



A Look into Eye Health

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Men's Health Day 2022

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Vision Matters!



Vision Impairment

US: 15 million people

\$150 Billion Cost to US Society

Worldwide: 285 million people

Double by 2050

90% in low-income settings

25% are in India



‘Most Americans regard loss of eyesight as the worst ailment that could happen to them.’ ‘Low vision 3rd most common chronic cause of impaired functioning in people over 70’ behind arthritis and heart disease.

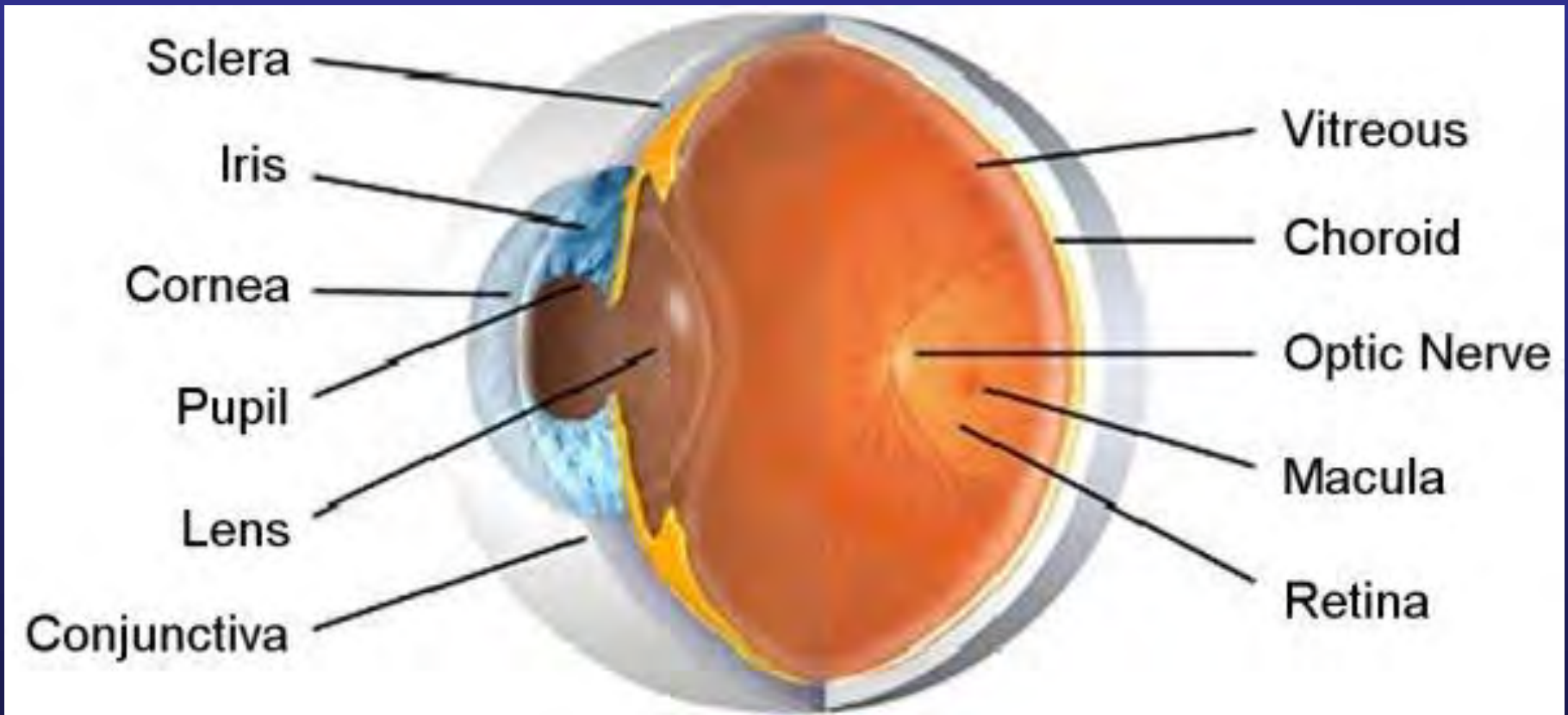
Eye Disease Epidemiology

Estimated Number of Cases by Vision Problem Age ≥ 40 in the US

Total Population ≥ 40	142,648,393	
<u>All Vision Impairment</u>	4,195,966	~ 3%
<u>Blindness</u>	1,288,275	~ 1% $\leq 20/100$
<u>Low Vision</u>	2,907,691	~2-3% $\leq 20/40$
<u>Myopia</u> ≥ 1.0 diopters	34,119,279	~24% Nearsighted
<u>Hyperopia</u> ≥ 3.0 diopters	14,186,819	~10% Farsighted
<u>AMD*</u>	2,069,403	~ 1.5% - Leading cause of blindness in 65+ yrs
<u>Cataract</u>	24,409,978	~17%
<u>Diabetic Retinopathy</u>	7,685,237	~5.4% - Leading cause of blindness 20-74 yrs
<u>Glaucoma</u>	2,719,379	~2%

https://www.nei.nih.gov/eyedata/adultvision_usa.asp

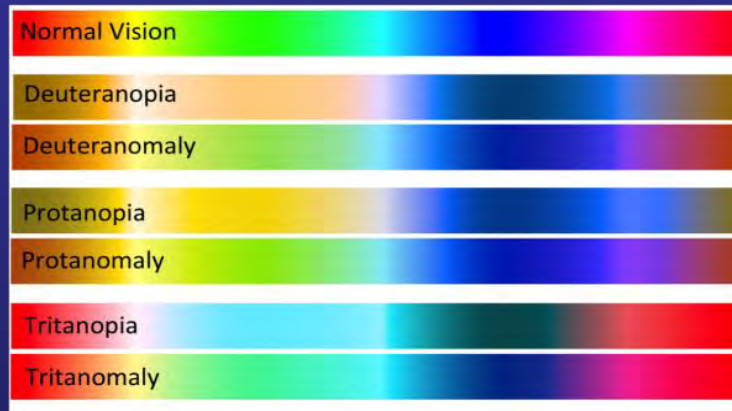
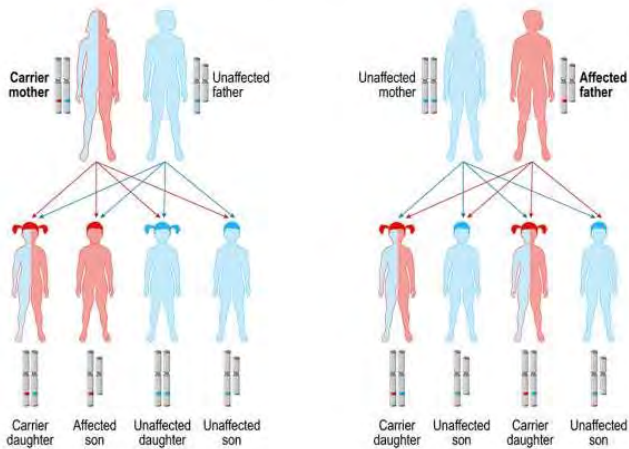
Eye Anatomy: Like a Camera



Color Blindness – 1 in 12 men

- Red-Green Color Blindness – X-linked - More Men
- Blue-Yellow Color Blindness – M = F

