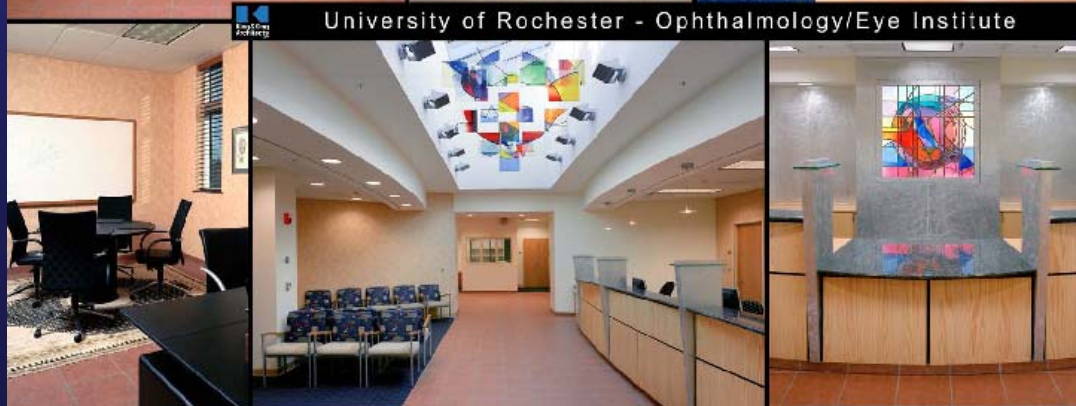


Eye Health: What You Should Know

**Holly B. Hindman, MD – Cornea Specialist
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**Assistant Professors of Ophthalmology
Flaum Eye Institute
University of Rochester**

THE FLAUM EYE INSTITUTE



University of Rochester - Ophthalmology/Eye Institute

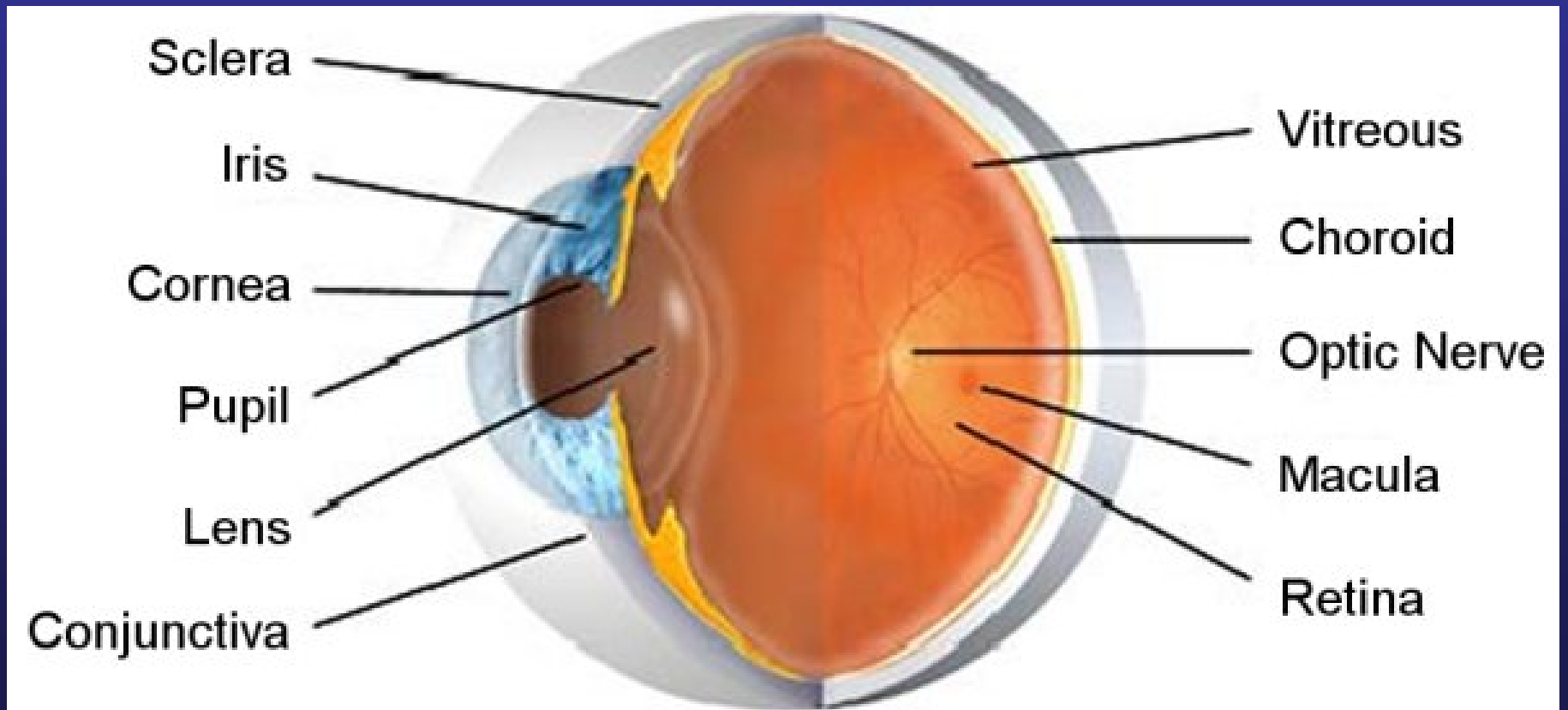
Keeping Your Eyes Healthy

- Know about how your eyes work
- Most Eye Diseases are Have No Symptoms until the Advanced Stages
- Importance of Seeing an Eye Doctor
- Common Eye Problems and Diseases
- Risk Factors, Prevention, Management, Treatment

What You Can Do!

- **Be Educated**
- **See Your Medical Doctor & Eye Doctor**
- **Eat and Live Healthy**
- **Wear Eye Protection when needed**
- **Keep Your Eye on Your Eye Health**

