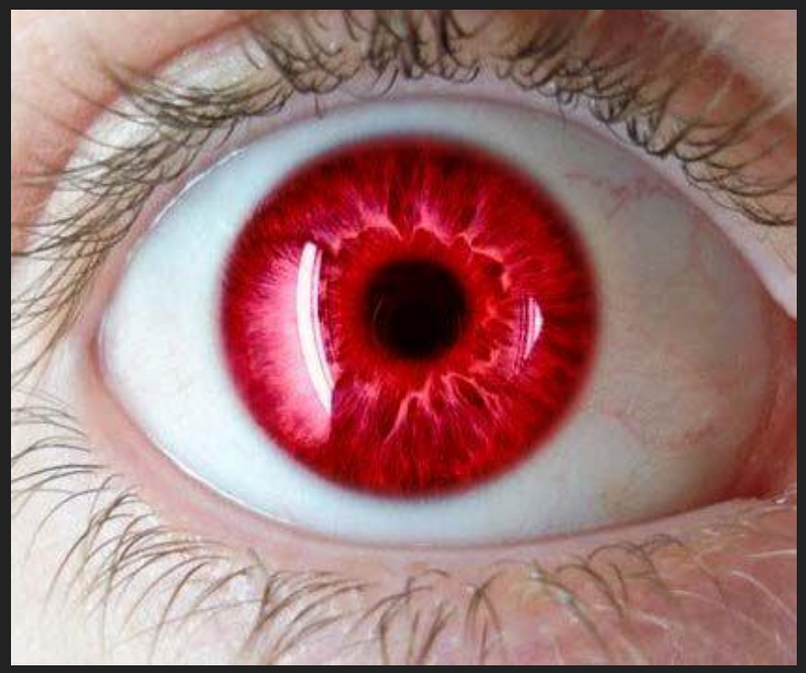

THE RED EYE

ANNIE MOREAU, MD FACS
10/05/2019
OKLAHOMA ACP SCIENTIFIC MEETING

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OU Medicine
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ANNIE MOREAU, M
FACS

- French-Canadian
- Med School @ OU
- Residency in Ophthalmology @ DMEI
- Fellowship in Ophthalmic Plastic & Reconstructive Surgery @ DMEI
- Full-time Associate Professor with OU Department of Ophthalmology

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DISCLOSURE STATEMENT

NO FINANCIAL OR NONFINANCIAL DISCLOSURES
NO CONFLICTS OF INTEREST

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LEARNING OBJECTIVES

Identify the most common types of ocular inflammation

Recognize the signs & symptoms related to ocular inflammation

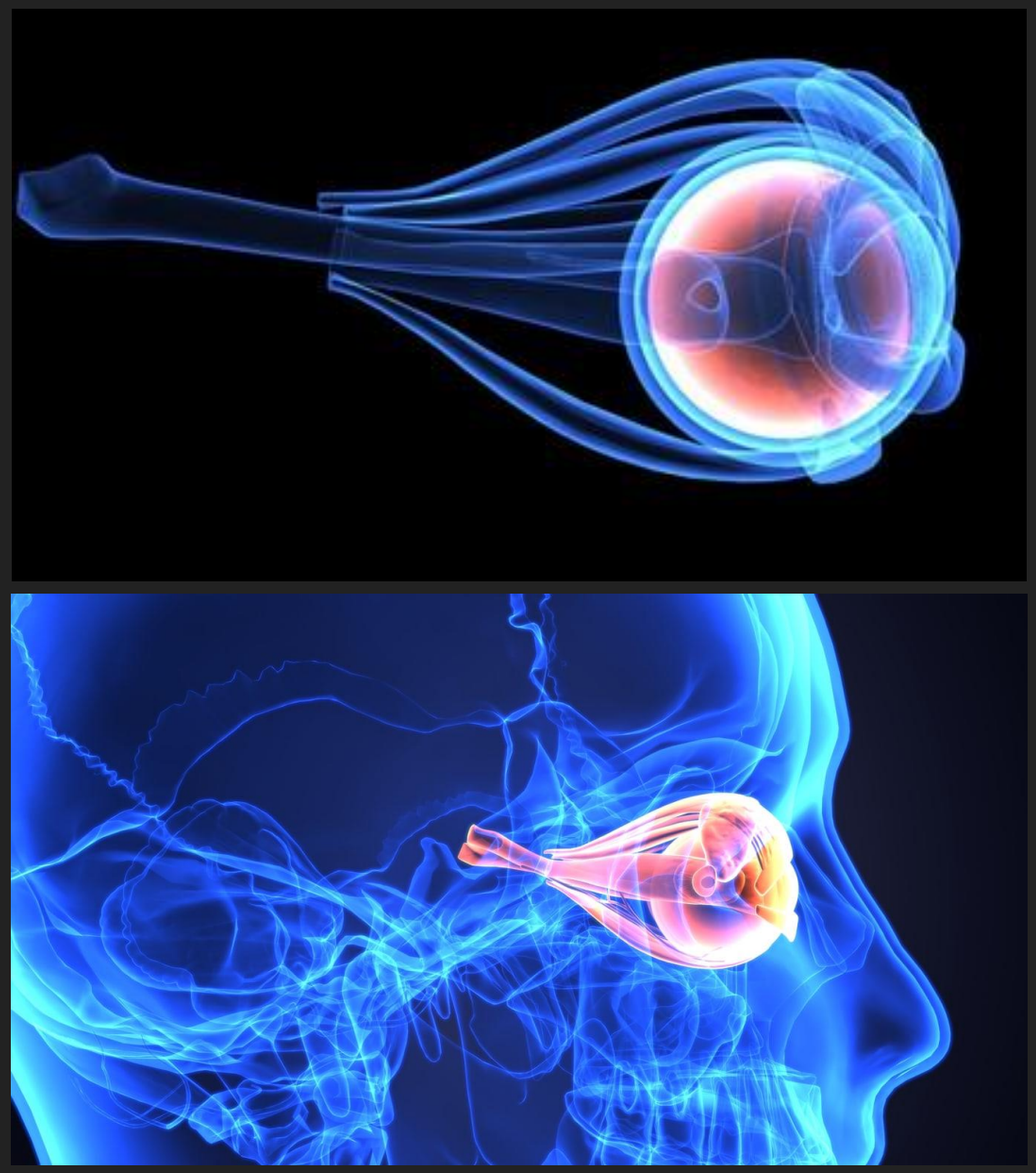
Understand the different treatment and management approach & the need for tertiary care referrals.

THANK YOU

- Thank you for helping us take care of patients, whether in or outpatient setting.
- Thank you Dr Jeffries for the invitation to present.
- Ophthalmologists are not really “real” doctors.

Anyone knows what this is?

SUBSPECIALTIES



- Cornea & External Disease
- Cataract & Refractive Surgery
- Glaucoma
- Intraocular Inflammatory Diseases
- Vitreoretinal Diseases (Medical & Surgical)
- Pediatric & Strabismus
- Neuro-Ophthalmology
- Ophthalmic Pathology / Ocular Oncology
- Low Vision Rehabilitation
- Oculoplastic/Orbit

RED EYE IS THE CARDINAL SIGN OF OCULAR INFLAMMATION

RED EYES ARE SEEN ACROSS THE ROOM AND READILY NOTICED!

THIS ALLOWS US TO HAVE VERY EARLY DETECTION OF EITHER A FOCAL, BENIGN, SELF-LIMITED CONDITION
OR
IT CAN BE THE FIRST SIGN OF A MORE SERIOUS SYSTEMIC DISEASE FOR WHICH WE NEED THE EXPERTISE OF OTHERS……LIKE YOU!

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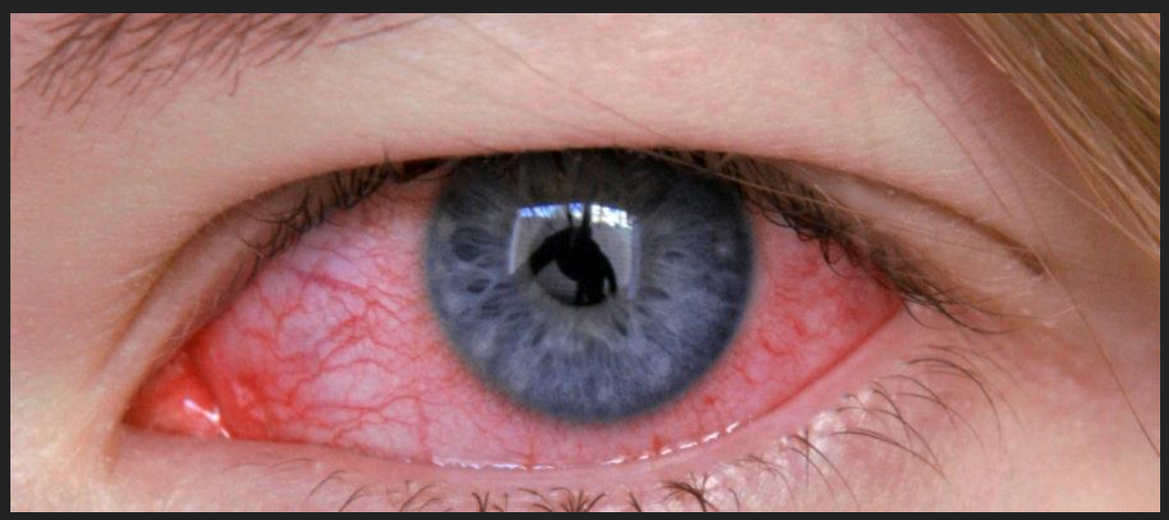
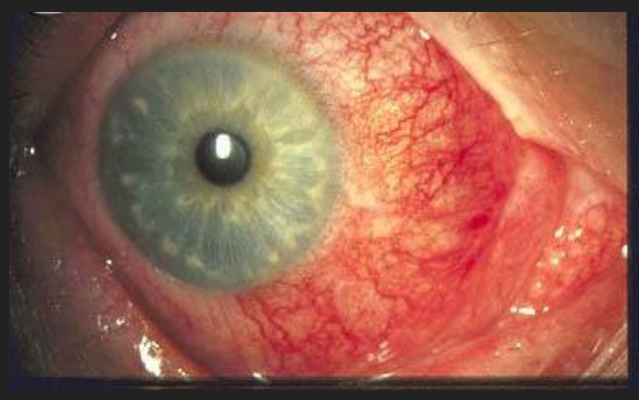
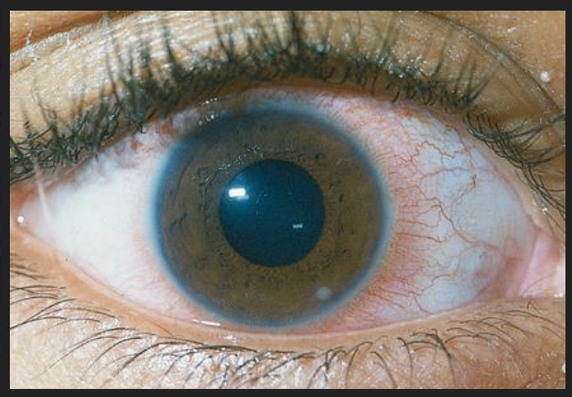
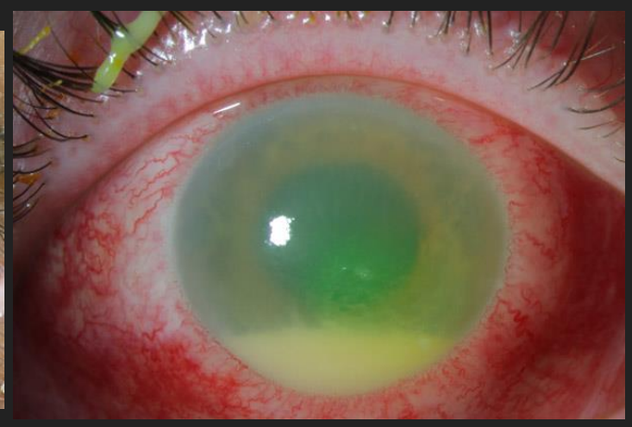
ETIOLOG

- Blepharitis
- Keratitis
- Conjunctivitis
- Episcleritis
- Scleritis
- Uveitis / Iritis
- Endophthalmitis