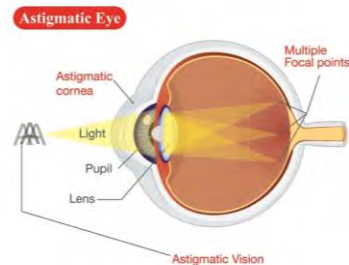
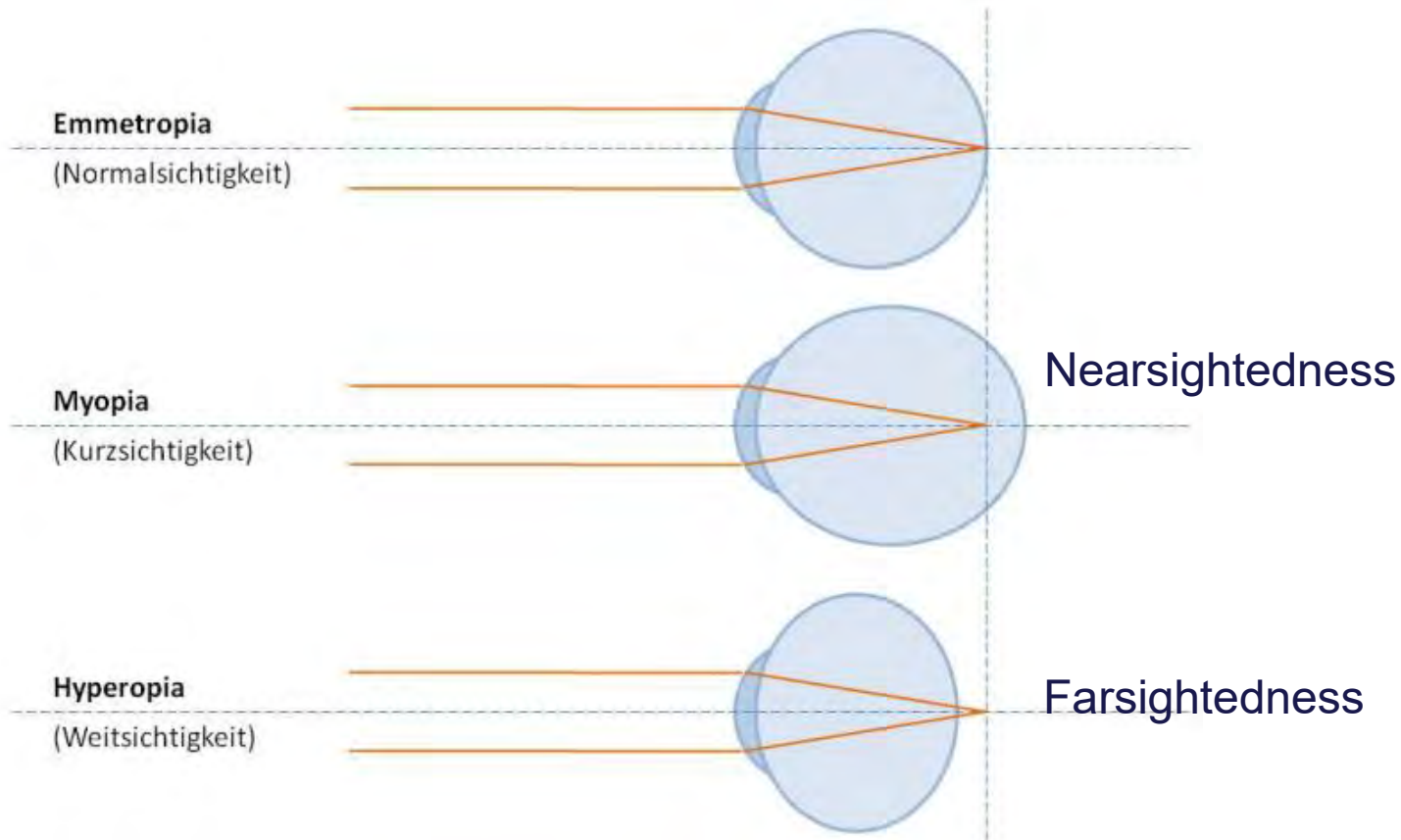
X-linked recessive inheritance



<https://www.nytimes.com/2015/11/14/sports/football/when-red-bills-met-green-jets-colorblind-fans-lost.html>

<https://www.npr.org/sections/thetwo way/2015/11/13/455896618/nfls red and green uniforms described as torture by colorblind fans>

Refractive Error



Astigmatism

Eye Injury

A Leading Cause of Blindness in Men

Wear Eye Protection

- Wear Polycarbonate lenses – shatter resistant lenses
- - cleaning
- - gardening and mowing the lawn
- - working around dust, smoke
- - using any tools
- - while playing sports
- - using any chemicals
- - when doing any high speed activity (riding ATV, snowmobile, boating, motorcycle, roller blading, biking, etc)



Eye Injuries

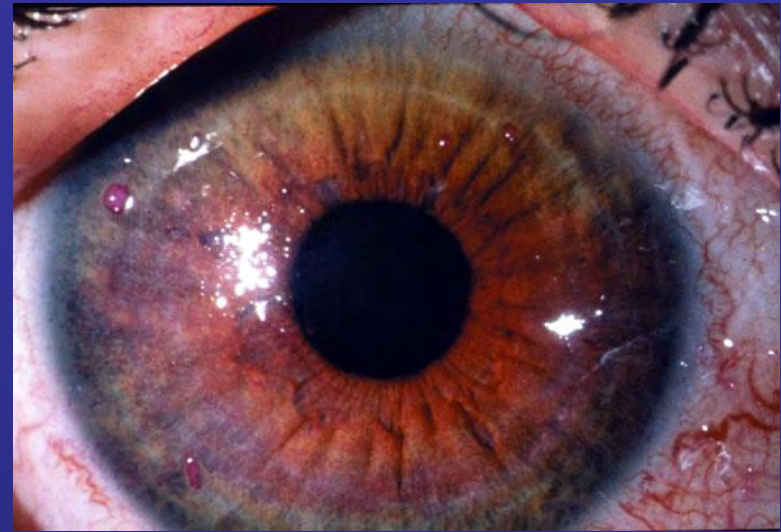
- If chemicals go into your eye, immediately rinse out your eye with water
- Call your eye doctor or go to the Emergency Room
- **DO NOT** wear contact lenses!
- **DO NOT** attempt to remove anything from your eye



Dry Eye

Symptoms

- Scratchy / Sandy
- Worse in windy dry weather
- Burning
- Itching
- Blurred vision

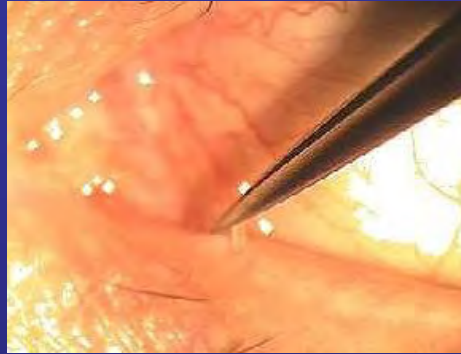


Your Doctor May Notice

- Decreased tears
- Blocked glands
- Inflamed lids
- Redness
- Irregular Corneal Surface
- ↑ Blinking
- ↑ Tearing



Dry Eye Treatments



Water Deficiency

- Artificial Tears
- Humidifiers
- Blocking tear drainage

Oil Dysfunction

- Warm Compresses
- Keeping eyelids clean
- Oral Antibiotics
- Anti-inflammatory

Digital Eye Strain

HOW TO PROTECT YOUR EYES FROM DIGITAL STRAIN



65% of Americans suffer from Digital Eye Strain

Also called **Computer Vision Syndrome**, common symptoms include blurred vision, eyestrain, dry eye, headaches, and neck and shoulder pain



96% spend more than 2 hrs/day using digital devices



The average American spends 7 hrs / day working on a computer

TAKE A BREAK...



Take a 10 second break



to stare at something 20 feet away



every 20 minutes

The average digital device user blinks 5-8 times / minute



You should

Blink 15 times a minute for optimal eye health

Follow the **20-20-20 Rule**

MODIFY YOUR WORKSPACE...



Overhead lighting should match the brightness of your monitor



Your eyes should be **20 - 28"** from your monitor and **4 - 5"** above the center of the screen



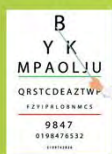
Maintain good posture

ONE DEVICE AT A TIME...



77% of people with digital eye strain use 2 or more digital devices simultaneously

TALK TO YOUR DOCTOR



90% of patients don't discuss their digital device use with their eye doctor

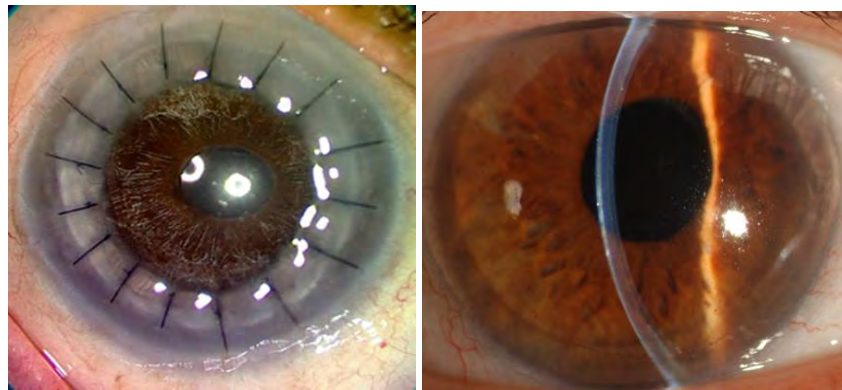
- Adjust Lighting – Reduce Glare
- Take Breaks – 20-20-20 Rule
- Remember to Blink
- Limit Screen Time
- Use Artificial Tears
 - Avoid Redness Reducers
- Improve air quality
- Choose right eyewear for fit
- Keep hydrated

Keratoconus – 2-3 times more common in men

Pointed Cornea – blurred vision
Usually Presents in puberty to 20s and can advance to scarring and swelling/edema of cornea in 30s-40s



Rx: largely optical – contact lenses, procedures to smooth the surface, corneal transplant, surgery when indicated



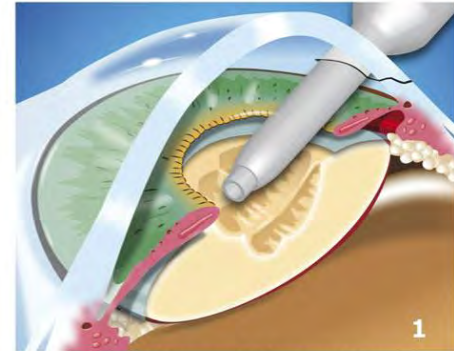
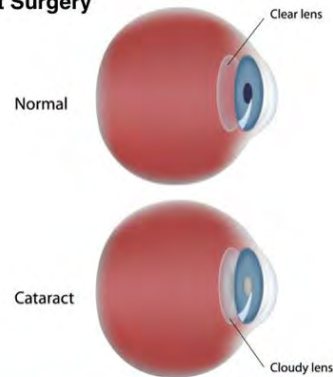


