signs and Symptoms

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Chief Complaints That May Accompany Dry Eye

- ▶ Red eyes
- ▶ Burning or stinging eyes
- ▶ Fluctuating vision
- ▶ Foreign body sensation
- ▶ Grittiness or irritation
- ▶ Watering or excessive tearing
- ▶ Stringy discharge
- ▶ Sore or tired eyes
- ▶ History of styes
- ▶ Ocular discharge
- ▶ Light sensitivity
- ▶ Difficulty driving at night
- ▶ Contact lens discomfort
- ▶ Others

Factors Associated With Dry Eye

- ▶ Advancing age
- ▶ Anticholinergic medications
 - ▶ Some antidepressants
 - ▶ Antihistamines
 - ▶ Decongestants
 - ▶ Acne medications
 - ▶ Opiate pain relievers
 - ▶ Diuretics
 - ▶ Some high-blood pressure medications

Factors Associated With Dry Eye

- ▶ Poor diet
 - ▶ Excessive fats, salt, cholesterol, alcohol, protein, caffeine, sucrose
- ▶ Smoking
- ▶ Flying (air quality on airplanes is generally poor and dry)

Factors Associated With Dry Eye

- ▶ Heating/Cooling systems
 - ▶ Low environmental humidity
- ▶ Dry outdoor environment
 - ▶ Need to use sunglasses (preferably wrap sunwear)
- ▶ Hormonal changes
 - ▶ Menopause
 - ▶ Pregnancy
 - ▶ Use of HRT
 - ▶ Birth Control Pills

Factors Associated With Dry Eye

- ▶ Autoimmune disorders
- ▶ Diabetes mellitus
- ▶ Rheumatoid arthritis
- ▶ Systemic lupus
- ▶ HIV
- ▶ Stevens-Johnson syndrome
- ▶ Parkinson's Disease
- ▶ Sjögren's syndrome
- ▶ Thyroid dysfunction
- ▶ Scleroderma
- ▶ Graves Disease (TED)
- ▶ Acne rosacea

Factors Associated With Dry Eye

- ▶ Contact lens use
- ▶ Cancer and bone marrow transplantation
- ▶ Computer use
- ▶ Refractive surgery

Poor Lid Hygiene Can Affect Tear Film



The “WHY”

Tear Quantity & Quality

- ▶ Why it should be checked
- ▶ How it should be checked
- ▶ Comparisons
- ▶ Fluorescein staining
- ▶ Tear meniscus
- ▶ TBUT
- ▶ Schirmer's #1
- ▶ Schirmer's #2
- ▶ Rose Bengal
 - ▶ Rose Bengal fills intercellular spaces and stains dead cells
- ▶ Lissamine Green
- ▶ Phenol Red Cotton Thread Test

Tear Quantity & Quality

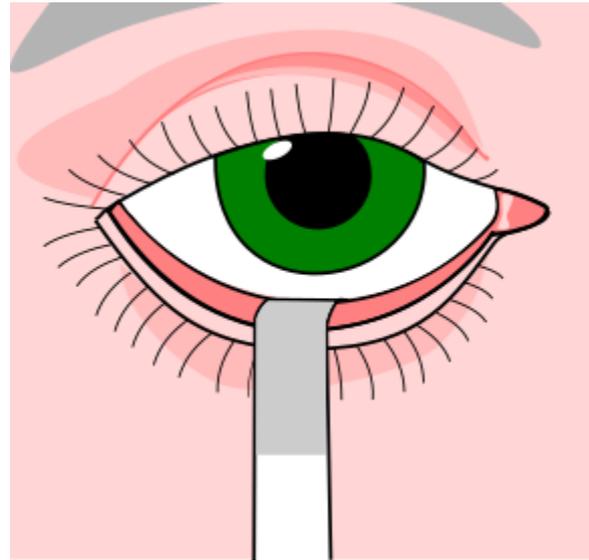
- ▶ Schirmer's #1
- ▶ Schirmer's #2
- ▶ Rose Bengal
 - ▶ Rose Bengal fills intercellular spaces and stains dead cells
- ▶ Lissamine Green
- ▶ Phenol Red Cotton Thread Test
- ▶ Tear osmolarity
- ▶ Lipiscan
- ▶ Inflammatory