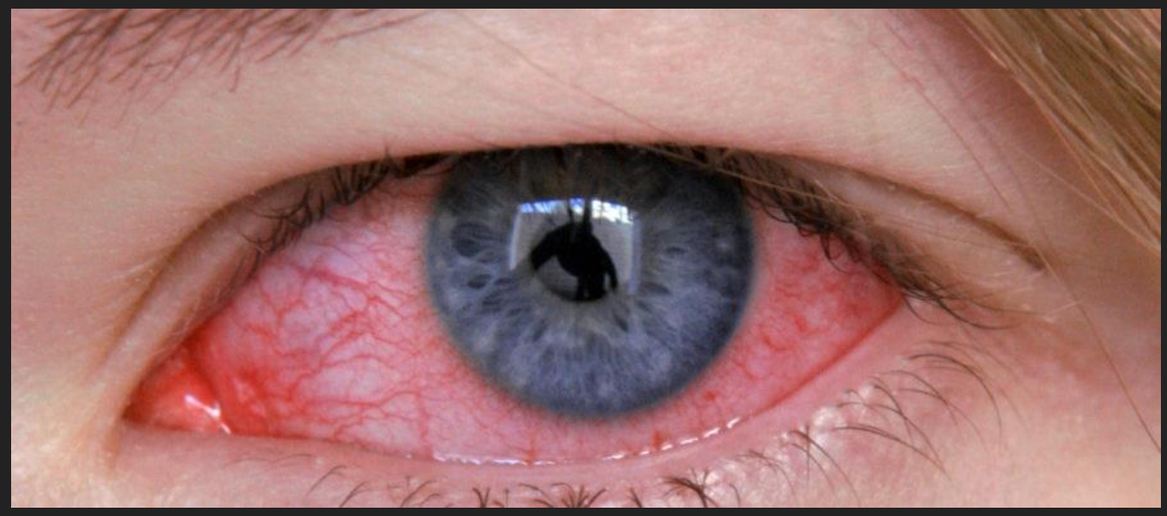






THE INFLAMED RED EYE

- Blepharitis
- Keratitis
- Conjunctivitis
- Episcleritis
- Scleritis
- Uveitis / Iritis
- Endophthalmitis



Which one is the most common?

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THE INFLAMED RED EYE

- Blepharitis
- Keratitis
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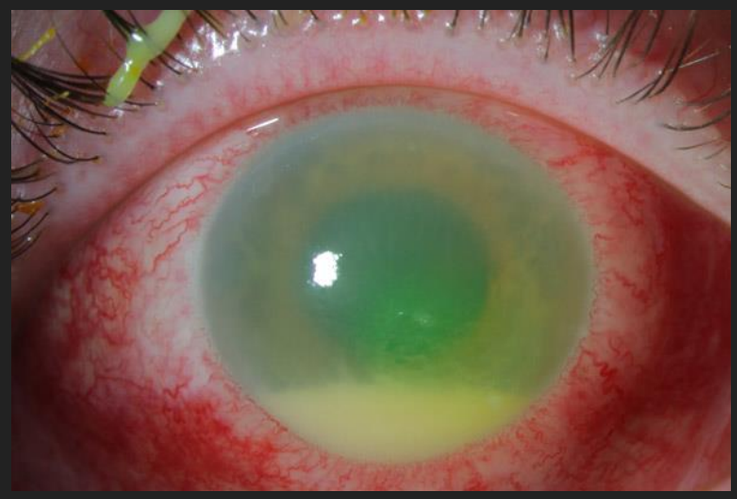

Which one is the least common?

This is also the one with the highest potential for blindness

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THE INFLAMED RED EYE

- Blepharitis
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- Episcleritis
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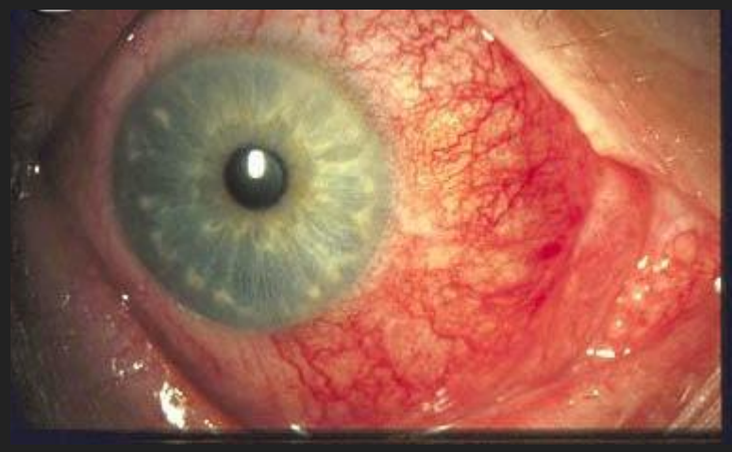
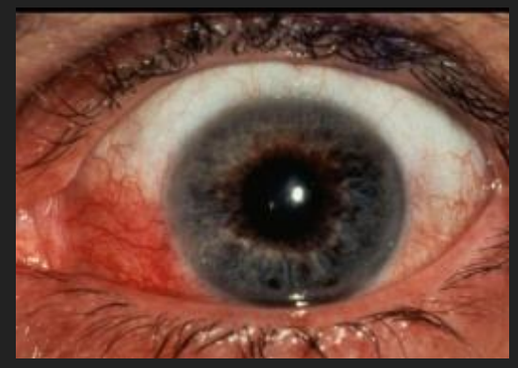
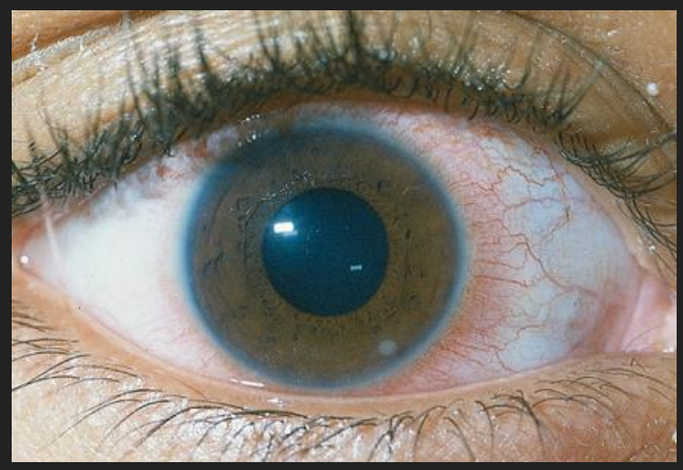


Which one is the most likely related to a systemic condition?





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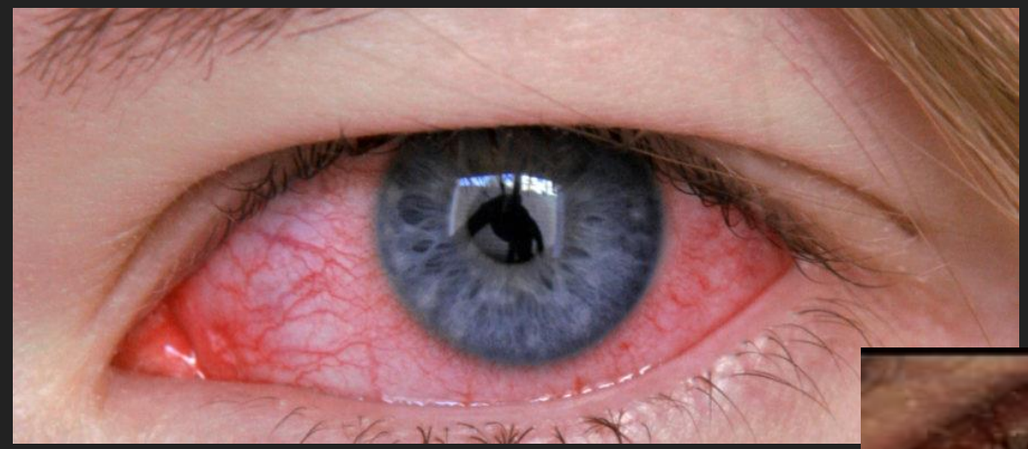
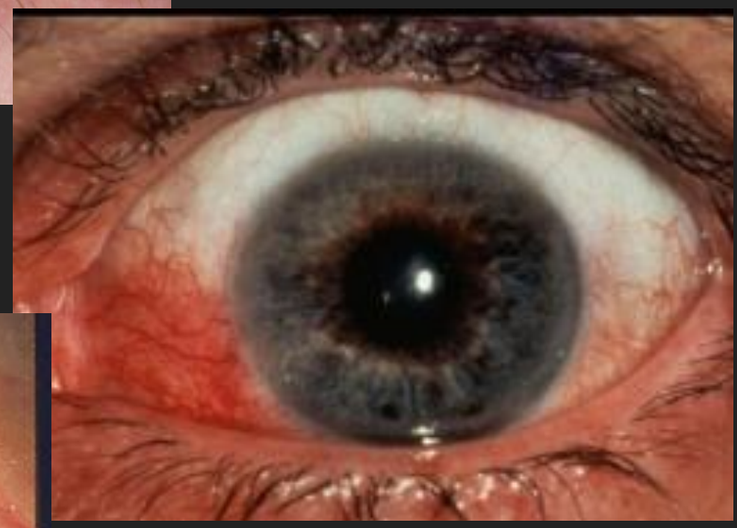
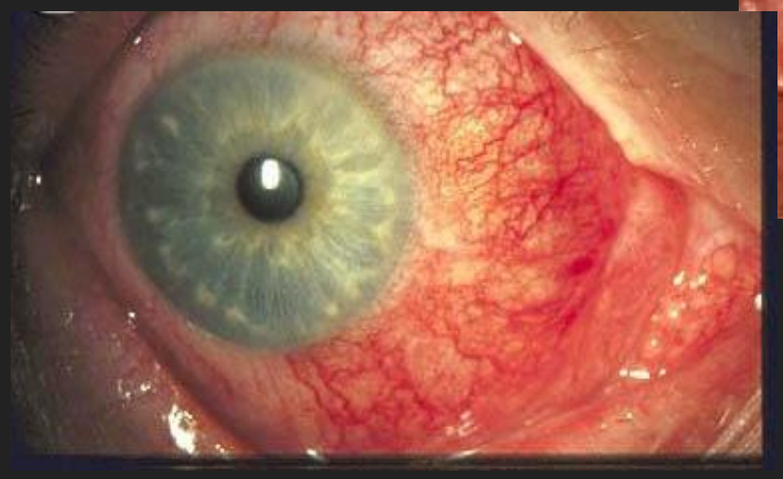
THE FOCUS OF THIS TALK

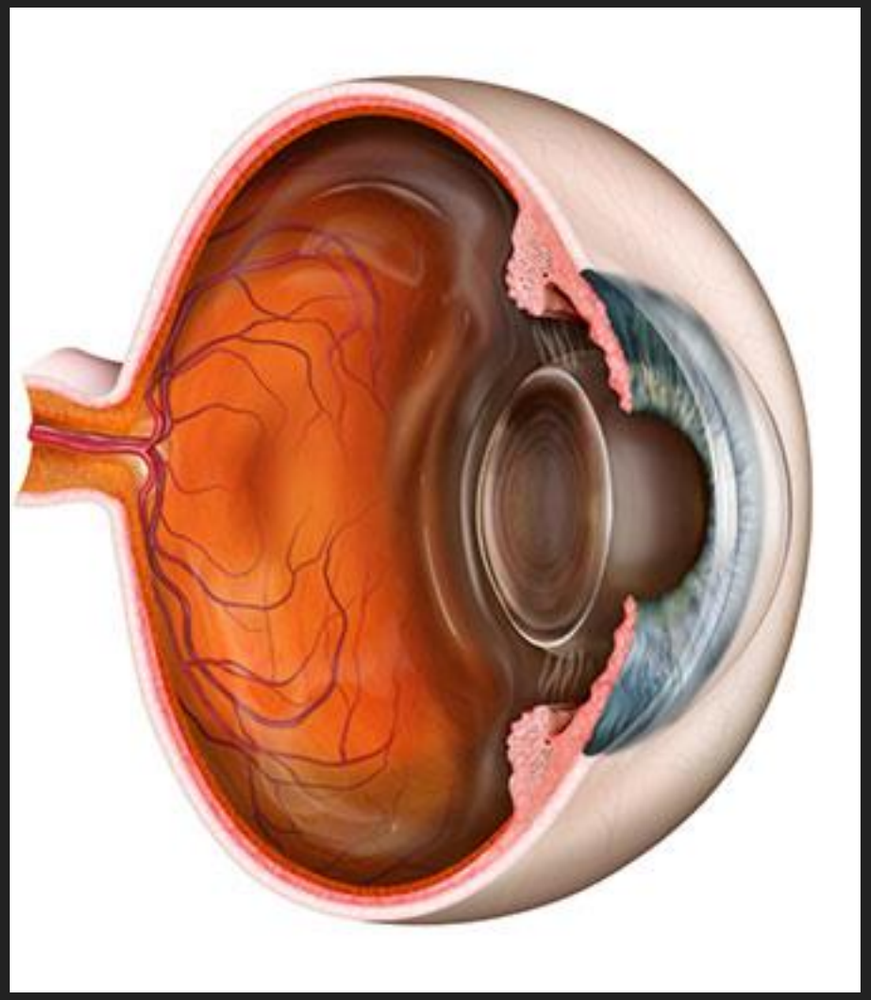
- Blepharitis
- Keratitis
- Conjunctivitis
- Episcleritis
- Scleritis
- Uveitis / Iritis
- Endophthalmitis