Cataracts

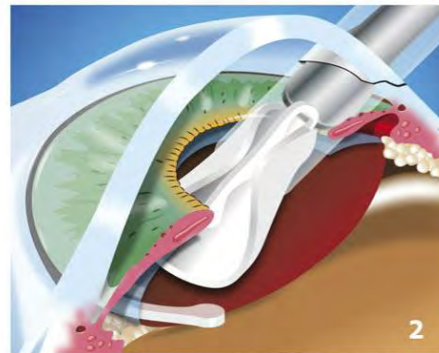
Treatment of cataracts: Cataract Surgery



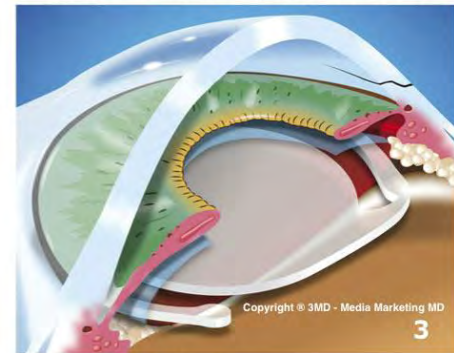
Cataract Surgery



The cloudy lens is removed (phacoemulsification).



A clear artificial lens is implanted into the empty capsule of the lens.



Intraocular lens (IOL) in place.

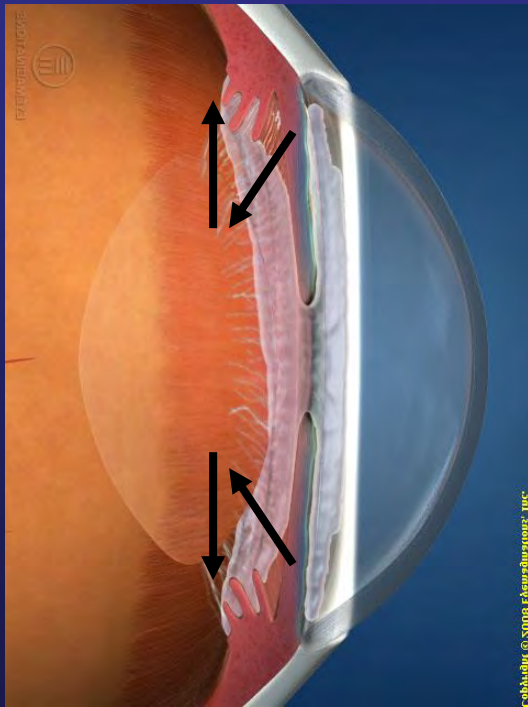
Most Common Operating Room Surgery in the US.

2020, Cataract - 30.1 million cases.

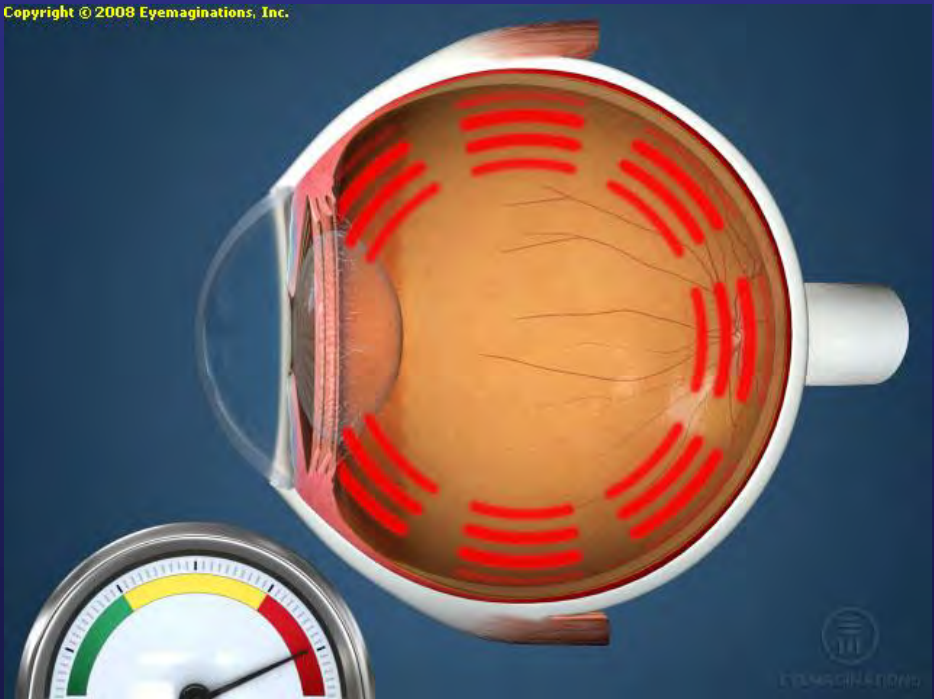
Leading Cause of Curable Blindness Worldwide.

Optic Nerve – Cable to the Brain

- Glaucoma: Dying of Optic Nerve related to pressure of fluid produced in eye

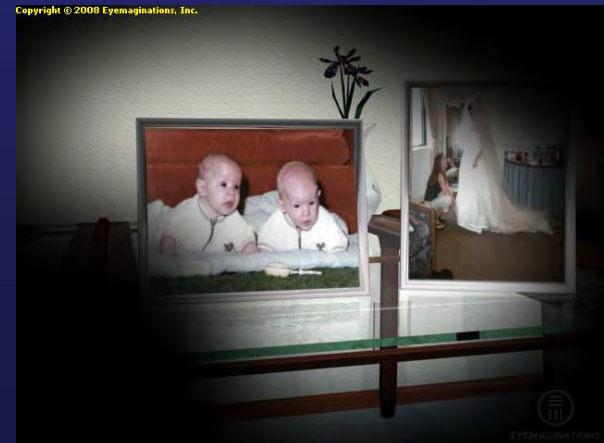


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Glaucoma – Silent Disease

- CANNOT RECOVER LOST VISION



Glaucoma: Silent Disease

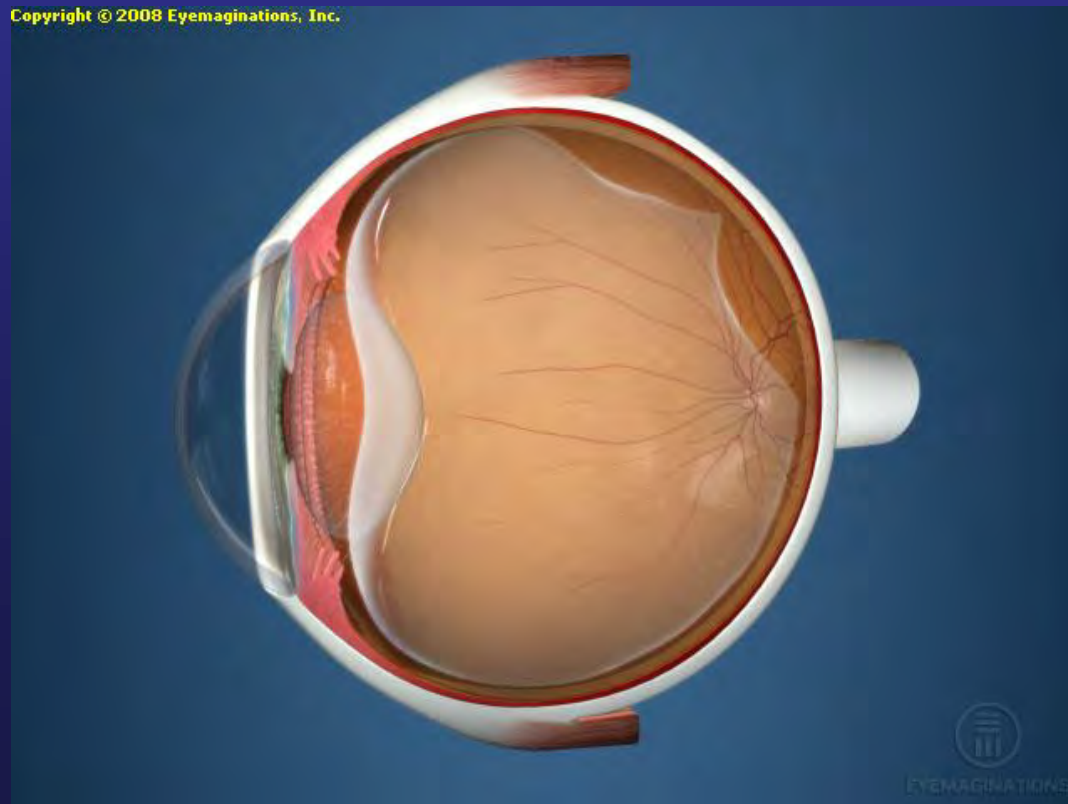
- **No Pain or Symptoms**
- **Vision Loss Only Realized in Advanced Stages when Treatment Limited and More Common in Men Due to Lack of Screening/Monitoring Eye Exams**
- **Know Risk Factors**
 - Older age
 - Family history of glaucoma
 - African or Hispanic/Latino descent
 - Unique Anatomy of Eye
 - Increased Eye Pressure



