

A close-up photograph of a young girl with blonde hair, wearing purple-rimmed glasses. She is smiling broadly, showing her teeth, and looking down at a dark screen, likely a tablet or laptop. Her hands are resting on the edge of the screen. The background is a warm, golden-yellow gradient. A semi-transparent, light-colored shape overlaps the left side of the image, serving as a background for the text.

Vision Benefits and Overall Health

How often should a person have a comprehensive eye examination?

Eye Examination Frequency

- Eye examination every 3 years
- Eye examination every 2 years
- Eye examination every year
- Eye examination when vision is blurry or eyes are uncomfortable

AOA Clinical Practice Guidelines

The American Optometric Association's Clinical Practice Guidelines indicate:

Adults

Asymptomatic/Risk Free (No Rx need, no eye or general health conditions)

- 18-40-Every 2-3 years
- 41-60-Every 2 years
- 61 and over-Every year

At Risk

- 18-40-Every 1-2 years or as recommended
- 41-60-Every 1-2 years or as recommended
- 61 and over-Every year or as recommended

Children

Asymptomatic/Risk Free (No Rx need, no eye or general health conditions)

- Birth to 24 mo.-At 6 mo. of age
- 2 to 5 yrs-At 3 yrs of age
- 6-18 yrs-Before 1st grade and every two years thereafter

At Risk

- Birth to 24 mo.-At 6 mo. of age or as recommended
- 2 to 5 yrs-At 3 yrs of age or as recommended
- 6-18 yrs-Annually or as recommended

Eye Exams vs. Physical Exams

How many comprehensive eye examinations are performed annually compared to a health physical:

- a) 3.5 to 1
- b) 2.5 to 1
- c) 1.5 to 1
- d) 1 to 1

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Annually there are 3.6 times more eye examinations performed when compared to a full health physical examination

Why individuals need eye exams

- Blurry Vision
- Eye strain
- Headaches
- Protection
 - UV
 - Blue light
- Productivity
- Eye health
- General health



Children's vision and learning

- 25% of children in the US have uncorrected vision problems that impact learning
- Pediatrician and school nurse screenings have a sensitivity (positive identification of problem) of 27%
- 80% of children with learning disabilities have uncorrected vision problems
- Children's eyes are more susceptible to UV damage
- 2 of 3 children under age 6 have never had a comprehensive eye examination
- 80% of learning in the first 12 years is through vision

Productivity gains or losses

Slight miscorrections in vision
(not easily perceptible) can
decrease productivity by

20 up to
%

When employees have the
most accurate prescription,
employers can realize a

2.5%
increase

in productivity (time)

Another University Study

With as little as a 0.5D miscorrection (two clicks on testing),
productivity decreased by 8.9% and accuracy reduced by
over 38%!

