

## CAN MY MEDICATIONS CAUSE VISION PROBLEMS?

Dr. Kris Kerestan Garbig  
[krisgarbig@fuse.net](mailto:krisgarbig@fuse.net)

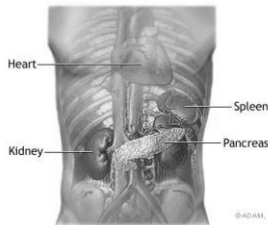


## YES ABSOLUTELY!!

- ❖ It's very important for people to be aware of **what conditions** they have, **what medications** they're taking and **how** these meds may increase the risk of certain vision problems.

## WHAT'S THE DANGER?

Every med. has an effect on **Multiple Organs**



"Each capsule contains your medication, plus a treatment for each of its side effects."

## WHAT'S THE DANGER?

- 70 % of Americans are on at least **ONE** prescription drug
- 50 % take at least **TWO** prescriptions
- 20 % take at least **FIVE** prescriptions



## WHAT'S THE DANGER?

- The most commonly prescribed drugs are:
  - Antibiotics -- taken by **17 %** of Americans
  - Antidepressants -- **13 %** of Americans
  - Opioids (Pain) -- **13 %** of Americans.
- Followed by:
  - HBP -- **11%**
  - Vaccines -- **11%**

## CHRONIC CONDITION OR OTHER?

- Chronic Condition
  - Heart Disease/ Diabetes/Arthritis
- Depression
  - Nearly **20 %** of **women** ages **50 to 64**
  - **13 %** of the **overall population** were found to be on **antidepressants**
- Pain
  - Opioids – High addiction rate (WVA and KY two of highest)

## MEDS BY AGE

- Younger than 19
  - Vaccines
  - Antibiotic
  - Anti-Asthma
- Middle Age
  - Antidepressant
  - Opioids
- Older
  - Cardiovascular



## COURSE OBJECTIVES...

- What are the most common Systemic meds. that cause Visual side effects?
- What are the specific Visual side effects?
- How to minimize visual loss while taking these meds?

## ROLE OF OPTOMETRIC ASSISTANT

Must be familiar with common systemic meds and their associated visual side effects

- Transient
- Mild
- Moderate
- Severe
- Vision Loss

THE EFFECT OF SIDE EFFECTS

Over half of Americans have stopped or wanted to stop taking a medication due to side effects.

52%

have stopped or wanted to stop taking a medication due to side effects.



## ROLE OF OPTOMETRIC ASSISTANT

It ALL begins with the CASE HISTORY!!

- A careful and detailed Case Hx. is critical to revealing the patients Medication Hx.
  - Can often identify the problem even before any testing is completed
  - MU 2 Rx requirements-complete list from physician

## CASE HISTORY

- Chief Complaint/RFV
- Visual and Ocular history
- General Health history
- ALL** Medications
- Allergies to medications
- Family Eye and Medical histories



## # 1 ACNE MEDICATIONS (ISORETINOIN)

Brand names


- > Acutane
- > Amnesteem
- > Claravis
- > Sotret



## ACNE MEDICATIONS

Uses:

- Treatment of **severe** acne that **hasn't responded to other treatments**






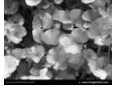

## Initial SCIENTIFIC Treatments

- Benzoyl Peroxide** - Kills Acne **bacteria**
- Salicylic Acid** - Unclogs **Pores**
- Glycolic Acid** -Renews **Skin**
- Sulfur** - Dries **Sebum**
- Azelaic Acid** - Normalizes **Skin**

## OTC OPTIONS





## NATURAL ALTERNATIVES

- Green Tea** - Kills Acne **Bacteria** 
- Passion Flower** - Reduces inflammation 
- Aloe Vera** - Soothes Irritated Skin 
- Sage Extract** - Fights Free Radicals 
- Gotu Kola** - Improves Skin Healing 

## VISUAL SIDE EFFECTS



---

- Dry Eyes- mild to severe
- Decreased CL tolerance
- Blepharoconjunctivitis
- Keratitis
- Photophobia
- Increase in hordeolum and chalazion frequency
- Corneal opacities

## VISUAL SIDE EFFECTS

---

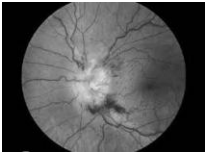
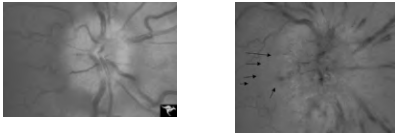



- Headache
- Transient blurred vision
- Sudden decrease in night vision
- Subjective visual obscurations
- Photosensitivity
- Tinnitus
- Papilledema

## PAPILLEDEMA

---

- Swelling of Optic Nerve caused by increase in intracranial pressure
- Usually Bilateral