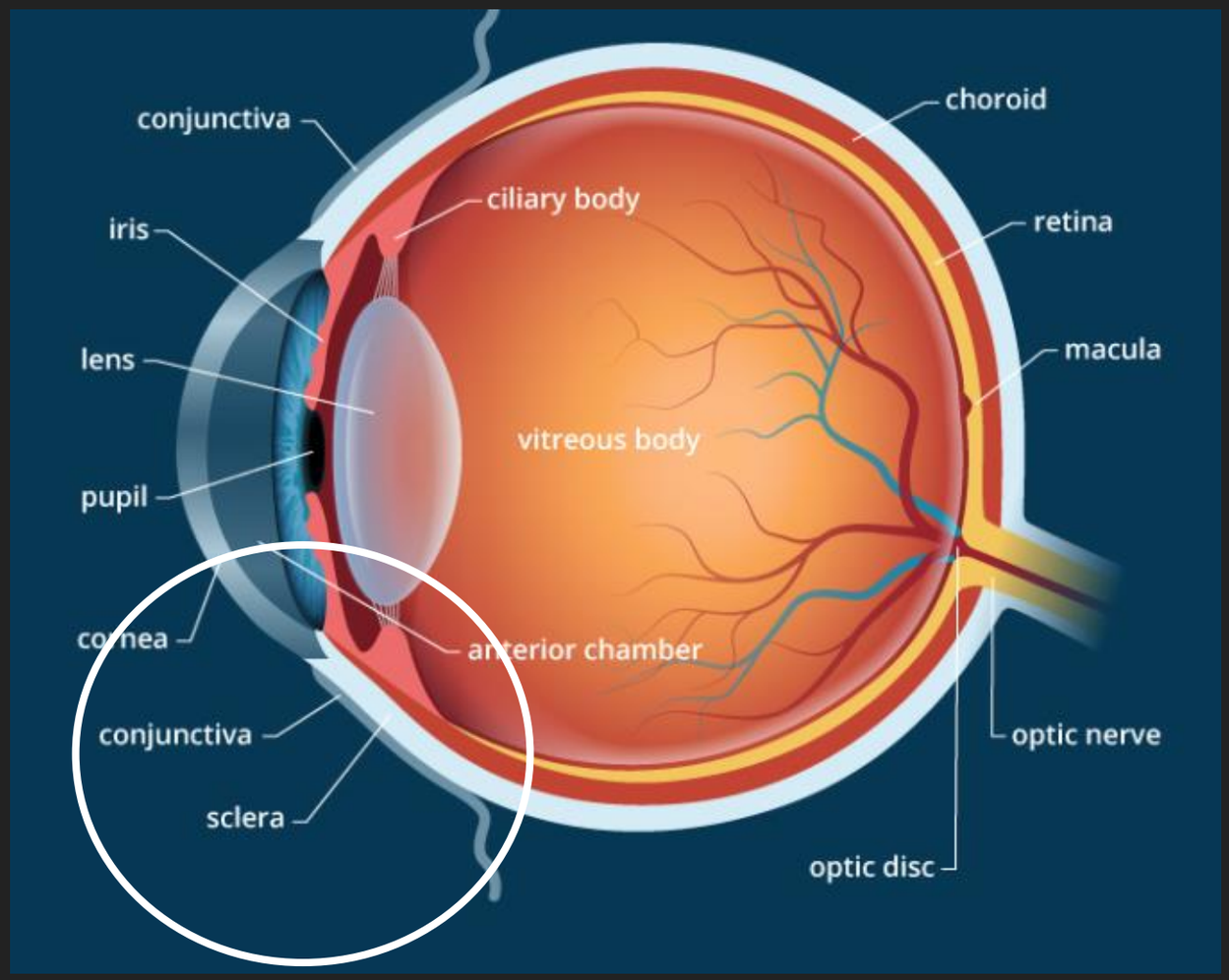




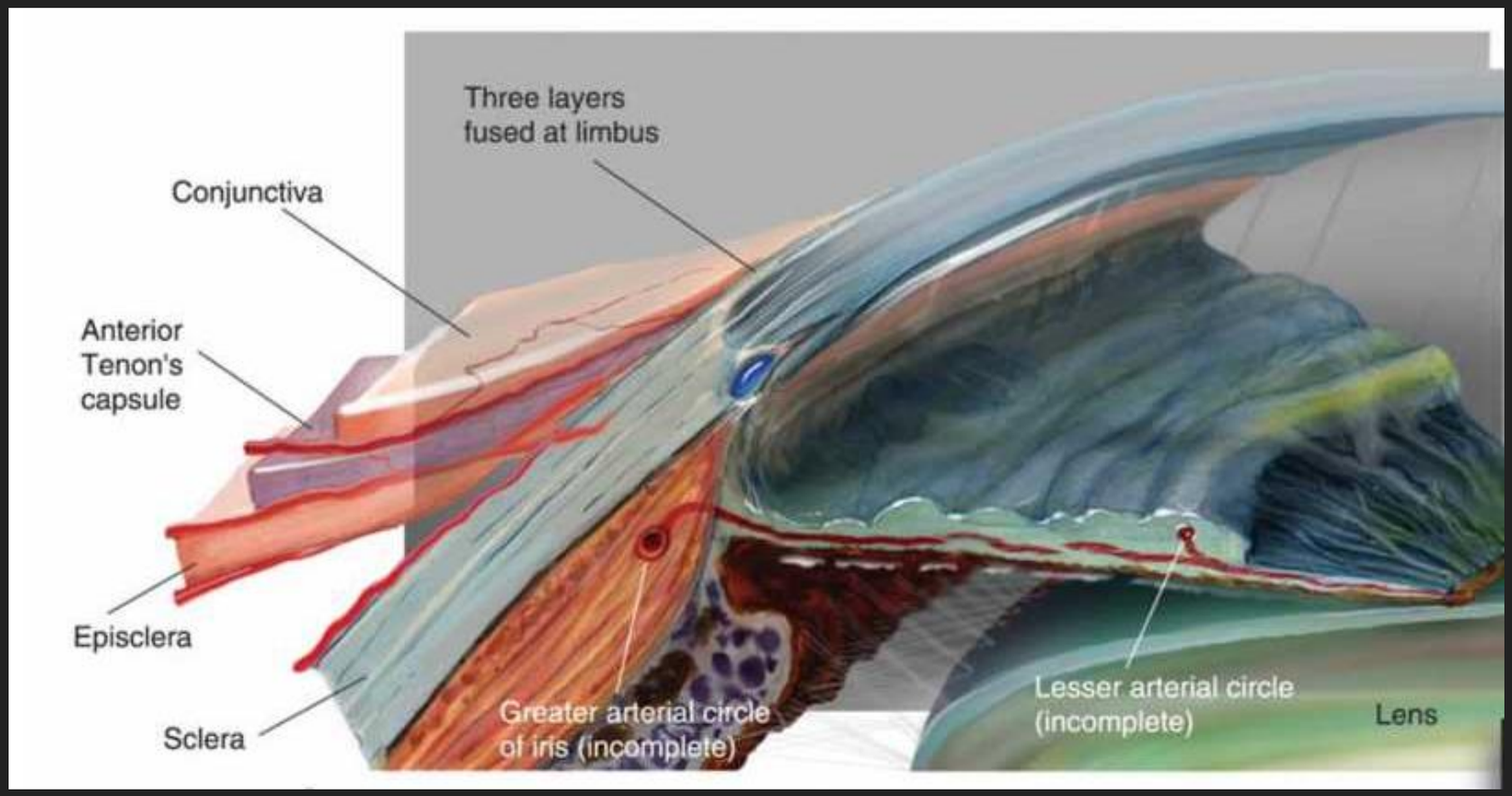


WHAT'S WHAT?

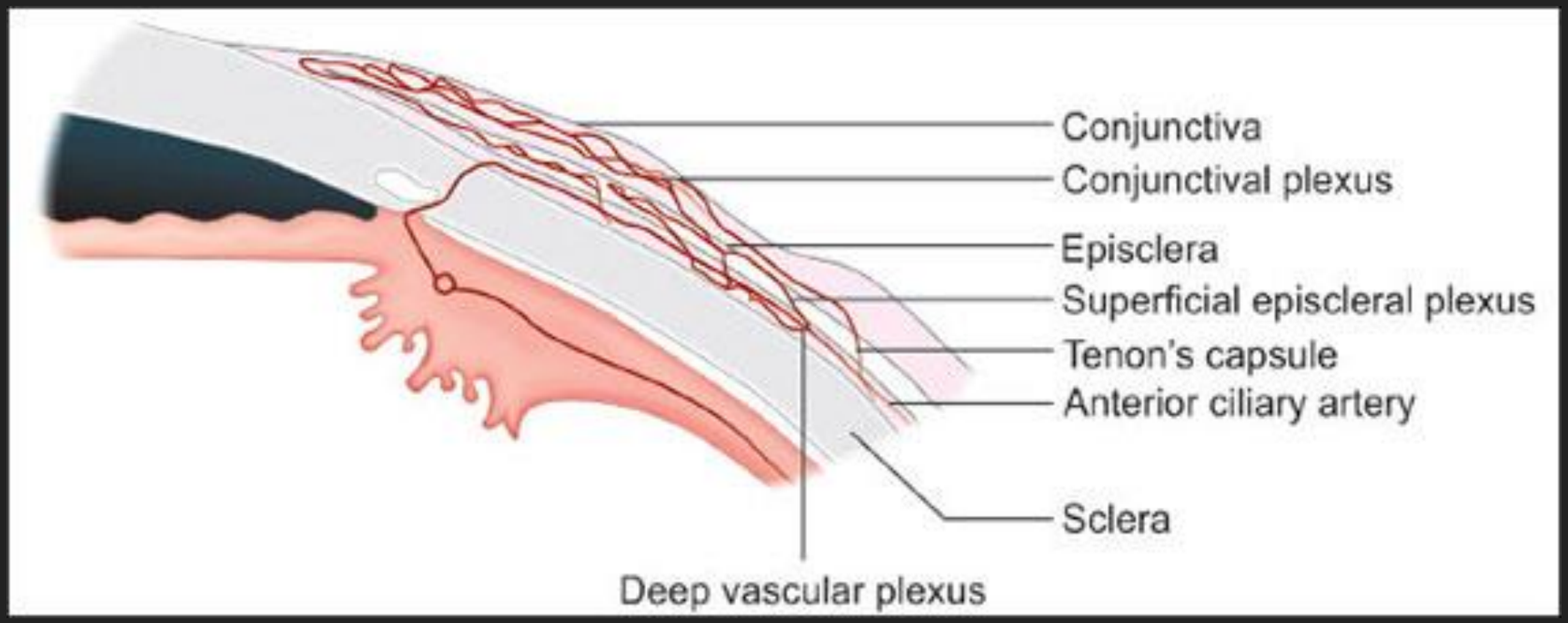



conjunctiva
choroid
ciliary body
iris
retina
lens
macula
vitreous body
pupil
cornea
anterior chamber
conjunctiva
optic nerve
sclera
optic disc

