

### Ugly Eye: What Do I Do With That?

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### What's Urgent ?

### What's Not ?

### How Do You Know What's Urgent & What's Not ?

**Minnesota:**  
 "Urgent care means acute, episodic medical services available on a 24 hour basis that are required in order to prevent a serious deterioration of the patient's health"

**North Carolina:**  
 "A medical condition that warrants medical attention and intervention within 12-24 hours"

**Illinois:**  
 "... means health care needed for a condition that does not require Emergency Care but for which, based on medical appropriateness, treatment must be provided within 24 hours and should not wait for a normally scheduled appointment"

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### Levels of Urgency

<b>Immediate:</b> within 1-2 hours	<b>Routine:</b> 3- 6 months
<b>Urgent:</b> within 24 hours	
<b>Semi Urgent:</b> within 1 weeks	

### Immediate: within 1-2hours

- Orbital cellulitis
- Sudden loss of vision
- Red eye with ↓ vision, ↑ pain, ↑ photophobia and/or corneal staining
- Acute angle closure
- Diplopia with pain
- Proptosis with HA
- Ruptured globe
- Retraining foreign body

### Corneal Foreign Body: 1-2°

- Pain, "scratchy" sensation
- ↑ tearing, blurry vision, photophobia, lid edema
- Problems:
  - Metal → rust
  - Organic → infection

### Penetrating Foreign Body: 1-2°

The concern with any foreign body is this:  
 "Is it on the eye - or has it penetrated into the eye?"  
 In most cases, the eye needs to be dilated to answer that question!

### Intraocular Foreign Body: 1-2°

Worse yet - is it through the eye or in the eye did it go through the back of the eye into the orbit?  
 What was the patient doing when the injured occurred?  
 Were they wearing protective glasses?

### Penetrating Foreign Body From A Hammer

Patient was hammering when he noticed a spark, then felt a slight sting to his eye. Penetrating foreign body now located in the orbit.

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### Intraorbital Foreign Body: BB

- Metal & Glass are usually well tolerated
- Wood & Vegetable are poorly tolerated and need to be removed

### BB's To Head

### Corneal Laceration With Iris Prolapse: 1-2°

- Typically from a metallic object
- Intense pain, photophobia, tearing
- AC is shallow or flat
- In full thickness
- IOP approx. 2-6 mmHg
- ↓ Vision

- Full thickness: "penetrating injury", Chamber will be flat. Seidel's sign
- Additional pressure on the globe may cause extrusion of the uvea. (Seidel's will see aqueous oozing from the wound when you use fluorescein dye)
- Do not check IOP! Do not put pressure on the eye!

### Abrasion: 1-2°

Patient will complain of:

- photophobia
- pain with movement
- ↑ tearing
- ↓ vision

Slit lamp exam shows:

- corneal edema
- if severe abrasion - folds in Descemet's

### Superficial abrasion:

does not involve Bowman's membrane  
 deep abrasion: penetrates Bowman's but does not rupture Descemet's. Can cause a scar to result.

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### Corneal Ulcer: 1-2°

Ulcers can be sterile or infectious. They can develop infiltrates. An infiltrate is an immune response causing cells or fluid to accumulate in an area that they normally don't belong in.

### Types Of Ulcers

**Bacterial:** Extremely painful due to a break in the epithelium. **Pseudomonas** is an extremely aggressive type that can be caused by contact lens wear. Most cases of bacterial corneal ulcer are due to a bacterial infection of the following eye injury, trauma or other damage. Contact lens wearers are highly susceptible because the contact lens has against the cornea. This can allow bacteria to penetrate the eye in some cases.

### Viral ulcer:

Can be caused by herpes simplex virus or adenovirus. Herpes simplex virus occurs in most cases when we are children via chicken pox. Once you are infected it will lay dormant until it is reactivated by stress, illness or even hormonal changes.

