

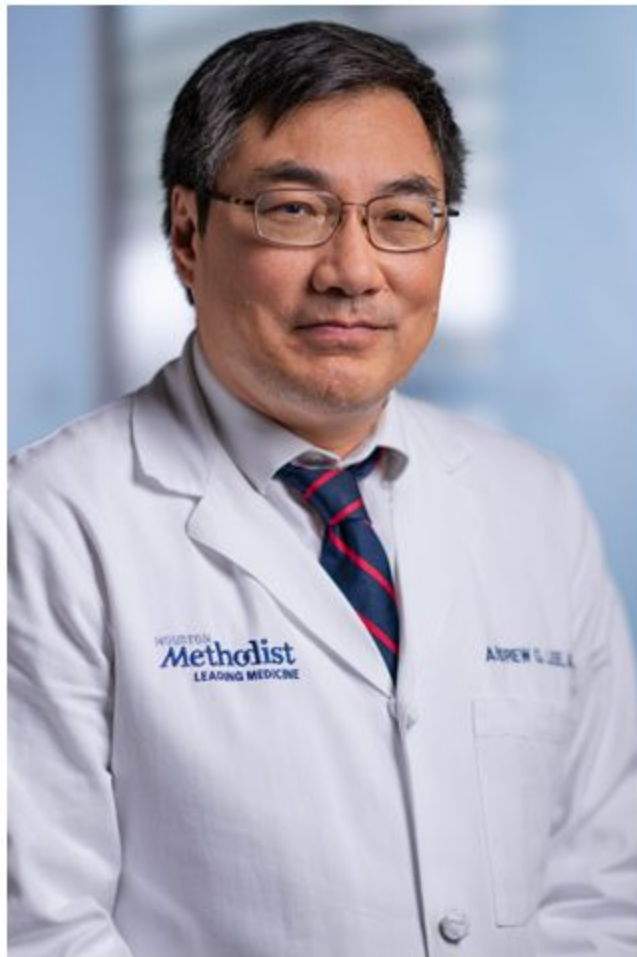


Eye Health for Older Adults

Dr. Andrew Lee, MD
April 16, 2024



SEMINAR INSTRUCTOR



Andrew G. Lee, MD

Herb and Jean Lyman Centennial Chair of Ophthalmology

Blanton Eye Institute

Houston Methodist Hospital

Professor of Ophthalmology, Neurology, and
Neurosurgery at Weill Cornell Medicine



CORNELL University Joan and Sanford I. Weill
UNIVERSITY Medical College

A Fantastic Voyage of Eye Health for Older Adults



- Andrew G. Lee, MD

Methodist

CORNELL UNIVERSITY Joan and Sanford I. Weill Medical College



A Fantastic Voyage of Eye Health for Older Adults

- Andrew G. Lee, MD



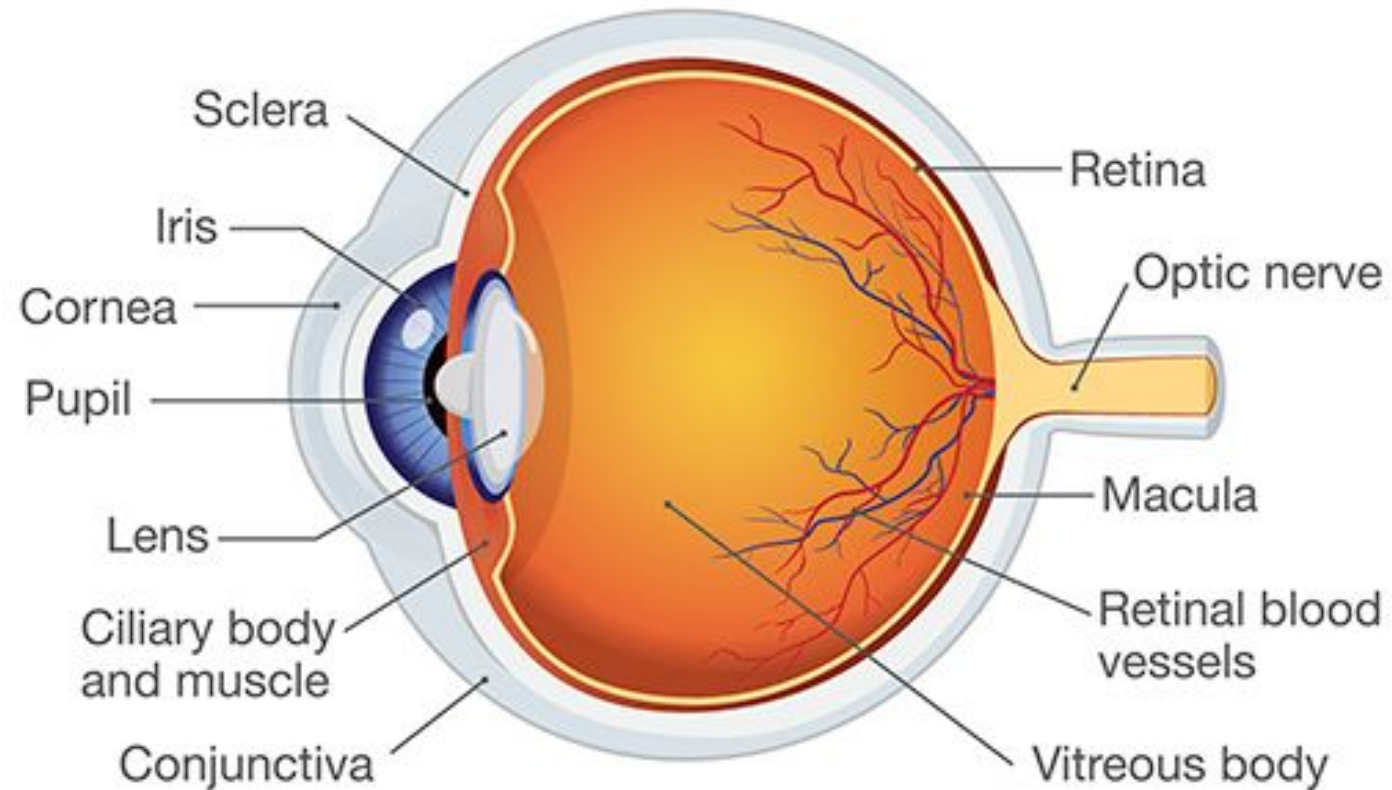
Overview of age-related eye disease

- To review the basic anatomy of the eye
- To review the most common age related eye conditions
 - Age related refractive error (presbyopia)
 - Age related dry eye
 - Age related cataract
 - Age related glaucoma
 - Age related macular degeneration
- To discuss healthy eye care initiatives including screening and preventive measures for elderly patients
- To review the age related sudden visual loss conditions that may require you to go to the hospital

Fantastic Voyage through the eye



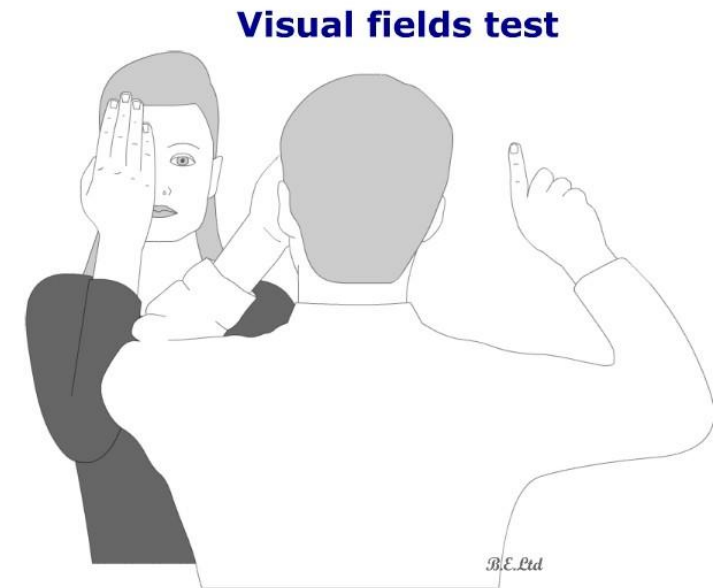
Human Eye Anatomy



On July 20, 1969, I was 5 years old,
the moon landing was on tv....

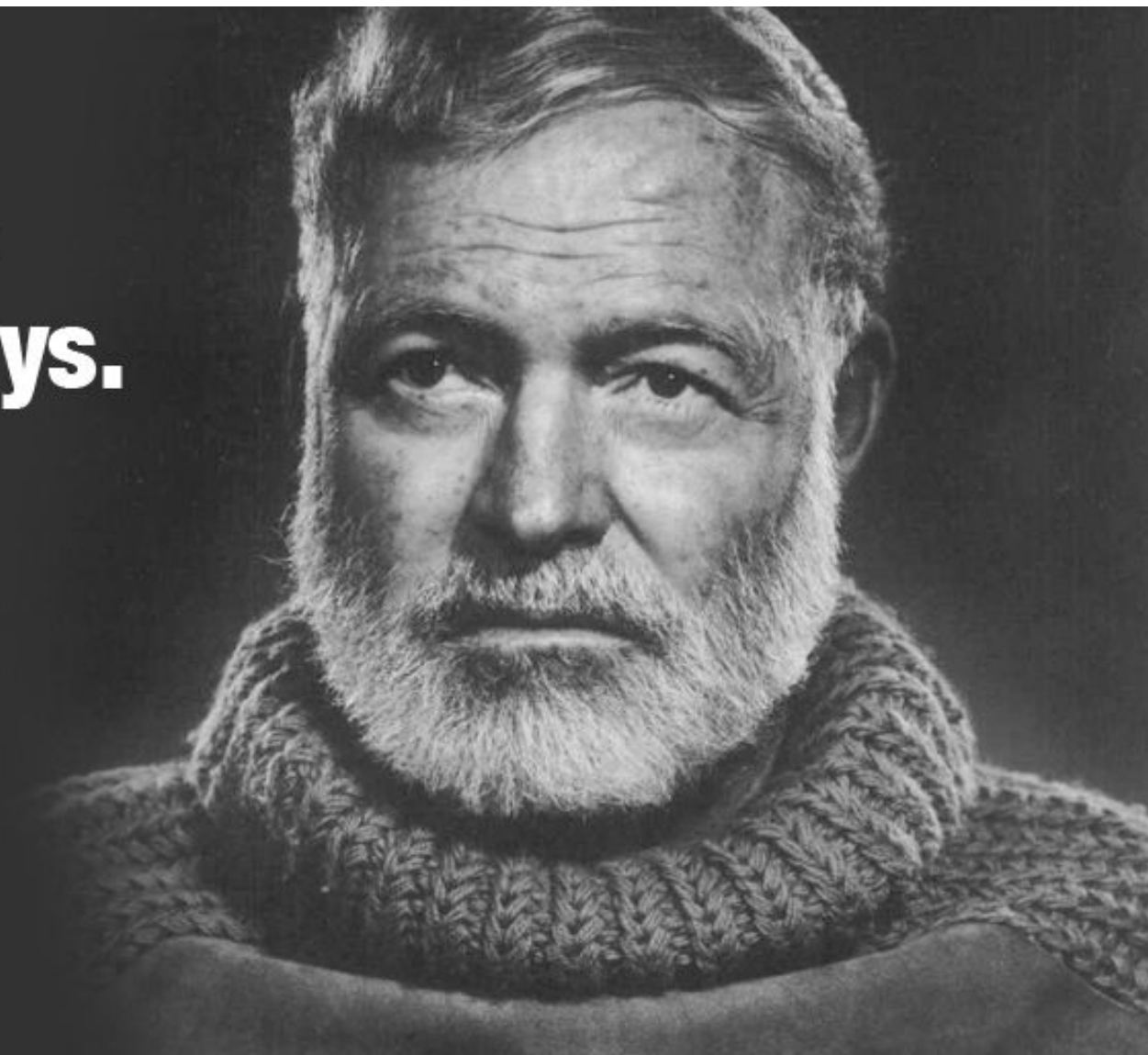


Ophthalmic tools of the trade for non-ophthalmologists



**How did you go
bankrupt? Two ways.
Gradually, then
suddenly.**

Ernest Hemingway



You need to be an advocate for your own eye care health

Vision and Primary Care

AMONG ADULTS AGE 50-80 WHO RECEIVED REGULAR CHECK-UPS

Does your primary health care provider ask you about your vision?

42% Yes

58% No



Our most common eye diseases are all age related

Dry eye

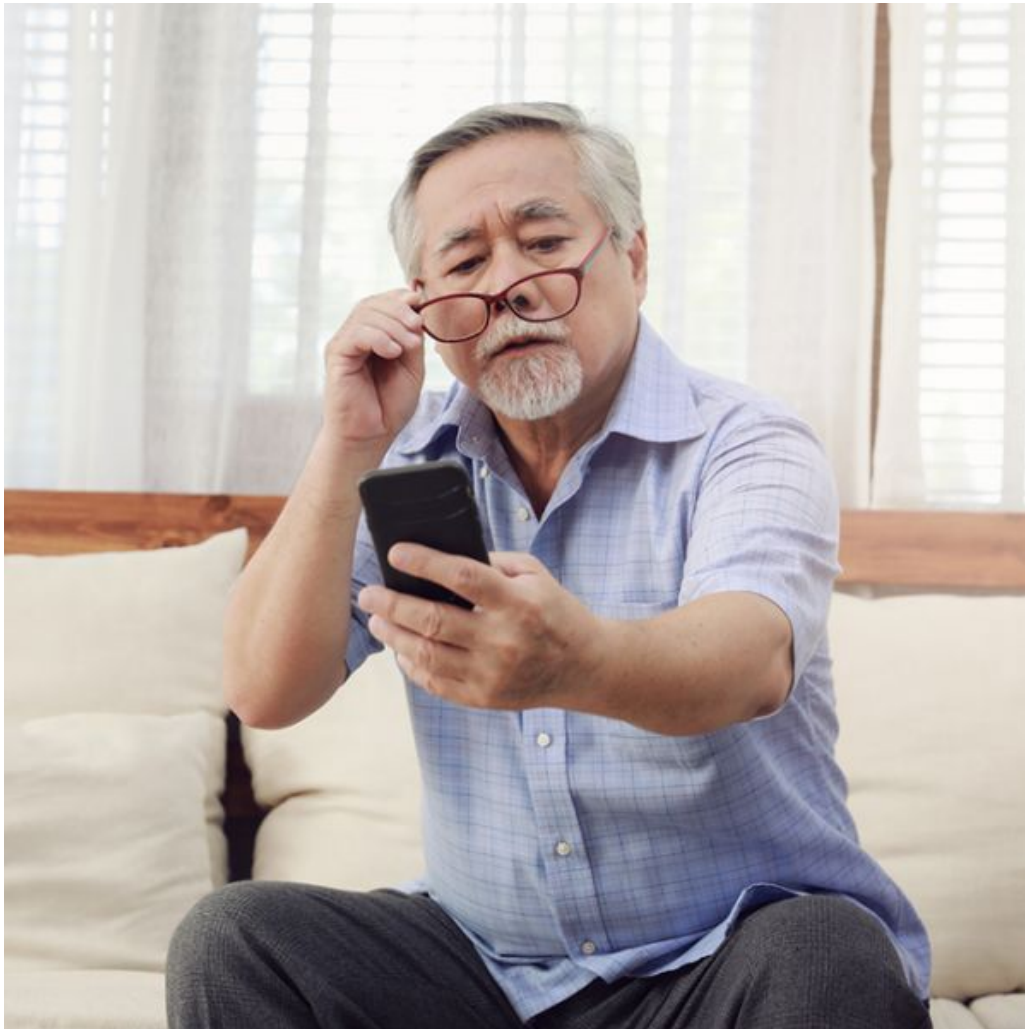
Refractive
Errors

Cataracts

Age-related
Macular
Degeneration

Glaucoma

What is presbyopia? (I need reading glasses)