Eye Anatomy: Like a Camera

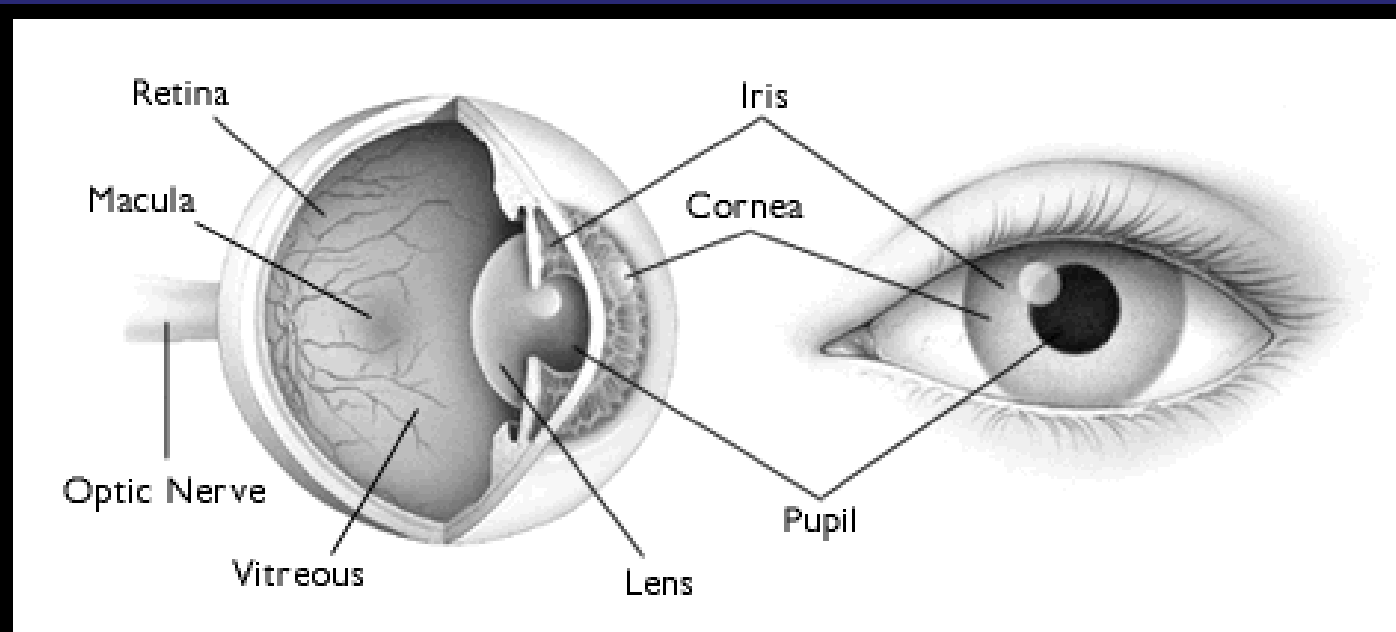


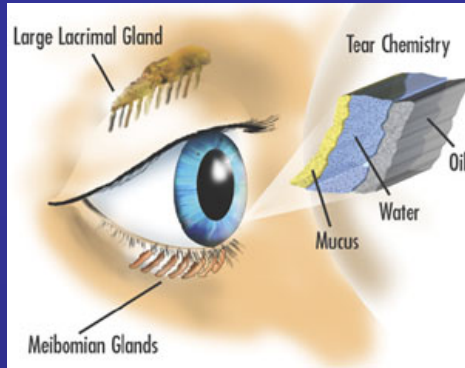
Common Reasons for Eye Doctor Visit

- **Blurry vision:** most commonly this is because of a need for or change in glasses.
- **Presbyopia:** need for reading glasses – usually occurs in middle age (40s)
- **Dry eye:** eye irritation or blurriness. Varies with activities.
- **Cataracts:** blurry vision that is caused by a cloudy lens. Cannot be corrected with glasses
- **Eye Injuries**
- In general, you should see your eye doctor every year. They will check you for glasses and also check for medical conditions of the eye.

Dry Eye

- Is the cause of 25% of eye doctor visits. It occurs because the surface of the eye dries out leading to blurry vision and discomfort.





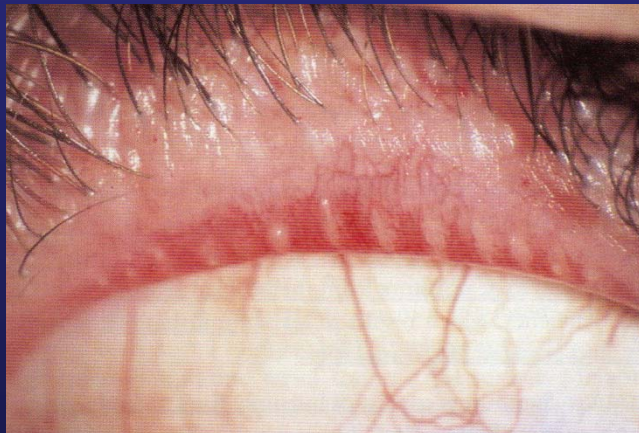
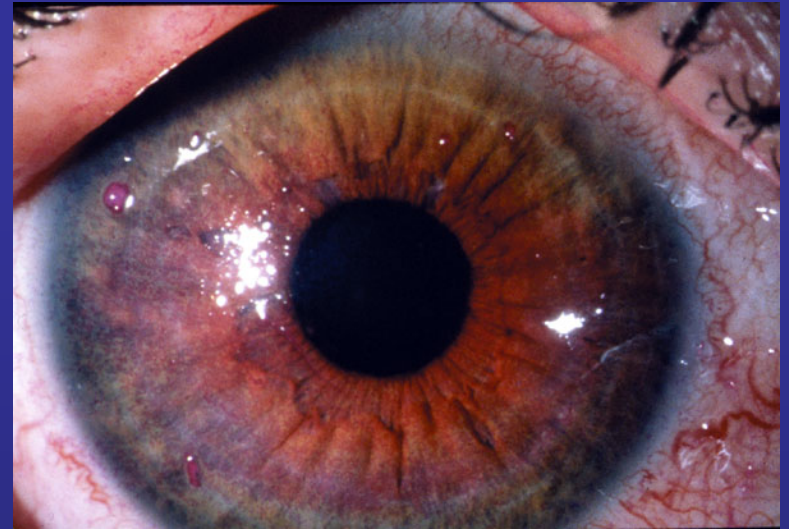
Tear Functions

- Smooth surface for clear vision
- Keeps eye moist
- Removes debris

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



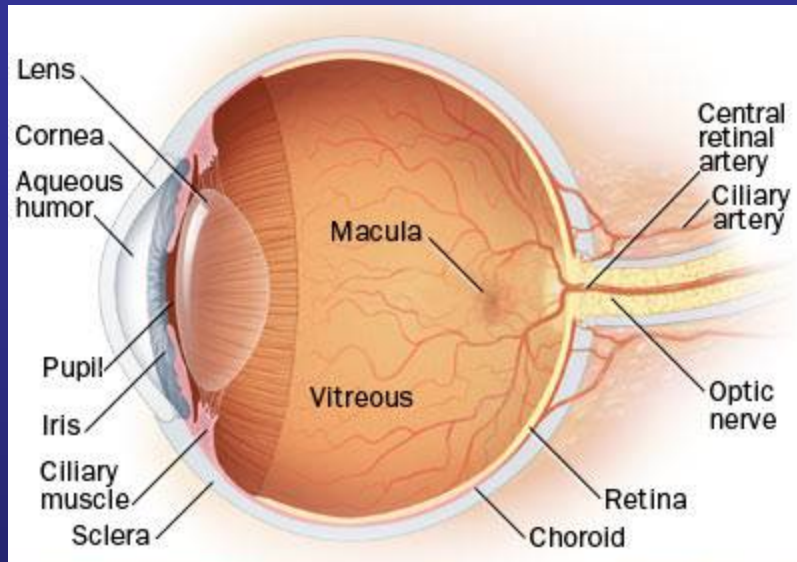
Water Deficiency

- Artificial Tears
- Humidifiers
- Blocking tear drainage

Oil Dysfunction

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

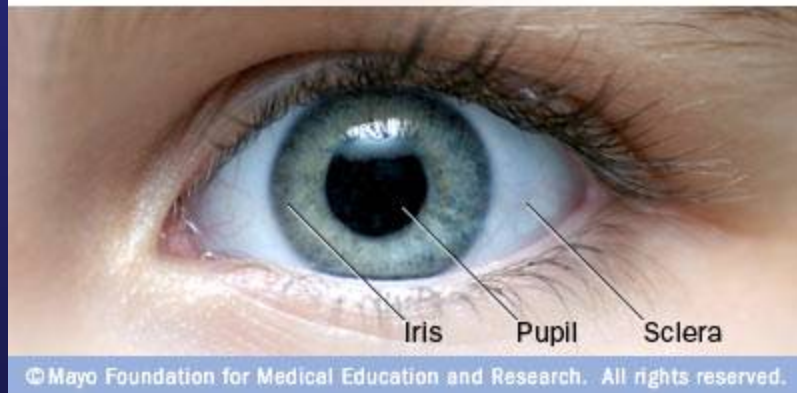
The Lens and Cataract



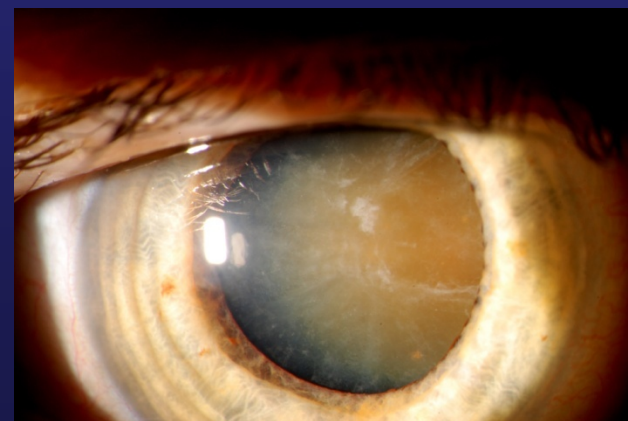
The lens sits inside your eye behind your pupil. It is usually clear.