Two strains:

- HSV1 = Cold sores.** Very common. Contagious by direct contact.
- HSV2 = Genital herpes.**

### What's The Difference Between An Abrasion vs An Ulcer?

	Abrasion	Ulcer
Appearance	White	White
Location	Superficial	Deep
Size	Small	Large
Shape	Irregular	Regular
Duration	Short	Long
Causes	Trauma	Infection

### Hyphema: 1-2°

Occurs in most cases due to blunt force trauma that results in bleeding to occur into the anterior chamber. The blood is not necessarily harmful - but when the blood exits through the trabecular meshwork, it can cause the meshwork to become clogged - and thereby raises the IOP.

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### " 8 Ball" Hyphema

If no trauma has occurred, systemic blood disorders need to be investigated, such as:

- \* Sickle cell anemia
- \* hemophilia
- \* Von Will brand's Disease (PT & PTT)

### Management

- Thorough history
- Thorough eye exam (CT scan)
- Thorough evaluation for perforation, rupture or laceration
- Fundus exam (Biom if obstructed view)
- Close follow of IOP with meds (Diazol, dilation, steroid gtt's, pressure gtt's)
- Limited activity - bed rest with head elevated at 30°
- \* To prevent re-bleed: Avoid ASA or NSAIDS

### Black Eye: within 24°

So, ALL patients that have a "black eye" need to be evaluated to ensure:

- \* No hyphema
- \* No ruptured globe
- \* No entrapment
- \* No abrasions
- \* No retinal detachment

### Blow Out Fracture With Entrapment: within 24°

Orbital floor fracture with a muscle (usually inferior rectus) becoming trapped in the fracture. Can cause diplopia.

### Burns To Eye: 1-2° Acid, Alkali or Irritant

**Alkali Burn:** Chemicals that have a high pH. **Most dangerous burn** because the chemical penetrates the surface.

**Alkali one:** hydroxide of ammonia, potassium, sodium, calcium and magnesium. **Common substances:** lye, drain cleaner, metal polishers, oven cleaner, cement, lime.

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### Acid Burn:

Usually causes less damage than alkali because the eye tissues act as a barrier against the acid. **Common acids:** sulfuric, sulfuric, hydrochloric, hydrofluoric. **Most common burn:** automobile battery!

### Irritant:

has a neutral pH. Often will cause pain, but not damage. Ex: pepper spray. Pepper spray causes an intense blepharospasm, conjunctival injection, burning pain, increased mucus. Lasts approx. 30 - 45 minutes.

### Episcleritis vs Scleritis

within 1 week      within 24°

### Episcleritis: within 1 week

Asymptomatic acute redness in one or both eyes. May have a white nodule in the center of the inflamed area. No discomfort although patients state tender. **Benign.** Cornea is clear. Women more. May be linked with RA, Lupus, inflammatory bowel or herpes zoster.

### Scleritis: within 24°


Severe, boring pain which may also involve the head and face. Vessels dilated. Eye may appear deep red or even purple. Photophobia, tearing and decreased vision. 50% of time associated with RA, ankylosing spondylitis, Lupus, or Wegener's. Can spread throughout eye causing cataracts & glaucoma.

### Floater: within 24°

In most cases, floaters are a benign part of aging. Small pieces of tissue or RBC's become caught in the vitreous. When light hits them, they cast a shadow on the retina. Patients often say that they "float" in air.


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Concern occurs if the floaters occur because there is a hole in the retina, or there is a **retina detachment**. IF the vitreous becomes adherent to the retina, it can pull the retina off the back of the eye.

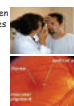


**Flashes: within 24°**

When a patient sees "flashing lights", this can also be an indication that they have a **peripheral vitreous detachment (PVD)**. But... it can also be an indication that they may be having a **retinal detachment**.



Patients need to be seen to determine if "flashes and floaters" are **benign** or if they are having a **more serious retinal problem**. You have no clue until you dilate their eyes!

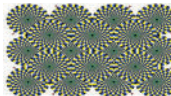


**Vision Changes: Urgent (1-2°) or Not (3-6 months)**

Probably the hardest part of triaging patient calls is

- Has there been a vision change?
- Is it **sudden** or **gradual**?
- Is the vision:
  - gone
  - gone & came back
  - blurry for a "bit" but now clear again
  - blurry all the time
- When was the last time they had an eye exam?
- What do they have systemically: DM, I BP, Stroke

And what makes it so hard is that it is all part of the patient's perception!