Evaluation

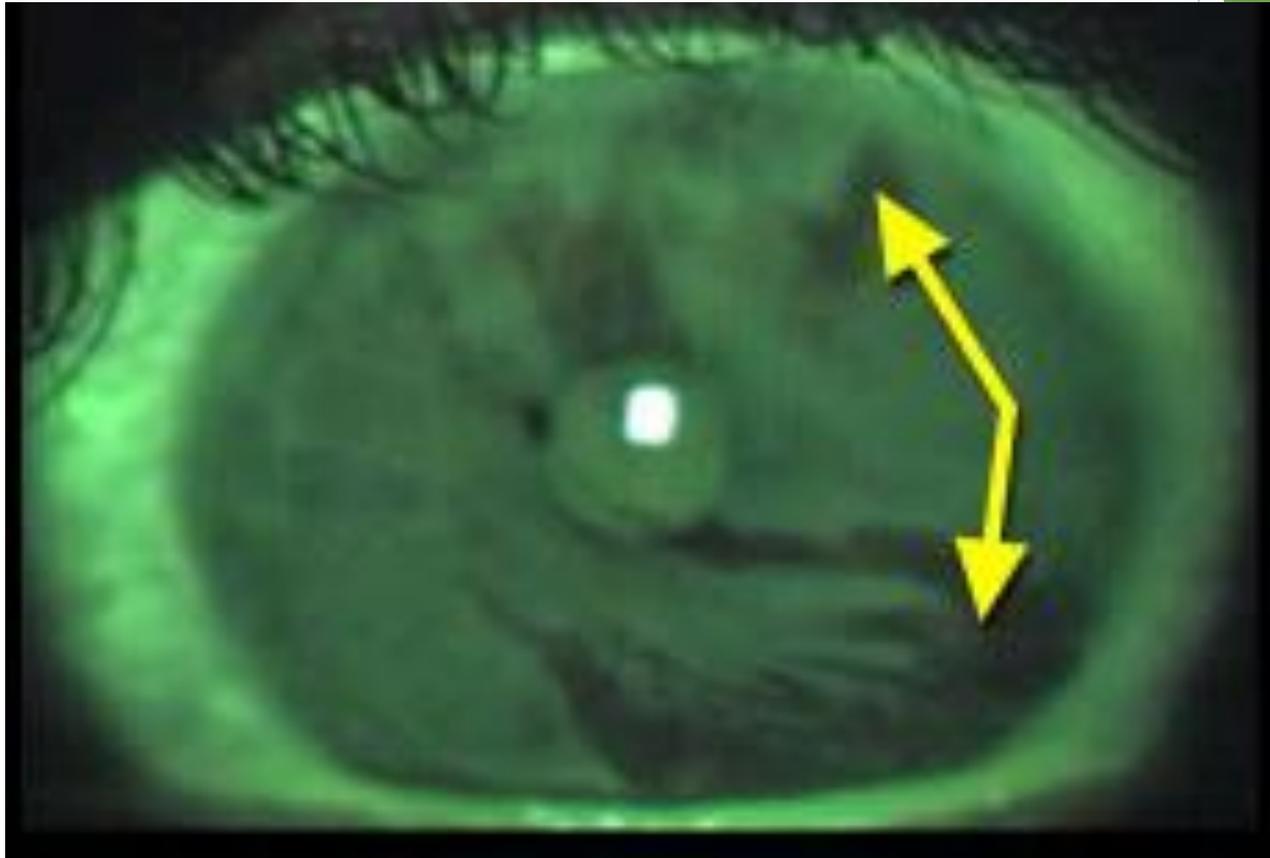
- ▶ TBUT
- ▶ Corneal Staining
- ▶ Tear prism/tear meniscus/tear lake
- ▶ Meibomian Glands
- ▶ Bulbar Conjunctiva
- ▶ Lid Wiper Area
- ▶ Palpebral conjunctiva