## PAPILLEDEMA



---

Symptoms	Signs
■ None early on	■ Venous engorgement
■ Headache	■ Loss of venous pulsation
■ Enlargement of the blind spot	■ Hemorrhages over and adjacent to the optic disc
■ Blurred vision	■ Blurring of optic margins
■ Total loss of vision may ultimately occur	■ Elevation of optic disc
	■ Paton's lines = radial retinal lines cascading from the optic disc

## OTHER SIDE EFFECTS

---

- Chapped lips (90%)
- Dry and itchy skin (80%)
- Dryness of nose/nosebleeds (80%)
- Irritation of eyes and eyelids (40%)
- Joint and muscle pain (15%)

## PREVENTION


---

- ❑ Comprehensive Case History
- ❑ Discussion and review of ALL meds
- ❑ 6 month Office Visit while taking meds
- ❑ Annual Comprehensive Vision Exams

**#2**

---

**ANTIHISTAMINES**



- Claritin
- Zyrtec
- Allegra
- Benadryl
- Sudafed

**#2**

---

**ANTIHISTAMINES**

**Uses:**

- Relieves hay fever and allergy symptoms
- Reduces inflammation due to allergic reactions


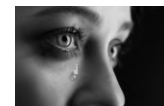
**Mechanism of Action:**

- Blocks the histamines that are produced by the body that cause runny nose, watery eyes, sneezing, itching and inflammation due to allergic rxn. or the common cold

**VISUAL SIDE EFFECTS**

---

- Dry eyes
- Mydriasis
- Blurred vision due to the loss of accommodation
- Lacrimation

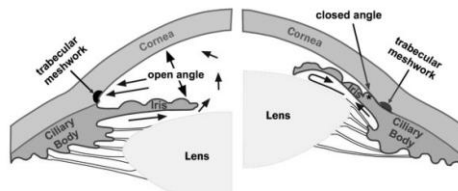



**VISUAL SIDE EFFECTS**

---



- Angle Closure Glaucoma (Ocular Emergency)
  - **Rapid** increase in ocular pressure
  - Ocular and Systemic symptoms
    - Headache
    - Severe eye pain
    - Nausea and vomiting
    - Blurred vision
    - Seeing halos around lights

**Anatomy and Physiology of Acute Angle Closure Glaucoma**



**OTHER SIDE EFFECTS**

- Dry mouth
- Drowsiness
- Dizziness
- Nausea/Vomiting
- Restlessness or moodiness (in some children)
- Blurred vision
- Confusion
- Trouble urinating

## PREVENTION


---

- ❑ Avoid mydriatics (pupil dilating agents)
- ❑ Avoid Anticholinergics and Antispasmodics
  - Asthma and COPD meds
  - Scopolamine patches used for dizziness and sea sickness
  - Drugs that calm diarrhea and muscle spasms in people with GI problems
- ❑ Annual comprehensive vision exams

## #3 ANTIMALARIALS

---


- Plaquenil (Hydroxychloroquine)
- Quineprox
- Aralen (Chloroquine)




---

Uses:

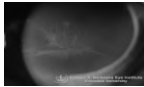
- Rheumatoid arthritis
- Lupus Erythematosus
- Sjogren's Syndrome
- Prevention of and treatment for Malaria  
(Parasitic disease kills 2.7 million people annually)



## VISUAL SIDE EFFECTS


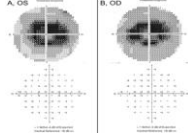
---

- Keratopathy
- Retinal toxicity leading to permanent and irreversible vision loss (Dose related toxicity)
  - Bilateral Pigmentary Retinopathy
  - Asymptomatic early on



## BULL'S EYE MACULOPATHY

---





- Later - Bull's eye maculopathy accompanied by paracentral and central scotomas
- End stage - Widespread RPE and retinal atrophy with a loss of central vision, peripheral vision, and night vision

## OTHER SIDE EFFECTS

---

- GI problems
- Skin changes
- CNS involvement
- Neuromuscular toxicity
- Cardiac toxicity



## PREVENTION

- ❑ Baseline vision exam prior to treatment
  - SLE Q 6 months
  - 10-2 Humphrey Visual Field
  - Macular OCT
  - Fundus autofluorescence (Optomap Daytona)
- ❑ Annual comprehensive vision exams repeating the above tests

## # 4

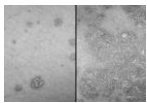
## CORTICOSTEROIDS

- Prednisone
- Cortisone
- Dexamethasone
- Hydrocortisone



### Primary Uses:

- Systemic inflammatory conditions...arthritis, lupus, psoriasis
- Severe allergies, asthma, breathing disorders, bronchitis, ulcerative colitis
- Ocular conditions...Contact dermatitis, Acute Allergic rxn, Anterior uveitis