A cloudy lens is called a cataract

A cataract can blur your vision



Clear lens



Cataract

Scope of Problem

- **Cataract is a common problem of older people, but can easily be corrected with surgery.**
- **In many parts of the world; however, cataract is a leading cause of blindness**

	% Blind	% from Cataract
India	1.0%	57.5%
Latin America	0.5%	57.6%
Sub Saharan Africa	1.4%	43.7%
Middle Eastern	0.7%	45.2%

Risk Factors for Cataract

- Sunlight (wear sunglasses)
- Diabetes (control your blood sugar)
- Smoking (stop smoking)
- Alcohol (avoid excess drinking)
- Certain medications
- Family history

What to do if you think you have cataracts

- **See your eye doctor for a complete eye exam**
- **They will:**
 - Check your vision
 - Check you for glasses
 - Check your eye pressure
 - Assess your level of cataract
 - Look in the back of your eye to ensure good eye health
 - Discuss Surgery if your blurry vision is causing difficulty with activities or hobbies or you have glare affecting vision due to the cataract

Preventing Eye Injuries and Maintaining Eye Health

- The **two most important** things you can do to protect your eyes and ensure good eye health are:
 1. See your eye doctor for a full eye exam regularly
 2. Wear eye protection!



Eye Injuries

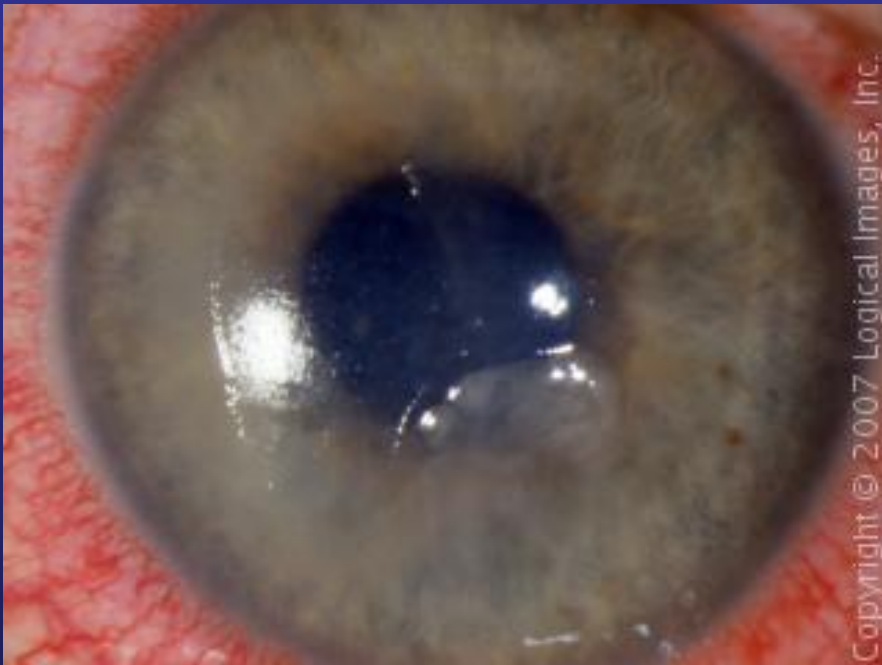
- **Eye injuries are preventable.**
- **Wear eye protection!** (with polycarbonate lenses – shatter resistant)
 - - cleaning
 - - gardening and mowing the lawn
 - - working around dust, smoke
 - - using any type of tool
 - - while playing sports
 - - using any chemicals
 - - when doing any high speed activity (riding ATV, snowmobile, boating, motorcycle, roller blading, biking, etc)
 - - if you do any work that places you at risk (mechanic, metal work, carpenter, etc).

Eye Injuries

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



Corneal Scratches



Commonly caused by:

- **fingernails**
- **papercuts**
- **tree branches**

You will have:

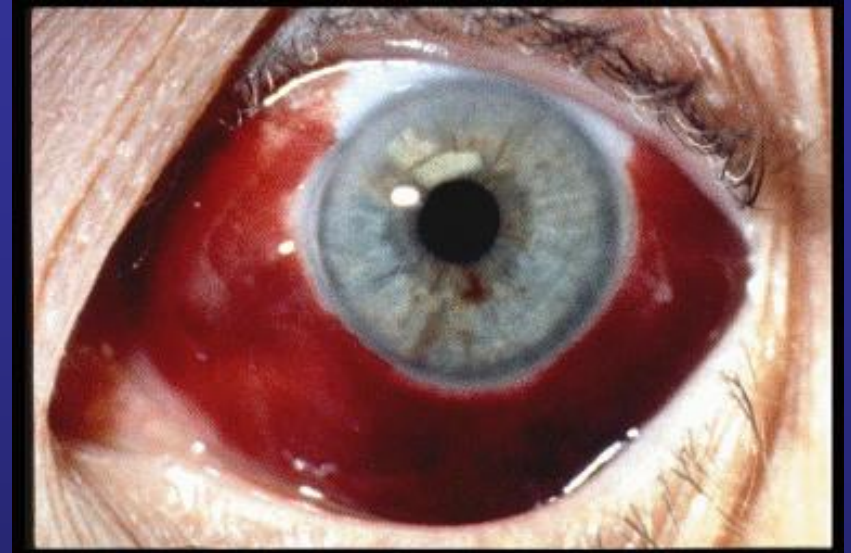
- **sharp pain**
- **feeling like something is in your eye**
- **tearing**
- **light sensitivity**

Subconjunctival Hemorrhage

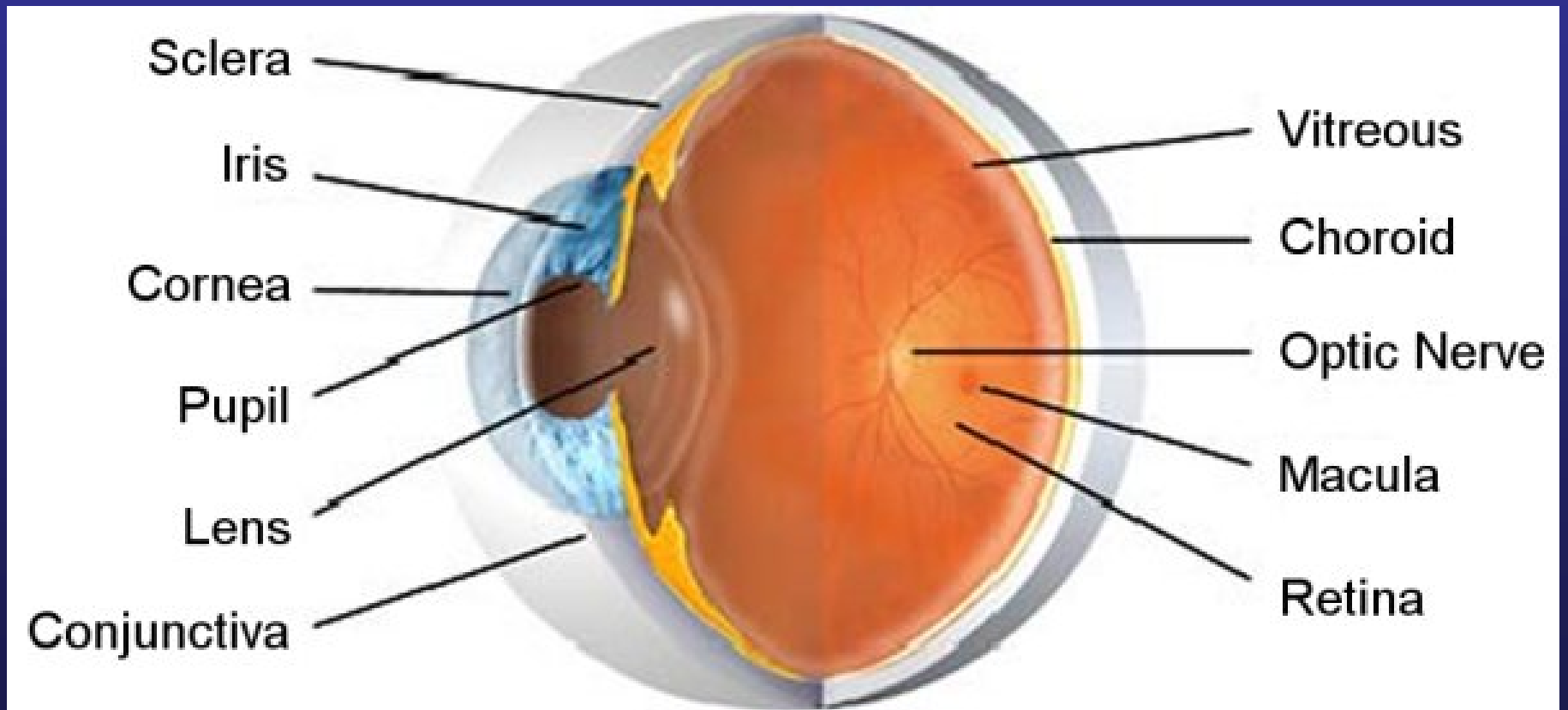
- **A bloody appearing white of the eye**
- Usually no pain
- Vision unchanged
- Commonly noticed by another person
- **Normal causes**
 - Vomiting, Coughing, Straining
 - Bumping in something