Tear Quantity

- ▶ Schirmer's #1
- ▶ Schirmer's #2



Tear Break Up Time - TBUT

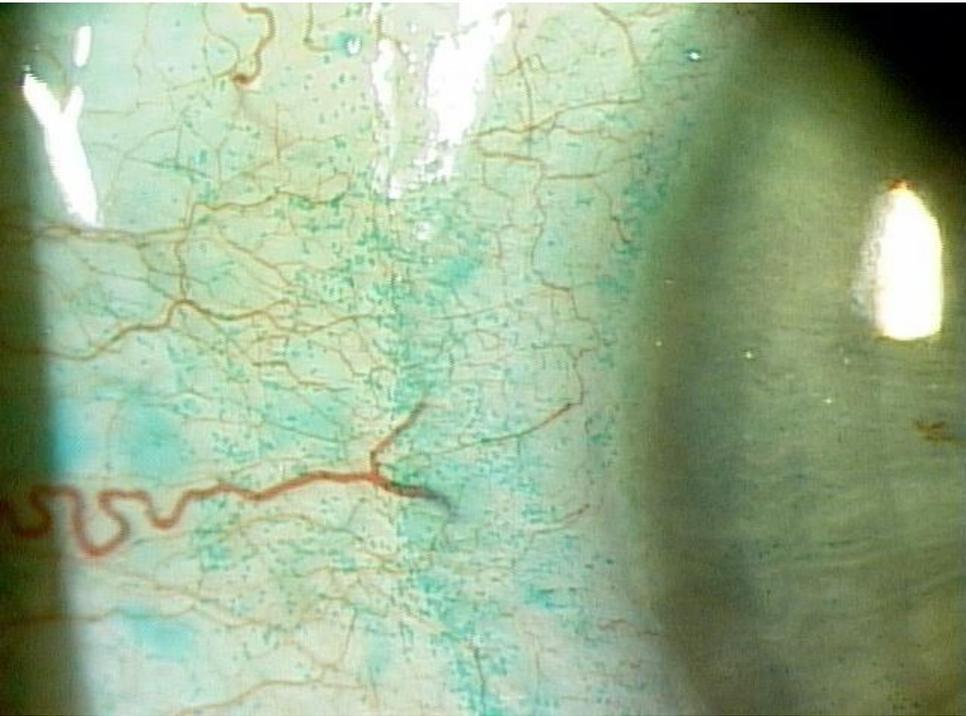




Rose Bengal