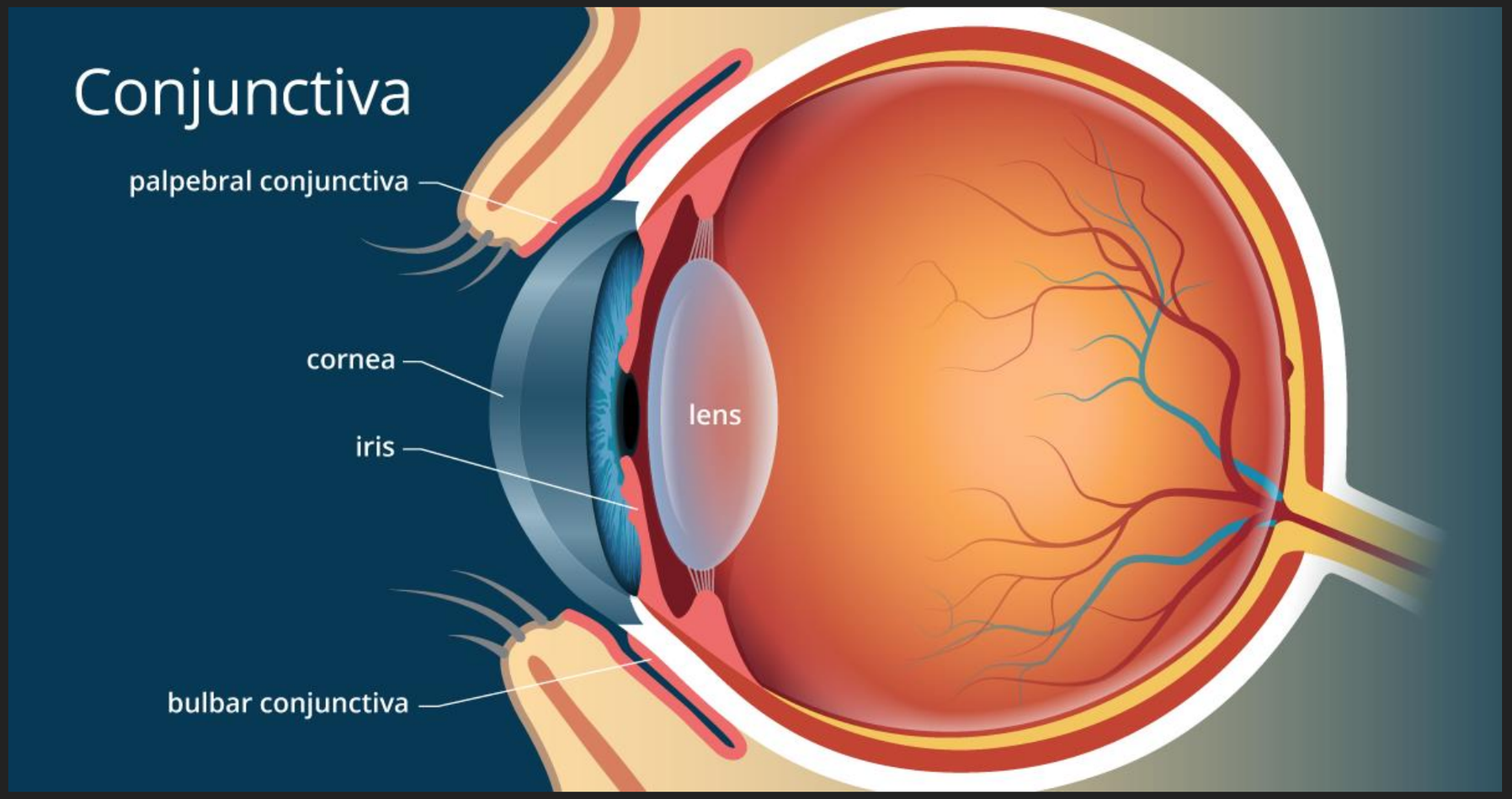
CONJUNCTIVA VS EPISCLERA VS SCLERA



VASCULATURE



ANATOMY



The conjunctiva is what prevents contact lenses from going behind the eye!!

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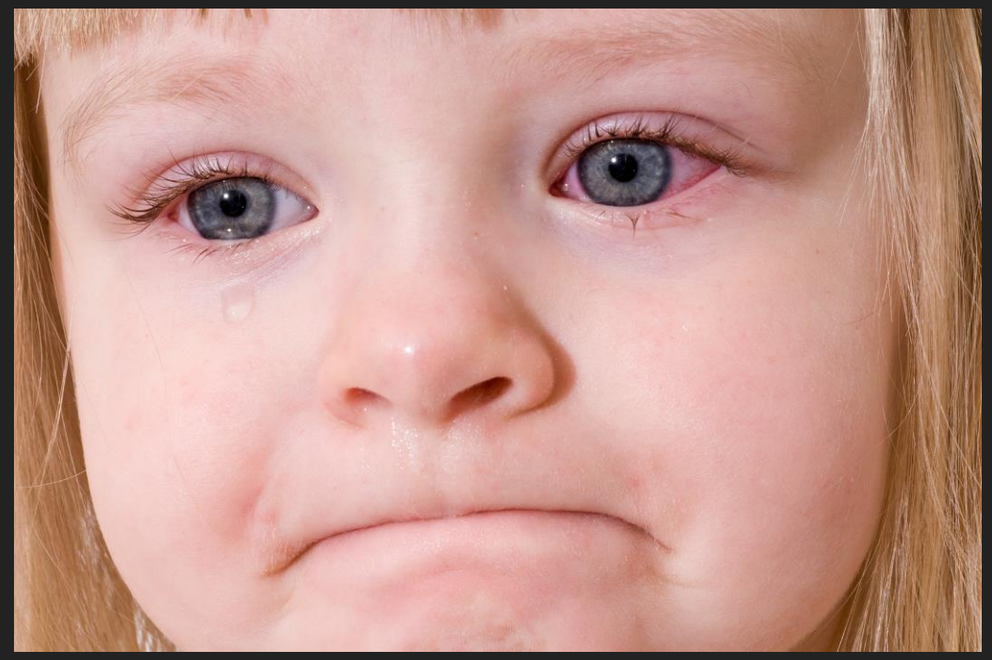
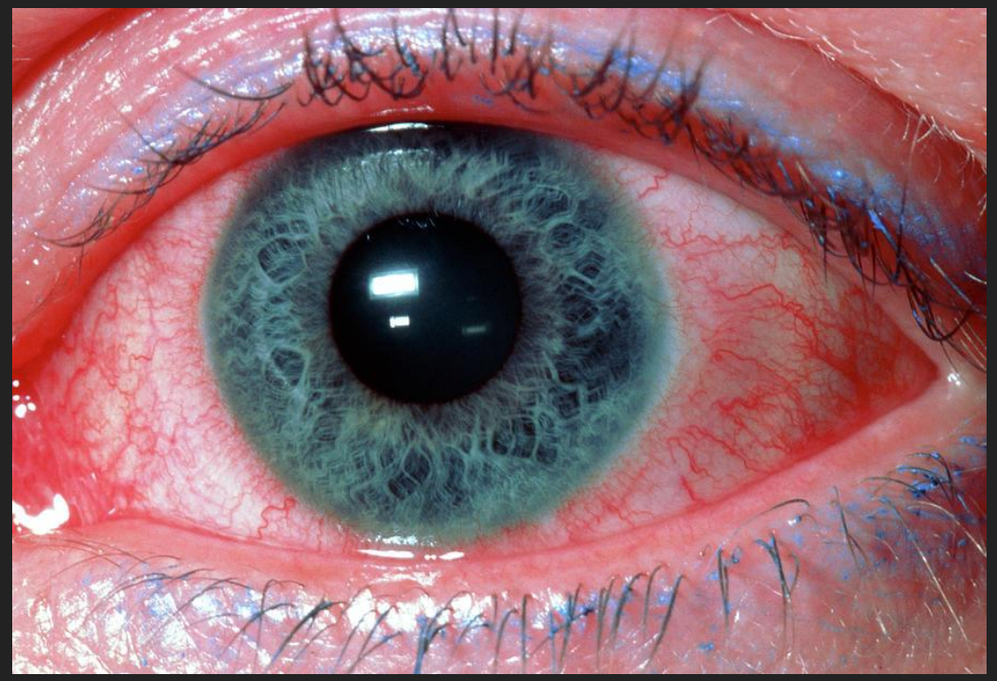
CONJUNCTIVITIS

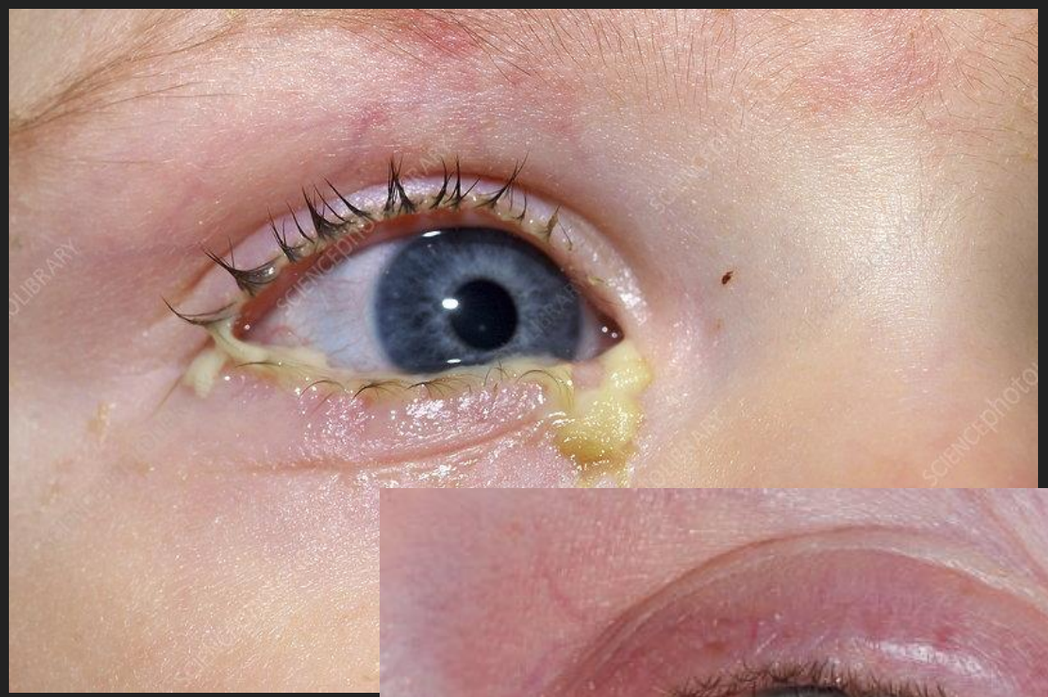
- Inflammation of the conjunctiva
- Most common reason for missed school or work days!
- Symptoms are redness, discharge, crusting, blurry vision, photophobia, irritation
- Most commonly sequentially bilateral
- Self-limited (resolves w/i 10 days w/o tx)