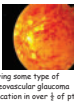
**What Is The First Question Most Staff Ask When Triageing ?**

"Where are you coming from?!"




**Central Retinal Vein Occlusion: 1-2 °**

Common retinal disorder that can lead to blinding complications. Sudden, painless loss of vision. Marked hemorrhages. Patients usually 50+ with most having some type of cardiovascular disease. Neovascular glaucoma can be a secondary complication in over 1/3 of pts.




**Central Retinal Artery Occlusion: 1-2 °**

Painless, catastrophic vision loss over a few seconds. Can be preceded by episodes of transient vision loss (amaurosis fugax) CI or TIA, or APO. "Cherry Red Spot". Retina becomes opacified except for the foveal region (which is fed by the choriocapillaris). Patients need cardiac/cardiovascular work-ups!



**Toxoplasmosis (3-6 months)**

Caused by a protozoan parasite (*Toxoplasma gondii*) that infects animals. Occurs in utero during pregnancy (usually 3rd trimester). Causes chorioiditis in posterior pole which may cause floaters, blurred vision, pain & photophobia.



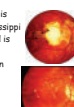
**Pregnant women should NOT clean the litter box!**

Dig Deep Cover Up Be Neat LITTER BOX MANNERS



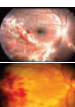
**Histoplasmosis: (3-6 months)**

In some parts of USA is endemic (Ohio & Mississippi River Valley areas) and is very common. Causes "punched out lesions" in peripheral fundus.



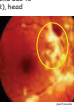
**CMV Retinitis: within 1 week**

Most frequently affects immunosuppressed patients (AIDS, organ transplant patients). Causes a necrotizing retinitis that can be blinding. In AIDS, CMV is prevalent with patients with a low CD4 count. Need IV ganciclovir treatment. Causes retinitis in newborns.




**Purtscher's Retinopathy: within 24°**

Occurs after major chest trauma due to *MVA*, chest compression (CPR), head trauma. Also seen in *Luft*, near falls and pregnancy. Painless, acute loss of central vision - usually binocular. Cotton wool and hemorrhages along the retinal arcades and nerve head. Findings will resolve, but VA prognosis is poor.



**Orbital Cellulitis: within 1-2°**

Presents with acute pain and lid edema that makes it difficult to open the eye. Usually occurs following trauma, blow out fracture, lid infection, bite wound, sinus infection or dental abscess.




- Vision loss
- APO
- Patient feels ill
- Patient has a fever
- Common organisms are:
  - staphylococcus aureus
  - streptococcus pyogenes & pneumoniae
  - Haemophilus (in children)

**Preseptal Cellulitis: 1-2 °**

Usually after a sinus infection, penetrating trauma, hordeolum or dental infection. Caused by bacterial infection (staphylococcus aureus) of the eyelid anterior to the orbital septum.


- no fever
- patient feels ok



**Differentiate Orbital Cellulitis vs. Pre-septal Cellulitis!**

Many similarities (pain, redness, edema) but **orbital cellulitis** manifests proptosis and EOM restrictions. Also, **orbital cellulitis**:


- Patient has fever
- Patient does **not** feel well.
- Decreased vision



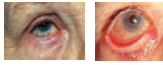
**Dacryocystitis: 1-2°**

Presents more commonly in the elderly. Pain, redness and swelling over the medial canthus/area of the lower lid.

- Fever
- Discharge can be expressed from the lacrimal sac



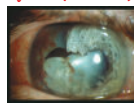
Entropion vs. Ectropion: within 1 week



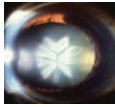
Lid rolls inward causing the lashes to rub on the cornea.

Lid pulls away from the globe causing the eye to become exposed.

Traumatic cataract: Punji Stick (3-6 months)



Traumatic cataract: When Did Trauma Occur ??



Subluxated lens: Marfans (within 24 hours)