Lissamine Green



Tear Prism



Tear Meniscus Height

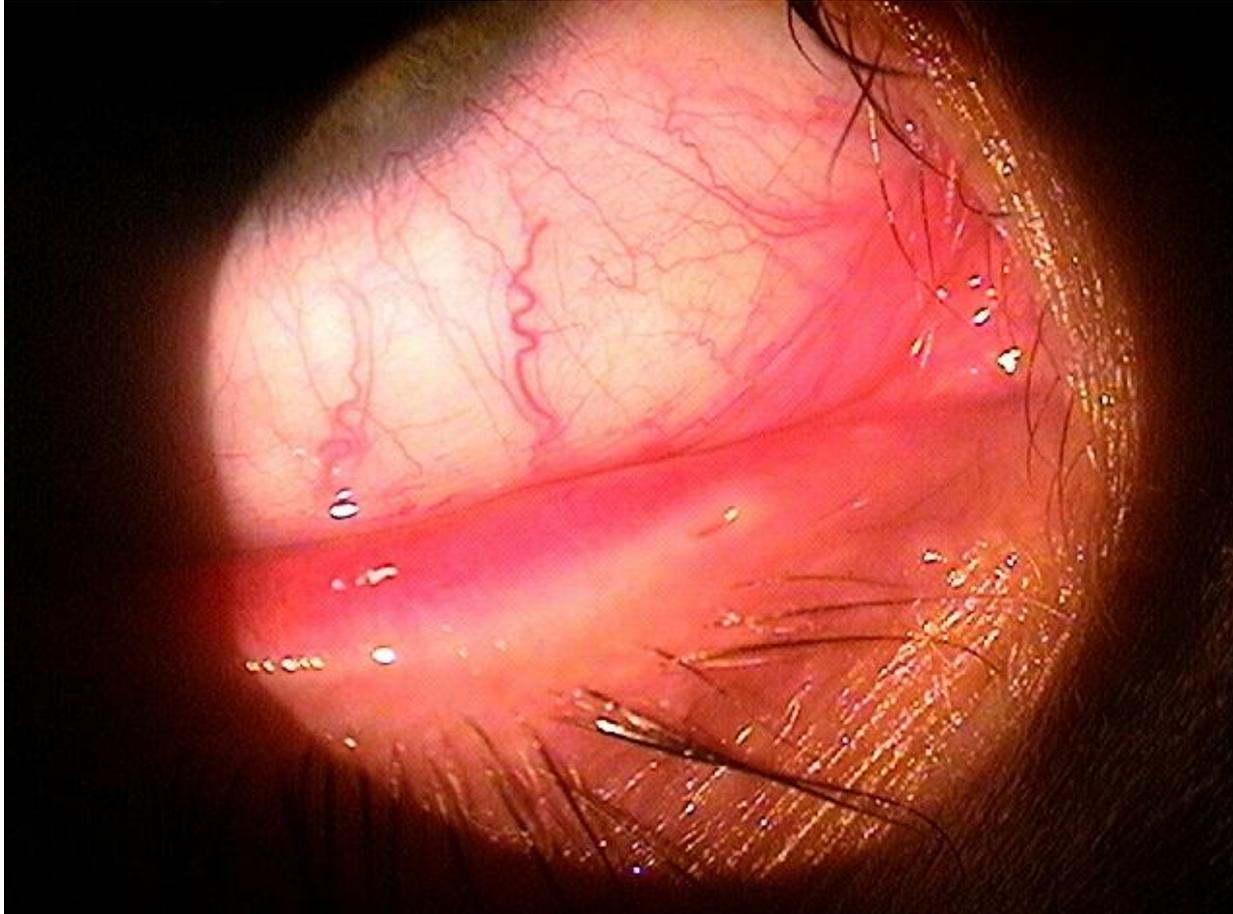


Meibomian Glands