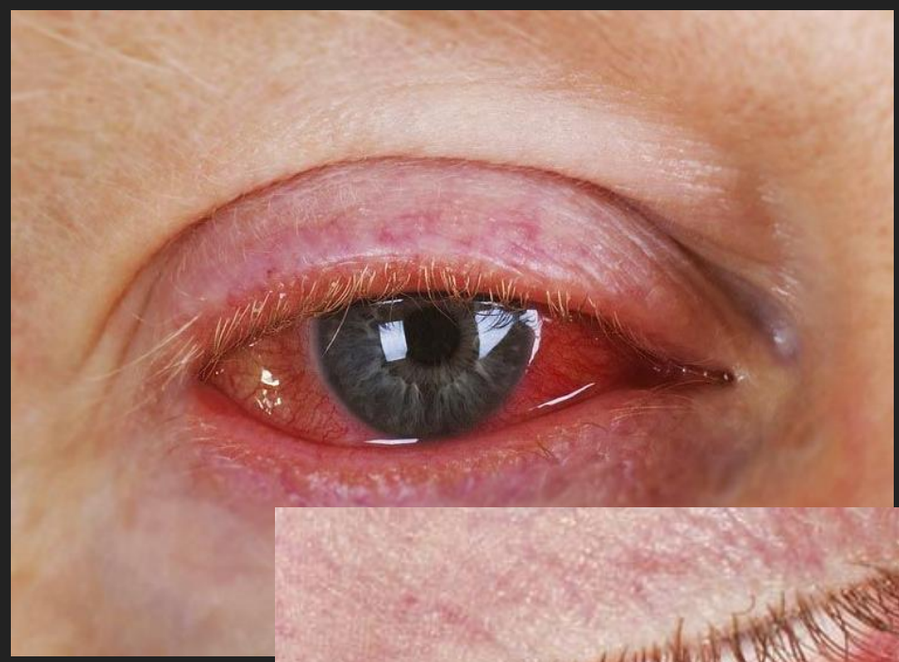
CONJUNCTIVITIS

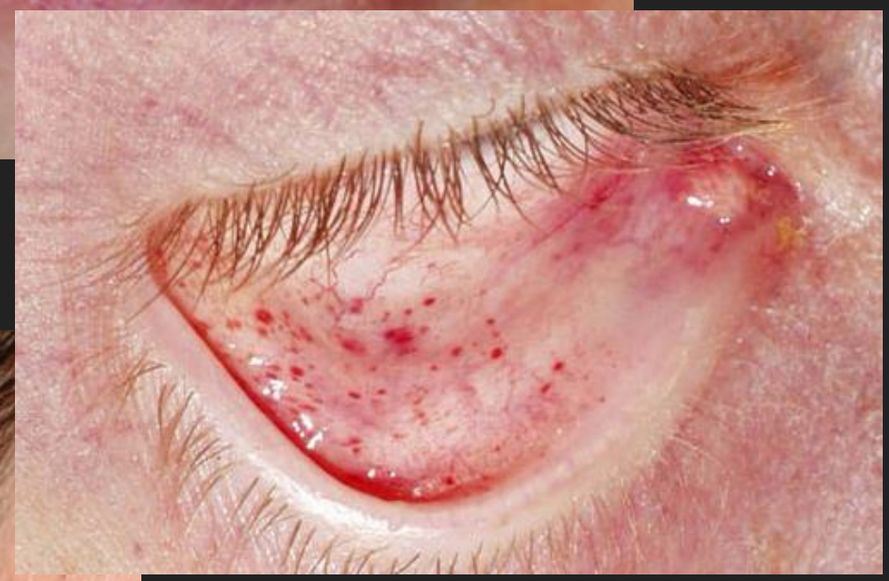
- Bacterial
  - purulent discharge
  - eyes “glued” shut in the morning
  - more frequent in children



CONJUNCTIVITIS

- Bacterial
  - purulent discharge
  - eyes “glued” shut in the morning
  - more frequent in children
- Viral
  - mucoserous discharge
  - pre-auricular lymphadenopathy





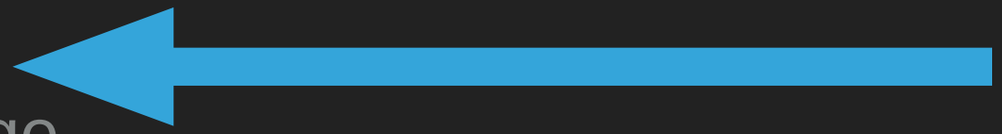
CONJUNCTIVITIS

- Bacterial
  - purulent discharge
  - eyes “glued” shut in the morning
  - more frequent in children
- Viral
  - mucoserous discharge
  - pre-auricular lymphadenopathy
- Allergic
  - watery discharge with chemosis & pruritus

CONJUNCTIVITIS

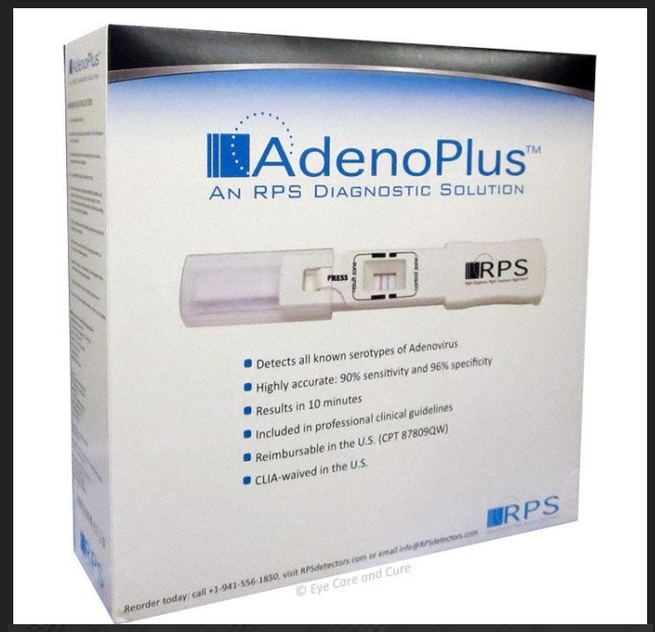
Which one is the most common?

- Bacterial
  - purulent discharge
  - eyes “glued” shut in the morning
  - more frequent in children
- Viral
  - mucoserous discharge
  - pre-auricular lymphadenopathy
- Allergic
  - watery discharge with chemosis & pruritus



DIAGNOSIS

- Conjunctivitis is a clinical diagnosis
- Ask the right questions
  - *Anyone around with a red eye?*
  - *Do you wear contact lenses?*
  - *New pet / new make up ?*
  - *Partner with same thing?*
- Cultures can be helpful
  - Expect Staph & Strep



TREATMENT

- Proper hygiene & hand washing
  (Frequent change of pillow cases / Throw away makeup / Stop wearing contact lenses)
- Bacterial: Antibacterial ophthalmic meds
- Viral: Cool compress + Artificial tears
- Allergic: Remove the offender! Antihistamine & Mast-Cell Stabilizer

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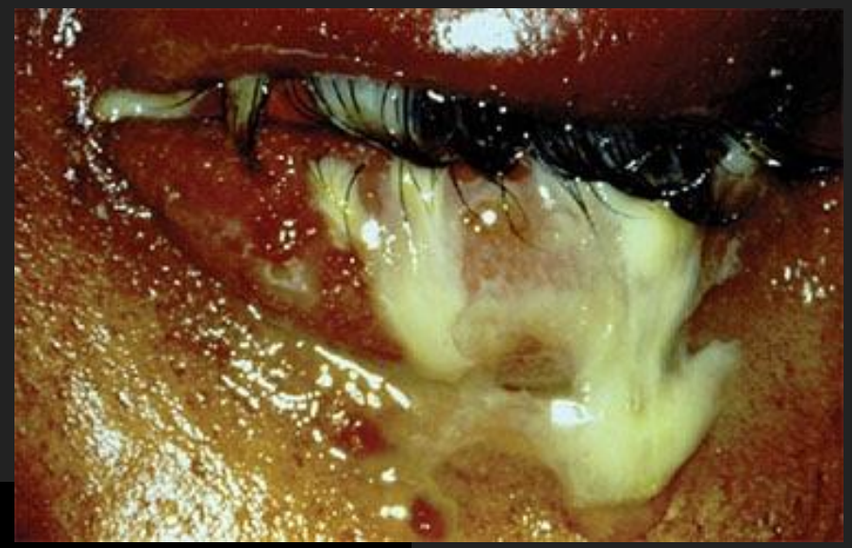
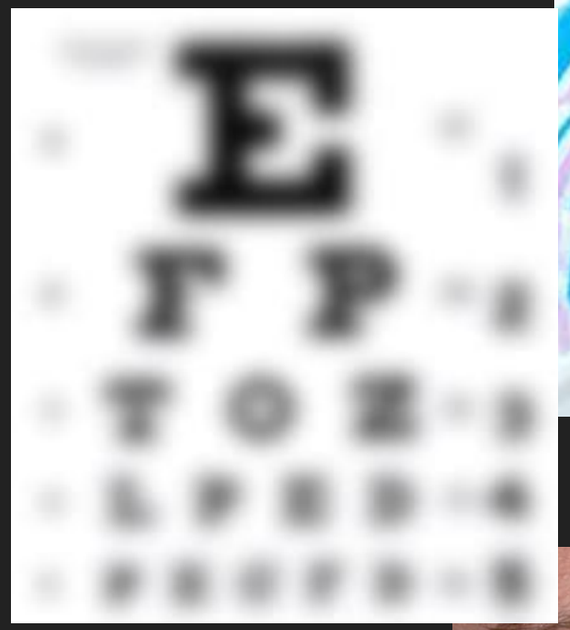
WHEN DO YOU NEED SYSTEMIC ANTIBIOTICS?

- Chlamydia
  - Macrolides (azithromycin)
  - Tetracyclines
- Neisseria gonorrhea
  - Ceftriaxone inj. + Azithromycin
  - Inform sexual contacts



WHEN DO YOU REFER?

- Newborn & Infants
- “Conjunctivitis” for more than 2 weeks
- Severe pain or photophobia
- Visual acuity is significantly reduced
- Recent eye surgery or ocular trauma
- Contact Lens wearers, especially the non-compliant ones!



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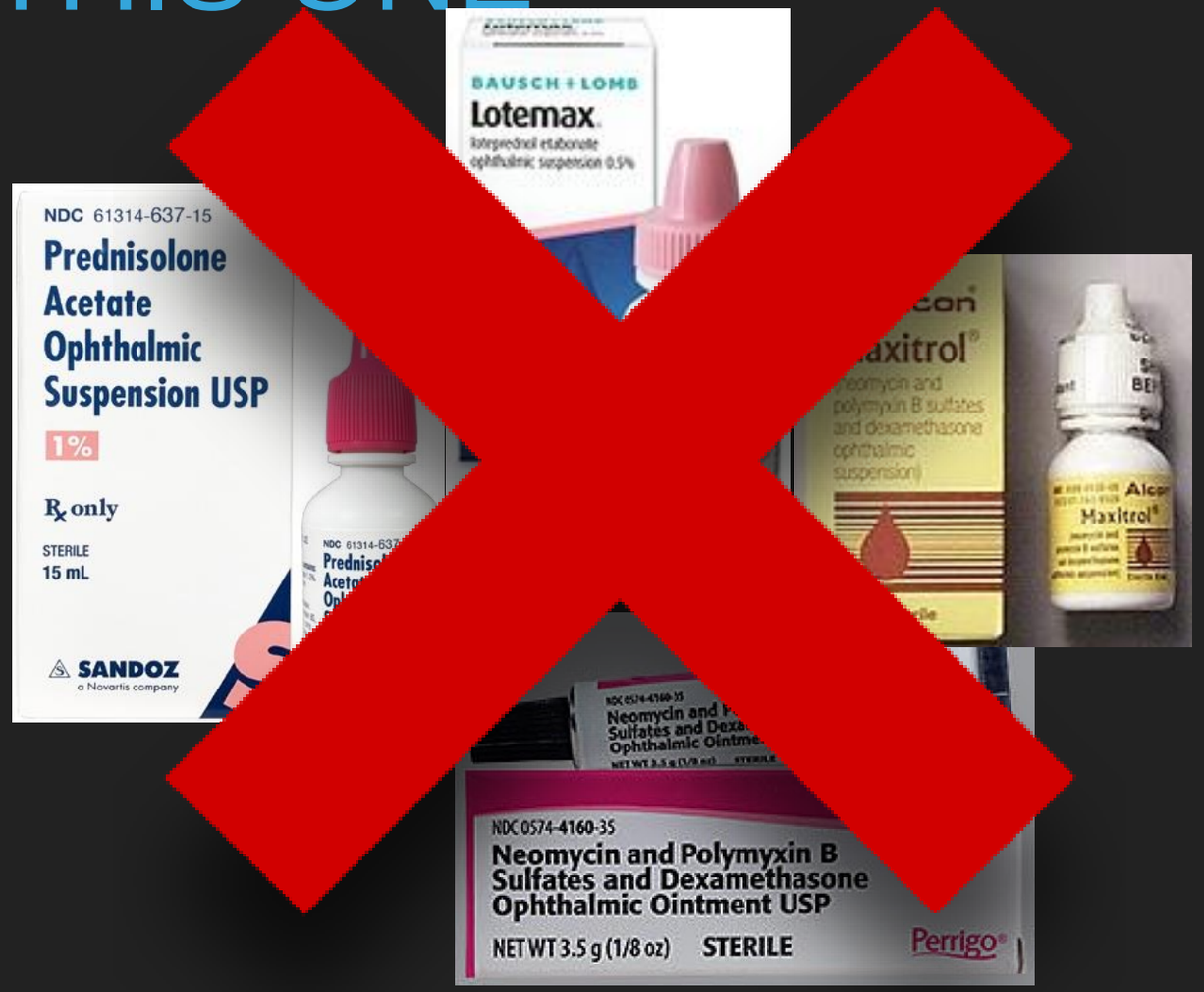
FORGET ALL THE PREVIOUS SLIDES. JUST REMEMBER THIS ONE