Can increase in size over first couple of days

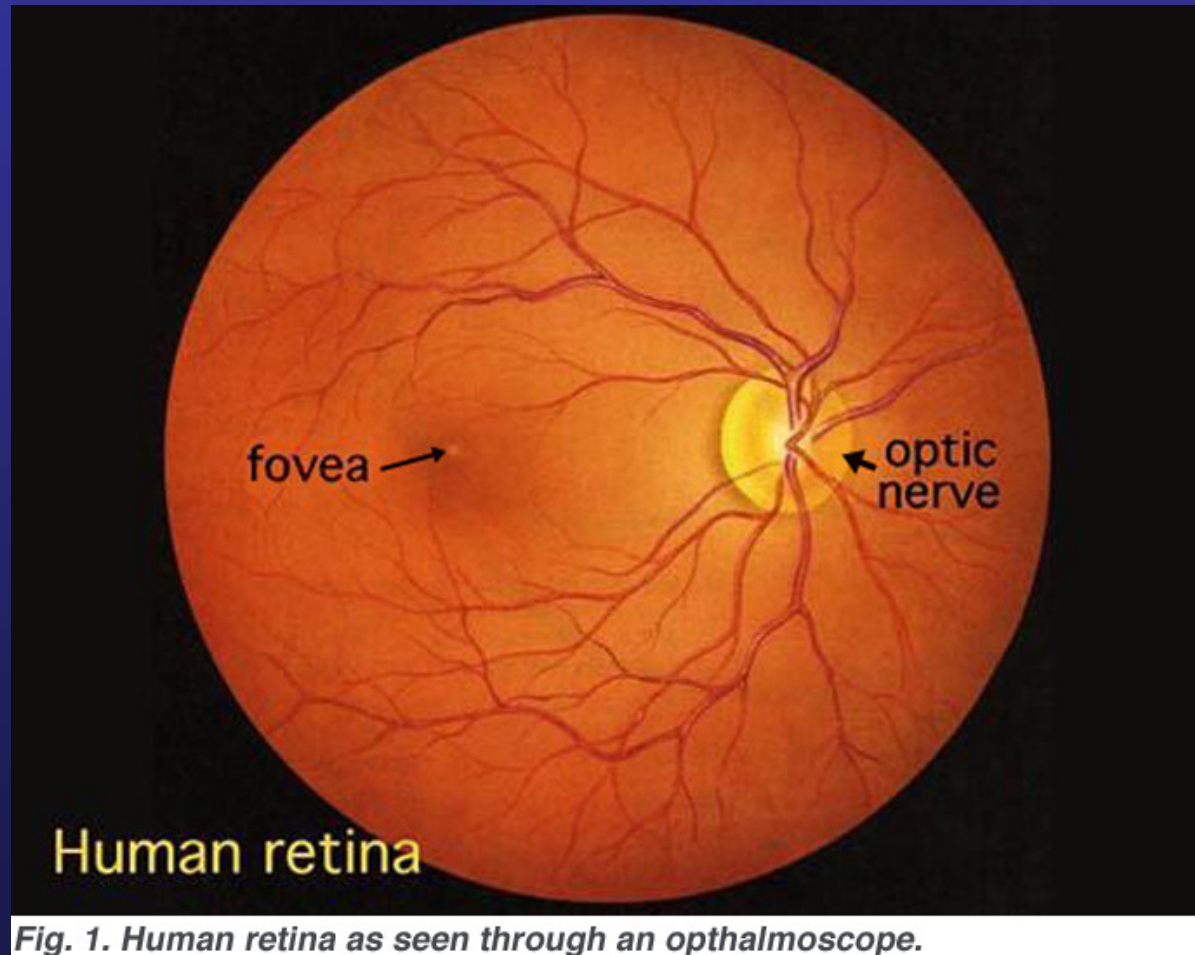
Gets better within 1- 3 weeks without permanent injury. Do not need to see doctor unless vision is blurry



Eye Anatomy: Like a Camera



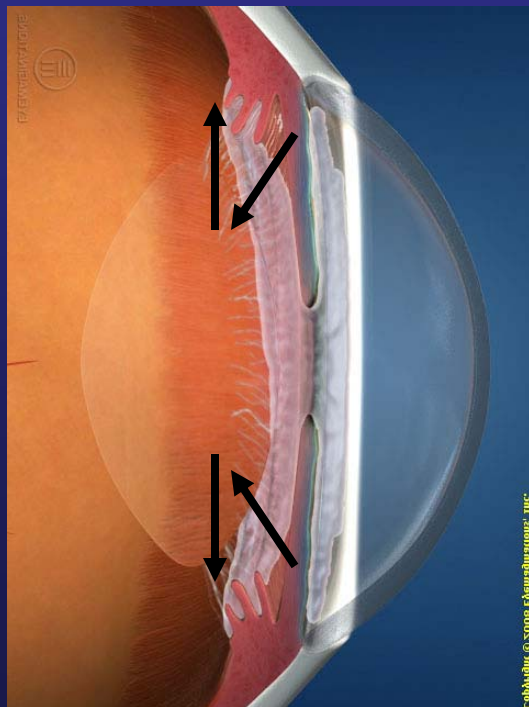
The Back of the Eye: Vitreous, Retina and Optic Nerve