## VISUAL SIDE EFFECTS

- Posterior Subcapsular Cataracts
- Elevated IOP
- Glaucoma
- Decreased vision
- Mydriasis
- Photophobia

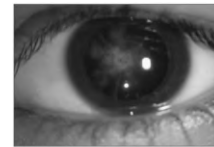


Figure 3: Posterior subcapsular cataract of left eye

## VISUAL SIDE EFFECTS



## OTHER SIDE EFFECTS

- Adrenal Insufficiency- decreased ability to respond to physical stress (Fight or Flight)
- Immunosuppression- Can't fight off infections
- Steroid Withdrawal Syndrome– could result in fatigue, joint pain, muscle stiffness, muscle tenderness, fever and Flu-like symptoms

## OTHER SIDE EFFECTS

- Gastrointestinal Ulcers or Bleeding
- Osteoporosis
- Weight gain
- Insomnia
- Mood Changes
- Fluid Retention
- Elevated BP
- Elevated Blood Sugar:



## PREVENTION

- ❑ Comprehensive Eye exam immediately after start steroids for SLE and IOP check
- ❑ Monitor IOP Q 3 months
- ❑ Call if develop eye pain, halos around lights or blurred vision
- ❑ Annual Comprehensive Vision Exam

# 5

## ERECTILE DYSFUNCTION MEDS

- Viagra
- Cialis
- Levitra

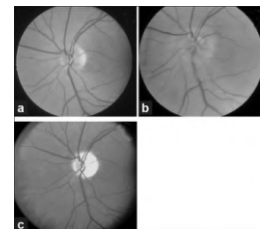


## VISUAL SIDE EFFECTS

- Seeing a temporary **blue tinge** to objects
- Blurred Vision
- Sensitivity to light
- Conjunctival Hyperemia
- Sudden vision loss (advertised on commercial)
- Non Arteritic Ischemic Optic Neuropathy

## NON ARTERITIC ISCHEMIC OPTIC NEUROPATHY -NAION

- NAION is an ischemic insult to the optic nerve
  - Acute
  - Monocular
  - Painless
  - Visual Loss
  - Optic disc swelling
  - Pallor of the Optic Nerve





## OTHER SIDE EFFECTS

- Headache
- Stuffy nose
- Facial Flushing
- Dizziness
- Lightheadedness.



## PREVENTION

- Comprehensive Case History
- Discussion and review of ALL meds
- Call if notice any vision changes
- Annual Comprehensive Vision Exams

# 6

## ETHAMBUTOL

Myambutol



Uses:

- Antibiotic used to treat tuberculosis (TB)

## VISUAL SIDE EFFECTS

- Decrease in visual acuity/clarity
- Difficulty seeing certain colors
- **Toxic Optic Neuropathy**



## TOXIC OPTIC NEUROPATHY

Visual symptoms generally appear between 4 months to a year after taking meds:  
(Dose Dependant)

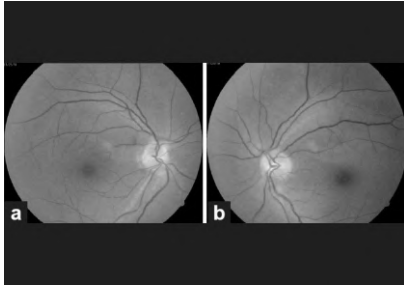
- Mild Unilateral Dimness of vision initially
- Painless Visual Loss
- Bilateral vision loss no worse than 20/200

## TOXIC OPTIC NEUROPATHY

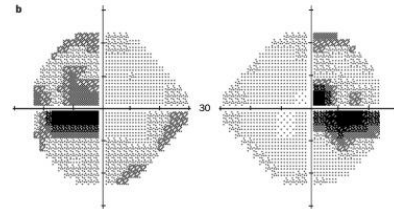


- Pupils are **bilaterally sluggish** to light
- Always **R/G or B/Y** defect
- Normal-appearing optic nerves initially making early diagnosis a challenge
- Visible Optic Atrophy develops later

## TOXIC OPTIC NEUROPATHY



## TOXICOPTIC NEUROPATHY



Papillomacular bundle damage with Central or Ceco-central Scotoma

## OTHER SIDE EFFECTS



- Headache
- Loss of appetite
- Upset stomach
- Nausea
- Vomiting

## PREVENTION

- Baseline Vision Exam
- Color Vision testing
- Amsler Grid
- Visual field testing
- OCT
- Call if vision or color vision changes
- Annual Comprehensive Vision Exams

## # 7 FLOMAX

Uses:

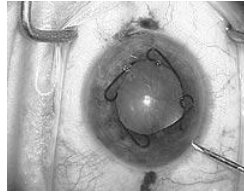
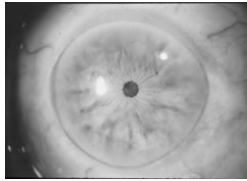
- Treatment of Benign Prostatic Hyperplasia
  - Minimizes pain during urination in men with enlarged prostates
  - Work by relaxing bladder and prostate muscles