Avoid Steroids



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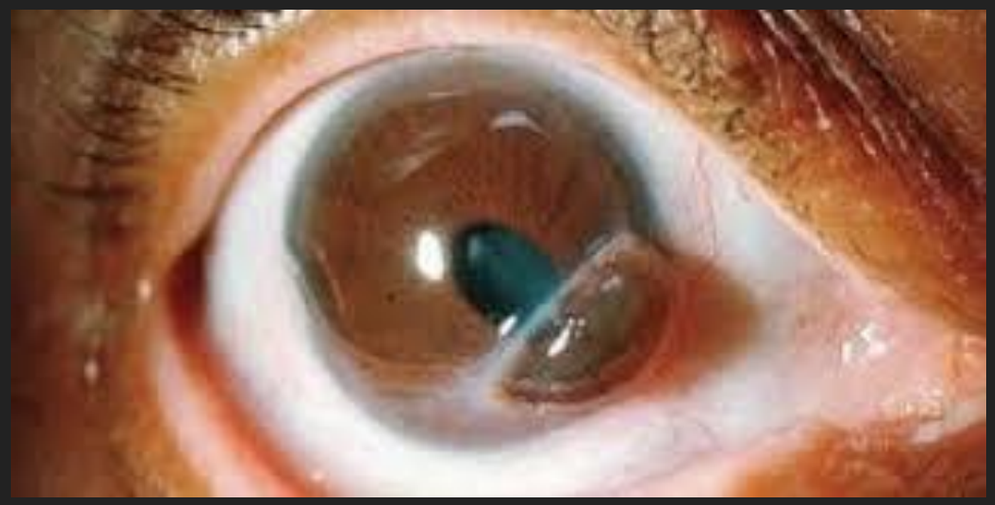

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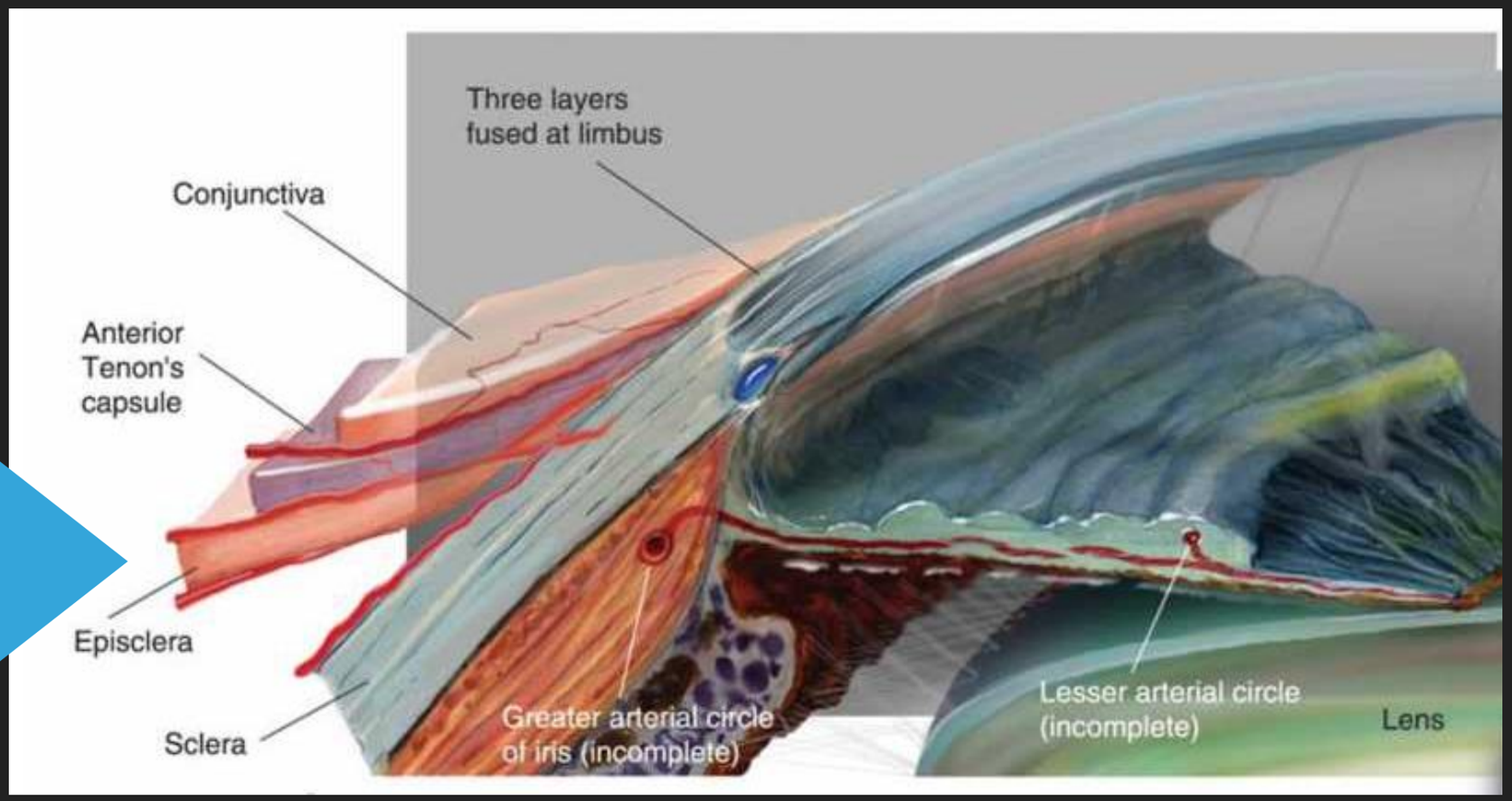
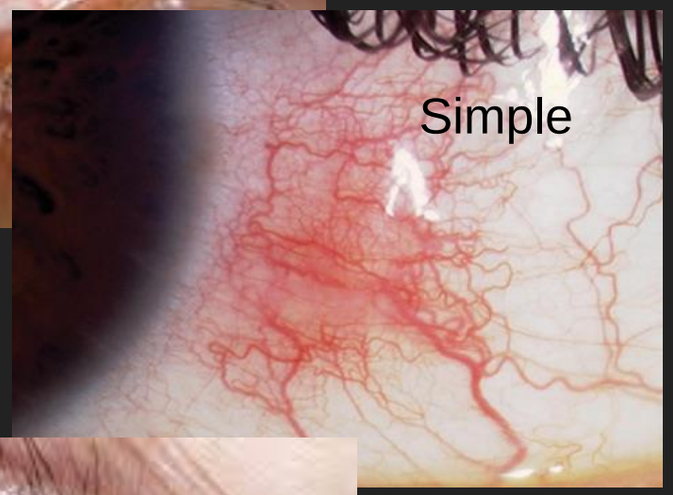
EPISCLERITIS

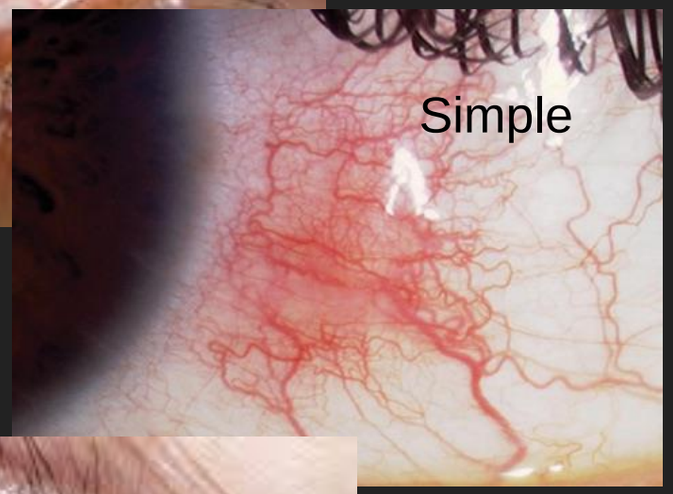


PRESENTATION



- Benign, self-limited inflammation of the episcleral tissues
- Simple (most common) or Nodular
- Sectoral (most common) or Diffuse
- Unilateral
- Idiopathic
- Pathophysiology unknown
- Resolves within 7-10 days

SIGNS & SYMPTOMS



- Pain (but not severe, sometimes none!)
- Redness, photophobia
- Don’t expect a discharge like in conjunctivitis

THE COOL TRICK!

- Phenylephrine is a direct-acting sympathomimetic
- Alpha-1 adrenergic agonist
- Contracts the dilator pupillae
- Constrict the conjunctival & episcleral arteriolar system

TREATMENT

- Reassurance
- Go back to work!!
- Supportive measures
  - Cool compresses
  - Artificial Tears
- Oral NSAIDs
  - Ibuprofen 600mg TID
  - Indomethacin 75mg BID

AVOID STEROIDS

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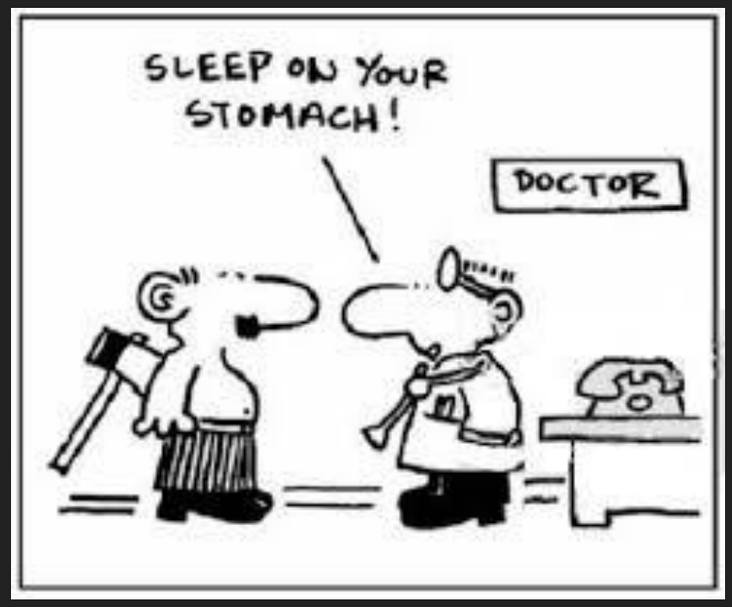
WHEN DO YOU REFER?