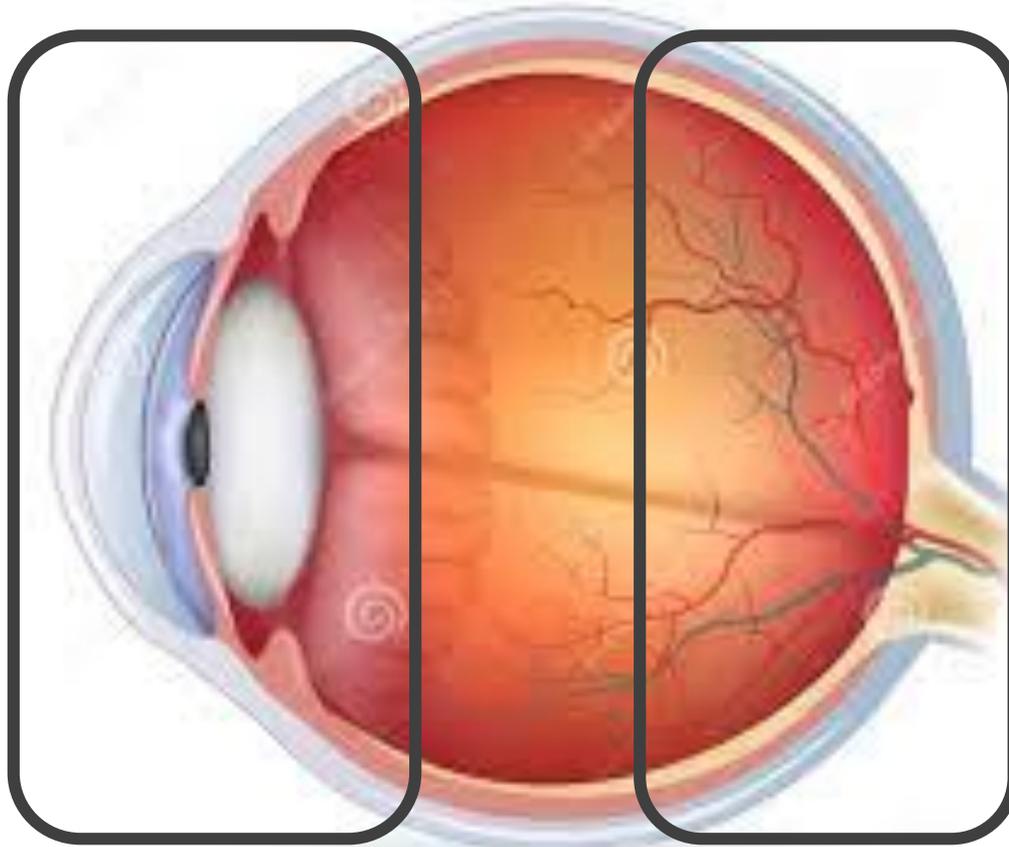


Protection

eye[®]
Med

UV

**Blue
Light**

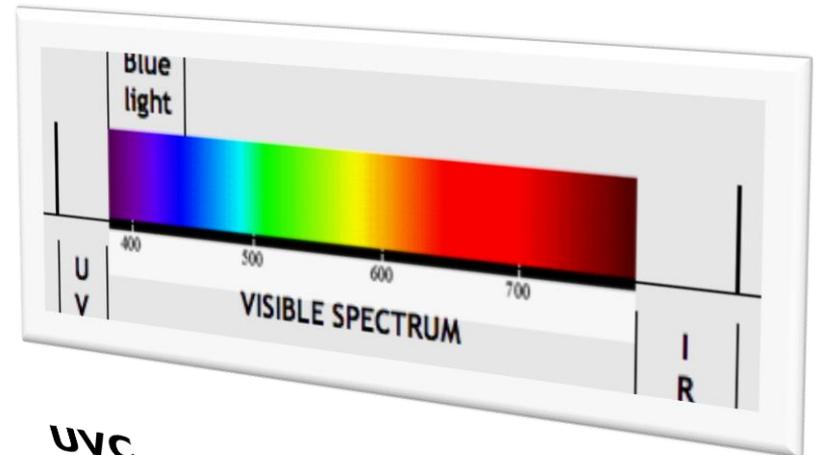


UV Dangers

Ultra-Violet radiation (UVR) effects are cumulative