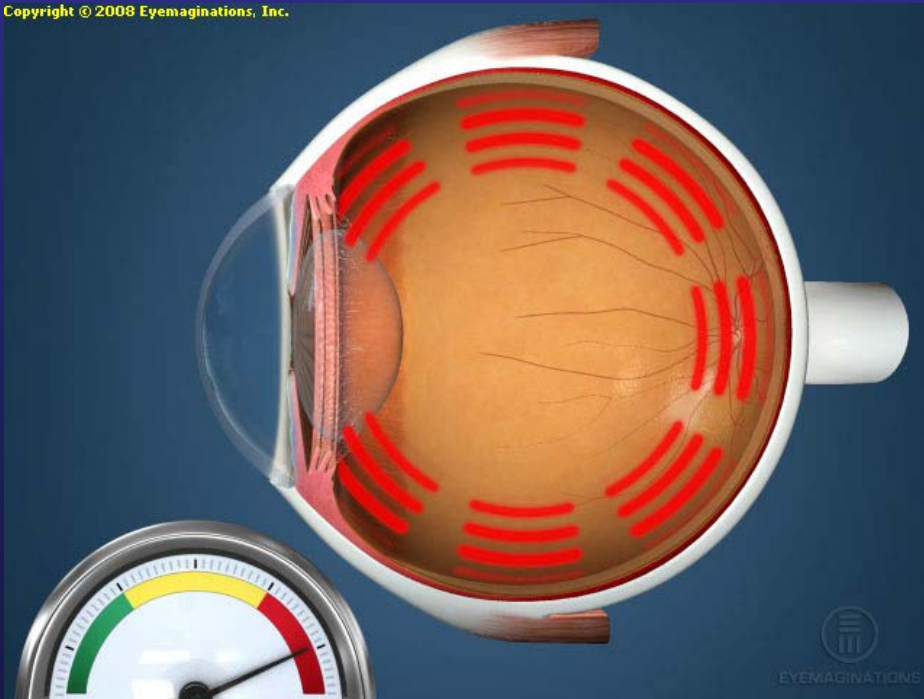
NEED TO HAVE A DILATED EXAM

Optic Nerve – Cable to the Brain

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

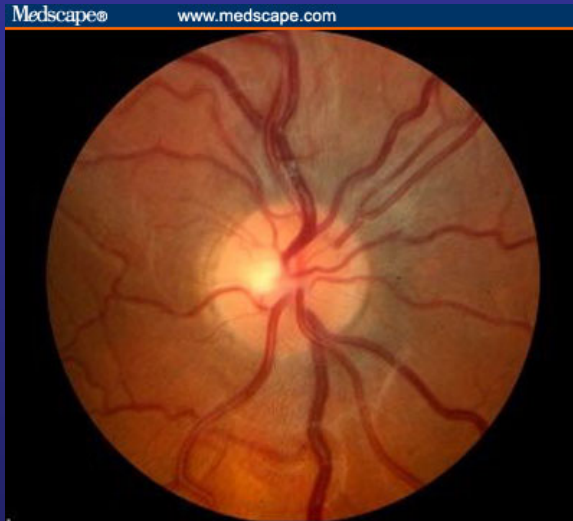


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Glaucoma – Silent Disease

- IRREVERSIBLE DAMAGE



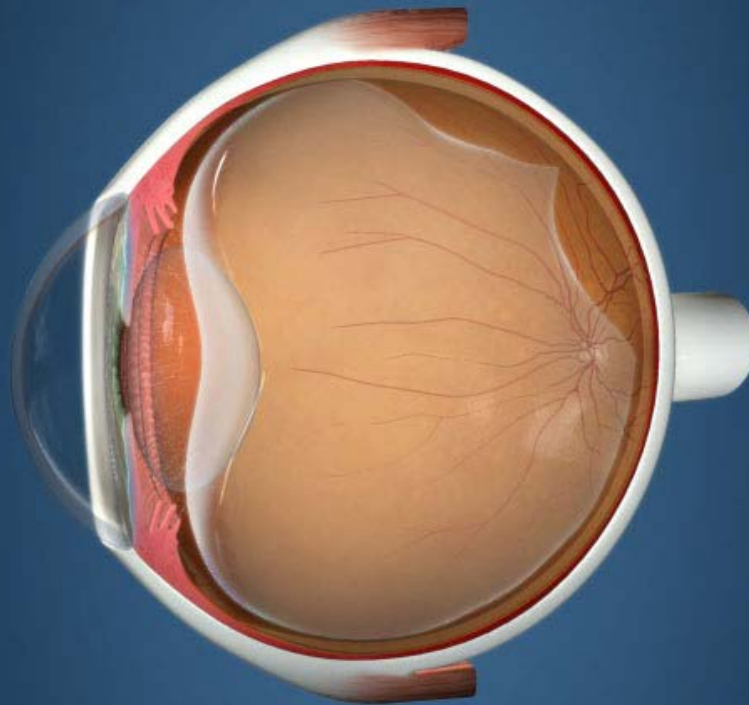
Glaucoma: Silent Disease

- No Pain or Symptoms
 - Vision Loss Only Realized in Advanced Stages when Treatment Limited
 - Know Risk Factors
 - Older age
 - Family history of glaucoma A
 - African or Hispanic/Latino descent
 - Unique Anatomy of Eye
 - Increased Eye Pressure
- Eye Doctor Diagnosis

Vitreous – Flashes and Floaters

- Normally Vitreous (like egg-white)
Becomes More Liquid with Age and Peels off from Retina

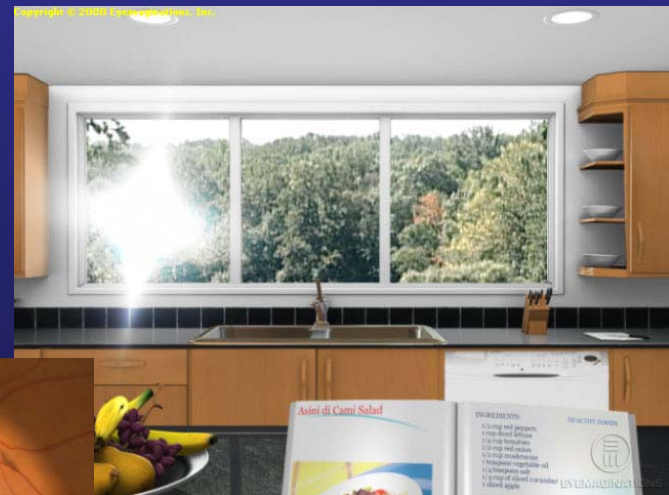
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EYEMAGINATIONS

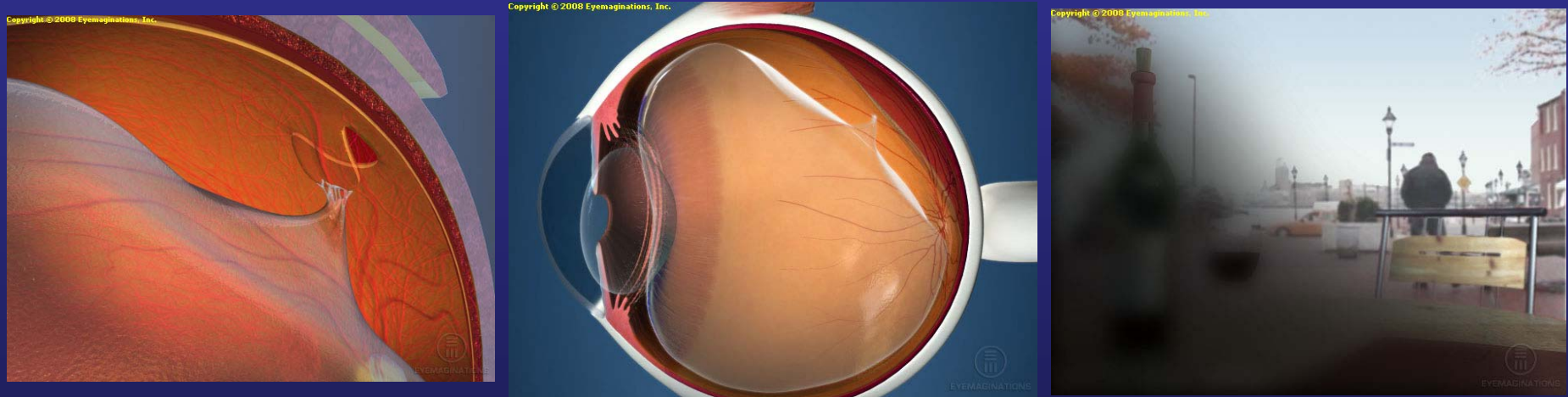
Flashes and Floaters

- Floaters – Condensations of Vitreous
- Flashes – Tugging of Vitreous on Retina
- **Increased Number of Either is Concerning**



Retina – like Camera Film

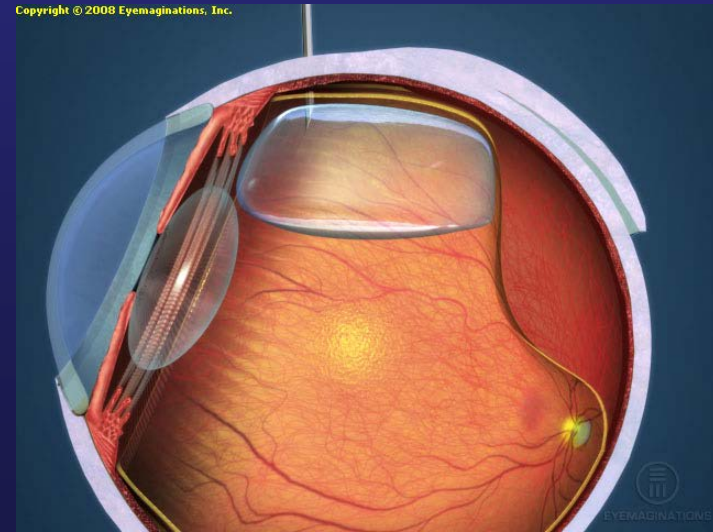
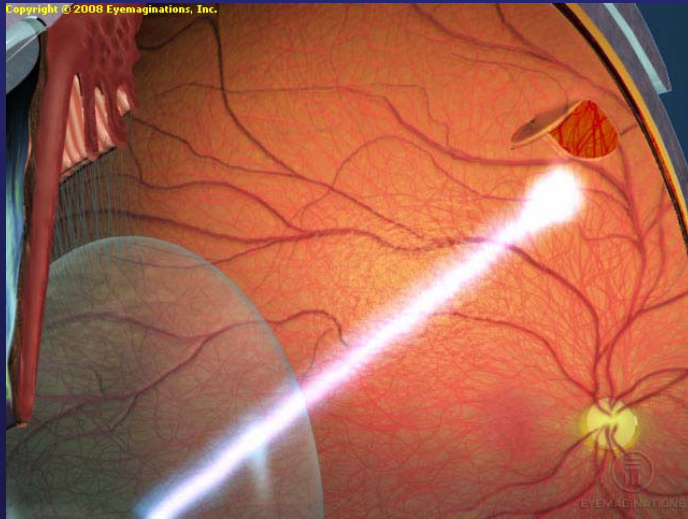
- Increased Flashes and Floaters may be Associated with Retinal Tear/Detachment



- Tear Can lead to Detachment Causing Permanent Vision Loss so Early Diagnosis is Key!