Eye Doctor Diagnosis

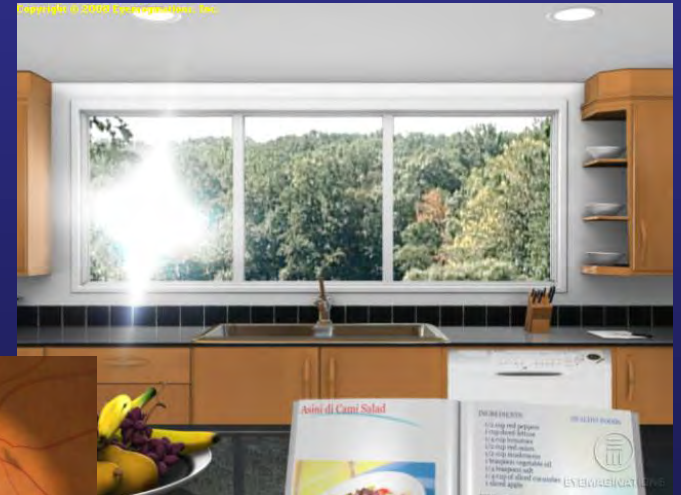
Flashes and Floaters

- Normally Vitreous Jelly that Fills the Eye (like egg-white) Becomes More Liquid with Age and Peels off from Retina



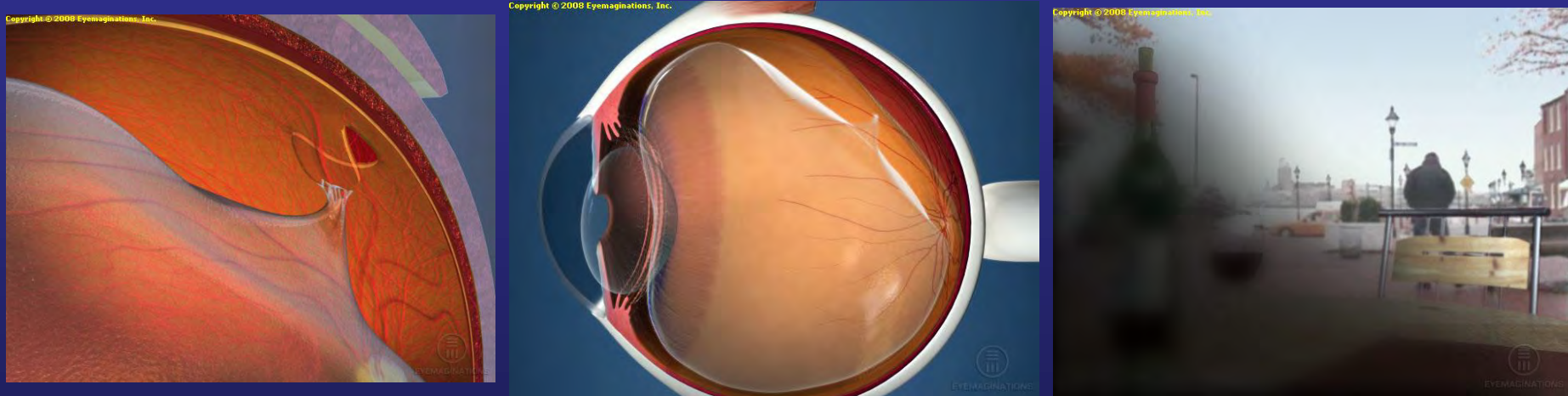
Flashes and Floaters

- Floaters – Pieces of Vitreous (Jelly in Eye)
- Flashes – Tugging of Vitreous on Retina
- **Tell Your Doctor if You Are Having These**



Retina – like Camera Film

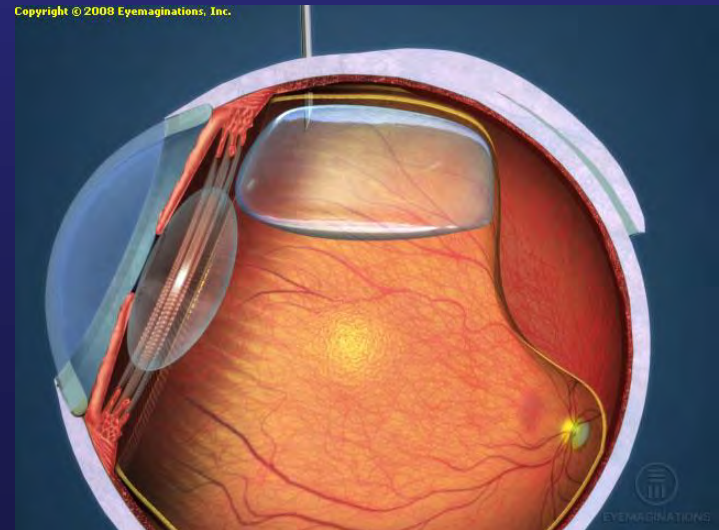
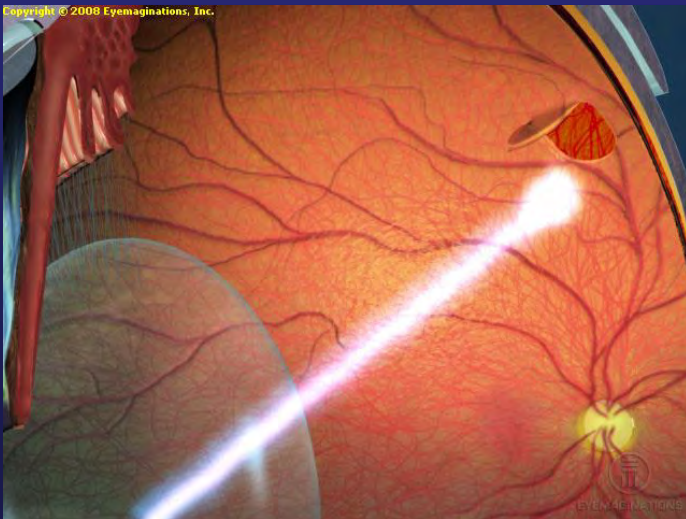
- Increased flashes and floaters may mean you have Damage (like a tear) in your retina



- A Tear in the Retina Can lead to Detachment Causing Blindness Forever so Catching it Early and Getting Treatment is Key!

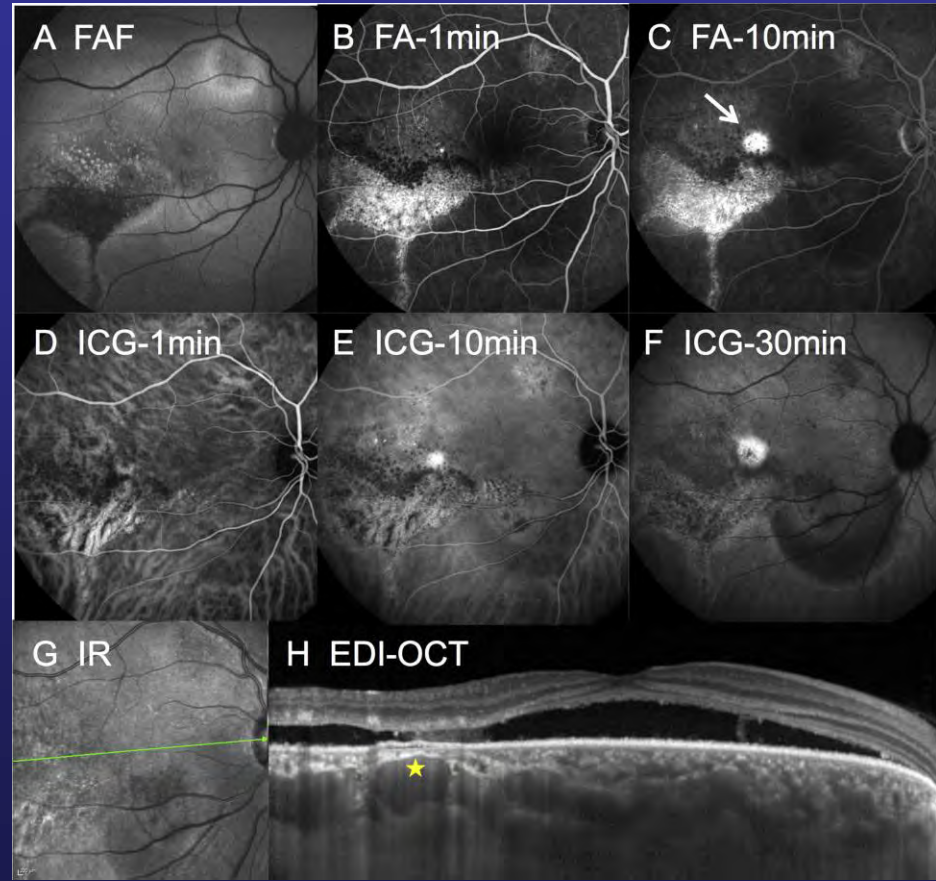
SEE YOUR EYE DOCTOR

- Early Diagnosis is Key
- In office treatment for tears, Operating Room for Retinal Detachment