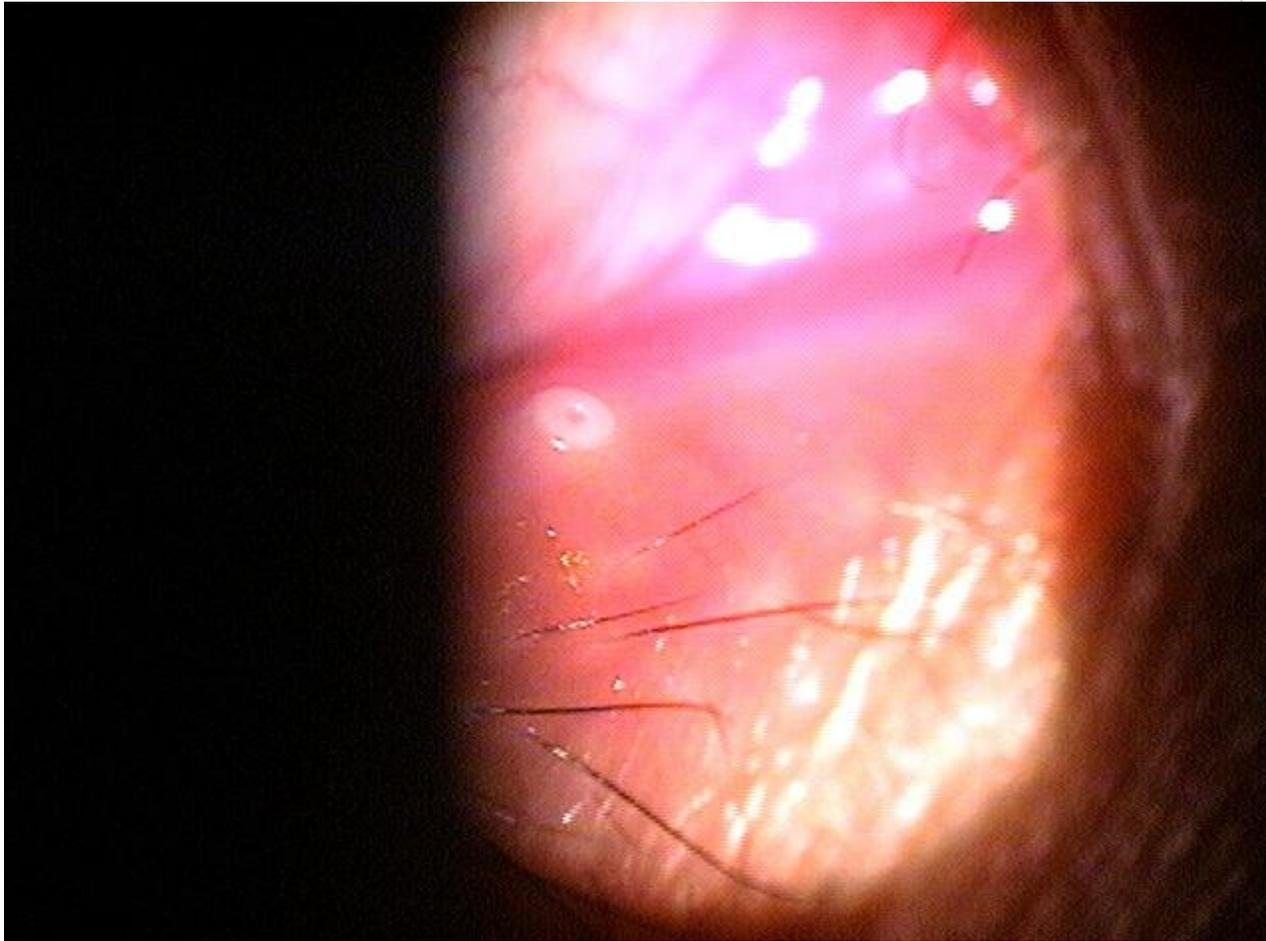




Punctal Plugs - Collagen



Punctal Plugs - Silicone

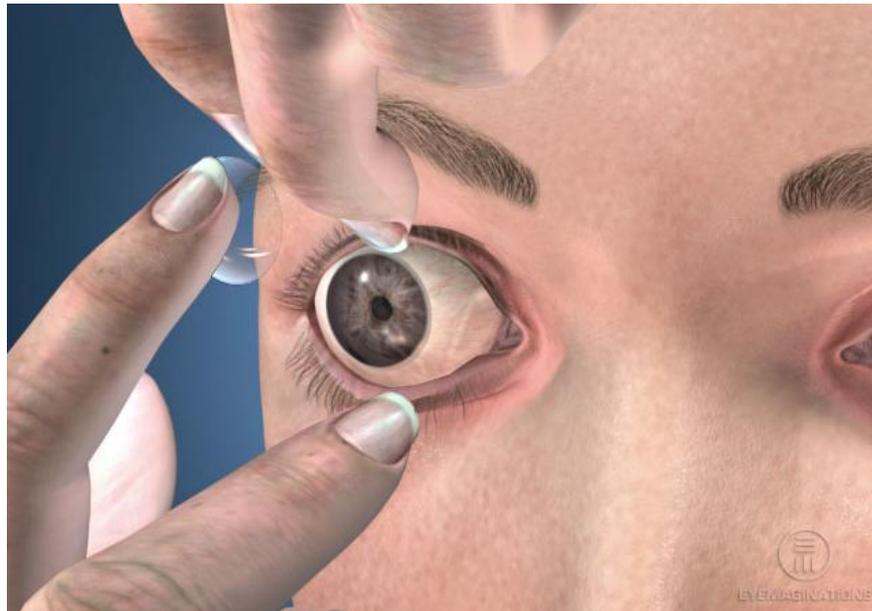


The “WHY”