- “Episcleritis” for more than 2 weeks
- Severe pain or photophobia
- Visual acuity is significantly reduced
- Recent eye surgery or ocular trauma
- Contact lens wearers



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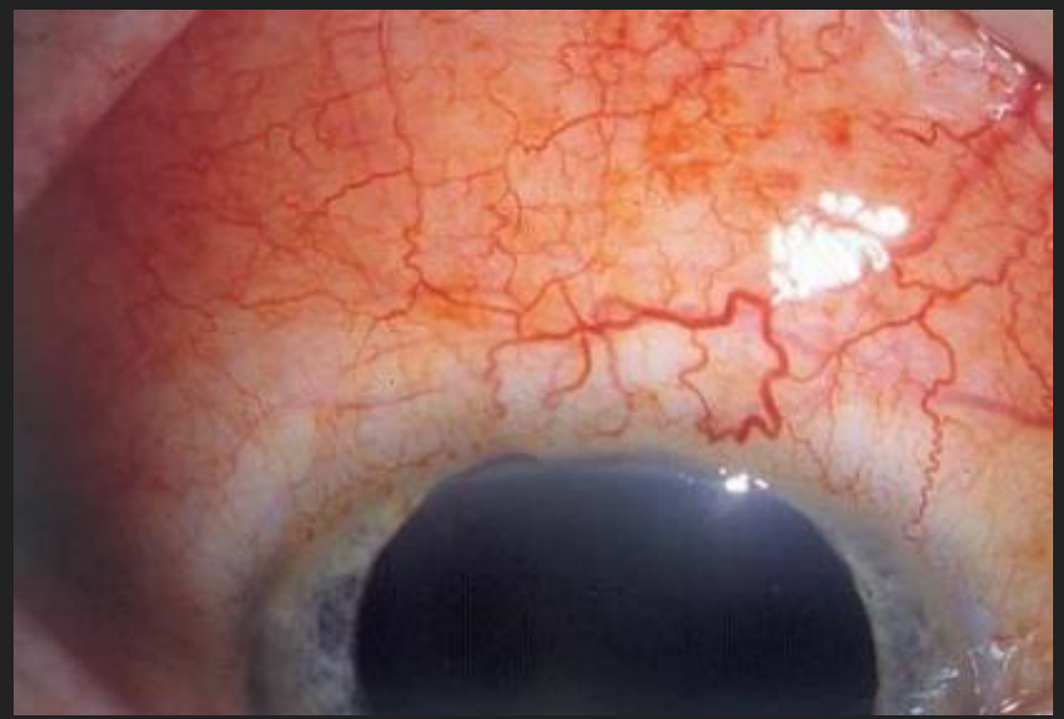
SCLERITIS

- Severe, destructive, vision-threatening inflammation of the sclera
- Marked piercing pain which can awaken patient from sleep or radiate to the face, jaw, ear.
- 4th - 6th decade of life
- More female (1.6:1)
- Asymmetrically bilateral
- Insidious onset



PATHOPHYSIOLOGY

- Type III Hypersensitivity reaction
- Granulomatous (epithelioid or multinucleated giant cells) vs Nongranulomatous (lymphocytes, plasma cells, macrophages)
- 50% a/w systemic condition
  - Most common: RA
  - No HLA association

Systemic diseases	Infectious diseases	Other
Causes of scleritis		
Rheumatoid arthritis ★	Syphilis	Ocular surgery
Wegener's granulomatosis ★	Sarcoidosis	Metabolic causes
Polyarteritis nodosa	Herpes zoster	Trauma
Relapsing polychondritis	Herpes simplex	
Psoriatic arthritis	Tuberculosis	
Reiter's syndrome	Lyme disease	
Ankylosing spondylitis	Bacterial	
Systemic lupus erythematosus ★	Fungal	
IgA nephropathy	HIV	
Giant cell arteritis		
Behcet's disease		
Takayasu's arteritis		
Crohn's disease		
Ulcerative colitis		
Gout		

WHAT DO WE TELL OUR PATIENTS

- Relapsing polychondritis patient has a 14% chance of developing scleritis
- Wegener's granulomatosis patient has a 10% chance
- IBS has a 10% chance
- RA has a 6% chance

BISPHOSPHONATES SIDE EFFECT

First-time users of Bisphosphonates is a/w increased risk for scleritis

Unclear mechanism but possibly release of inflammatory mediators

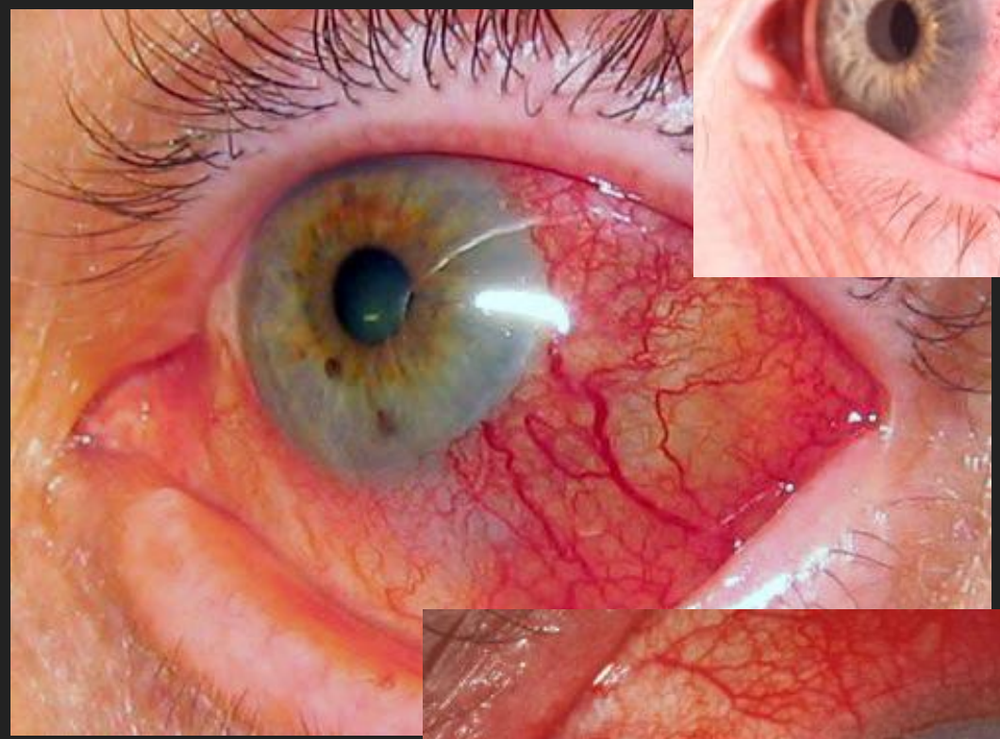
NNH: 370

Discontinuation of the drug is recommended

Mahyar Etminan PharmD MSc, Farzin Forooghian MD MSc, David Maberley MD MSc. Inflammatory ocular adverse events with the use of oral bisphosphonates: a retrospective cohort study. CMAJ May 15, 2012 184 (8)

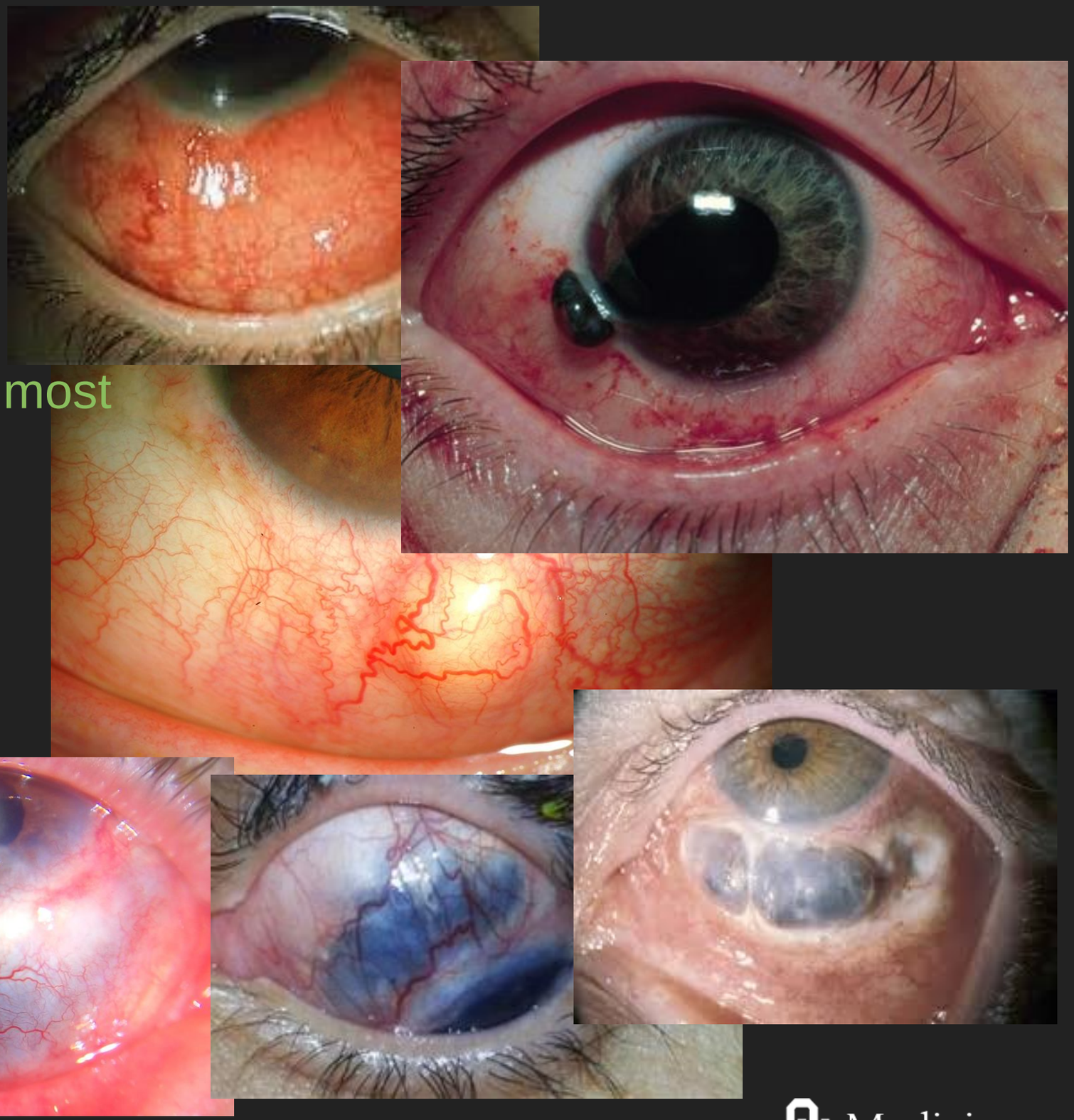
EXAM

- Violet-bluish hue or salmon color
- Inflamed scleral vessels have a criss-crossed pattern
- It will not blanch with phenylephrine
- The entire globe is tender
- Pain is worse with eye movements



ANTERIOR VS POSTERIOR

- Anterior
  - Diffuse: most common & most treatable
  - Nodular
  - Necrotizing: most severe
- Posterior