Central Serous Chorioretinopathy

- Swelling under the retina causes visual distortion and loss
- Males 6x more likely to have
 - Age 28-68, Mean 43 yrs
 - 1/10,000 individuals
- Endogenous and Exogenous steroid use – “Type A personality”
- H. pylori bacteria infection assoc.
- Treatment:
 - Self-Limited – resolved over 3-6 months, can reoccur
 - Stress Reduction - Mindfulness
 - Cold Laser – Photodynamic Therapy
 - Treat H. pylori infection



Diabetic & Hypertensive Retinopathy



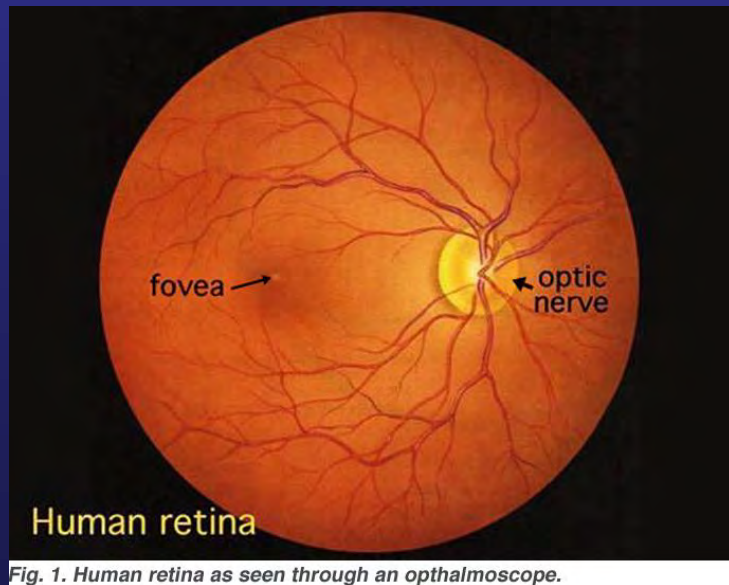
More Common in Men

Diabetic Retinopathy

- Diabetic retinopathy = leading cause of new cases of legal blindness among working-age Americans.
- 7-8 million persons in US
- Retina is only part of body where one can examine fine blood vessels, what happens to retinal blood vessels is happening elsewhere as well.

What Causes Diabetic Retinopathy?

- Body cannot take glucose (sugar) into cells, over time glucose causes toxic changes to blood vessels



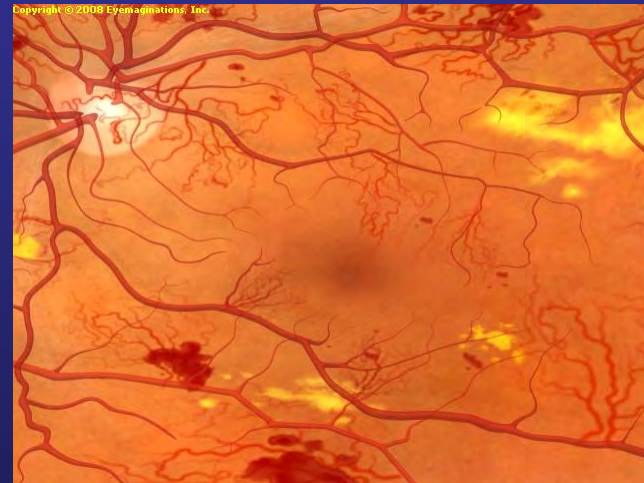
→ Important to **CONTROL BLOOD SUGAR**

Diabetic Retinopathy: Consequences

1. **Macular Edema** – swelling of the retina from leakage of central blood vessels

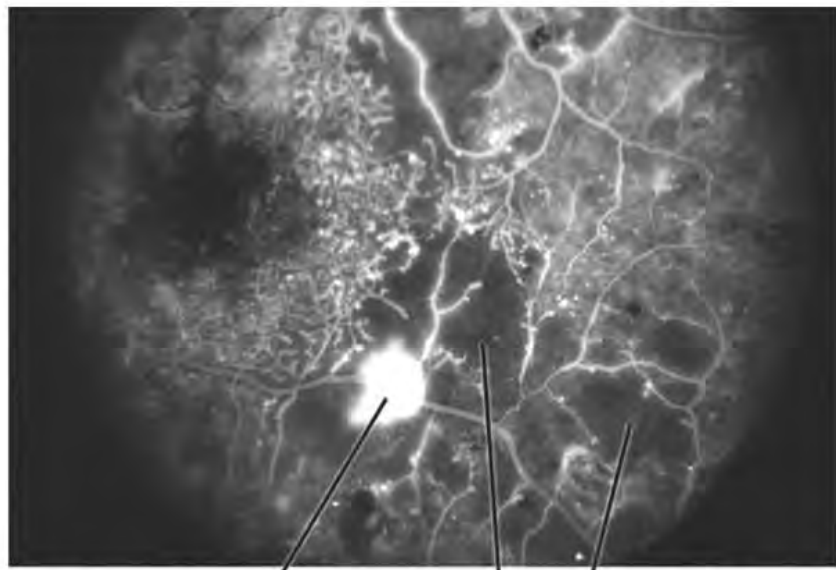


Macular Edema



Proliferative Retinopathy

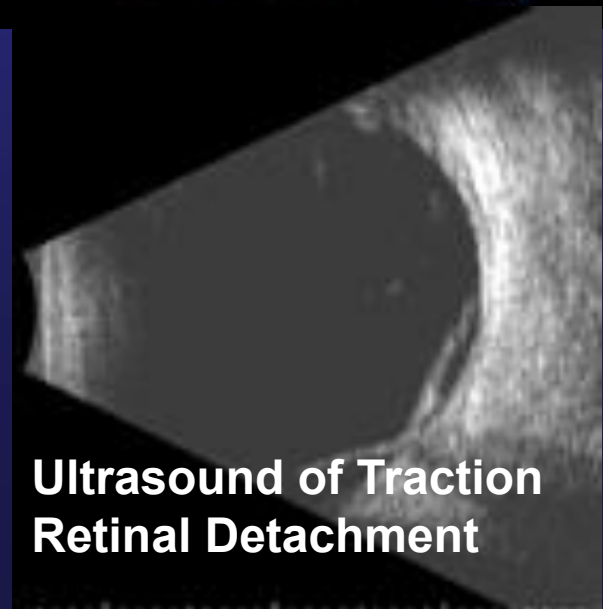
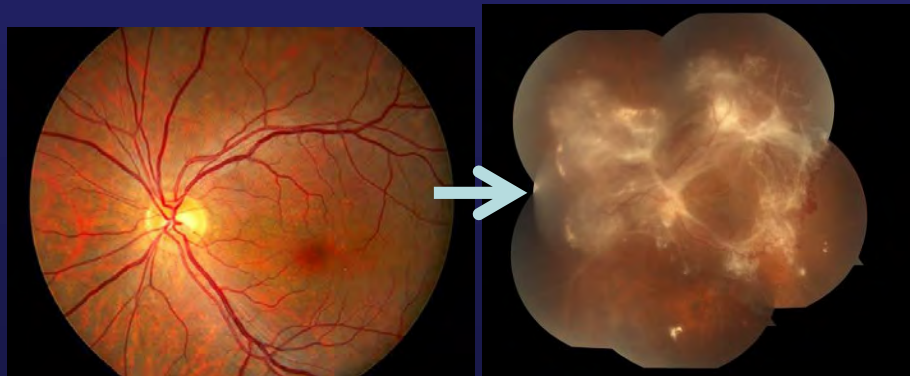
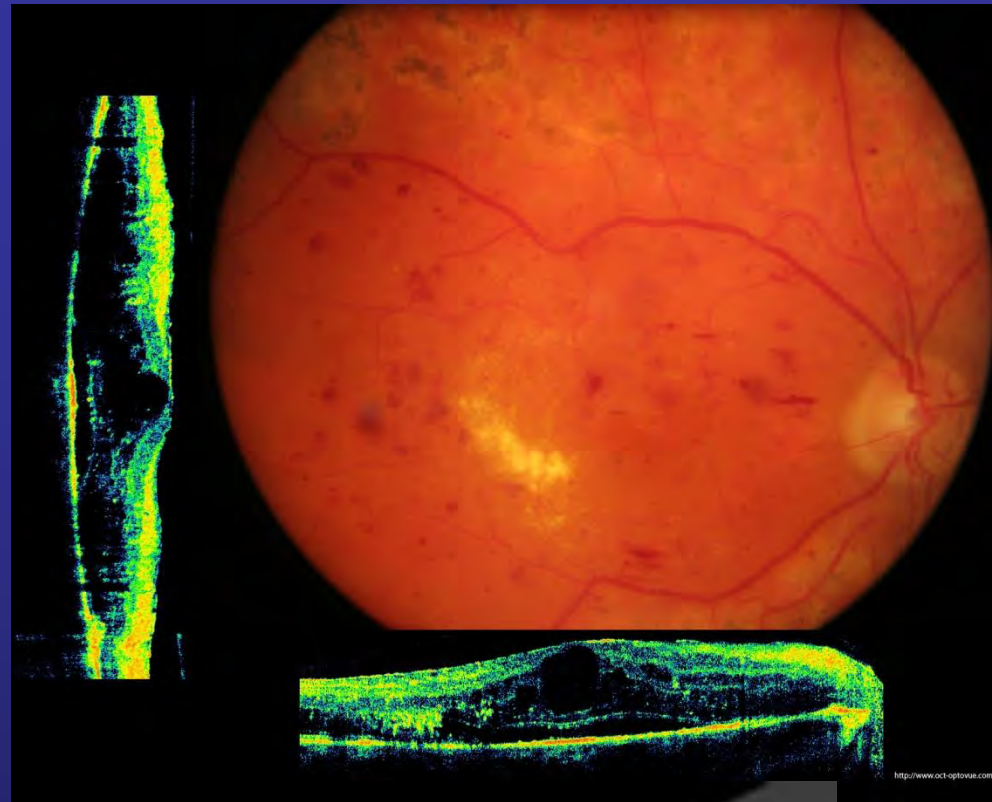
2. **Proliferative Retinopathy** – abnormal new blood vessels develop due to poor blood flow and cause bleeding and retinal detachment