Contact Lens Options for Patients with Dry Eye

Hydrogel Lenses

- ▶ Less breathable than Silicone contact lenses but they are very “wetable”.
- ▶ For a long period of time, this material was the standard of care.

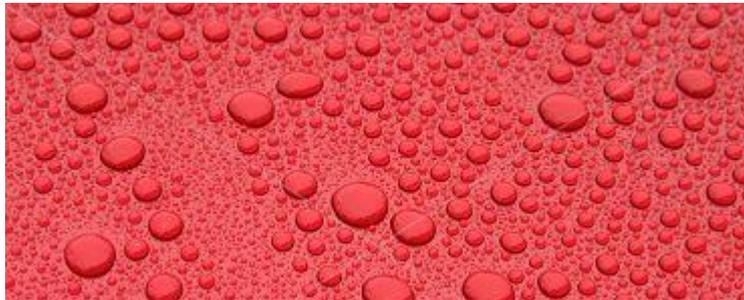


Low Water vs. High Water

- ▶ How water content affects the dry eye patient
 - ▶ Low water vs. high water
- ▶ Silicone hydrogel contact lenses
- ▶ Evaluation of solutions

Silicone Hydrogel Lenses

- ▶ It has been well established that silicone lenses are extremely breathable
- ▶ Problem: Silicone is not a wettable material - The tear film beads up on the contact lens like water beads up on a car that has been freshly waxed
- ▶ Thus...surface treatments