What are the symptoms of presbyopia

Symptoms of Presbyopia



Headaches



Blurred vision
close-up



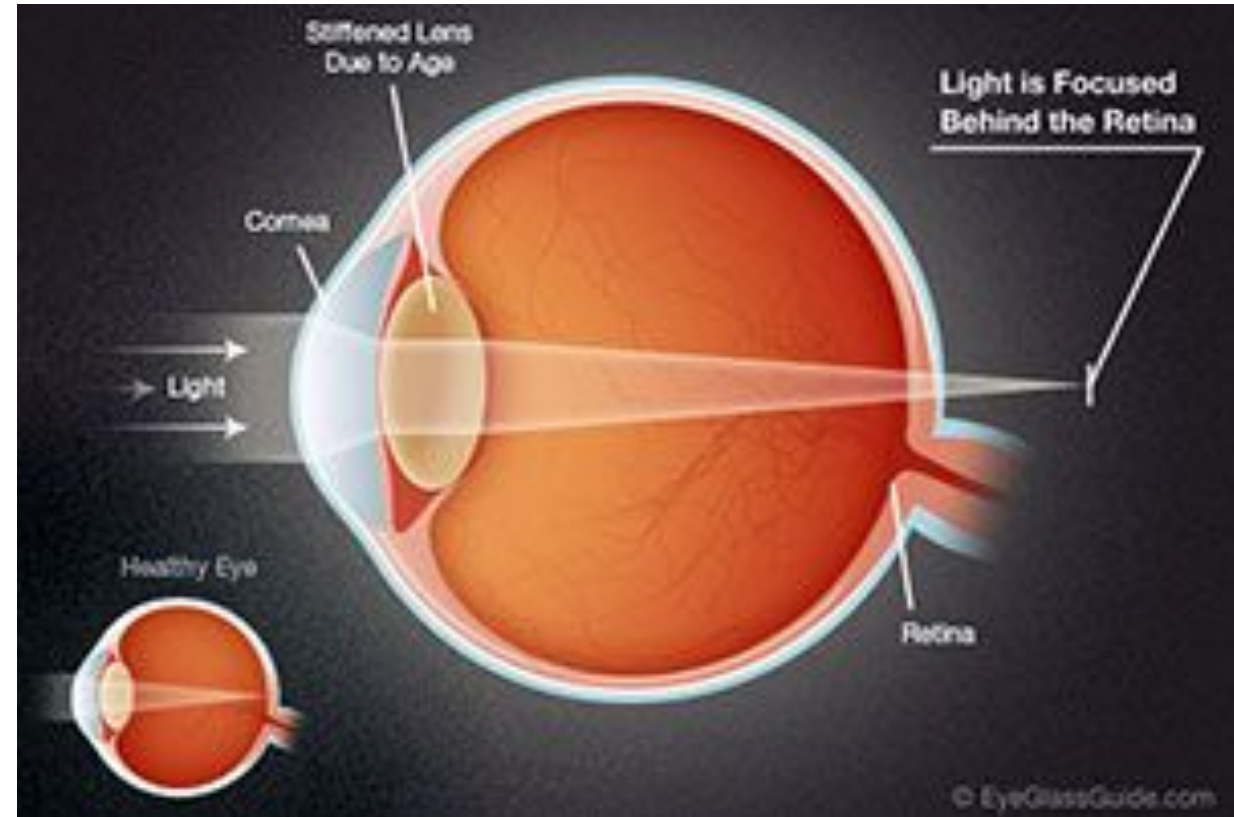
Require distance
when reading

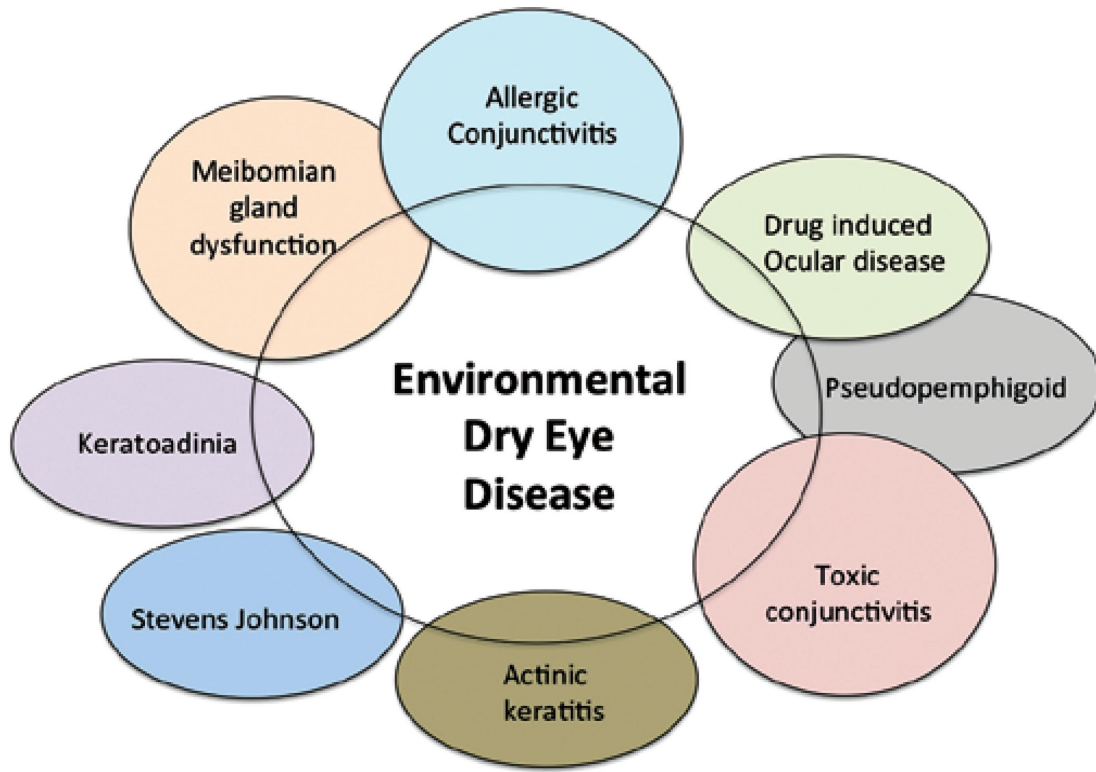


Blurred vision

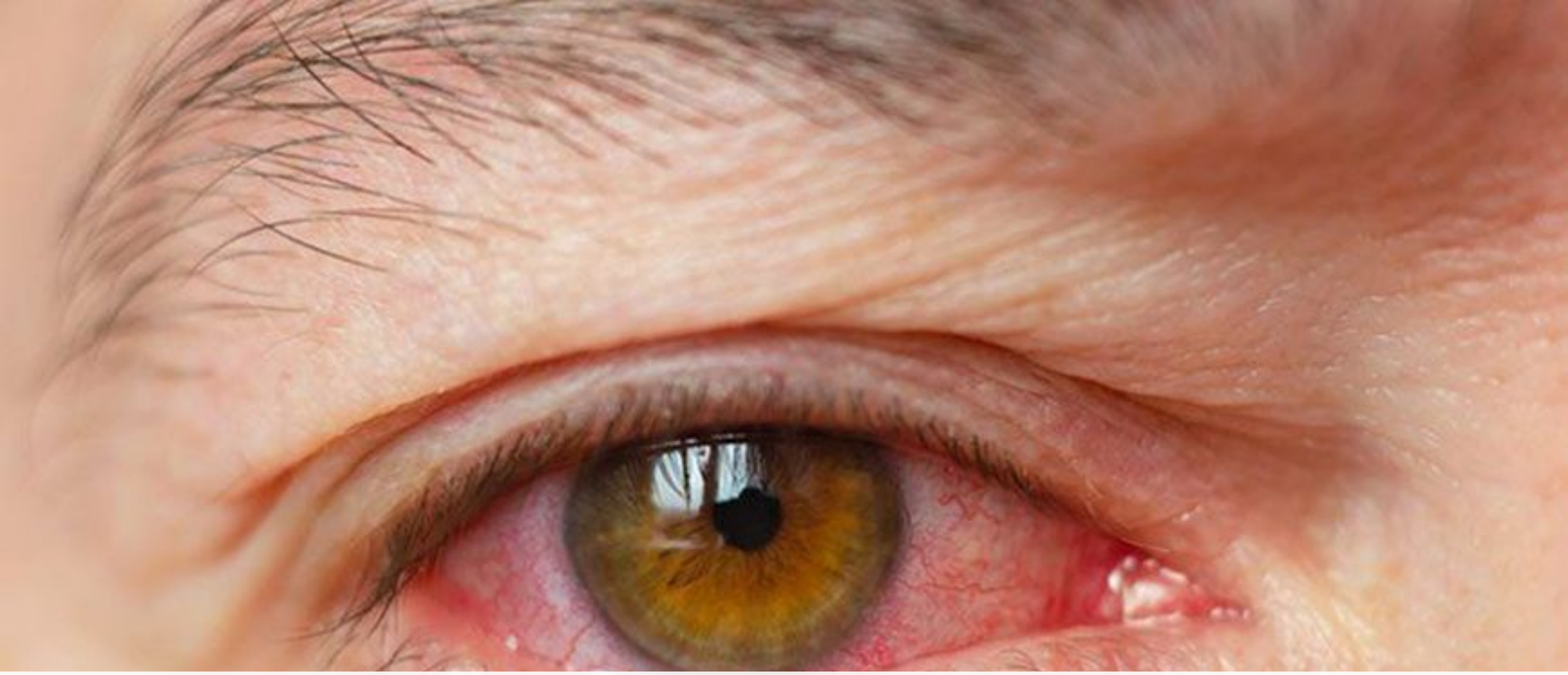


Eye strain





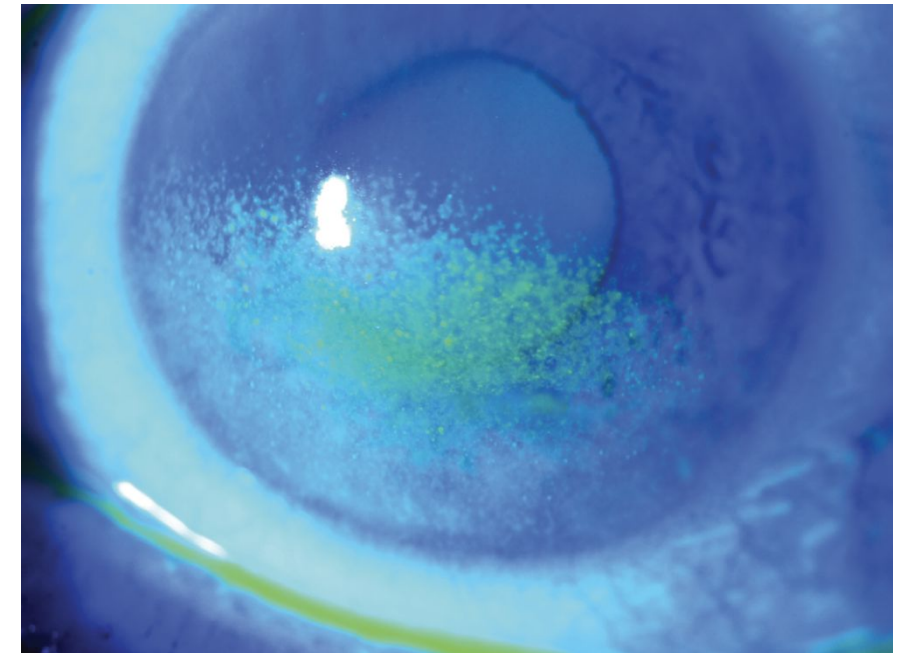
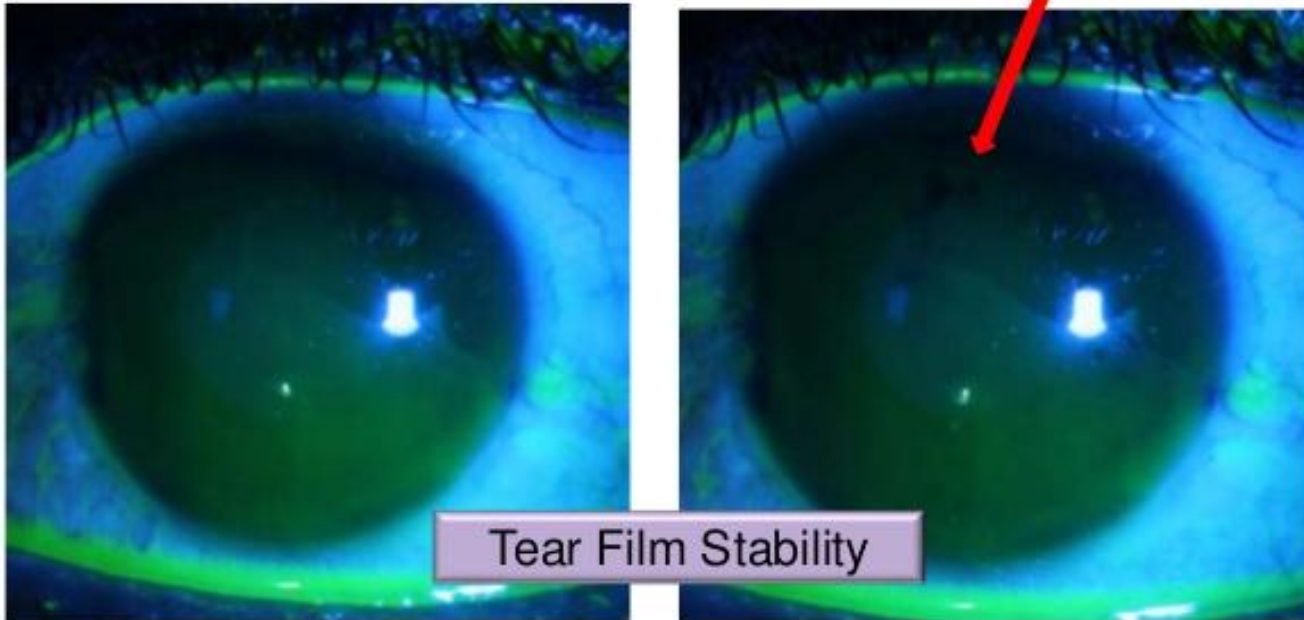
Dry eye is common in elderly



What do you feel with dry eye syndrome?

What is your eye doctor looking for?

Tear Film Evaluation-
Tear Film Breakup Time



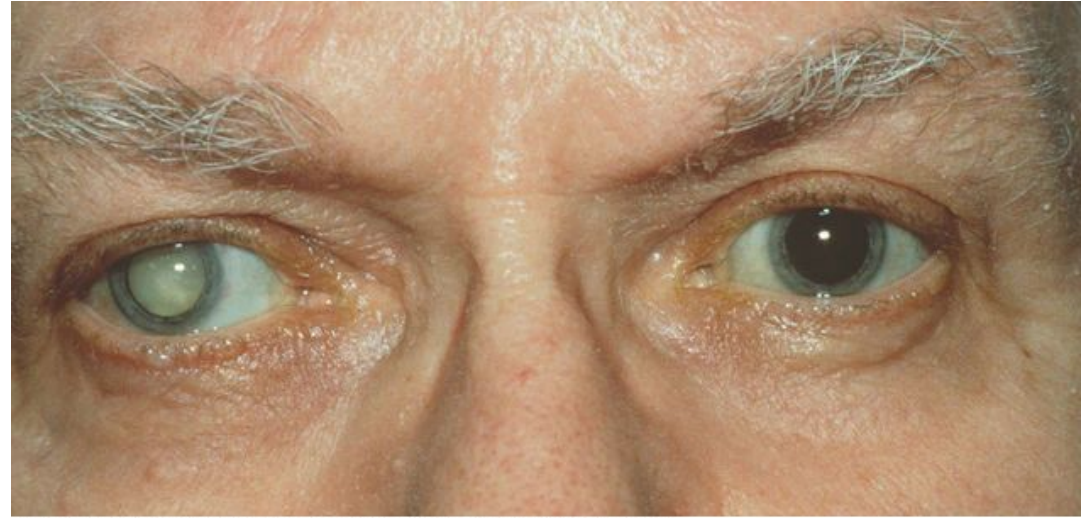
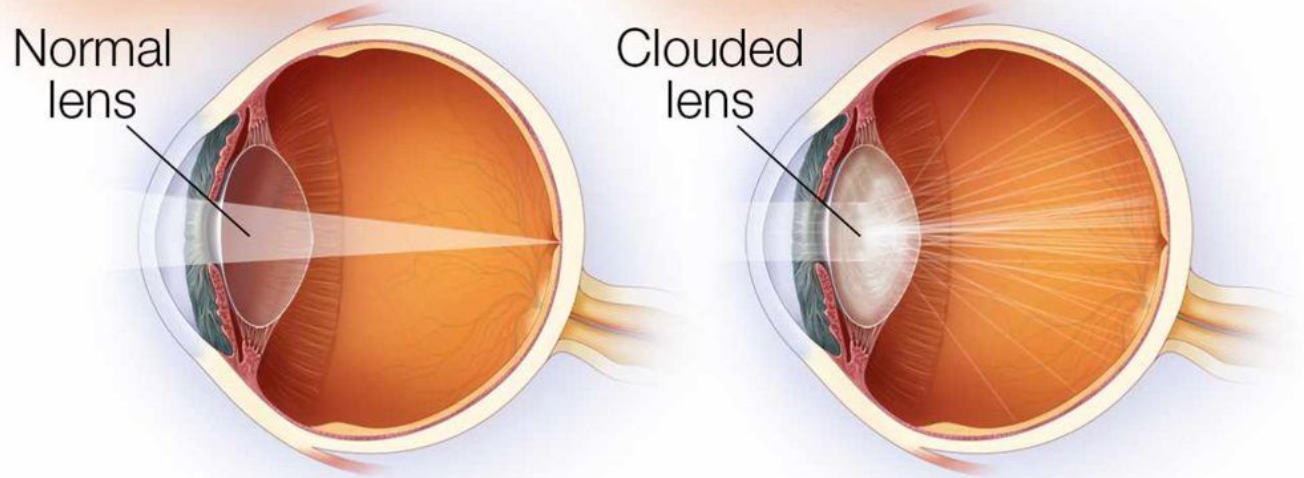
Normal