SEE YOUR EYE DOCTOR

- Early Diagnosis is Key
- In office treatment for tears, Operating Room for most Retinal Detachment
- Vision Recovery Depends on RD Extent



DIABETES and EYES

- Inability of the body to take glucose (sugar) into cells, over time glucose causes toxic changes to blood vessels
- Retina is only part of body where one can examine fine blood vessels, what happens to retinal blood vessels is happening elsewhere as well.



Diabetic Retinopathy

- Diabetic retinopathy leading cause of new cases of legal blindness among working-age Americans.
- 4.1 million persons in US
- 6 million persons by 2020
- After 15 yrs: 80% of those taking insulin and 50% of those not taking insulin have diabetic retinopathy

Diabetic Retinopathy: Vision Loss

- **Macular Edema** – retinal swelling from leakage of central blood vessels
- **Proliferative Retinopathy** – abnormal new vessels develop due to poor blood flow and cause bleeding and retinal detachment



Macular Edema



Proliferative Retinopathy

Proliferative Retinopathy

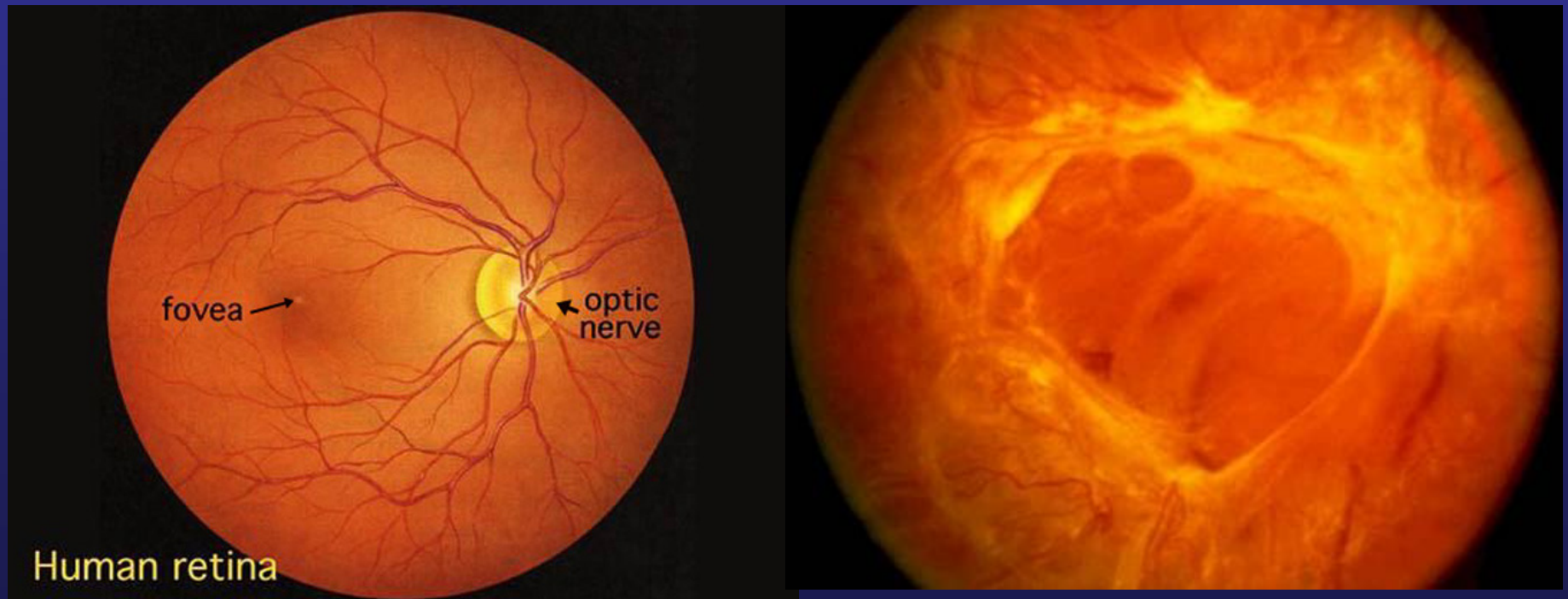
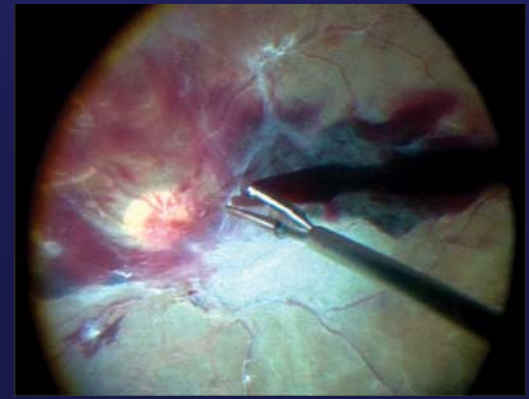


Fig. 1. Human retina as seen through an ophthalmoscope.

Diabetic Retinopathy: Treatment

- **Prevention:** Watch Blood Pressure, Sugar, & Cholesterol Levels, See Eye Doctor Yearly
 - Loss of Vision:
 - Type 1 - 5 times less risk with good control of sugar
 - Type 2 – 50% reduction of risk with good BP & sugar control
- **Laser or Operating Room Surgery**



Age Related Macular Degeneration (AMD)

- **50 Year Old +**
- **Leading Cause of Blindness (US)**
- **Affects the Sharp, Central Vision**
- **Involves Destruction of Retinal Tissues**
- **2 Forms, Exact Cause – Unknown**

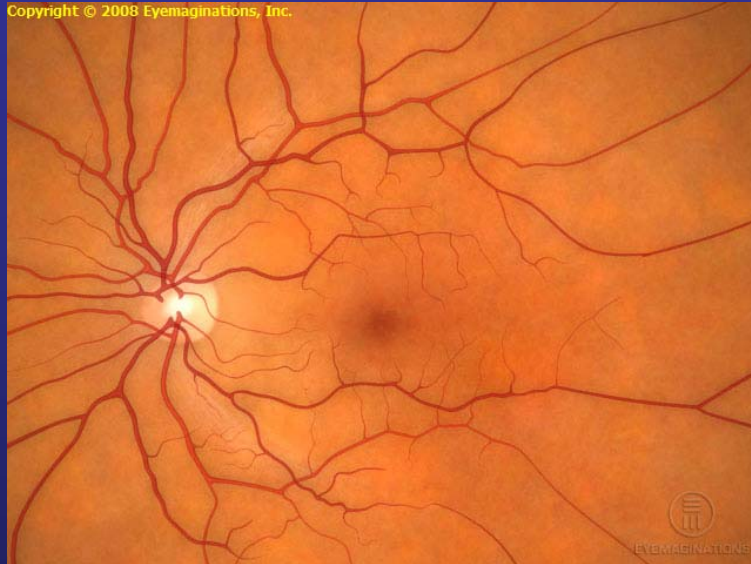
**Dry or
No New Vessel
Form**



**Wet or
New Vessel
Form**



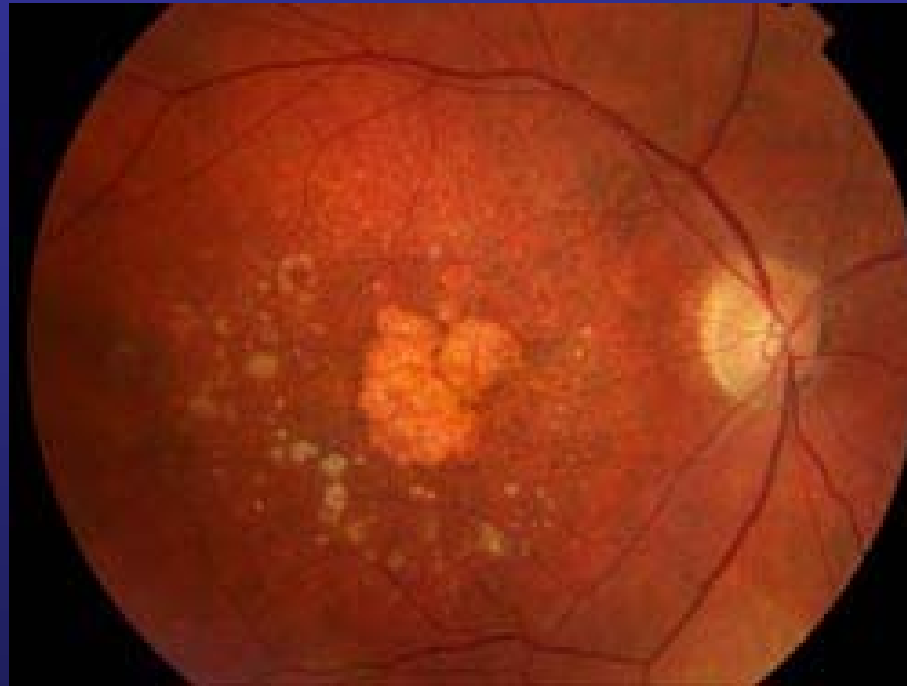
AMD: Starts as Dry Early and Intermediate