GP Lenses

Scleral Lenses

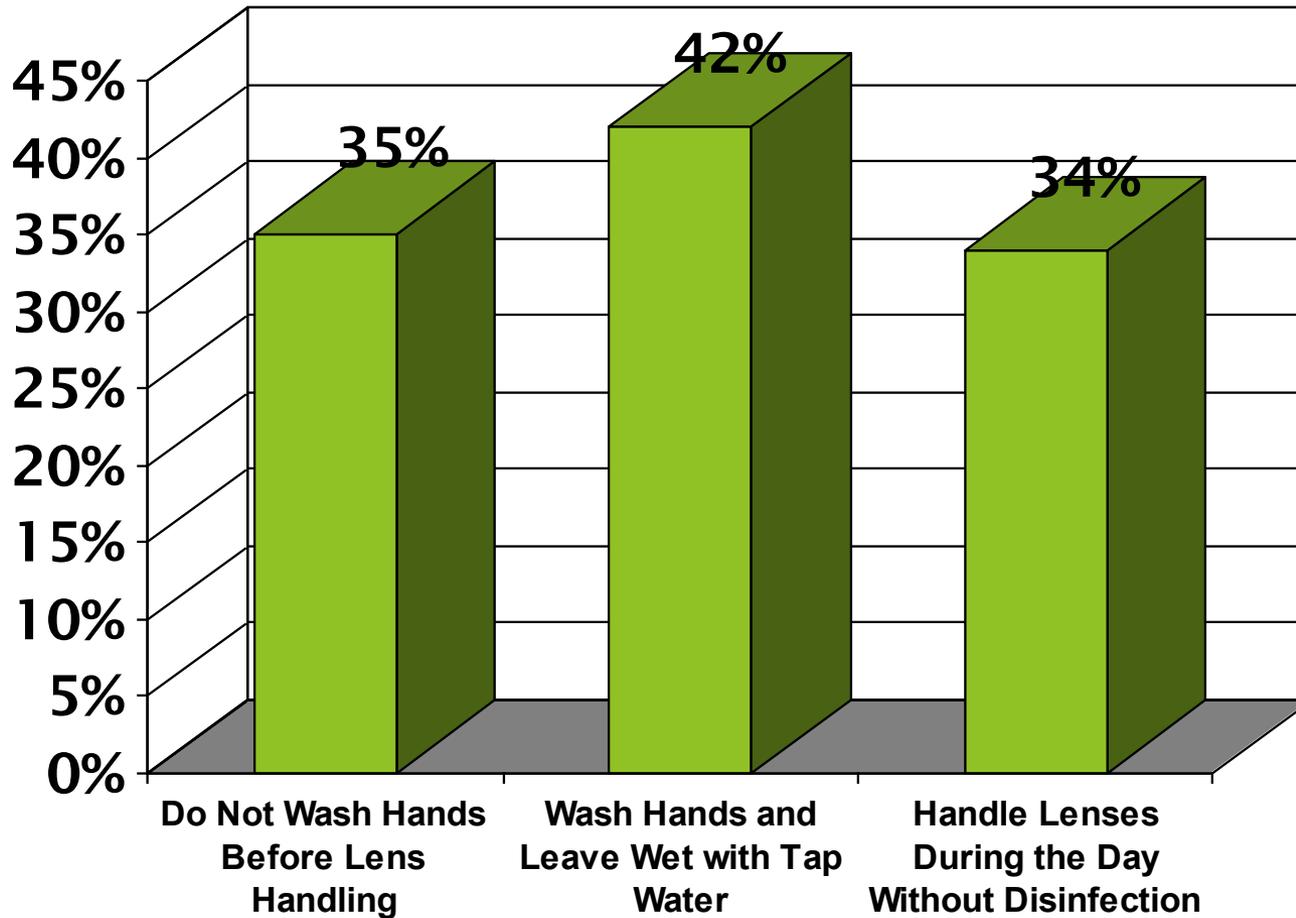
Contact Lens Solutions

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What About Compliance?

CL Hand Washing





Role of patient compliance

Lens wearing & replacement schedule

- ▶ 49% wear their lenses longer than recommended

Lens case hygiene

- ▶ <46% clean their lens case after each use

Topping Off - Using Fresh Solution

- ▶ >44% always or occasionally top-off (re-use) their contact lens solutions

Non-Compliant CL Patients

- ▶ Contact lens junkies
- ▶ Incorrect wearing schedules
- ▶ Incorrect replacement schedules
- ▶ Incorrect follow-up schedules
- ▶ Incorrect care
- ▶ Incorrect solutions
- ▶ Poor case care
- ▶ Incorrect handling
- ▶ Incorrect schedules for polishing

Other Management Considerations

- ▶ Home remedies
 - ▶ Warm compresses
 - ▶ Lid scrubs
 - ▶ Hydration
 - ▶ Blinking
 - ▶ Reducing screen time
 - ▶ Wrap around sunglasses
 - ▶ Environmental changes
 - ▶ Humidifiers
 - ▶ Air purifiers

Other Management Considerations

- ▶ Lens lubricants
- ▶ Punctal Plugs
- ▶ Use of ocular medications
 - ▶ OTC and Prescribed
- ▶ Intense pulsed light (IPL) therapy
- ▶ Thermal pulsation therapy
- ▶ Eyelid warming devices
- ▶ Dietary supplements and dietary changes
- ▶ Use of non-preserved solutions for CL patients
- ▶ Change of materials/parameters/CL types for CL patients

No “One and Done”

- ▶ No - One size fits all
- ▶ Each patient has different needs
- ▶ Reason communication on their level about their condition is important

Communication with Patients

- ▶ Time for patient education
 - ▶ All management
 - ▶ Diet
 - ▶ Environment

- ▶ Lid scrubs
- ▶ Warm compresses
- ▶ Drops
- ▶ Omega 3 fatty acids
 - ▶ Other dietary supplements

One Patient's Story

- ▶ Hairdresser
- ▶ She is the “WHY

The “WHY”



Conclusion/Comments

Questions/Answers

Thank You