Eye with cataract



Normal lens

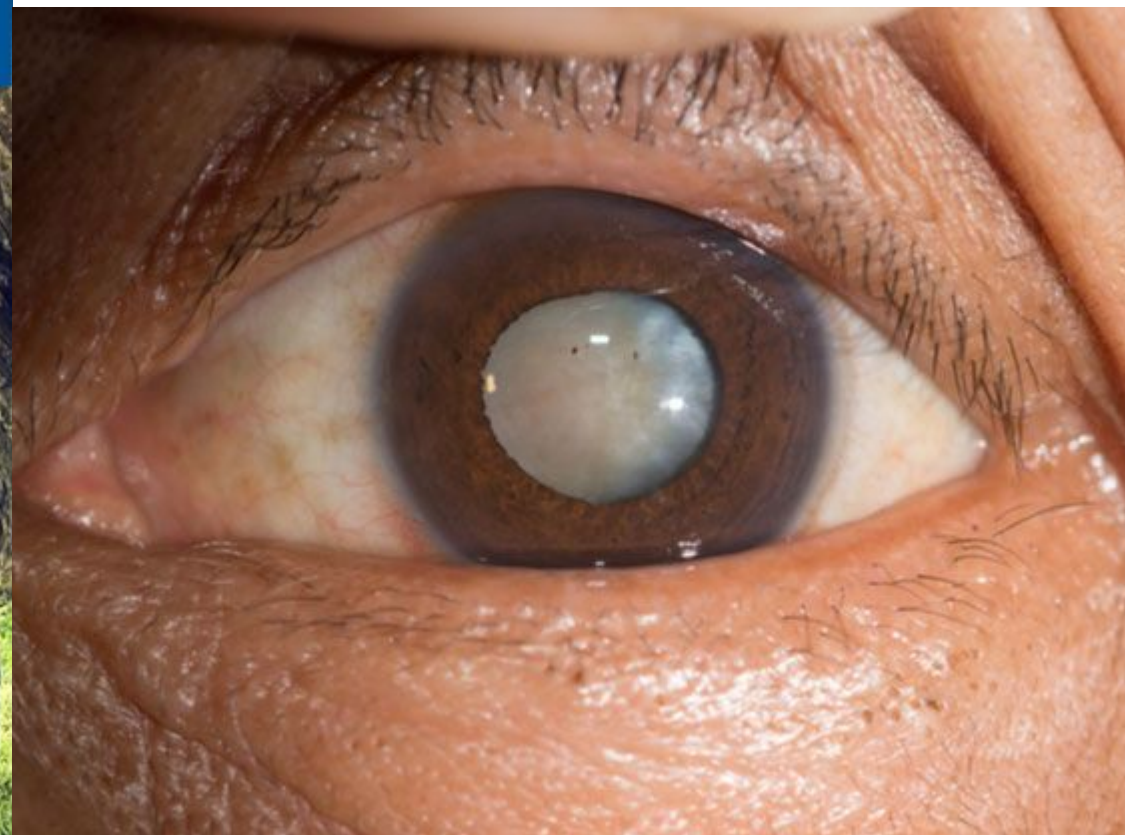
Clouded lens



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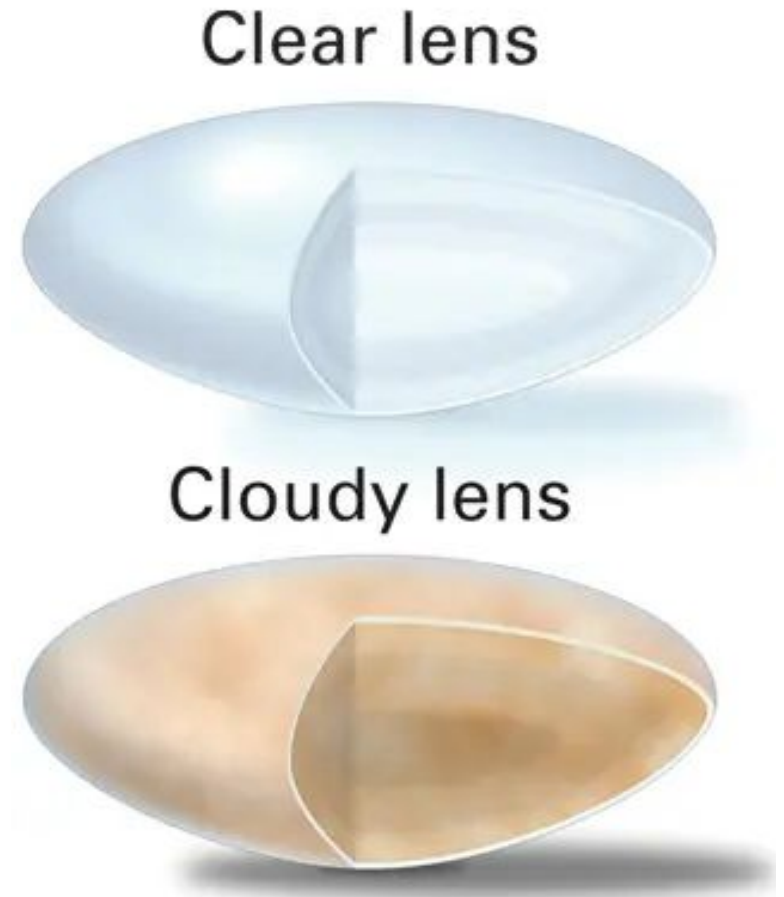
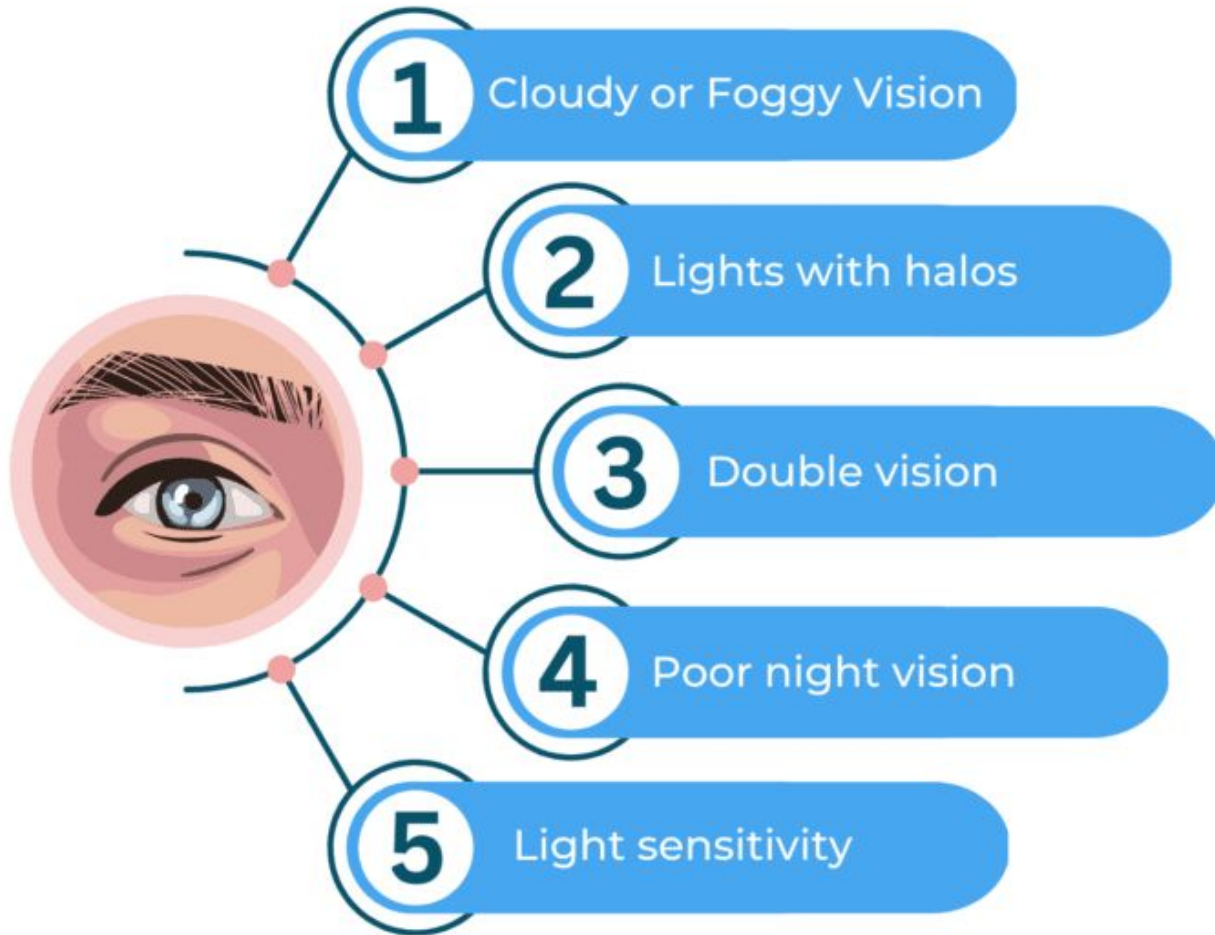
BY AGE 80, MORE THAN HALF OF ALL AMERICANS WILL HAVE CATARACT.*



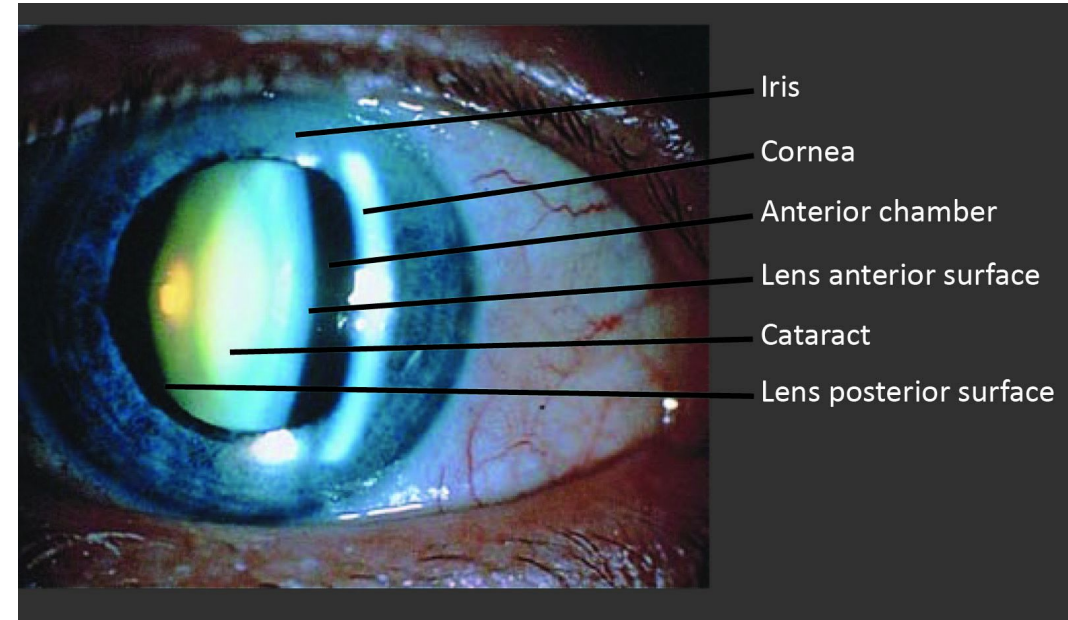
Learn more about symptoms and treatment options at [PreventBlindness.org/cataract](https://www.PreventBlindness.org/cataract)

*Vision Problems in the U.S. Report

What are your symptoms with cataract?



What is your eye doctor looking at when you have a cataract?



What can you do to prevent cataract?



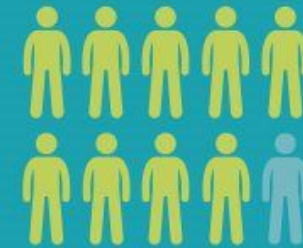
Nearly 70%
simply accept cataracts
as a natural part of aging³

50% said they never
realized how much they were
missing in their lives until
after the surgery²



More than half
are afraid of eye surgery
more than any other kind
of surgical procedure³

**Almost 90% of
adults** age 60+ who under-
went cataract surgery said they
realized that their worries about
the surgery and recovery
process were unfounded²



1 in 5 think there are
non-surgical treatment
options for cataracts³

Surgery is the only way to
correct cataracts. Nearly
4 million Americans
undergo the brief procedure each year, and
many are able to quickly resume their lives^{4,5}



Tips To Prevent CATARACT

Control Your Blood Sugar Level:

It is vital to maintain proper glycemic control because a high blood sugar level can also cause potential eye disorder.

Stay Hydrated: It is important to stay hydrated, an inadequate amount of water in the body can lead to developing the condition of cataracts.

1

Safety from UV Rays: UV radiation can increase the risk of developing cataracts. You can wear photochromatic lenses, polarized sunglasses or UV blocking contact lens to protect your eyes.

2

3

Improve Your Diet: You should always follow a healthy diet plan and include greens like broccoli, spinach, asparagus, and Brussels sprouts to reduce the risk of cataracts.

4

5

Visit An Eye Doctor: Your eye doctor will identify symptoms of cataracts and will help you prevent the progression of further symptoms.

Glaucoma causes silent visual field loss

NORMAL VISION



EARLY GLAUCOMA



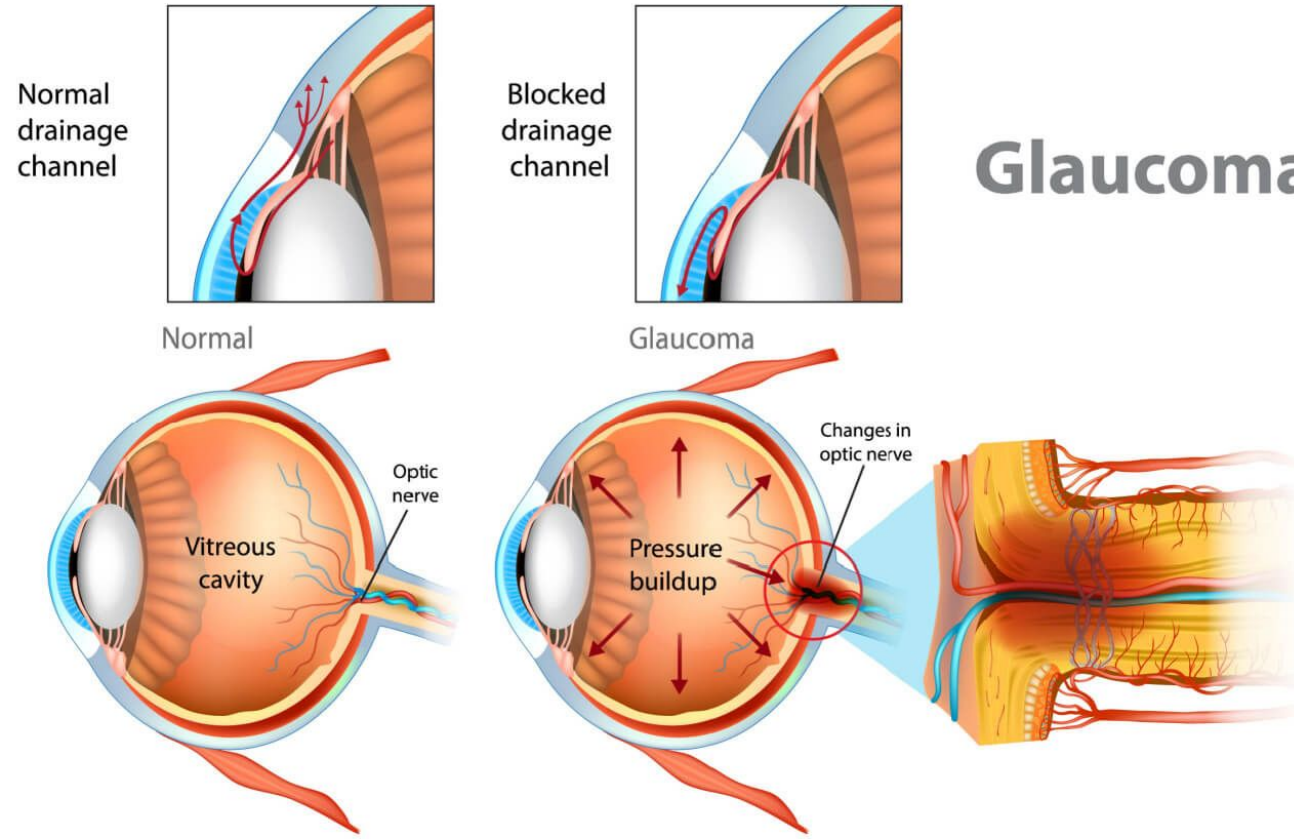
ADVANCED GLAUCOMA



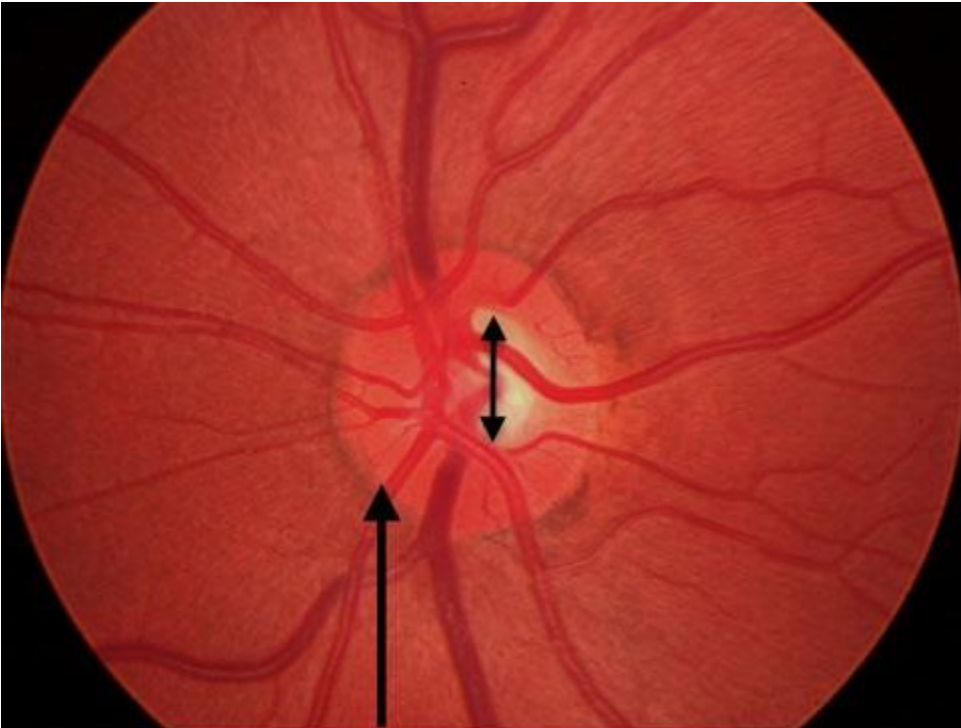
EXTREME GLAUCOMA



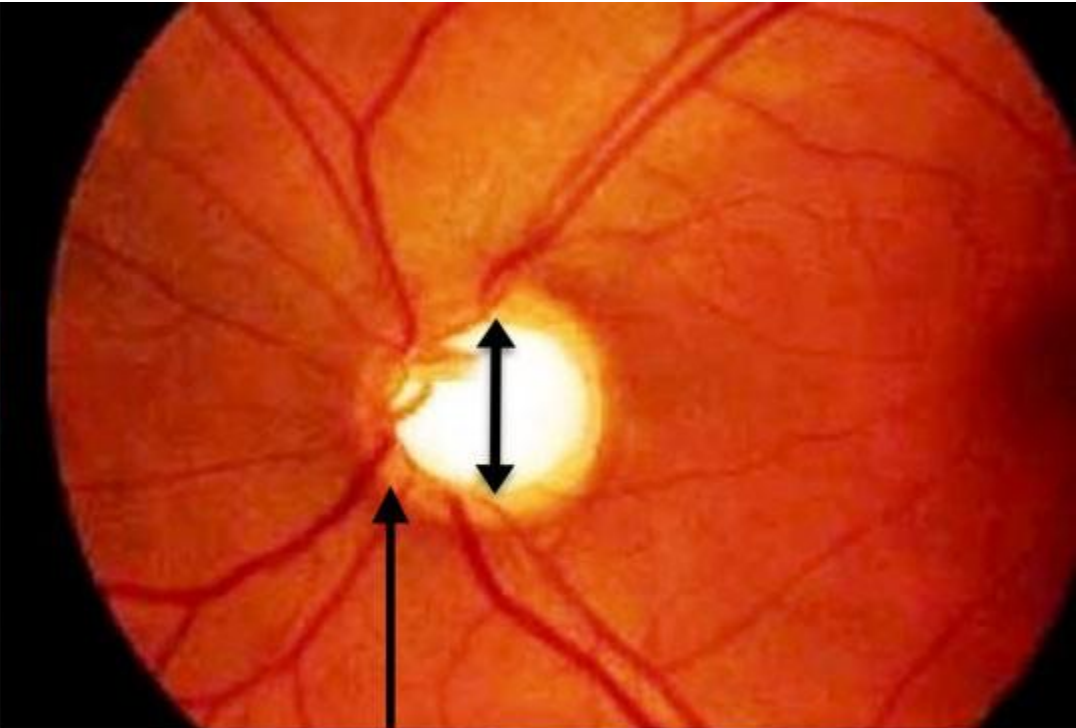
What is glaucoma?