80% with AMD have Dry form
40-50% Progress to Wet Form

AMD: Vision Loss

10% Dry have Advanced Disease



Geographic Atrophy

On going clinical Trials

NO Current Proven Treatment

AMD: Vision Loss 90% from Wet Form



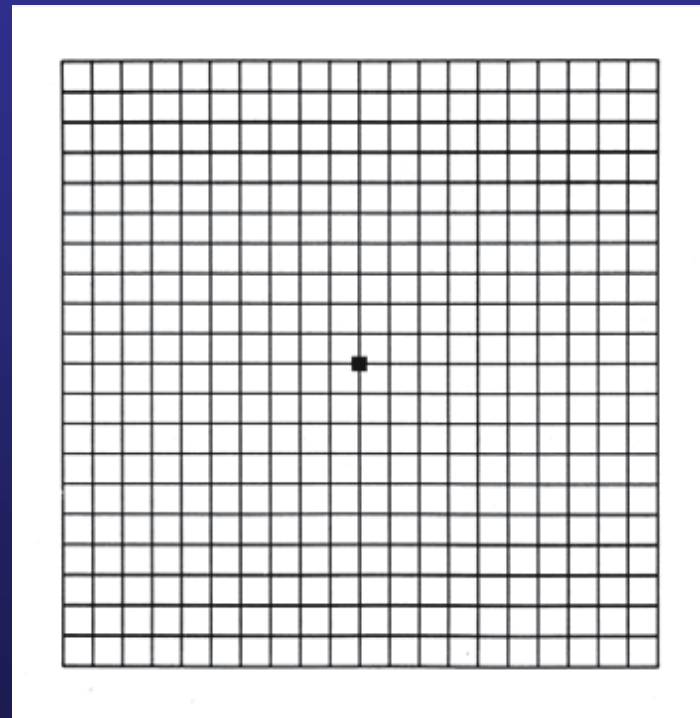
TREATMENTS AVAILABLE

4 Talk to Your Eye Doctor

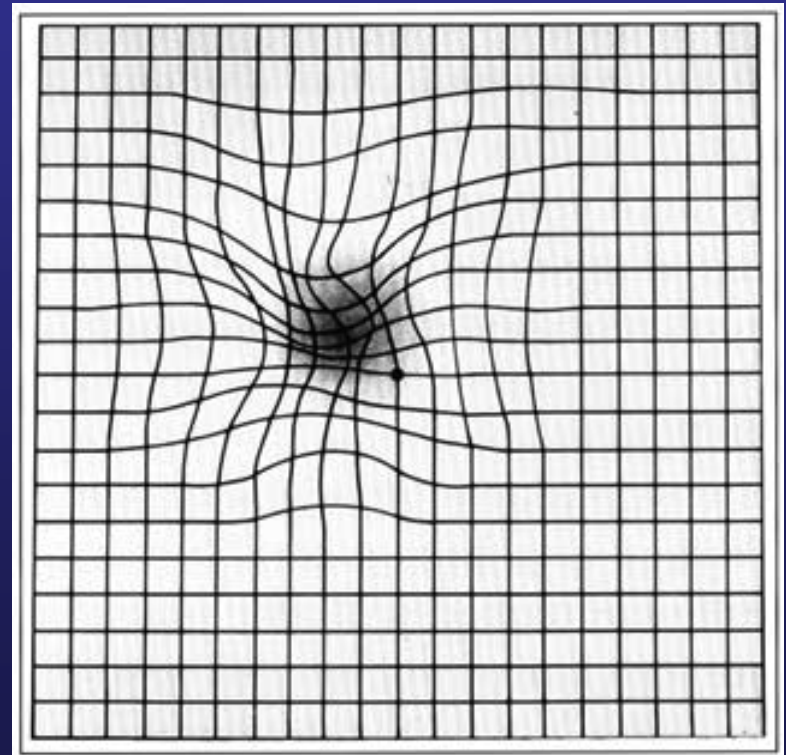
Normal Vision



Amsler Grid



AMD VISION LOSS: Affects Central Vision



AMD: How common is it?

- **10 million people in the US**
 - **Increases with age**
 - **29% over 75 years**
- **1.75 million with Advanced Disease**
 - **~8% over 75**
- **More Common in Caucasians**

AMD: Risk Factors

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

DO NOT SMOKE

- **Doubles the Risk of Developing Advanced AMD**



Eating Healthy: Eye Vitamins

- Randomized Control Trial Showed that for Those with Advanced Intermediate Dry AMD Certain Combination of Vitamins Reduced the Risk of Developing Wet AMD by 40-50%.
- Ask Your Eye Doctor about this and check with your Primary Medical Doctor

Eating 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).

What You Can Do!

- Eat and Live Healthy
- Be Educated
- See Your Medical Doctor & Eye Doctor
- Keep Your Eye on Your Eye Health



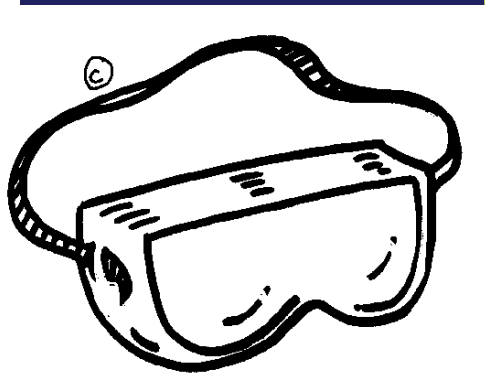
Healthy Lifestyle is Key to Maintaining Good Eye Health