neovascularization capillary nonperfusion

(From Kaiser PK, Friedman NJ, Pineda R II: *Massachusetts Eye and Ear Infirmary Illustrated Manual of Ophthalmology*, 2nd ed, Philadelphia, Saunders, 2004.)

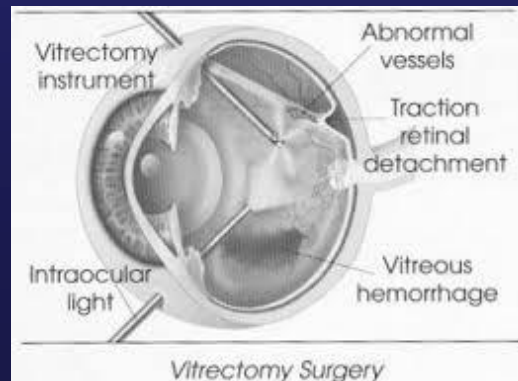
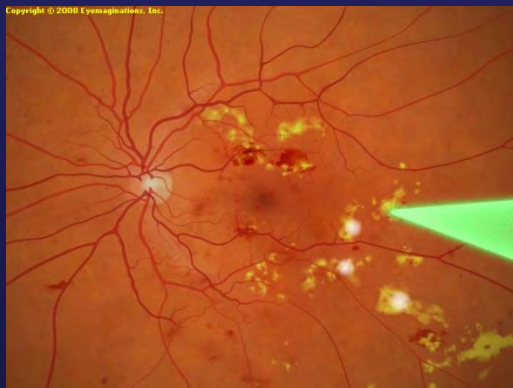
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**Ultrasound of Traction
Retinal Detachment**

Diabetic Retinopathy: Treatment

- Control Blood Pressure, Sugar, & Cholesterol Levels,
- See Eye Doctor Yearly
- If Not then may need Surgery or may be Blind Forever.



Men More Commonly Have High Blood Pressure

- Venous/Arteriolar Occlusive Diseases Caused by High Blood Pressure – Higher Risk of Coronary Artery Disease



Hypertensive Retinopathy

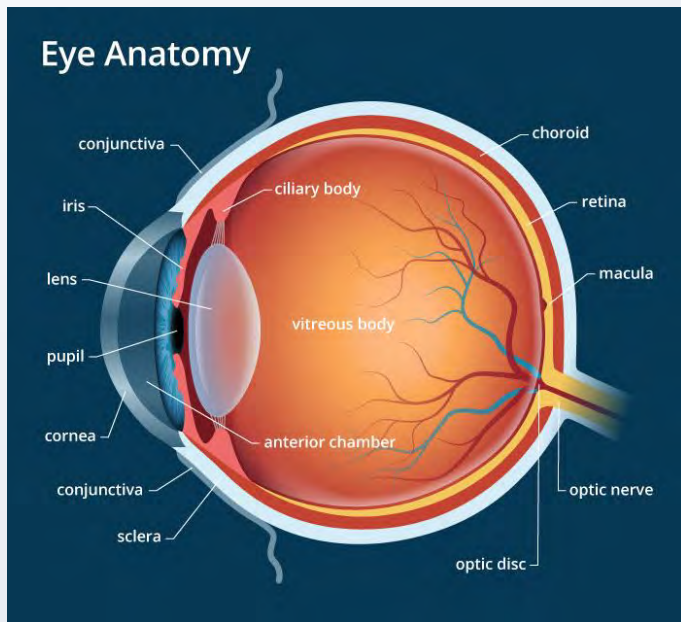


Branch Retinal & Central Retinal Vein Occlusion



Treatment: Hypertension (BP) and diabetes management, Anti-VEGF injections into the eye and laser treatments

Eyes are the window to the body and brain & Eye Health is a Barometer for General Health and Wellbeing

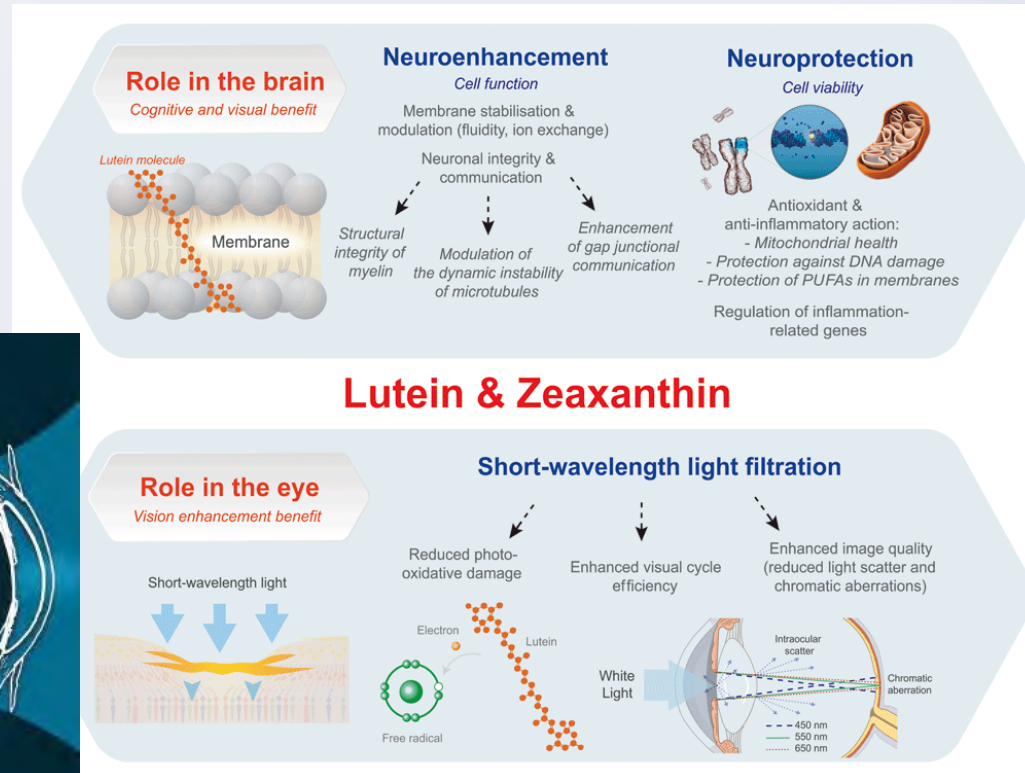
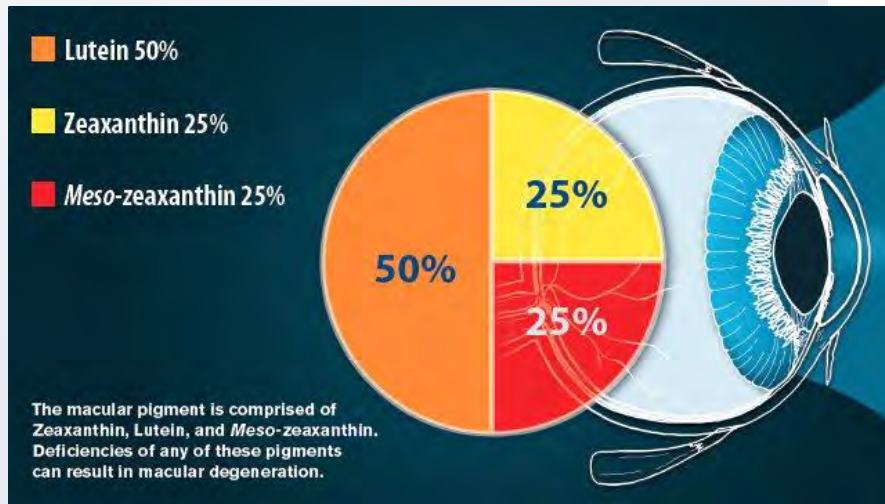


- ❑ The Age-Related Eye Diseases Study (AREDS), funded by the National Eye Institute, showed that foods rich in vitamins C and E, zinc, **lutein**, **zeaxanthin**, and omega-3 fatty acids DHA and EPA lower risk for age-related macular degeneration (AMD), cataract and dry eye later in life.
- ❑ Diabetes, Hypertension, Alzheimer's, and Schizophrenia can be diagnosed and monitored by examining the eyes.