What is my eye doctor looking for in glaucoma?

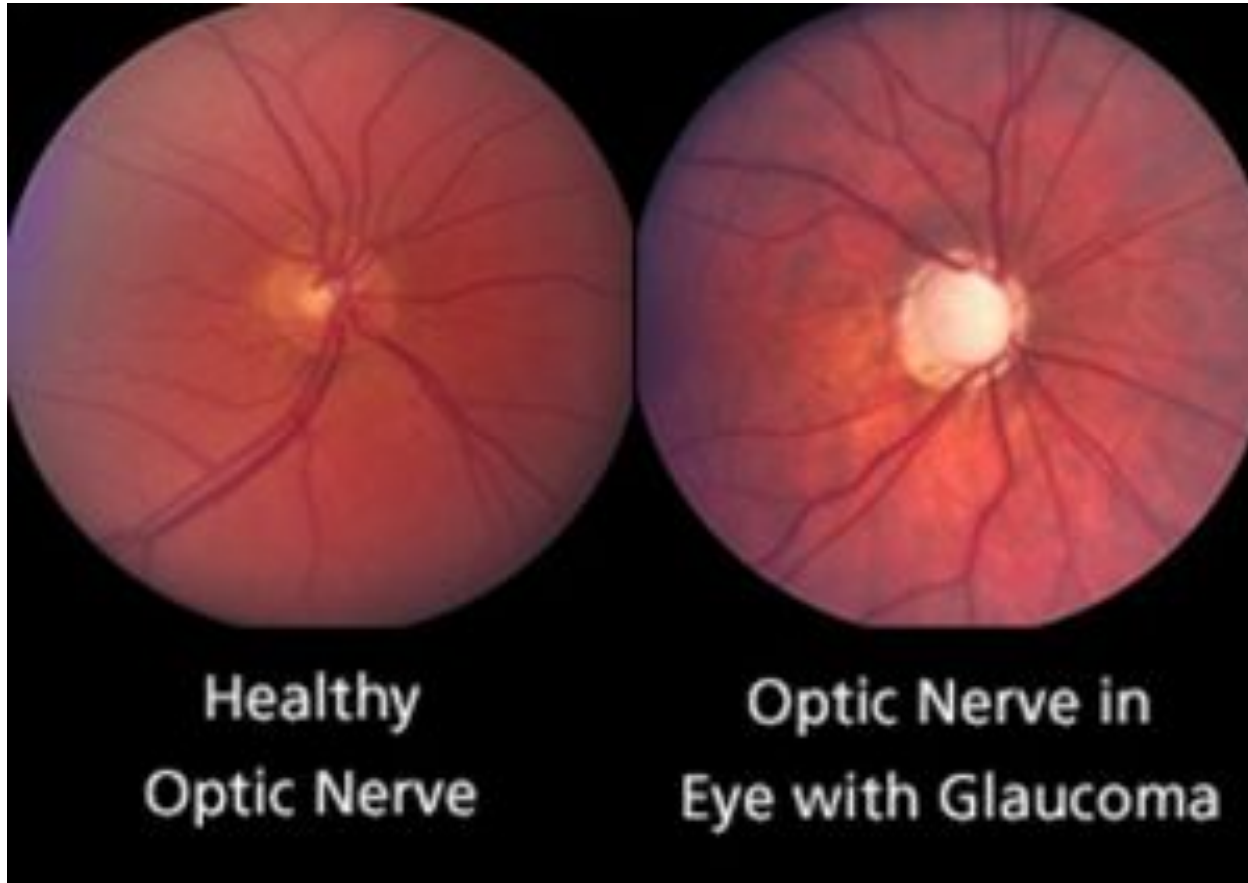


Normal optic nerve head

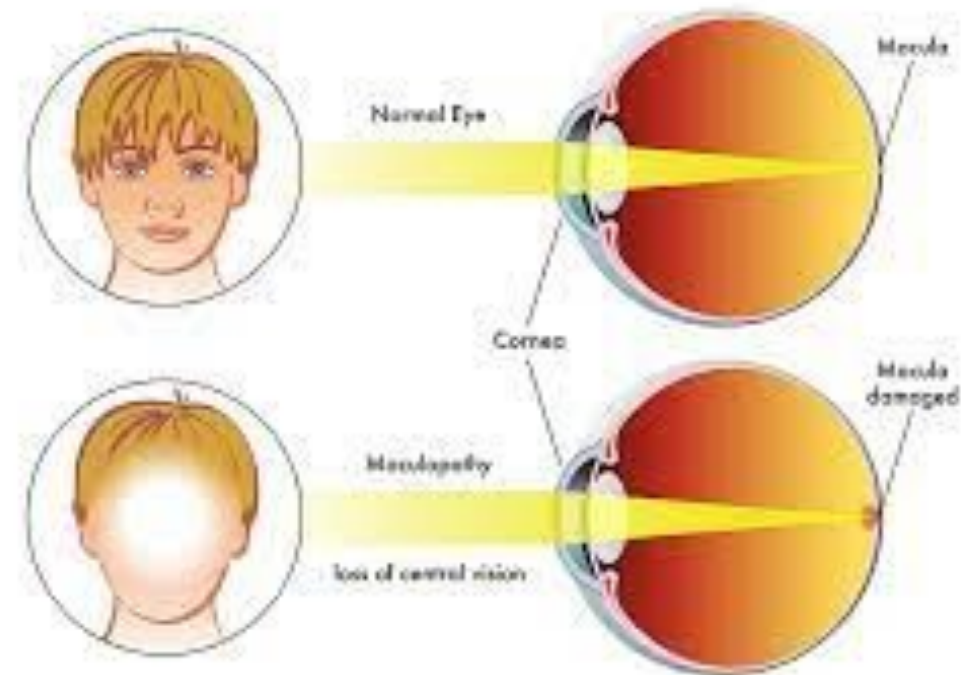
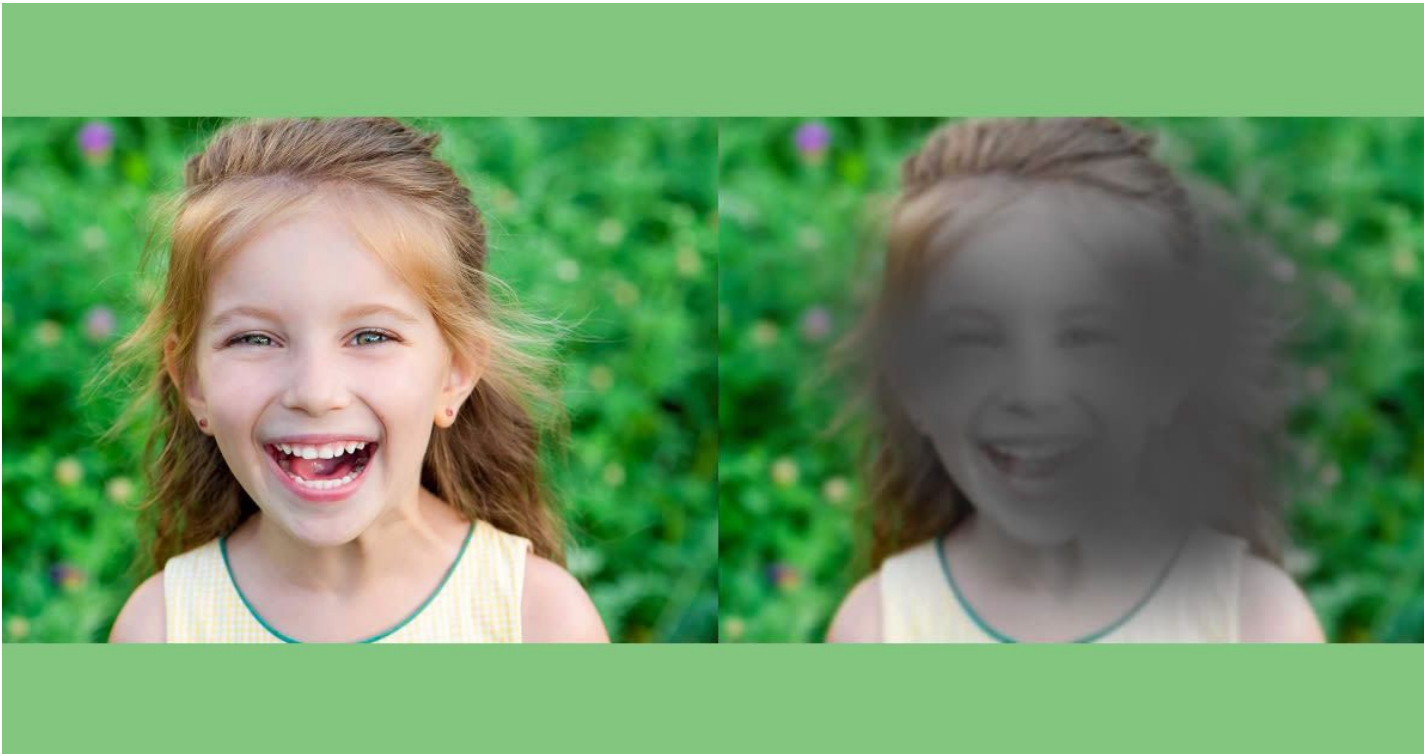


Glaucomatous cupping

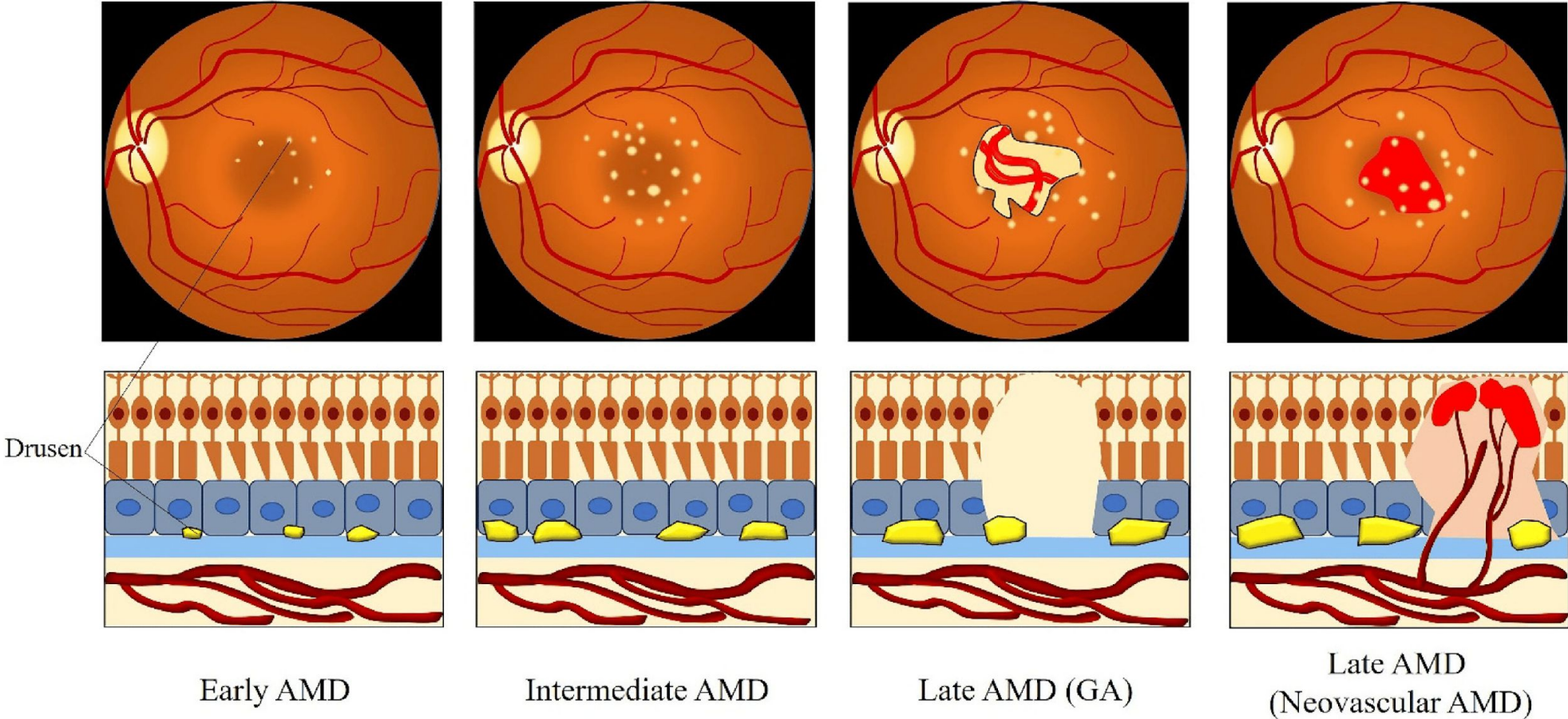
Cup to disc ratio: Donut/donut hole



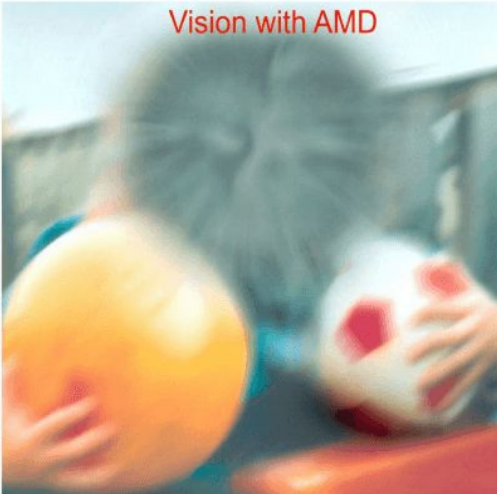
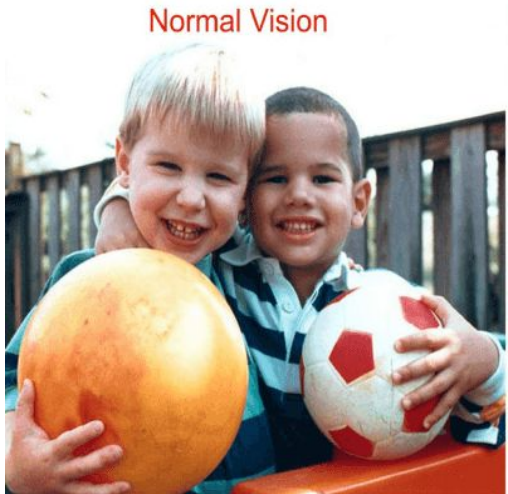
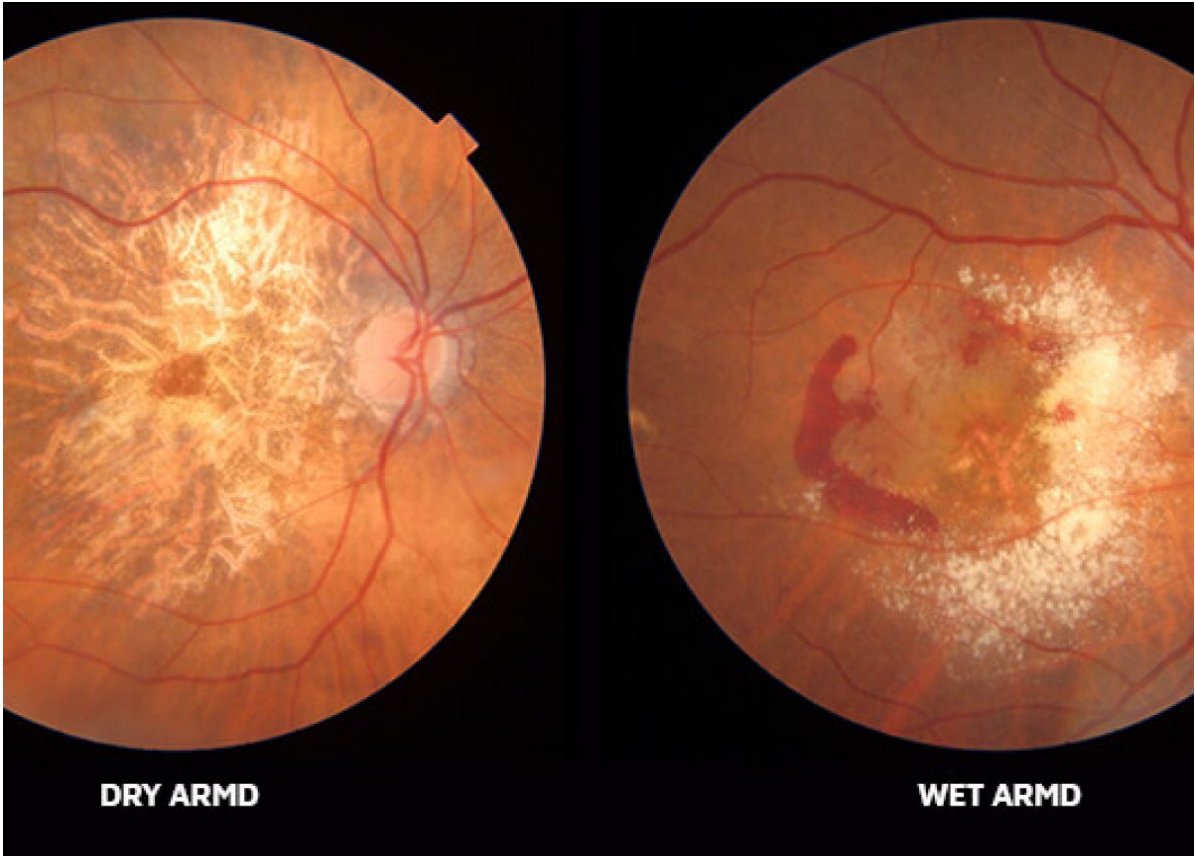
What are the symptoms of age related macular degeneration?