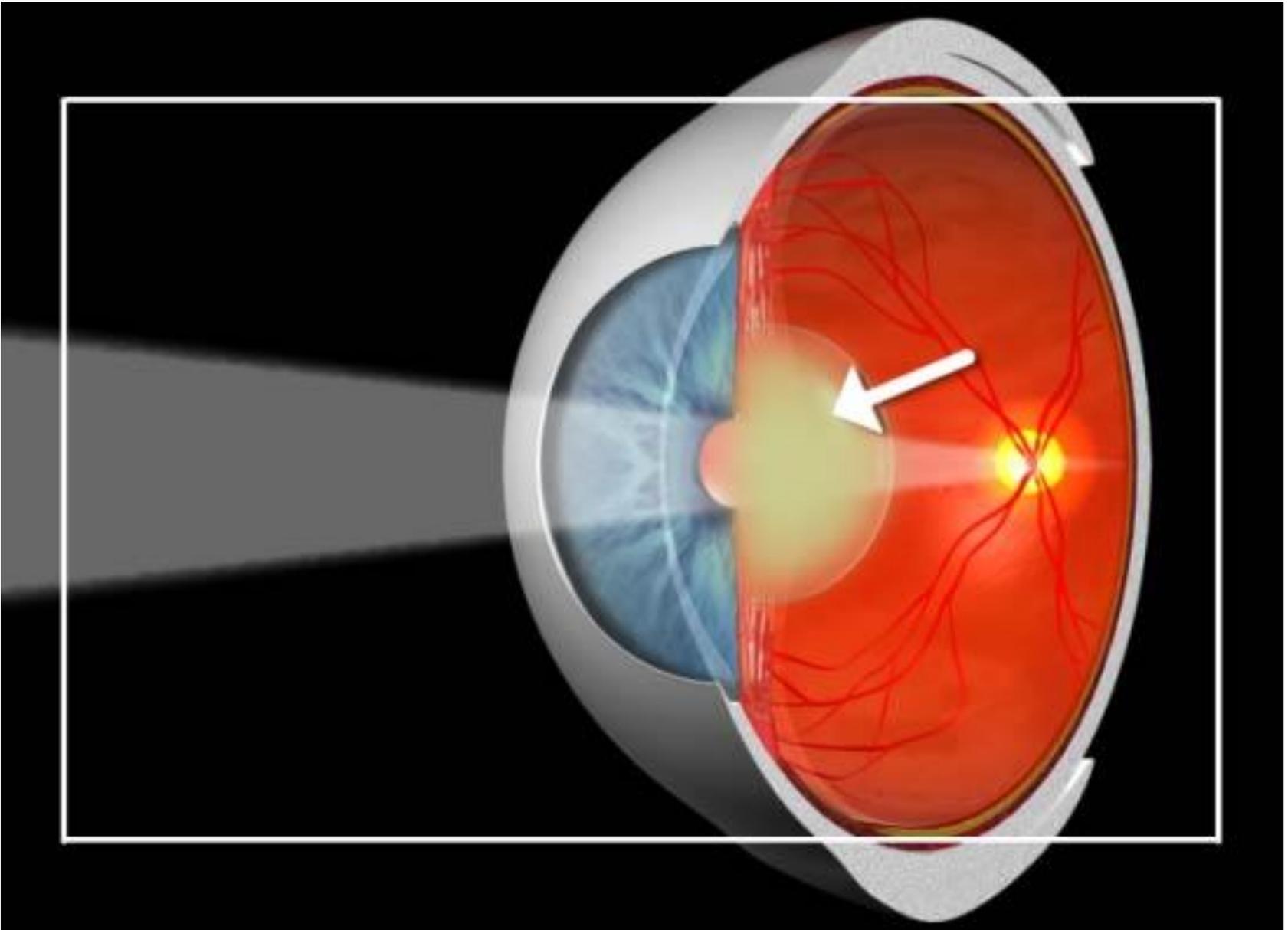
Implicated in:

- Cataracts
- Keratitis
- Pingueculae
- Pterygia
- Various eye and skin cancers
- Wrinkles