<https://www.aao.org/eye-health/diseases/amd-macular-degeneration>
Srinivasan, S., & Efron, N. (2019). Optical coherence tomography in the investigation of systemic neurologic disease. *Clinical and Experimental Optometry*, 102(3), 309-319.

Carotenoids: Important Nutrients for the Eye (AMD): Lutein & Zeaxanthin

Related to Vitamin A, found in the macular pigments of the retina, and important in protecting against UV & converting light into a visual signal.
Deficiency = AMD

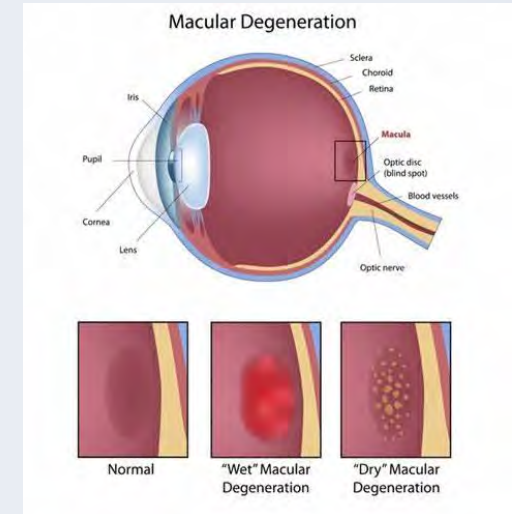


Eating for EYE & Body Healthy

- **Green leafy vegetables** including Swiss chard, kale, turnip greens, collard greens, and spinach.
- **Bright colored fruits and vegetables** including red and yellow peppers, corn, sweet potatoes, broccoli, peas, tomatoes, watermelon, blueberries, and zucchini.
- **Fish, (ie. salmon), tree nuts, flax seed oil** are excellent sources of natural omega-3-fatty acids.
- **Egg yolks** are a rich source of zeaxanthin (Retinal pigment).
- **ASK YOUR DOCTOR IF YOU CAN EAT THESE FOODS**

Age-Related Macular Degeneration (AMD)

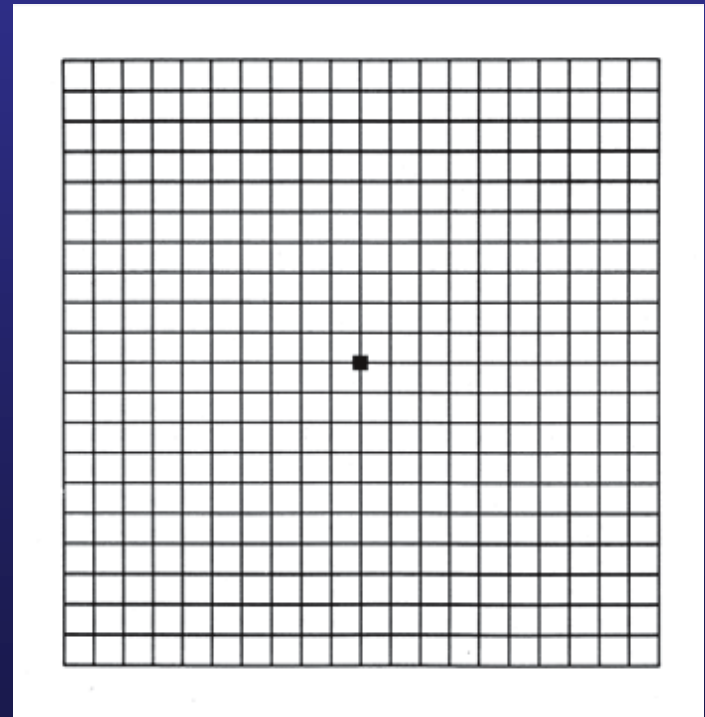
- ❑ **Leading cause of blindness in the US**
- ❑ **18.5 million people in the US**
 - ❑ **Increases with age**
 - ❑ **29% over 75 years**
- ❑ **1.75 million with Advanced Disease**
 - ❑ **~8% of people over 75**
- ❑ **More Common in Caucasians**
- ❑ **Yrly Direct Medical Costs - \$575 Million**



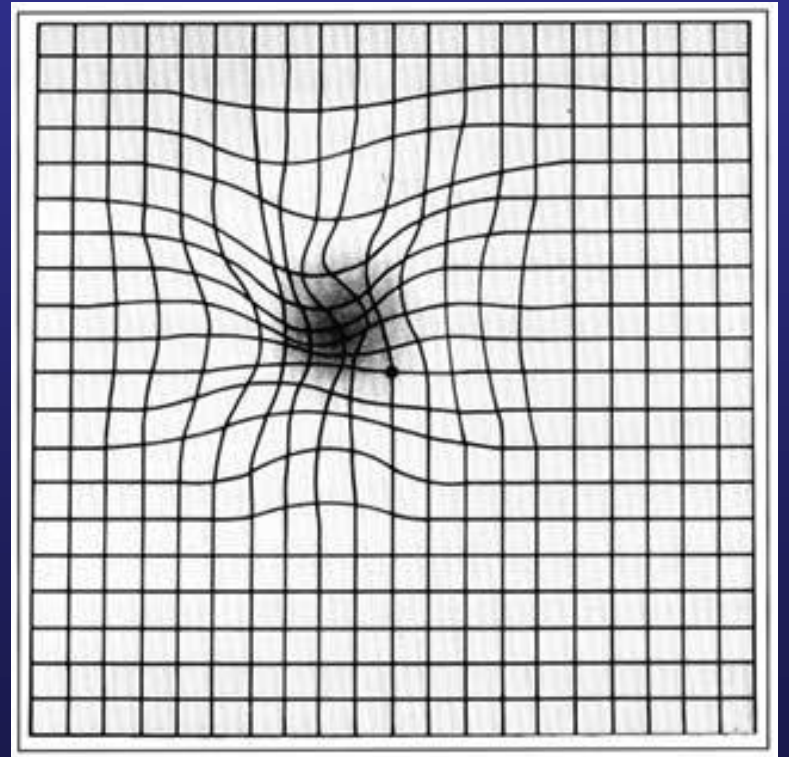
Normal Vision

Amsler Grid:

Used to Test Center
Vision

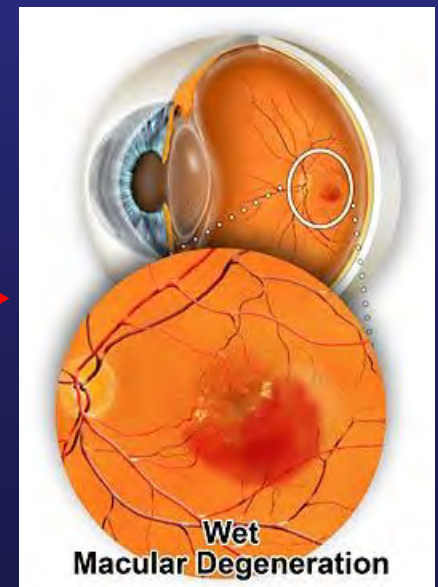
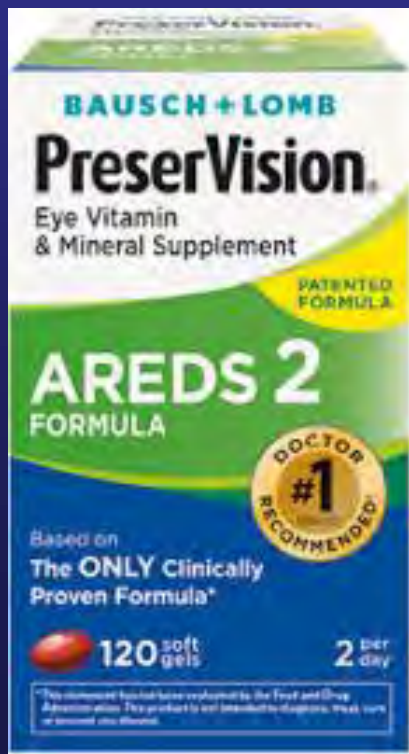