Age related macular degeneration



Age related
macular
degeneration
(ARMD)



Home Remedies and Lifestyle Changes for AMD



Limit foods high in saturated fats



Eat a heart-healthy diet



Manage blood pressure and weight



Use sun protection

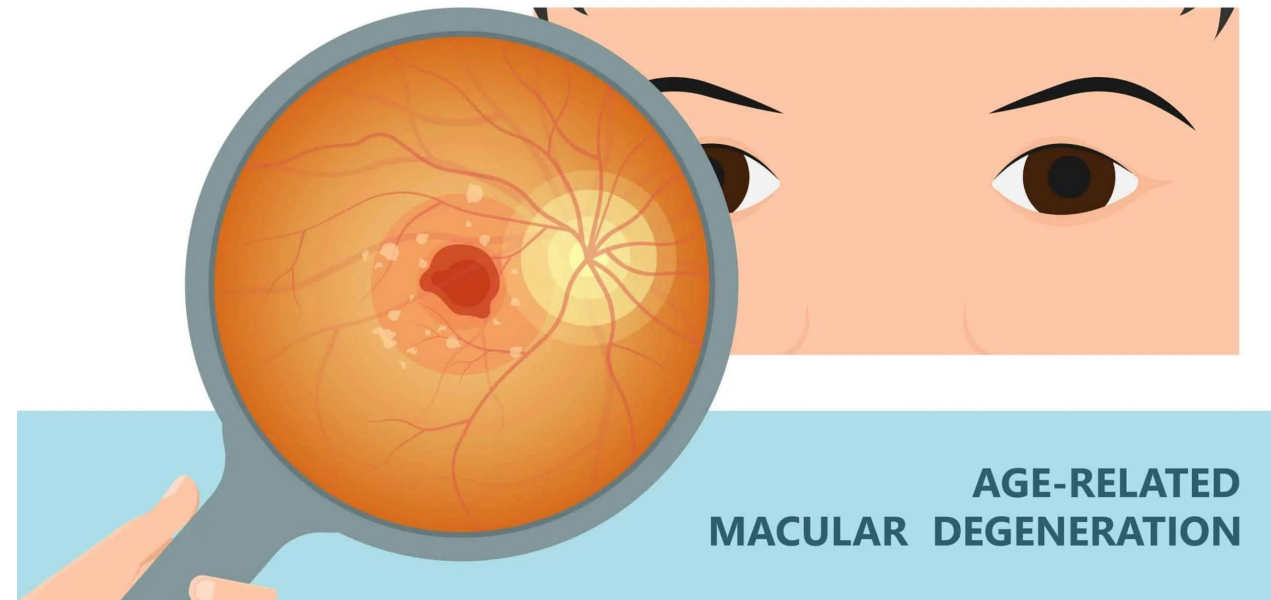


Exercise regularly



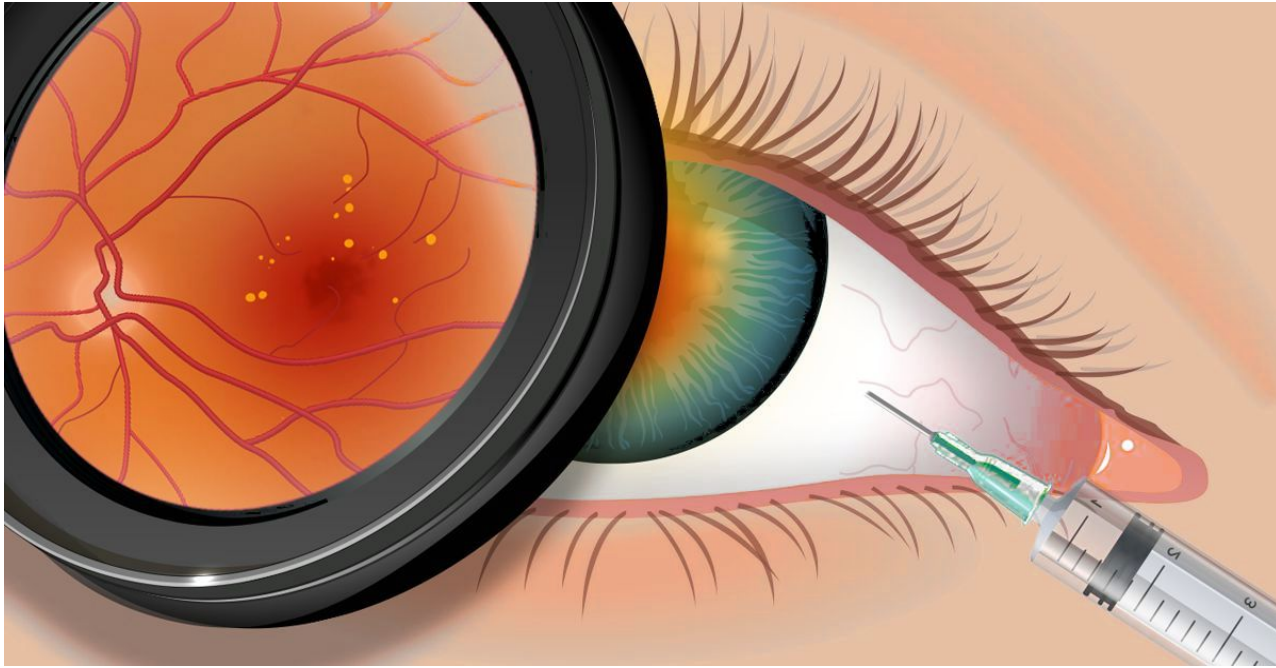
Quit smoking

What can I do to reduce my risk of AMD?



AREDS vitamins: Ask your doctor

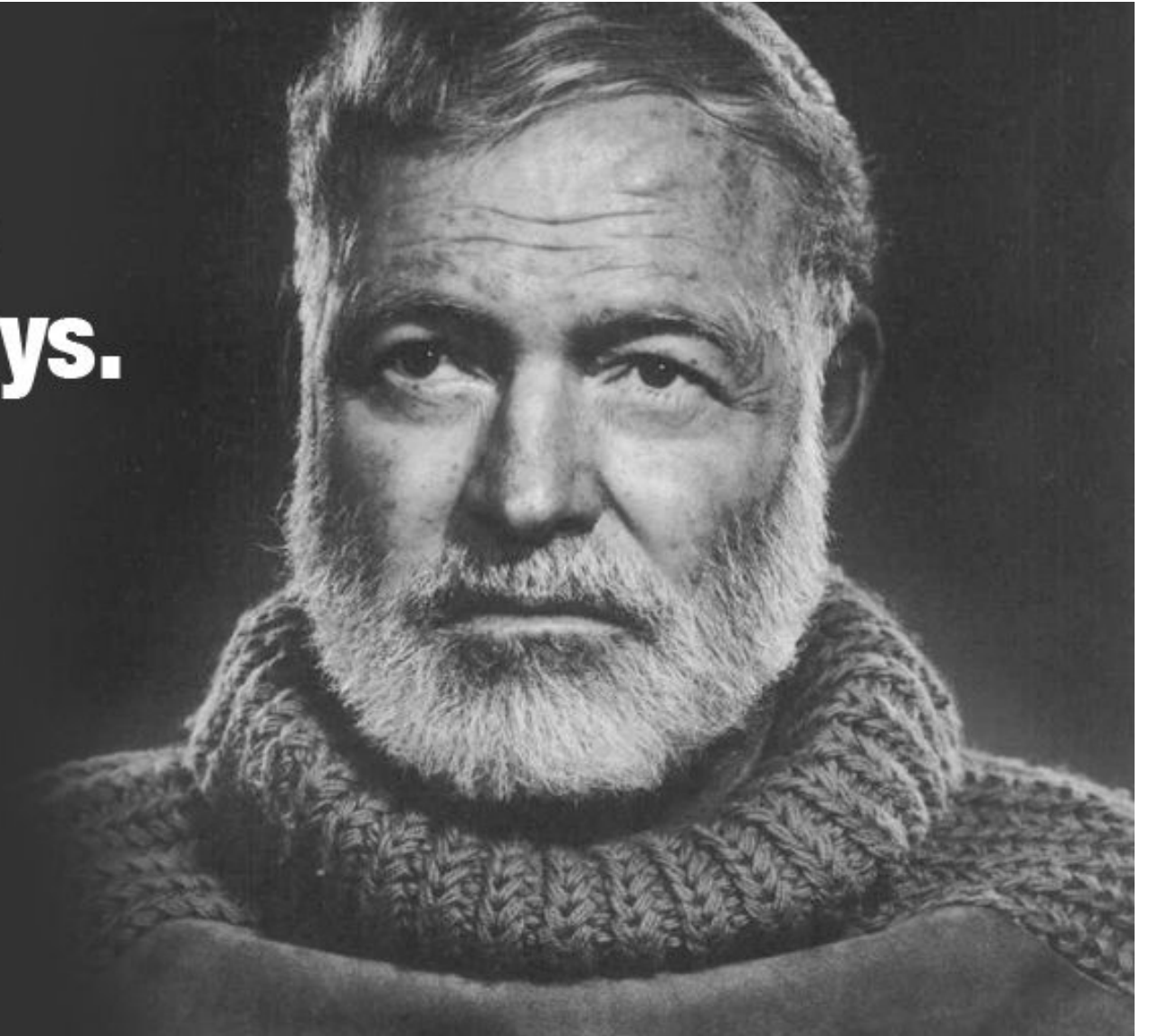




What is the treatment for the “wet form”
(Intravitreal injection for wet ARMD)

**How did you go
bankrupt? Two ways.
Gradually, then
suddenly.**

Ernest Hemingway



What should I do if I have sudden visual loss in one eye?

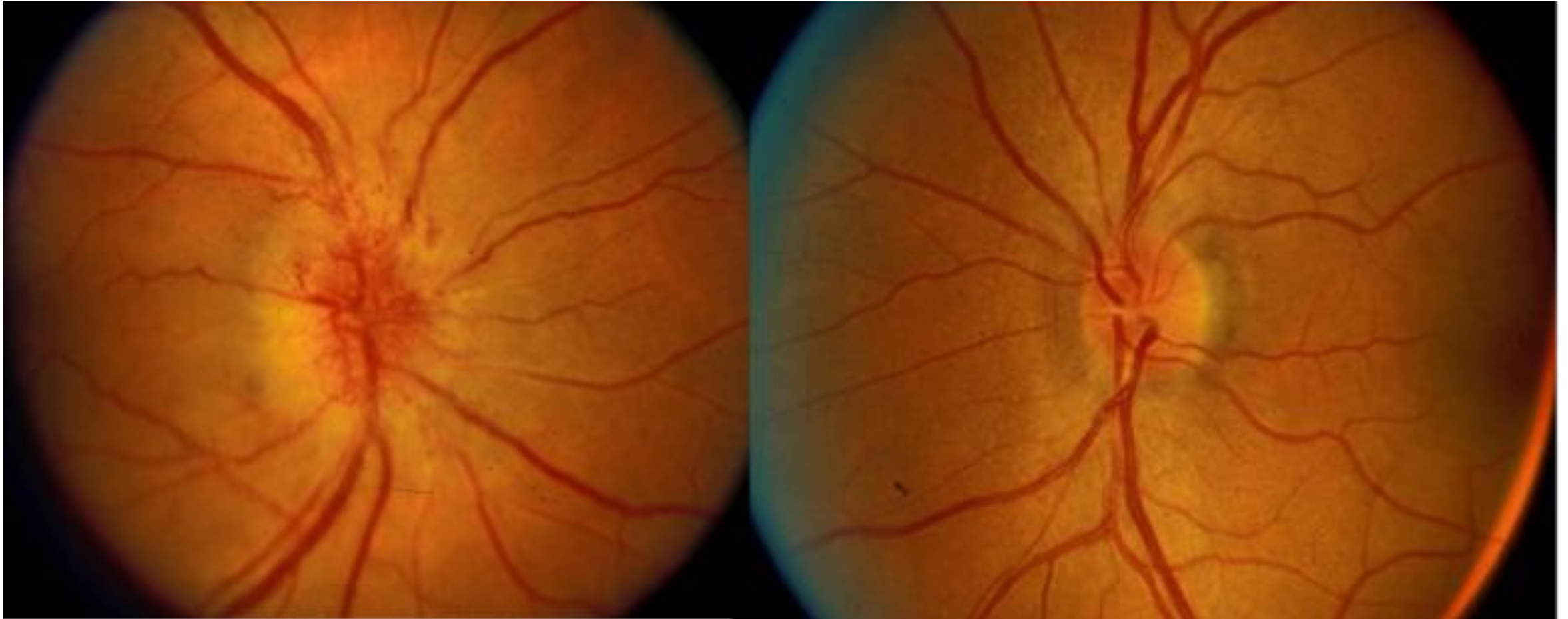
- In elderly patients the most common cause of an acute, unilateral, loss of vision from optic nerve disease is a stroke called non-arteritic anterior ischemic optic neuropathy (NAION)
- If is a retinal cause (e.g., central retinal artery or vein occlusion, retinal detachment) then you need to go to the ER
- You need an eye exam to decide if it is a stroke

Non-arteritic anterior ischemic optic neuropathy (NAION): a small vessel “stroke in the optic nerve”

- Vasculopathic patient
- Acute, unilateral loss of vision
- Decreased visual acuity
- Decreased peripheral visual field
- Swollen optic nerve in affected eye
- Refer



What is your doctor looking for in NAION:
one disc is swollen



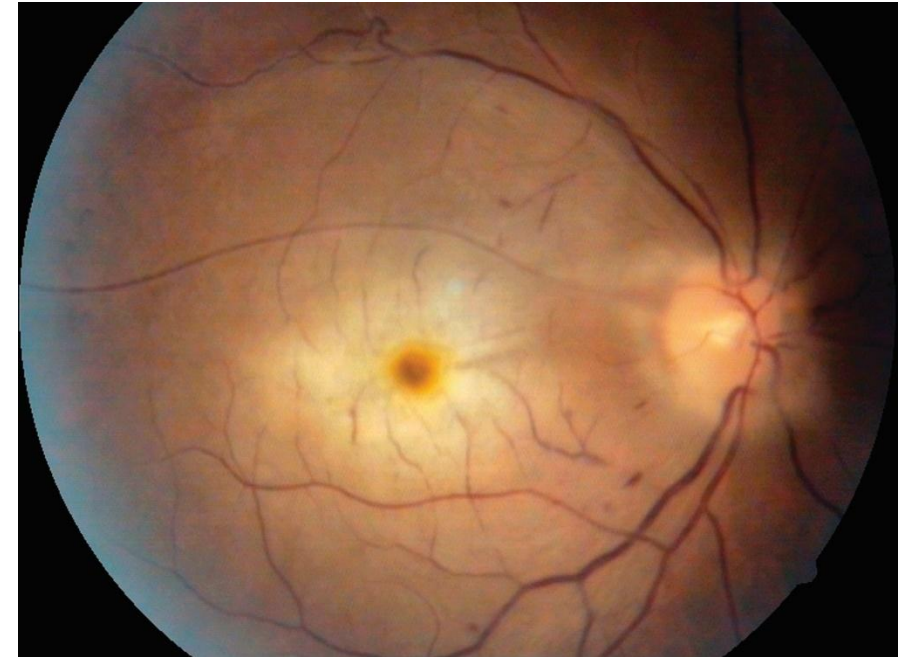
It could be a stroke in your eye



Management of Acute Retinal Ischemia

Follow the Guidelines!

Valérie Blouisse, MD,^{1,2} Fadi Nahab, MD,^{2,3} Nancy J. Newman, MD^{1,2,4}



Typical Central Retinal Artery Occlusion (CRAO) appearance



Stroke of the eye
(CRAO) is a stroke

- Needs stroke work up
- By stroke doctor
- At stroke center
- For stroke

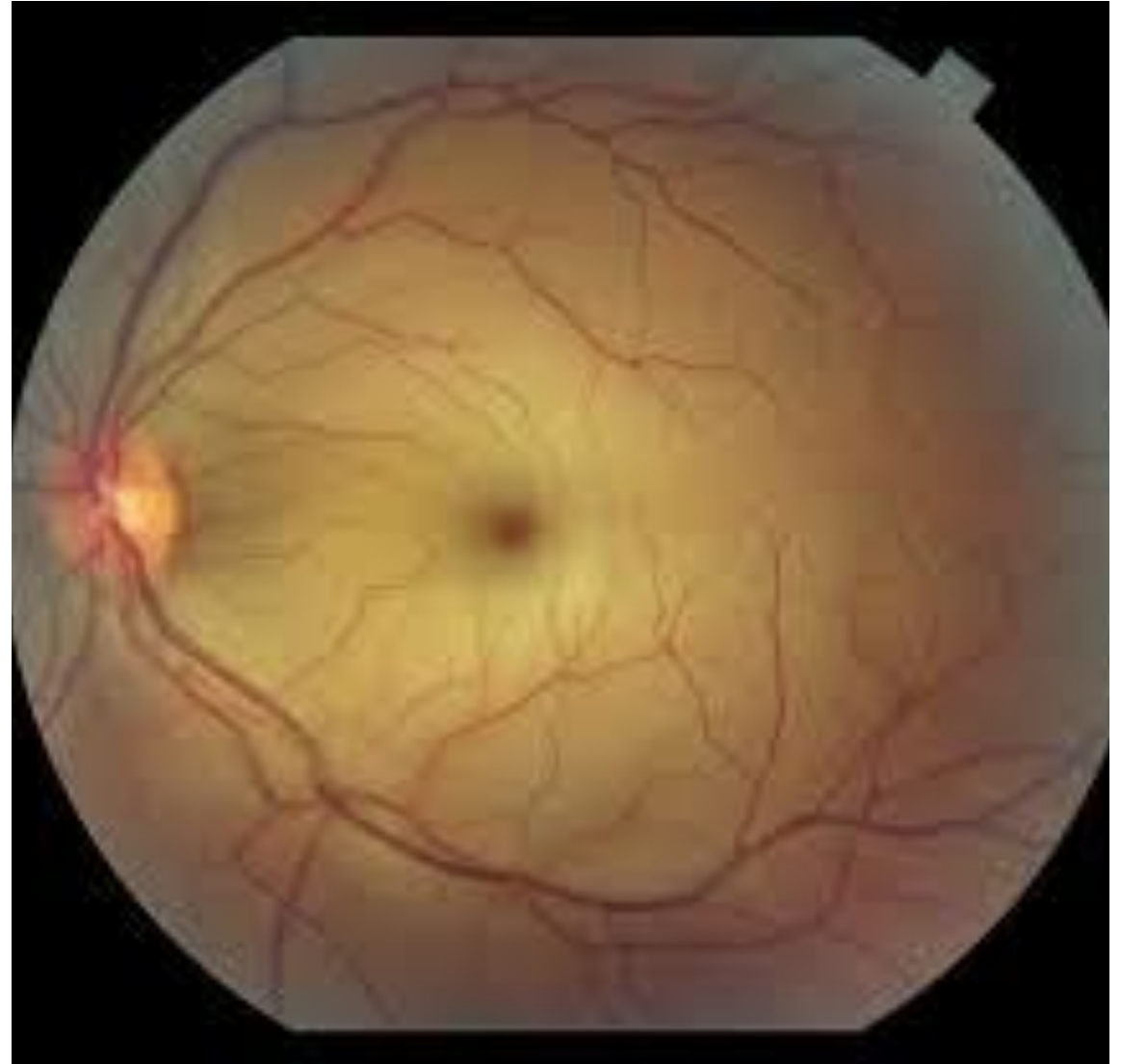


TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.