## VISUAL SIDE EFFECTS

- Medication builds up in the iris preventing pupil from being able to dilate
- Intra-Operative Floppy Iris Syndrome - cataract surgery
- Incidence of IFIS with the use of flomax is **43% to 63%** while prevalence in general population is only 1-2%

## IFIS

Miotic Pupils



Iris clips

## OTHER SIDE EFFECTS

- Headache - 4% to 20%
- Dizziness - 5% to 15%
- Back or chest pains - 4% to 8%
- Diarrhea - 5%
- Nausea and vomiting - 3%
- Flu-like syndrome or infection - 2%



## PREVENTION

- Men considering cataract surgery  
MUST make cataract surgeon aware
- Annual vision exams



#8

## PHENOTHIAZINES

Thorazine  
Mellaril



Uses:

- Antipsychotic used to treat schizophrenia and other severe mental/emotional illness
- Used to treat nausea and vomiting
- Severe hiccups

## VISUAL SIDE EFFECTS

- Sensitivity to light
- Color vision changes
- Difficulty with night
- Pigment changes on the lens



## OTHER SIDE EFFECTS

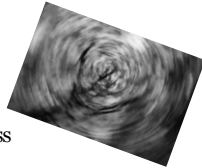
- Inability to move eyes
- Constipation - Mild
- Drowsiness
- Dry mouth



## OTHER SIDE EFFECTS



- Dizziness
- Lightheadedness
- Decreased sweating
- Nasal congestion



## PREVENTION

- Take LOWEST dose possible
- Avoid long term use
- If any symptoms persist or worsen, notify your doctor
- Annual comprehensive eye exams

## #9 TAMOXIFEN

Soltamox  
Nolvadex



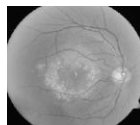
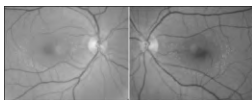
Uses:

- Anti-estrogen drug used to treat breast cancer

## VISUAL SIDE EFFECTS

- Blurred Vision
- Sub-epithelial corneal opacities
- Increased risk of Cataracts
- Crystalline Retinopathy

## Crystalline Retinopathy



- Initially asymptomatic
- Decrease in vision
- Dyschromatopsia
- Dose dependent - >120mg BID

## OTHER SIDE EFFECTS

- Irregular periods
- Hot flashes
- Nausea/Vomiting
- Noisy or rattling breathing
- Redness of the face, neck, arms or occasionally, upper chest



## OTHER SIDE EFFECTS

- Skin changes
- Swelling of the fingers, hands, feet, or lower legs
- Troubled breathing at rest
- Weight gain or loss



## PREVENTION

- Baseline Comprehensive Vision Exam
- Report any visual or systemic side effects to your doc
- Annual Comprehensive Vision Exams

## #10

## TOPIRAMATE

Topamax

Uses:

- Anti-convulsant used to treat seizure disorders
- Prevention of migraine headaches
- Treatment of Bipolar Disorder, OCD and PTSD
- Weight loss in Obesity
- Treatment for Pseudo-tumor Cerebri



## VISUAL SIDE EFFECTS

### Angle-Closure Glaucoma

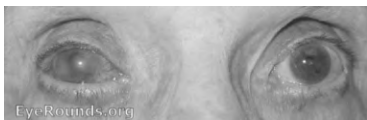
(Medical Emergency)

➤ **Rapid** increase in IOP due to:

- Swelling of the Ciliary Body
- Closing of the Angle between the Iris and Cornea

## ANGLE-CLOSURE GLAUCOMA

- Severe peri-ocular pain
- Photophobia
- Circum-limbal hyperemia
- Corneal edema
- Non-responsive pupil



## ANGLE-CLOSURE GLAUCOMA

- Extreme Headache
- Blurred or double vision
- Nausea and vomiting
- Seeing halos or rainbows around lights



## **OTHER VISUAL SIDE EFFECTS**

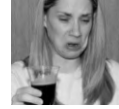
---

- Blurred Vision
- Visual Disturbances
- Peri-orbital pain
- Visual Field Defects (April 2014)

## **OTHER SIDE EFFECTS**

---

- Paresthesia- numbness and tingling
- Fatigue
- Taste change
- Weight loss
- Difficulty with concentration/attention/memory



## **PREVENTION**

---

- Baseline Comprehensive Vision Exam
- Report any visual or systemic side effects to your doc
- Annual Comprehensive Vision Exams

---

**THANK YOU!!!**

**Any ????**

**Dr. Kris Kerestan Garbig**  
**krisgarbig@fuse.net**