AMD VISION LOSS: Affects Central Vision

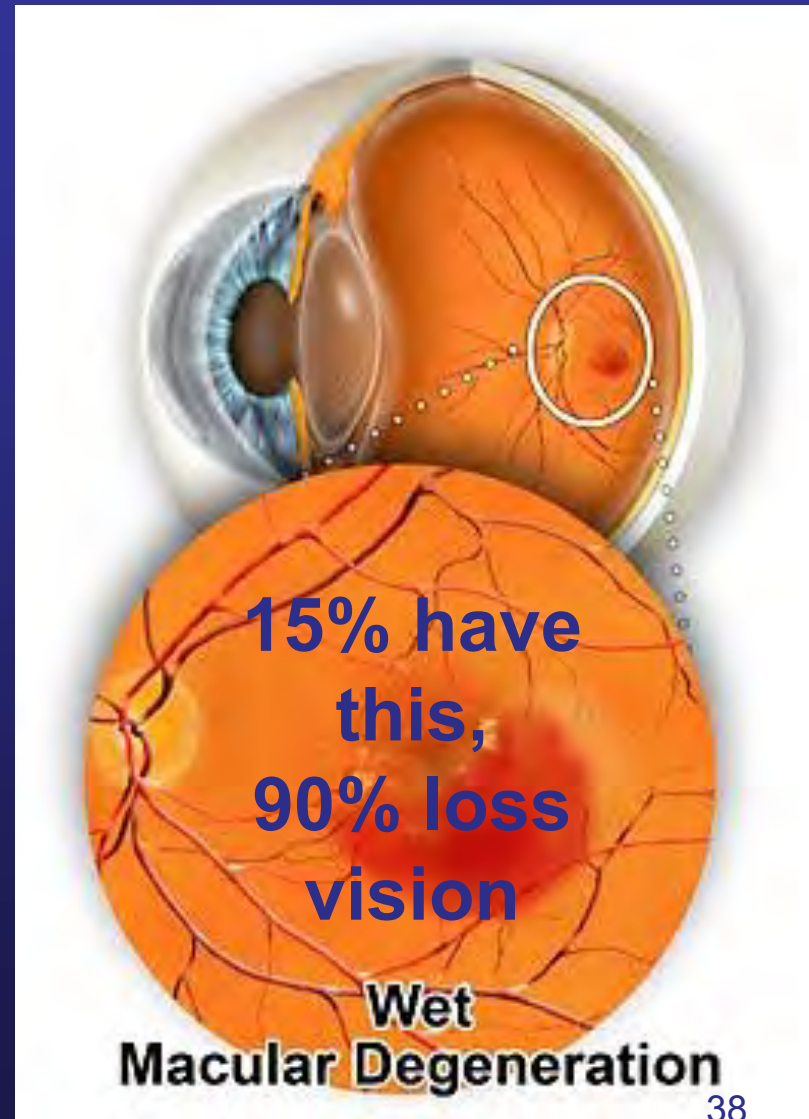
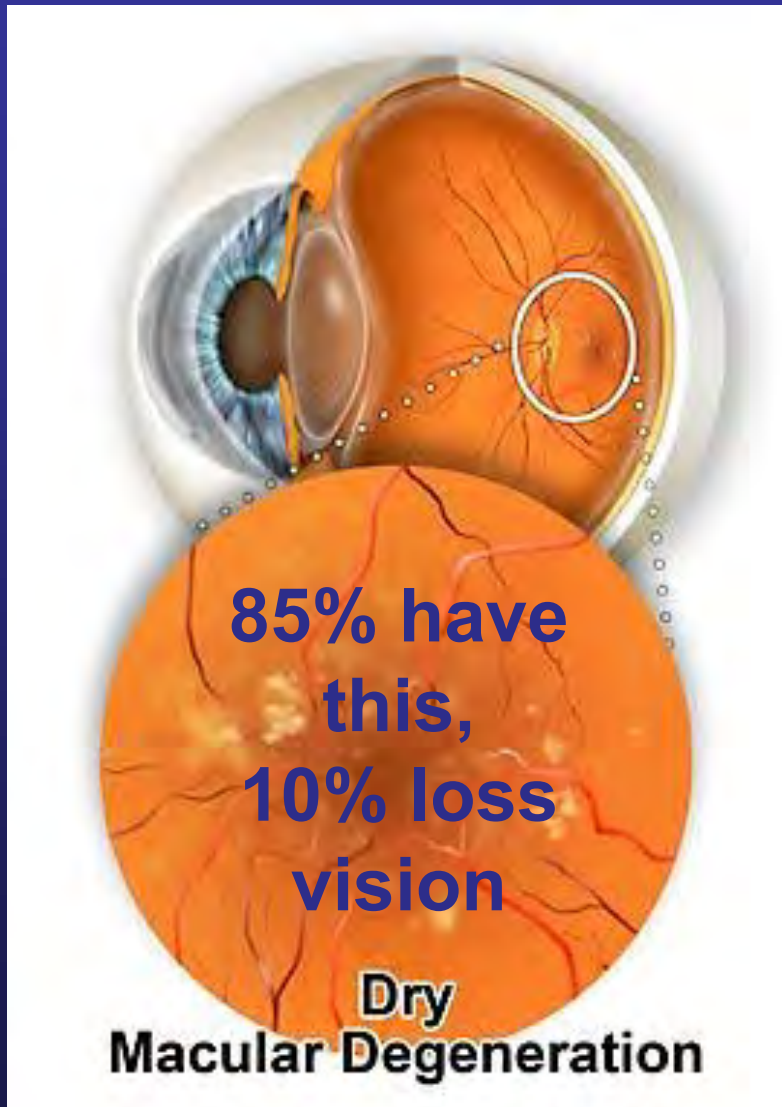


Prevention of Wet Form

- **AREDS Vitamins Reduced Risk by 25% for those with Intermediate (Moderate) Dry AMD – not for those with mild disease**



Age Related Macular Degeneration (AMD)



Treatment Wet AMD

Effectiveness of Anti-VEGF

Randomized Control Trials:

90 - 95% Stabilize Vision

30 - 40% Improve Vision

Regular schedule of monthly injections - 2 yrs

In Practice:

Extend Treatments as
eye is stable.



Age Related Macular Degeneration (AMD)

- Family history
- Smoking
- Nutritional status
- Being Overweight
- Couch Potato Lifestyle
- High Blood Pressure
- High cholesterol
- Sunlight (U-V) exposure

DO NOT SMOKE

- Leads to Dry Eyes, Cataracts,
 - Macular Degeneration,
 - Worsening of Diabetes



Know Your Medications When Having an Eye Exam

- Hydroxychloroquine – Lupus/Rheumatoid Arthritis – can cause retinal damage
- Medications for Erectile Dysfunction
 - Sildenafil (Viagra), vardenafil (Levitra, Staxyn), tadalafil (Cialis) and avanafil (Stendra)
 - Can inc risk of vision loss in people with retinitis pigmentosa (inhibiting important enzyme in visual pathway PDE6) and those at risk for optic neuropathy due to low blood flow to the eye (non-arteritic ischemic optic neuropathy)

Healthy Lifestyle is Key to Maintaining Good Eye Health

- **Eat Healthy and Right Foods**
- **Get Regular Exercise**
- **Maintain a Healthy Body Weight**
- **Do Not Smoke**
- **Watch Blood Pressure, Cholesterol, & Blood Sugar (for those with Diabetes)**
- **Protect Your Eyes (Safety/Sunglasses)**
- **Have Regular Dilated Eye Exams**

Protect Your Eyes

1. See your eye doctor for a full eye exam regularly and Live Healthy!
2. Wear Eye Protection When Needed!



Eye Exam Schedule

- Pediatrician Eye & Vision Screenings
 - Newborn, Childhood Exams, Ages 3-5 years
- NY State Mandated Vision Screenings
 - PreK, K, every odd grade
- Age 40 – at least one dilated eye exam
- Age 50+ - every 1-2 years, dilated eye exam
- Yearly when have diabetes/hypertension

What You Can Do!

- Eat and Live Healthy
- Be Educated
- See Your Medical Doctor & Eye Doctor
 - Many medications can affect your eyes
 - Those on Certain Medications Also have risk for eye disease
- Keep Your Eye on Your Eye Health



PREVENTION IS KEY



EyePromise [®] RESTORE		Amt Per Serving
Serving Size: 1 Softgel		
Vitamin C (as ascorbic acid)		120 mg
Vitamin E** (as d-alpha tocopherol)		60 IU
Zinc (as zinc oxide)		15 mg
Fish Oil		250 mg
Omega-3	125 mg	
EPA (Eicosapentaenoic Acid)	75 mg	
DHA (Docosahexaenoic Acid)	50 mg	
Alpha Lipoic Acid		10 mg
Zeaxanthin **		8 mg
Mixed Tocopherols**		6 mg
Lutein **		4 mg

**from natural sources