Tier	Capability
Acute Stroke Ready Hospital (ASR)	Able to initiate tissue plasminogen activator (tPA) prior to transfer to a higher-level stroke center
Primary Stroke Center (PSC)	Have protocols and specific care pathways for patients with stroke
Thrombectomy-Capable Stroke Center (TSC)	Able to initiate tPA and provide endovascular treatment
Comprehensive Stroke Center (CSC)	Can initiate tPA, provide endovascular surgery, and neurocritical care with stroke-specific protocols and care pathways.



The Joint Commission[®]



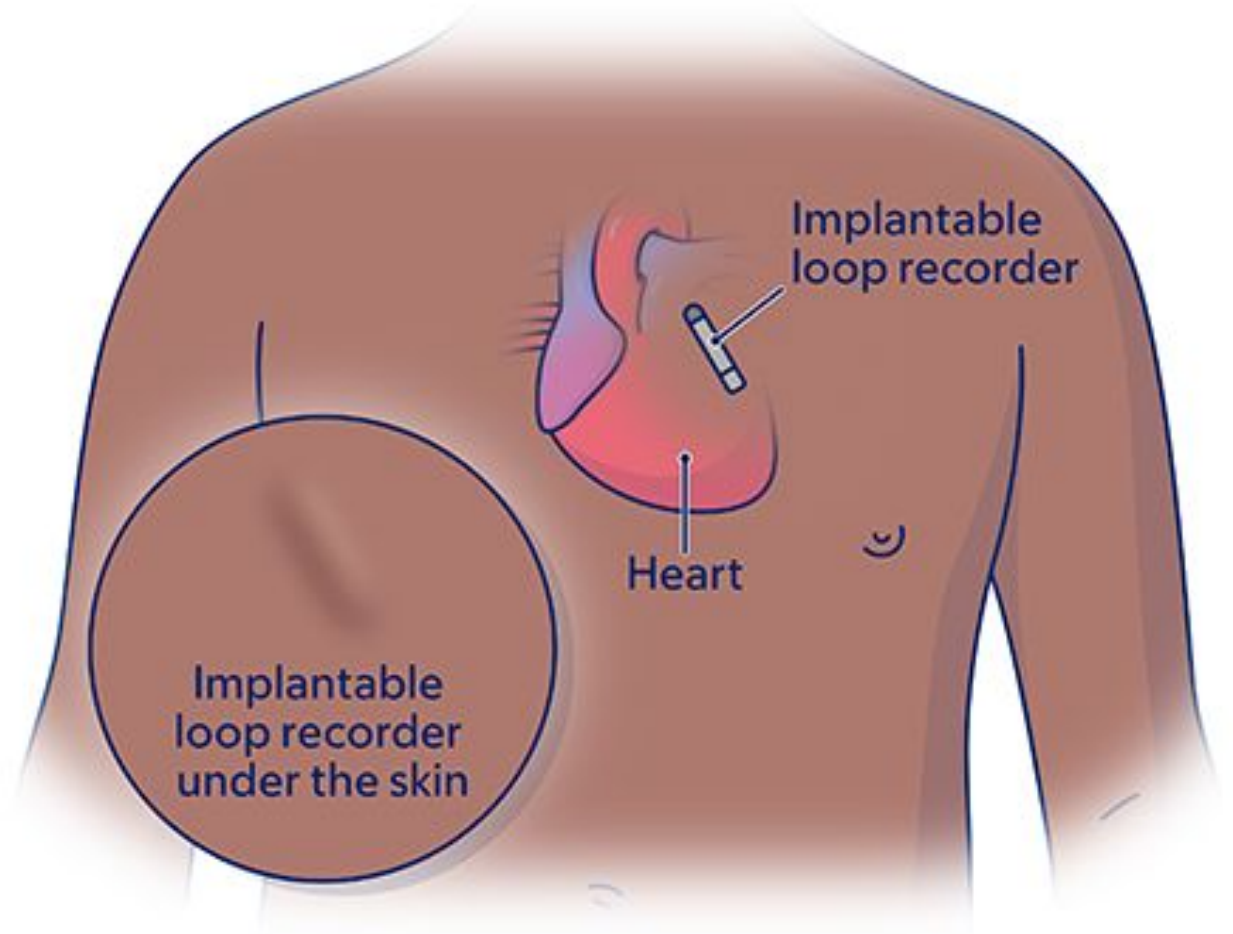
American Heart Association[®]
American Stroke Association[®]

C E R T I F I C A T I O N

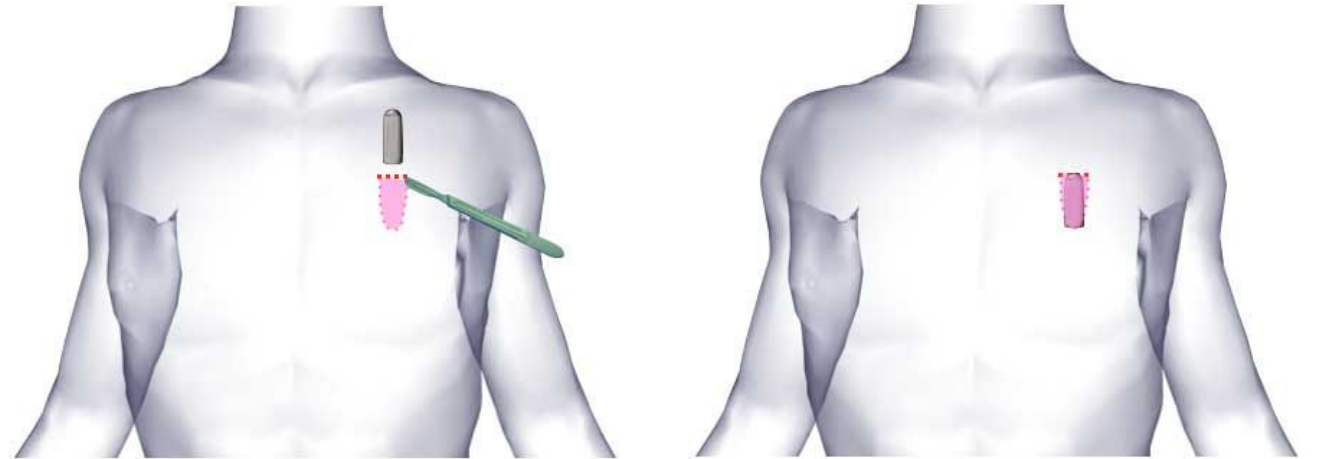
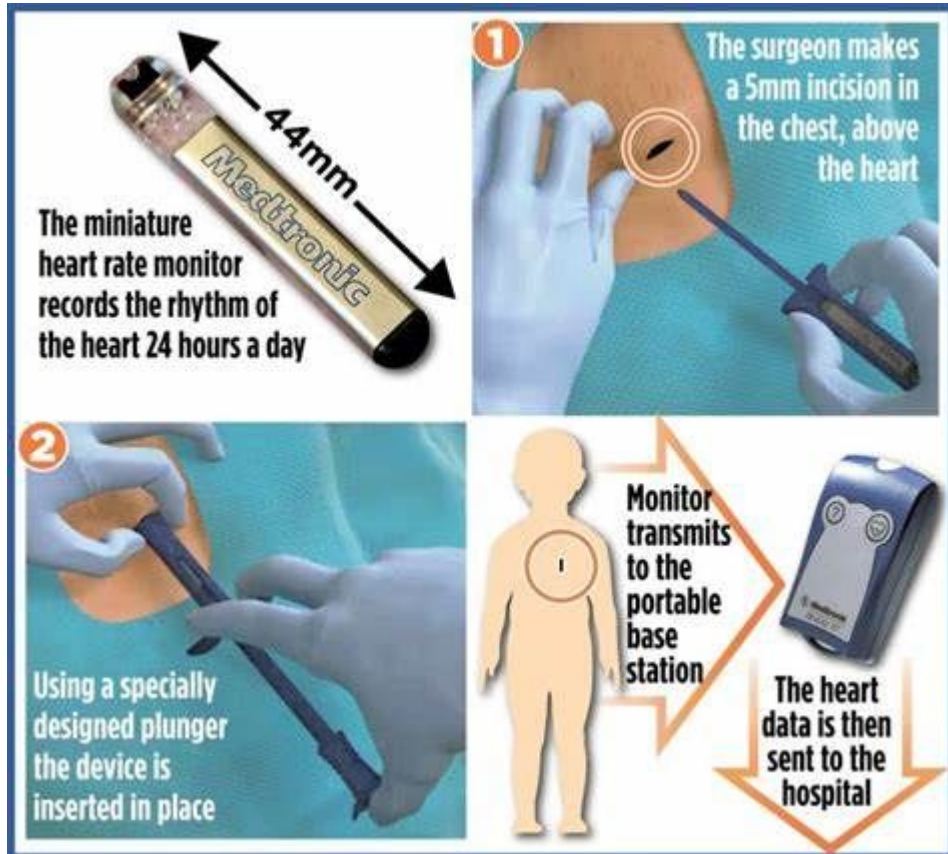
Meets standards for

Acute Stroke Ready Hospital

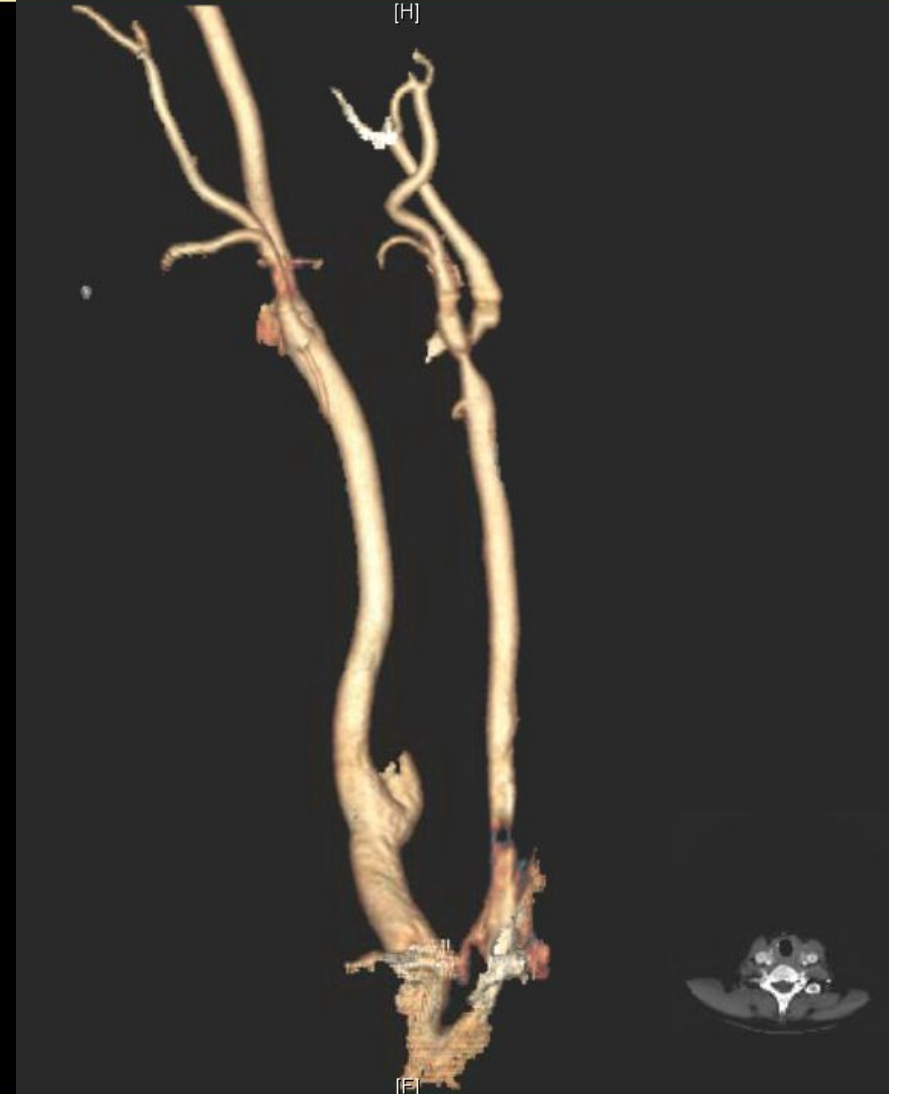
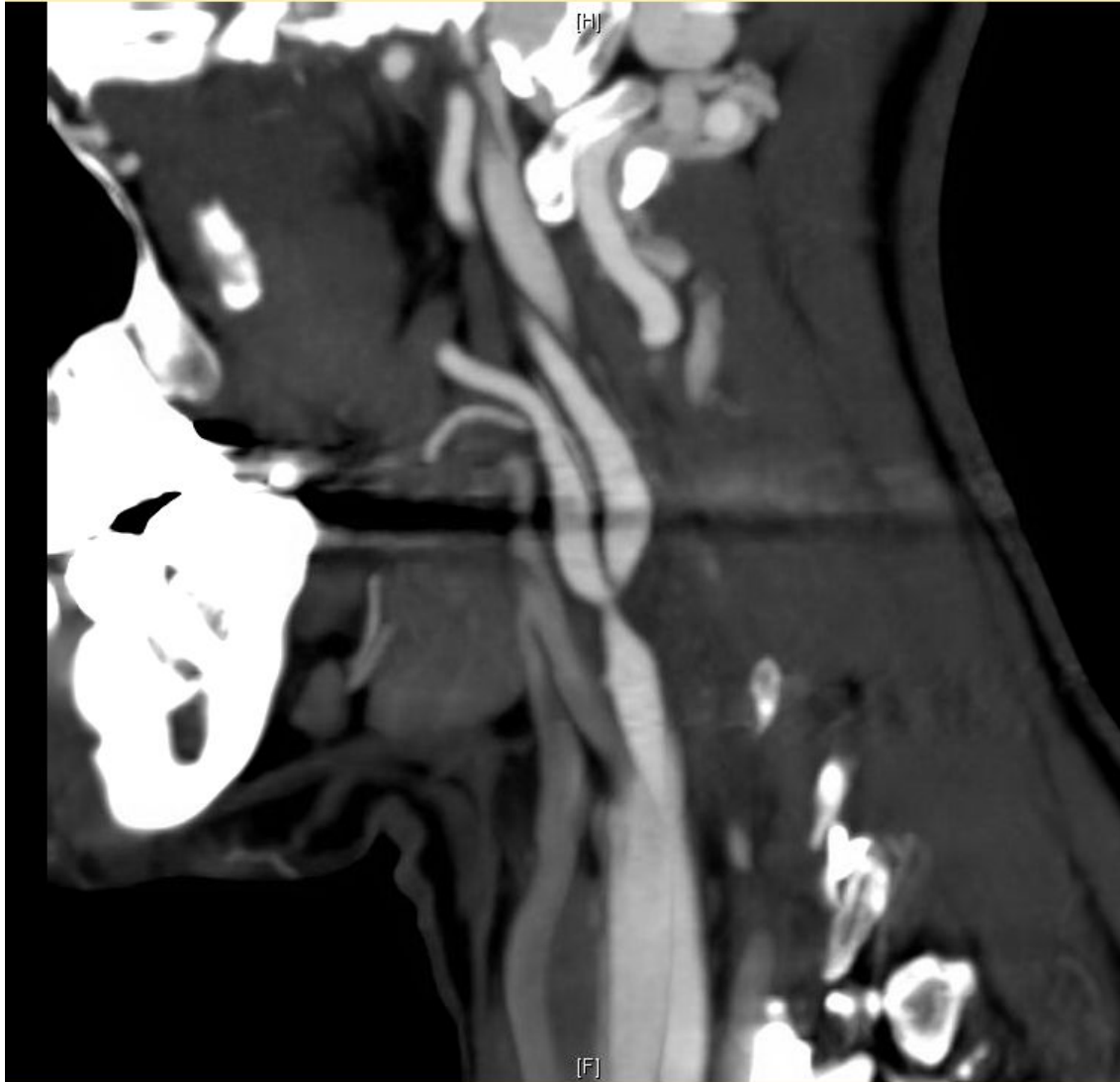
Stick on cardiac event monitor vs. implantable