- **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**

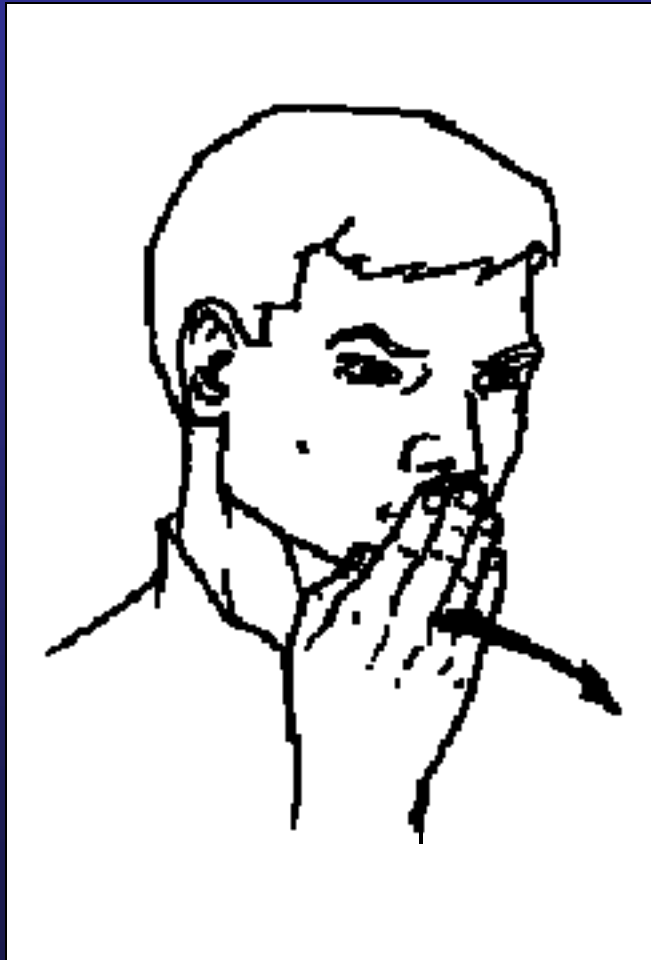
RISK REDUCTION



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



Thank You

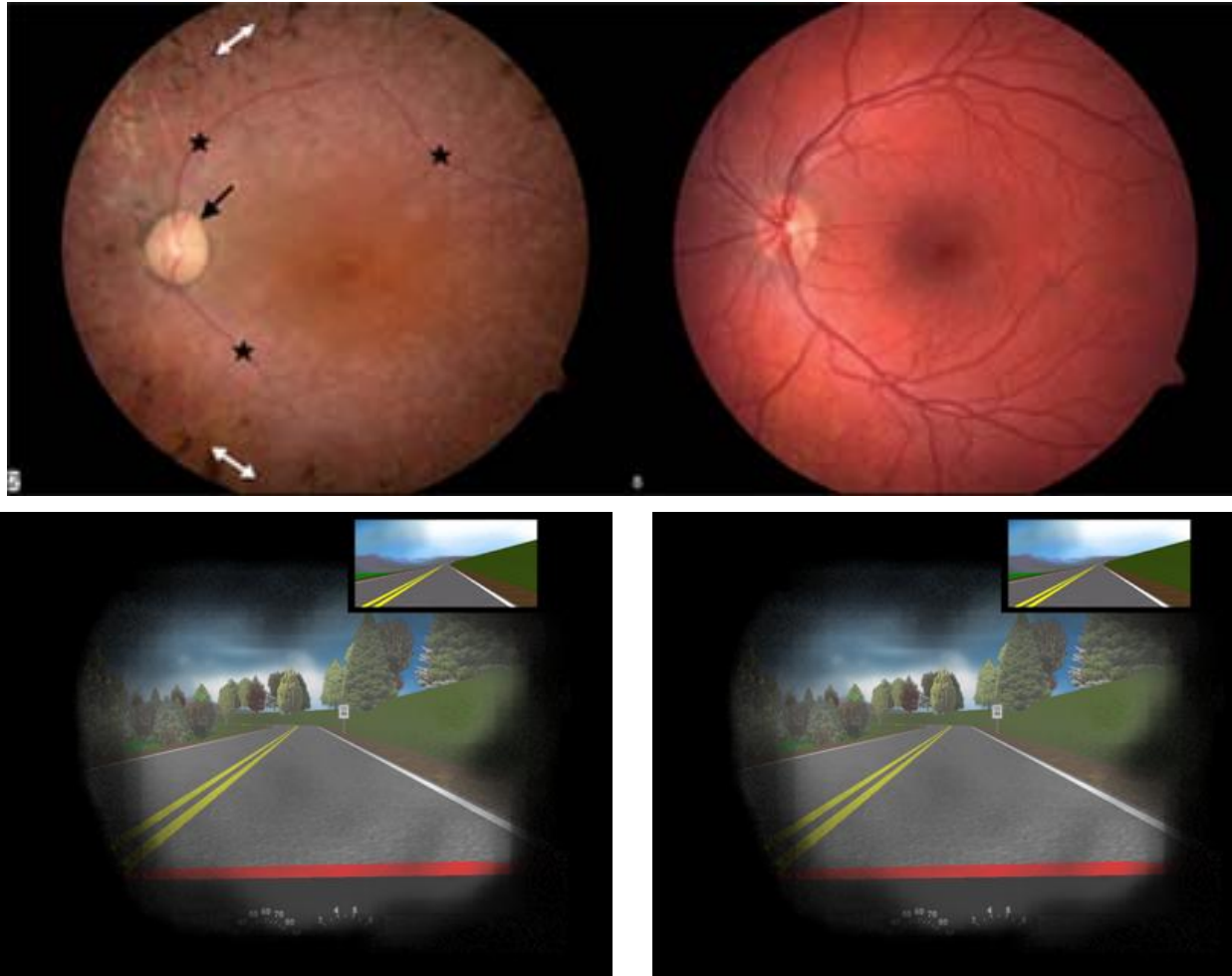




Usher's Syndrome

- 3 types, Types 1 & 2 – 95% of cases
- Autosomal recessive genetic component
- 4.4/100,000 in US
- 66% blind-deaf in US
- Deafness and Retinitis Pigmentosa – night blindness and tunnel vision
- Loss of Rod Photoreceptor function

Usher's Syndrome



http://www.medicinenet.com/usher_syndrome/page3.htm

Usher's Syndrome

Usher Syndrome: Type 1, 2, and 3			
	Type 1	Type 2	Type 3
Hearing	Profound deafness in both ears from birth	Moderate to severe hearing loss from birth	Normal at birth; progressive loss in childhood or early teens
Vision	Decreased night vision before age 10	Decreased night vision begins in late childhood or teens	Varies in severity; night vision problems often begin in teens
Vestibular function (balance)	Balance problems from birth	Normal	Normal to near-normal, chance of later problems

Congenital Rubella 'German Measles'

- Virus – 1st trimester transmission
- 1969 Vaccine – now 91% immunized, US

Number of congenital rubella syndrome cases per year

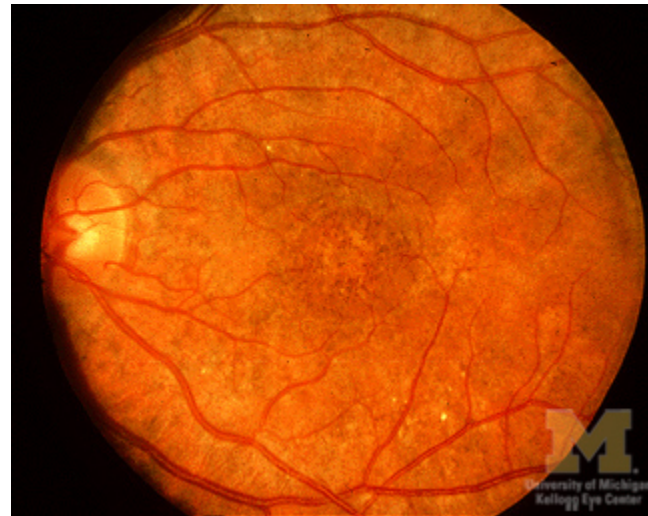


Number of rubella cases per year



Congenital Rubella

- 1960s – 1 in 5 cases of deafness
- Almost 70% with vision problem
- Affects Lens, Retina, also leads to glaucoma which damages optic nerve

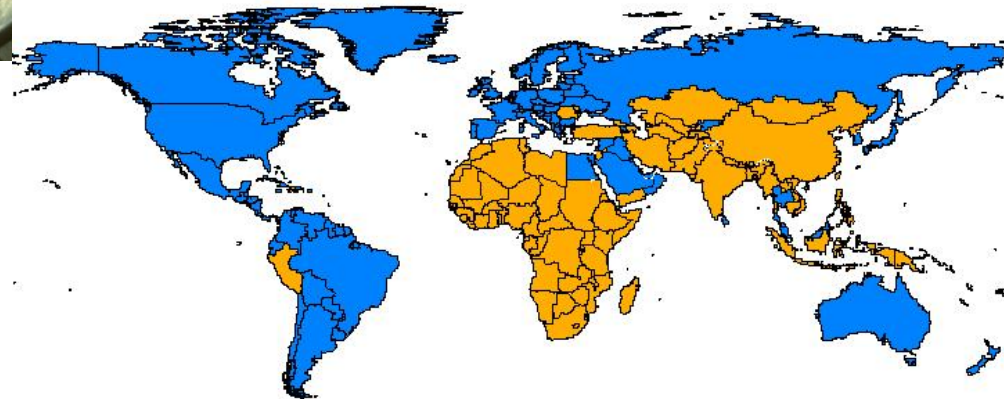


T. P. Nikolopoulos et al.,
UofM, Kellogg Eye
Institute

Congenital Rubella



Countries/territories with rubella vaccine in the national immunization system, 2002



■ Yes (123 countries/territories, 57%)
■ No (91 countries/territories, 43%)

Source: WHO Department of Vaccines and Biologicals, December 2002

The boundaries and names shown and the information provided on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its boundaries, or concerning the affiliation of any territory or territory. Dotted lines represent approximate boundaries for which there may not yet be a firm agreement.