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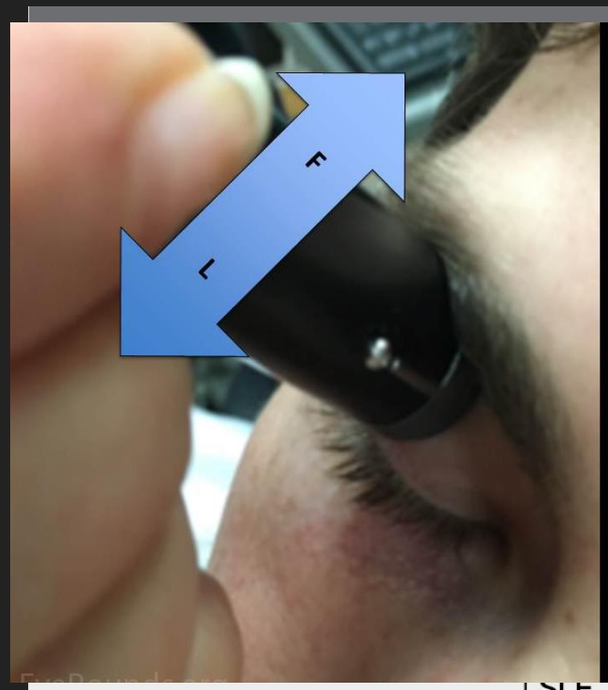
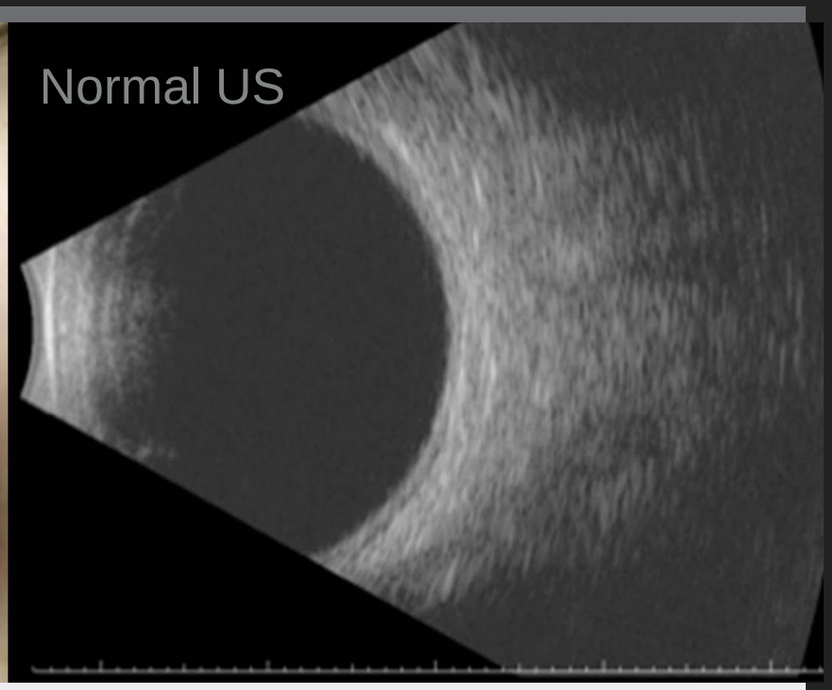
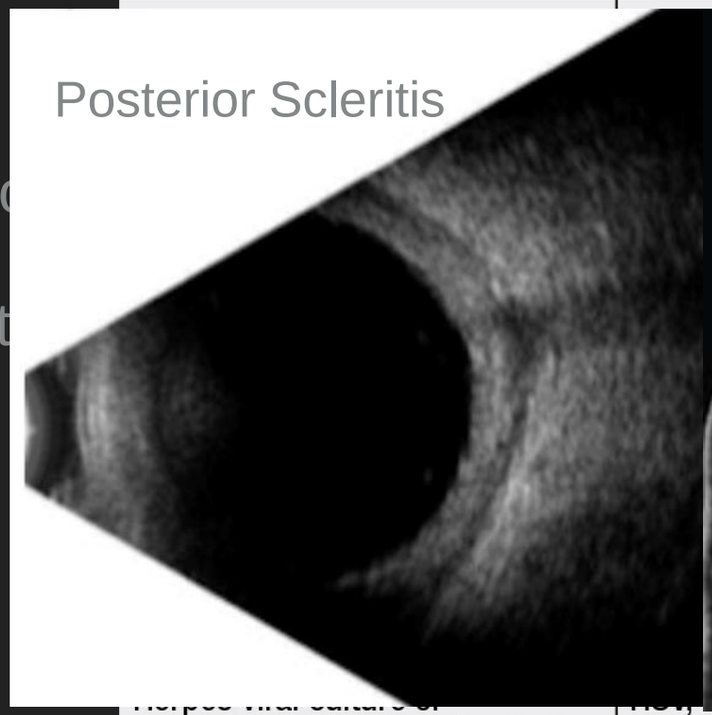
WORKUP

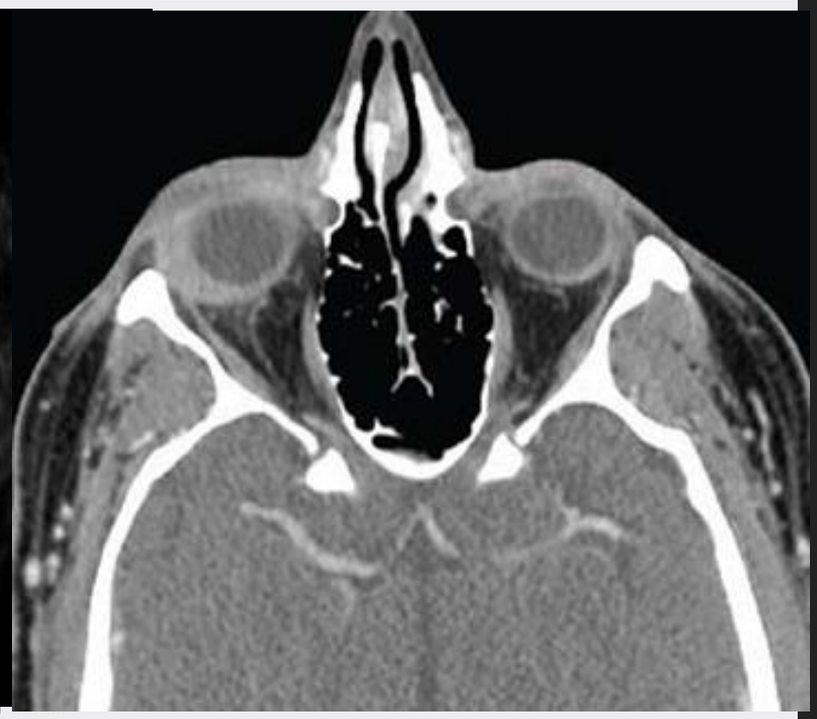
- Scleritis is a clinical diagnosis
- Ultrasound or CT to rule out posterior scleritis
- First episode does not warrant lab workup, but we base it on our index of suspicion.
- Look for connective tissue disorder or autoimmune conditi
- Scleral biopsy might be warrant





	SLE
Chest x-ray or CT scan	Sarcoidosis (CT more sensitive than chest x-ray)
Herpes viral culture or polymerase chain reaction test	HSV,





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TREATMENT

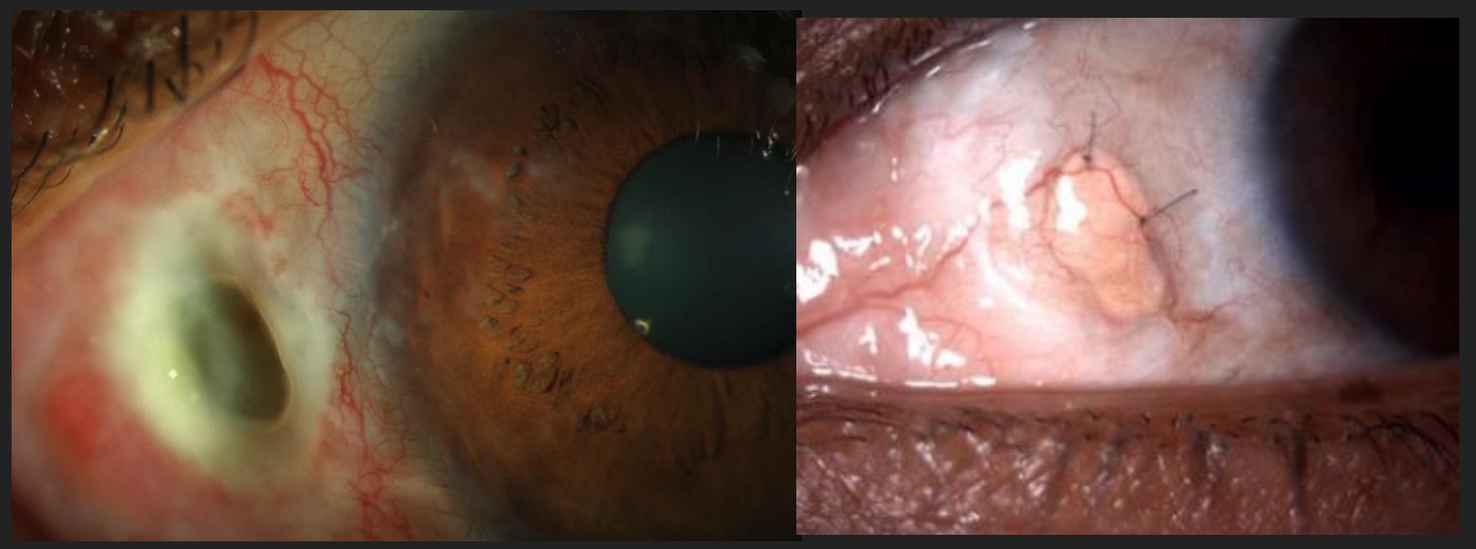
- NSAIDs trial (Indomethacin has been most effective)
  - Continue until inflammation completely subsided
- Prednisone, 1 mG/kG/day (daily max 80mg) w/ slow taper for 6 wks
  - If no or minimal response in 6 wks, add immunosuppressive agents

- Immunosuppressive drugs
  - Rituximab, Cyclophosphamide, Methotrexate, Cyclosporine, Mycophenolate
- We do not have Randomized Controlled Trial for scleritis & no well-defined optimal treatment length

Jabs DA, Mudun A, Dunn JP, Marsh MJ. Episcleritis and scleritis: clinical features and treatment results. Am J Ophthalmol 2000; 130:469.

TREATMENT

- 67% of patients require high-dose glucosteroids or a combination of steroids & another immunosuppressive agent
- Surgical intervention may be required for vision or globe preservation

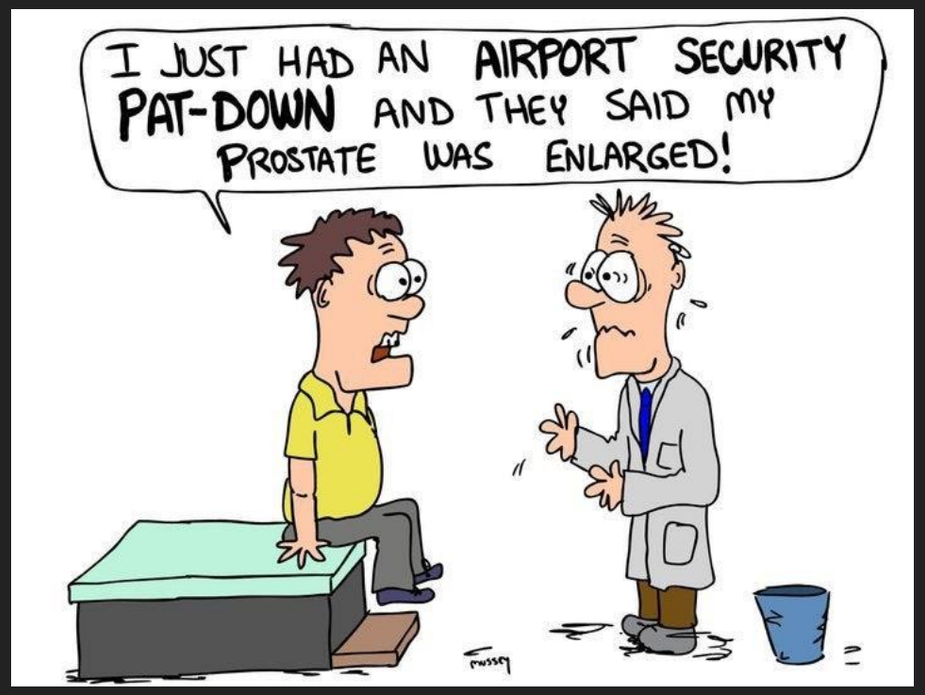


Jabs DA, Mudun A, Dunn JP, Marsh MJ. Episcleritis and scleritis: clinical features and treatment results. Am J Ophthalmol 2000; 130:469.

EPISCLERITIS VS SCLERITIS

	Episcleritis	Scleritis
Pathophysiology	Idiopathic inflammation	Autoimmune dysregulation
Symptoms	Acute onset Mild pain Redness, irritation	Subacute onset Severe pain Pain with eye movement Blurred vision/vision loss Photophobia
Physical Exam	Mobile vessels Blanch with phenylephrine drops Reddish hue	Adherent vessels Does **NOT** blanch with phenylephrine drops Bluish hue Slit lamp may reveal nodules, scleral thinning, and corneal changes Systemic inflammation (joint pain, rashes, etc)
Treatment	Self-limited Consider topical steroids in refractory cases	Ophthalmology consult Systemic steroids/NSAIDs +/- Topical antibiotics

BOTTOM LINE



- Conjunctivitis, Episcleritis & Scleritis are clinical diagnosis.
- We cannot solely rely on labs or imaging to differentiate them all.
- It’s still sometimes a fine line between all of them. So never hesitate to reach out to us.

MOST IMPORTANT SLIDE…..

Call/Text anytime for any patients (yourself included!!) with anything related to eyeballs. I am always happy to help.

my cell: 405-760-7685

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Thank you!

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