Implantable loop recorder

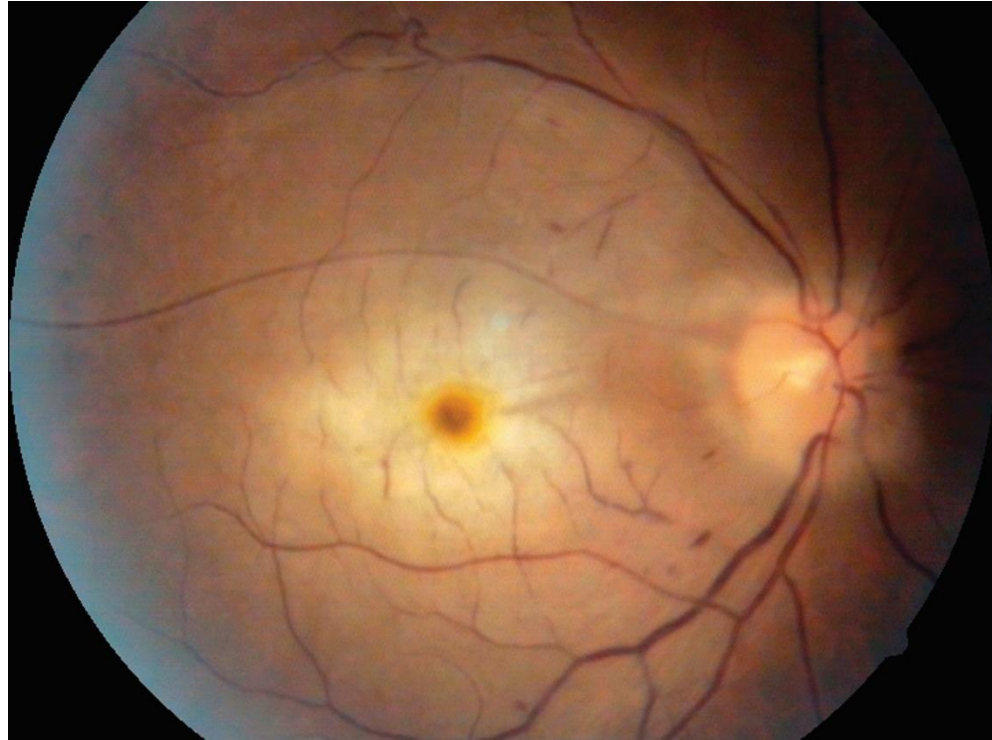
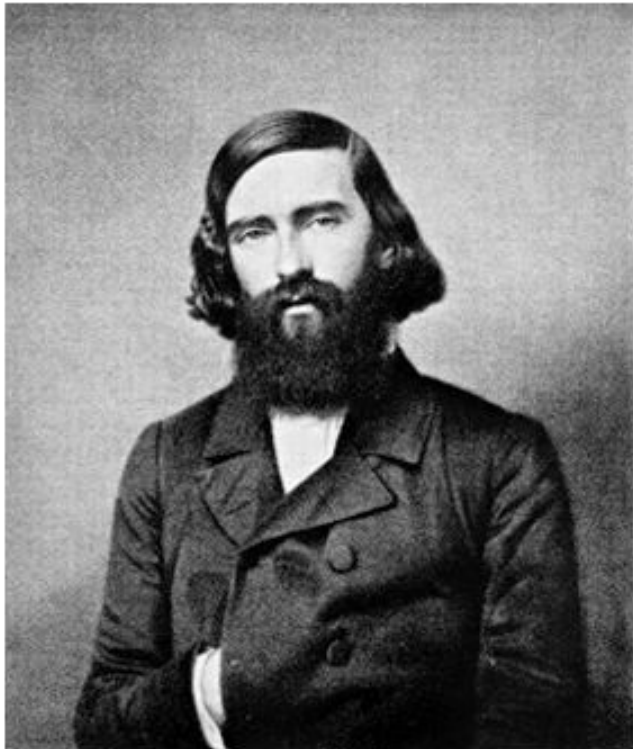


CTA neck: critical >90% stenosis Left ICA



Central Retinal Artery Occlusion (CRAO)

- CRAO was first described as an embolic occlusion of the CRA in a patient with endocarditis by von Graefe in 1859.



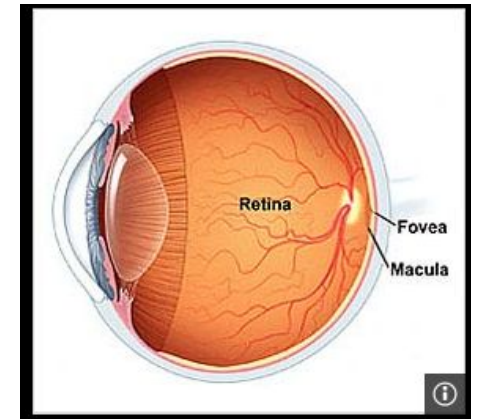
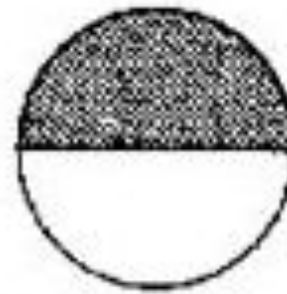
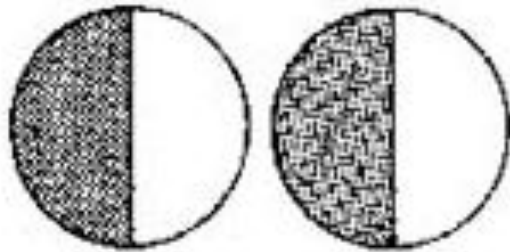
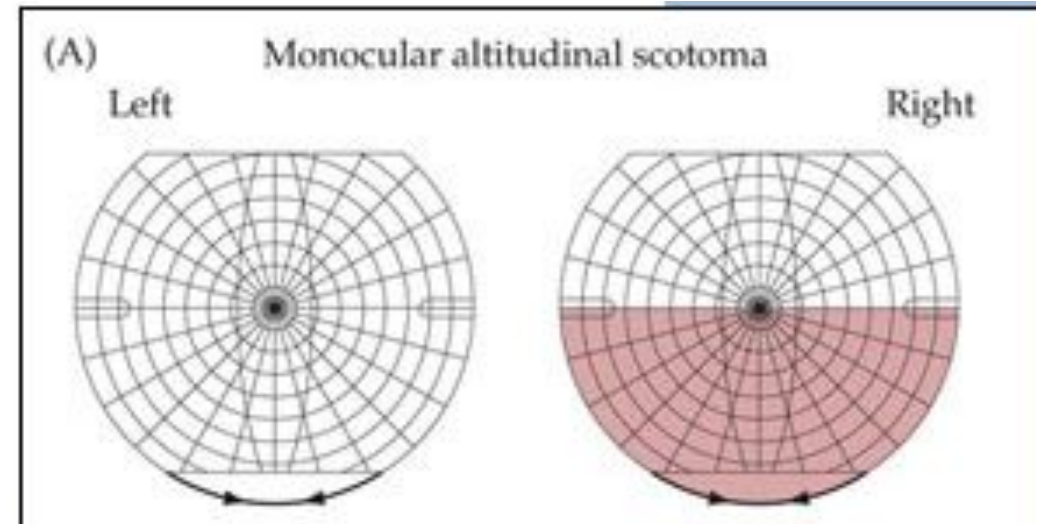
Central Retinal Artery Occlusion (CRAO)

- Stroke of the eye
- Two flavors
 - Non-arteritic: Stroke work up
 - Arteritic (GCA): Order ESR/CRP in elderly
- Ophthalmic emergency
- Incidence: 1 in 100,000 (1 in 10,000 eye clinic outpatient visits)

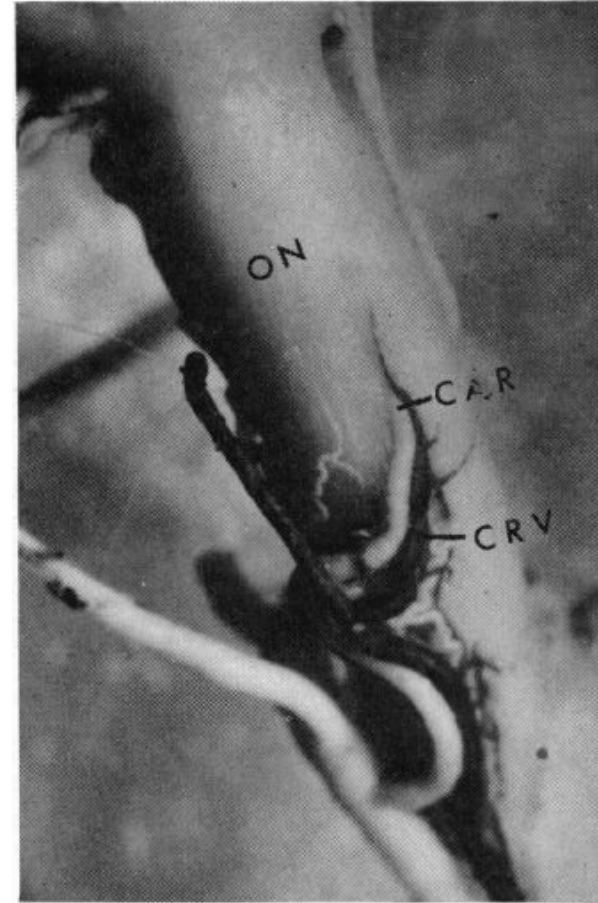
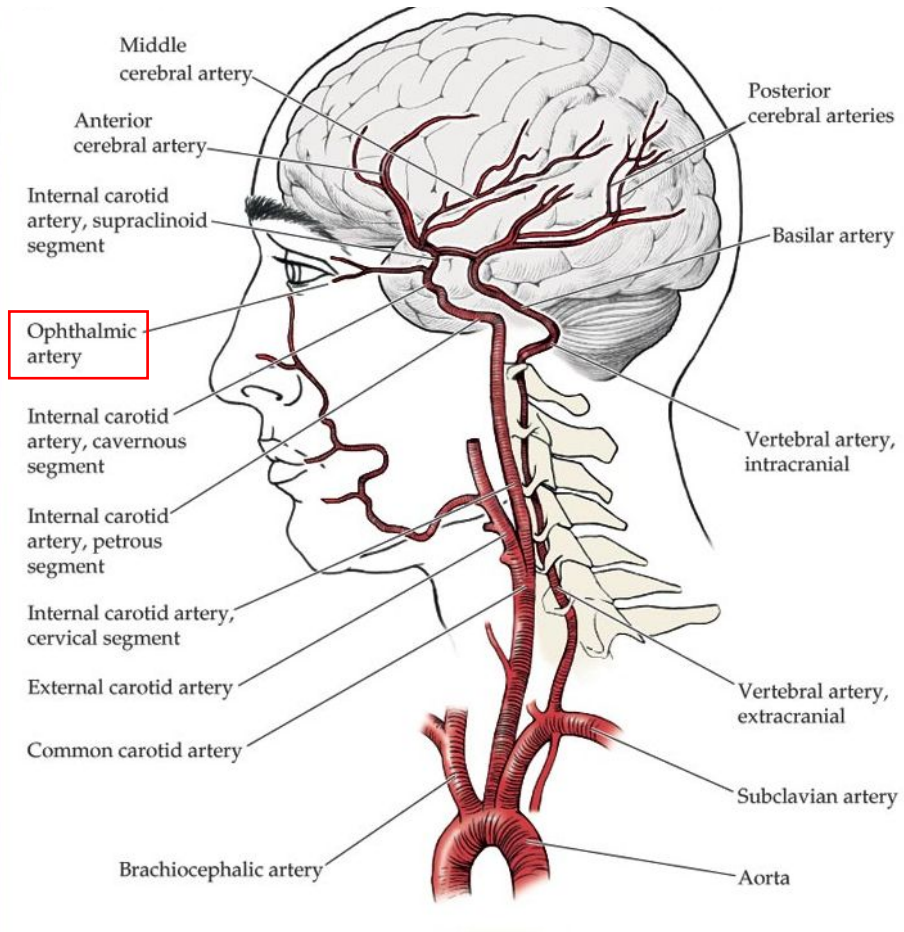
Brain vs Retina



VS

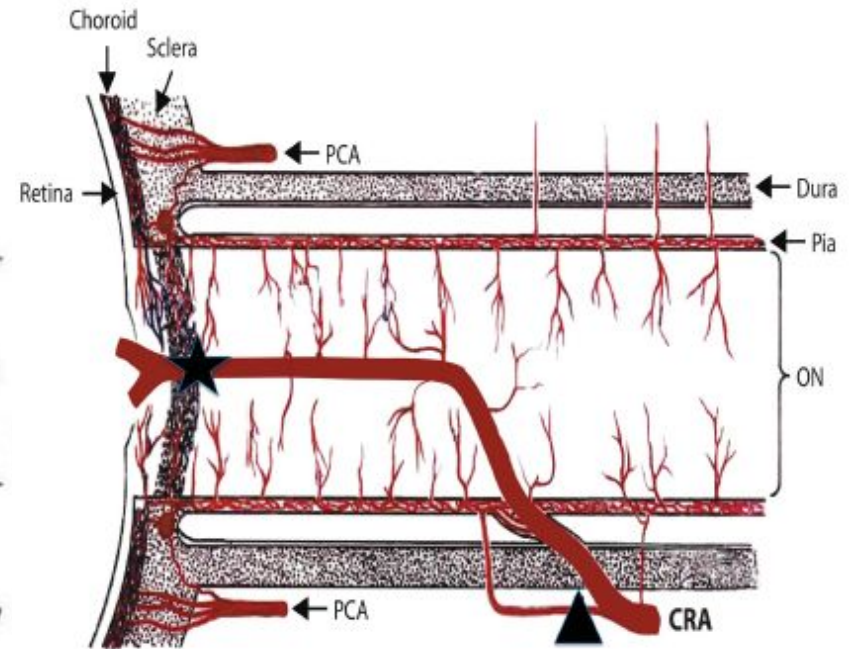
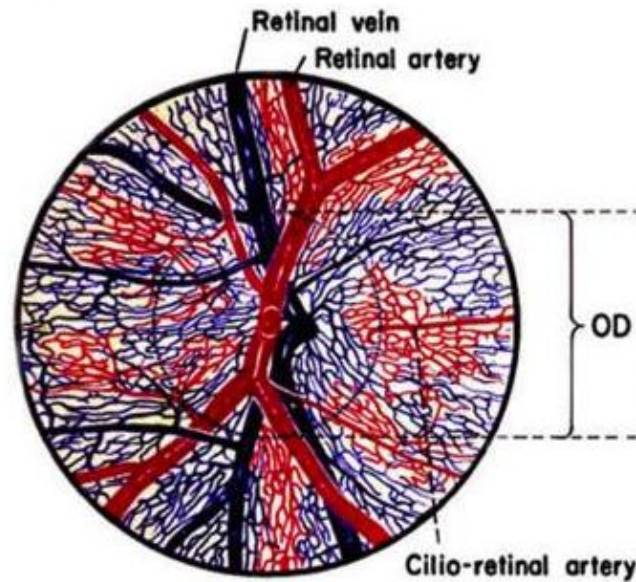
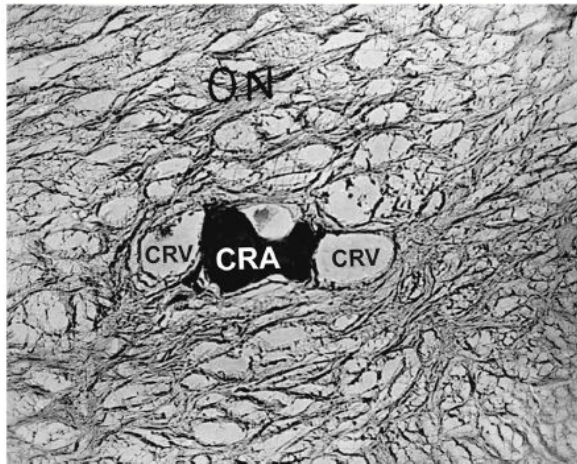
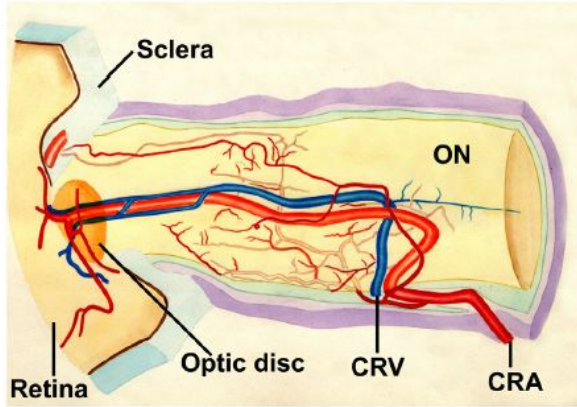


Blood Supply to Retina: CRA and PCA

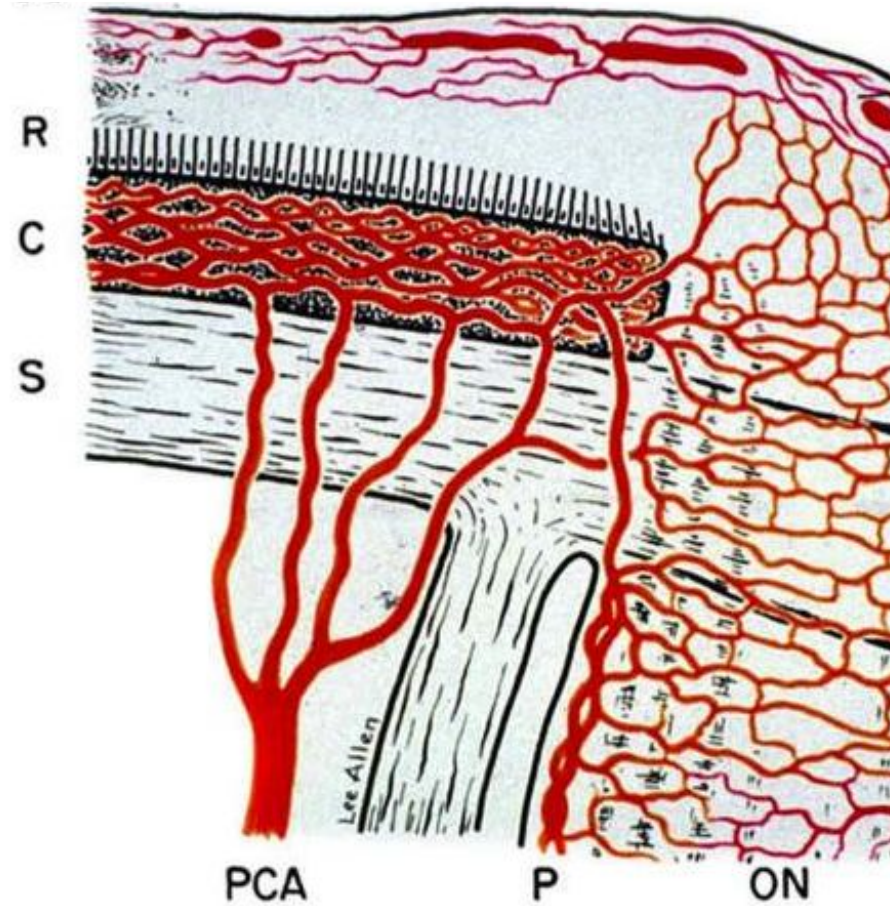


Brit. J. Ophthal. (1965) 49, 626

Central Retinal Artery (CRA): Inner part of retina

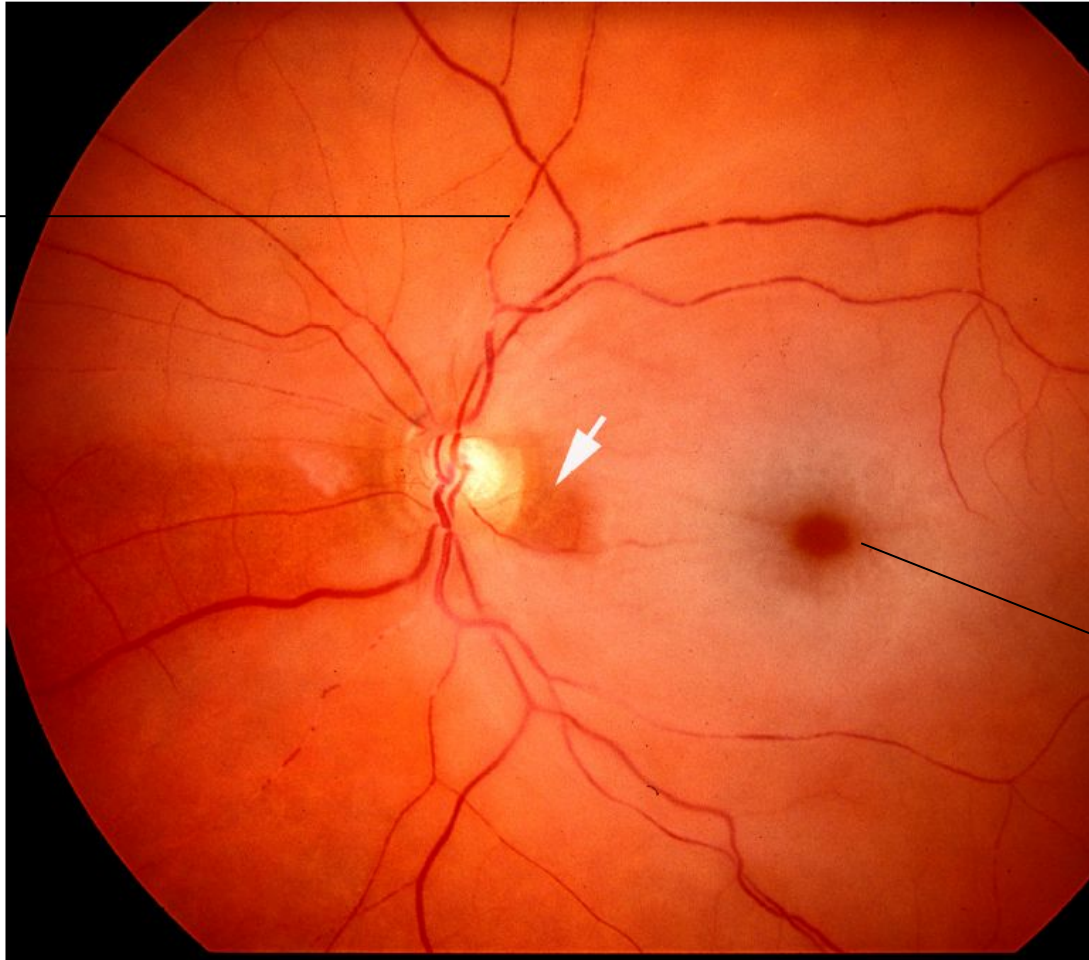


Posterior Ciliary Arteries (PCA): Outer Retina



Cherry red spot

Cattle-Trucking/
Box-Car Appearance

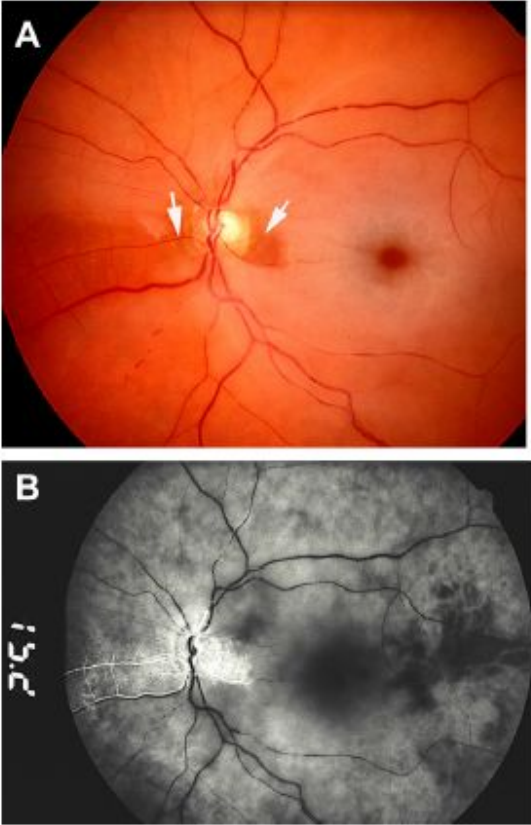


Cherry-Red Spot

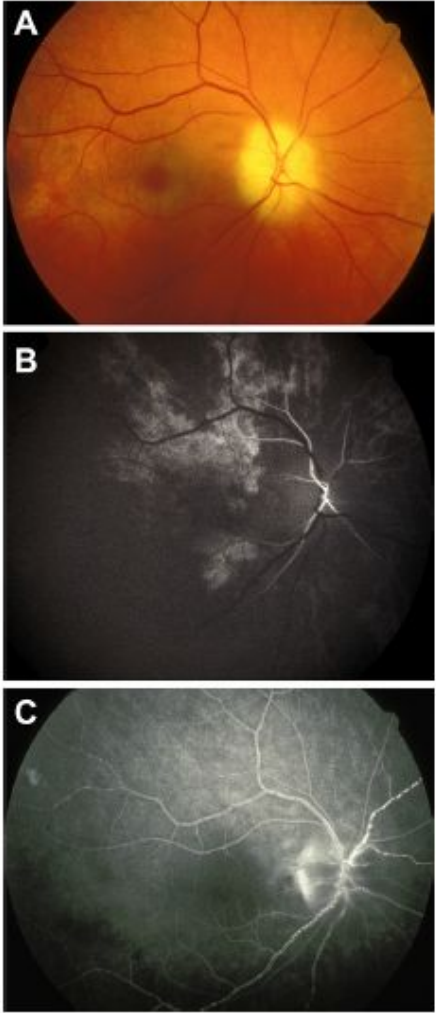
Non-arteritic permanent



Non-arteritic CRAO with cilioretinal sparing



Arteritic CRAO



In CRAO...Timing is everything...



The real reason that CRAO treatments don't work....



Time is brain....



Stroke (BE FAST): Eye!

If you see any of these signs,

B

Balance off/dizzy

Ask the person if they are experiencing sudden loss of balance or coordination.

E

Eyes

Ask the person if they have experienced sudden blurred vision, double vision or sudden, persistent vision trouble.

F

Face drooping

Ask the person to smile. If the face droops on one side, that is a sign of a stroke.

A

Arm weakness

Ask the person to raise both arms. If they cannot hold one arm up, that is a sign of a stroke.

S

Speech difficulty

Ask the person to say a few easy words. If they talk like they are drunk (slurred speech) or you cannot understand what they are trying to say, that is a sign of a stroke.

T

Time to call 911

Time is very important. The sooner you get to the hospital, the better your chances are for improving or getting better. If you wait too long, you may get worse or may not get better.

Know the *signs and symptoms* of a stroke and act **FAST**:



FACE

Look for an uneven smile.

ARM

Check if one arm is weak.

SPEECH

Listen for slurred speech.

TIME

Call 911 at the first sign.

The sooner you **call 911**, the better the chance of recovery.

Take home messages for age related eye disease

- The most common age related eye conditions are
 - Age related refractive error (presbyopia)
 - Age related dry eye
 - Age related cataract
 - Age related glaucoma
 - Age related macular degeneration
- Healthy eye care initiatives include screening and preventive measures for elderly patients (annual eye exam, sunglasses, vitamins)
- Some age related sudden visual loss conditions may require you to go to the hospital (stroke)

Thanks for your time and attention

- Andrew G. Lee, MD

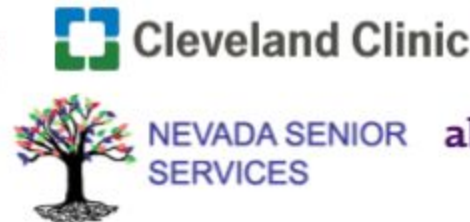


Resources

- **EyeCare America**
<https://www.aao.org/eyecare-america/patients>
- **American Glaucoma Society**
<https://www.americanglaucomasociety.net/patients/ags-cares>
- **New Eyes - application for Free Glasses (\$10 application fee)**
<https://new-eyes.org/application/>
- **Eye Health Organizations**
<https://www.aao.org/eyecare-america/resources/eye-health-organizations>
- **21 Ways Aging Changes Your Eyes**
<https://www.aao.org/eye-health/tips-prevention/20-ways-aging-changes-your-eyes>
- **Free or Low-Cost Eye Care**
<https://www.nei.nih.gov/learn-about-eye-health/healthy-vision/get-free-or-low-cost-eye-care>
- **Stroke Center Certification**
<https://www.qualitycheck.org/search/?keyword=Nevada#keyword=Nevada&sitestate=NV>



Creating an Age-Friendly Health System & Dementia-Friendly Community in Nevada



CONTACT NIHAN
nihan@unlv.edu | (702) 272-0826 | <http://www.nihan.care>

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**THANK YOU FOR
YOUR TIME & ATTENTION**

ANY QUESTIONS? 

NV Stroke Center - 3 Acute Stroke Ready Hospital (ASR) certified locations

updated 04/17/2024

TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.	
Tier	Capability
Acute Stroke Ready Hospital (ASR)	Able to initiate tissue plasminogen activator (tPA) prior to transfer to a higher-level stroke center



Sparks Family Hospital Inc.
 HCO ID: 5218
 DBA: Northern Nevada Medical Center
 2375 East Prater Way
 Sparks, NV 89434

[View Report](#)

Accredited Programs	Certification	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Spine Surgery 	<ul style="list-style-type: none"> Primary Stroke Center Heart Failure Advanced Total Hip and Total Knee Replacement Primary Heart Attack Center Acute Stroke Ready Hospital Acute Heart Attack Ready

[Get Directions](#)
[Visit Website](#)
[Show other care locations](#)



Spring Valley Hospital Medical Center
 HCO ID: 395162
 DBA: Spring Valley Hospital Medical Center
 5400 South Rainbow Boulevard
 Las Vegas, NV 89118

[View Report](#)

Accredited Programs	Certification	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Joint Replacement - Hip Joint Replacement - Knee 	<ul style="list-style-type: none"> Thrombectomy-Capable Stroke Center Primary Heart Attack Center Acute Stroke Ready Hospital Acute Heart Attack Ready

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Centennial Hills Hospital Medical Center
 HCO ID: 459268
 6900 N. Durango Drive
 Las Vegas, NV 89149

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Accredited Programs	Certification	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Joint Replacement - Hip Joint Replacement - Knee 	<ul style="list-style-type: none"> Thrombectomy-Capable Stroke Center Primary Heart Attack Center Acute Stroke Ready Hospital Acute Heart Attack Ready


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NV Stroke Center - 9 Primary Stroke Center (PSC) certified locations



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TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.	
Tier	Capability
Primary Stroke Center (PSC)	Have protocols and specific care pathways for patients with stroke



University Medical Center of Southern Nevada
 HCO ID: 9559
 DBA: University Medical Center of Southern Nevada
 1800 West Charleston Boulevard
 Las Vegas, NV 89102



Accredited Programs	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Primary Stroke Center


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Sparks Family Hospital Inc.
 HCO ID: 5218
 DBA: Northern Nevada Medical Center
 2375 East Prater Way
 Sparks, NV 89434

Accredited Programs	Certification	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Spine Surgery 	<ul style="list-style-type: none"> Primary Stroke Center Heart Failure Advanced Total Hip and Total Knee Replacement Primary Heart Attack Center Acute Stroke Ready Hospital Acute Heart Attack Ready



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Sparks Family Hospital, Inc.
 HCO ID: 671304
 DBA: Northern Nevada Sierra Medical Center
 6500 Longley Lane
 Reno, NV 89511

Accredited Programs	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Primary Stroke Center

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NV Stroke Center - 9 Primary Stroke Center (PSC) certified locations

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TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.	
Tier	Capability
Primary Stroke Center (PSC)	Have protocols and specific care pathways for patients with stroke




Prime HealthCare Services Reno LLC

HCO ID: 9564
 DBA: Saint Mary's Regional Medical Center
 235 West Sixth Street
 Reno, NV 89503

Accredited Programs	Advanced Certification
<ul style="list-style-type: none"> Laboratory Hospital 	<ul style="list-style-type: none"> Primary Stroke Center

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Summerlin Hospital Medical Center

HCO ID: 161810
 657 Town Center Drive
 Las Vegas, NV 89144

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Accredited Programs	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Primary Stroke Center Primary Heart Attack Center

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Sunrise Mountainview Hospital, Inc.

HCO ID: 224250
 DBA: MountainView Hospital
 3100 North Tenaya Way
 Las Vegas, NV 89128

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Accredited Programs	Certification	Advanced Certification
<ul style="list-style-type: none"> Hospital 	<ul style="list-style-type: none"> Spine Surgery Chest Pain 	<ul style="list-style-type: none"> Primary Stroke Center

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NV Stroke Center - 9 Primary Stroke Center (PSC) certified locations

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TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.	
Tier	Capability
Primary Stroke Center (PSC)	Have protocols and specific care pathways for patients with stroke



St. Rose Dominican Hospitals - San Martin Campus
 HCO ID: 479836
 8280 Warm Springs Road
 Las Vegas, NV 89113

Accredited Programs <ul style="list-style-type: none"> Hospital 	Advanced Certification <ul style="list-style-type: none"> Primary Stroke Center
Verification Program <ul style="list-style-type: none"> Maternal Levels of Care 	

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St. Rose Dominican Hospitals - Siena Campus
 HCO ID: 479835
 3001 St. Rose Parkway
 Henderson, NV 89052

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Accredited Programs <ul style="list-style-type: none"> Hospital 	Certification <ul style="list-style-type: none"> Joint Replacement - Hip Joint Replacement - Knee 	Advanced Certification <ul style="list-style-type: none"> Primary Stroke Center
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Henderson Hospital
 HCO ID: 589617
 1050 West Galleria Drive
 Henderson, NV 89011

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Accredited Programs <ul style="list-style-type: none"> Hospital 	Certification <ul style="list-style-type: none"> Joint Replacement - Hip Joint Replacement - Knee 	Advanced Certification <ul style="list-style-type: none"> Primary Stroke Center Primary Heart Attack Center Acute Heart Attack Ready
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NV Stroke Center - 2 Thrombectomy-Capable Stroke Center (TSC) certified locations

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TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.

Tier	Capability
Thrombectomy-Capable Stroke Center (TSC)	Able to initiate tPA and provide endovascular treatment



Centennial Hills Hospital Medical Center
 HCO ID: 459268
 6900 N. Durango Drive
 Las Vegas, NV 89149

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Accredited Programs <ul style="list-style-type: none"> Hospital 	Certification <ul style="list-style-type: none"> Joint Replacement - Hip Joint Replacement - Knee 	Advanced Certification <ul style="list-style-type: none"> Thrombectomy-Capable Stroke Center Primary Heart Attack Center Acute Stroke Ready Hospital Acute Heart Attack Ready
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Spring Valley Hospital Medical Center
 HCO ID: 395162
 DBA: Spring Valley Hospital Medical Center
 5400 South Rainbow Boulevard
 Las Vegas, NV 89118

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Accredited Programs <ul style="list-style-type: none"> Hospital 	Certification <ul style="list-style-type: none"> Joint Replacement - Hip Joint Replacement - Knee 	Advanced Certification <ul style="list-style-type: none"> Thrombectomy-Capable Stroke Center Primary Heart Attack Center Acute Stroke Ready Hospital Acute Heart Attack Ready
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NV Stroke Center - 2 Comprehensive Stroke Center (CSC) certified locations

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TABLE. THE 4 TIERS OF STROKE CENTER CERTIFICATION.	
Tier	Capability
Comprehensive Stroke Center (CSC)	Can initiate tPA, provide endovascular surgery, and neurocritical care with stroke-specific protocols and care pathways.



 Renown Regional Medical Center HCO ID: 9565 1155 Mill Street Reno, NV 89502		View Report
Accredited Programs <ul style="list-style-type: none">HospitalHome Care	Certification <ul style="list-style-type: none">Chronic Obstructive Pulmonary Disease	Advanced Certification <ul style="list-style-type: none">Advanced Comprehensive Stroke Center
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 Sunrise Hospital and Medical Center HCO ID: 9558 3186 South Maryland Parkway Las Vegas, NV 89109		View Report
Accredited Programs <ul style="list-style-type: none">Hospital	Certification <ul style="list-style-type: none">Chest Pain	Advanced Certification <ul style="list-style-type: none">Advanced Comprehensive Stroke Center
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