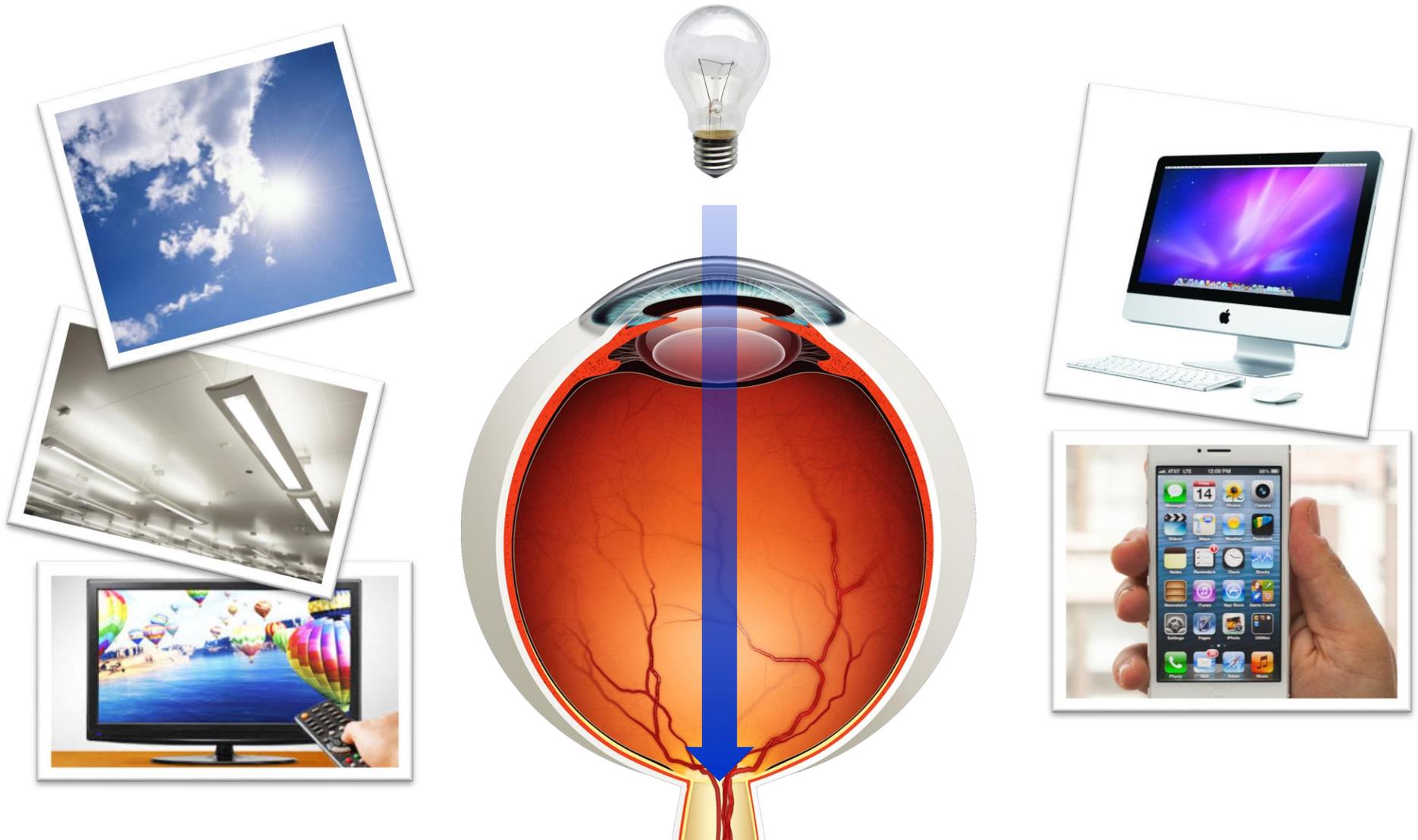


UVC
UVB
UVA

100-280nm
280-315nm (burning)
315-380nm (aging)

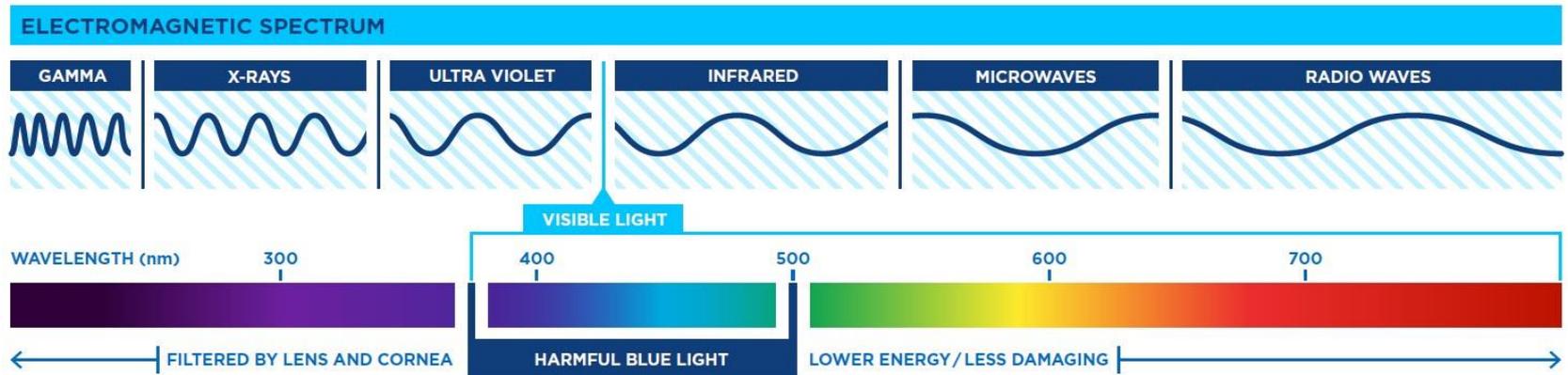


Blue light hazard



What Is Blue Light ?

A light you may not be aware of... but it surrounds us...



Blue light (400-500nm) is the most hazardous component of visible light²

The eye can't filter blue light on its own^{3,4}

Blue light penetrates deep into the eye and may cause damage⁵

BLUE LIGHT

SOURCES

INDOORS



LED
Lights



Digital
Devices



Metal
Halide Lamps

OUTDOORS



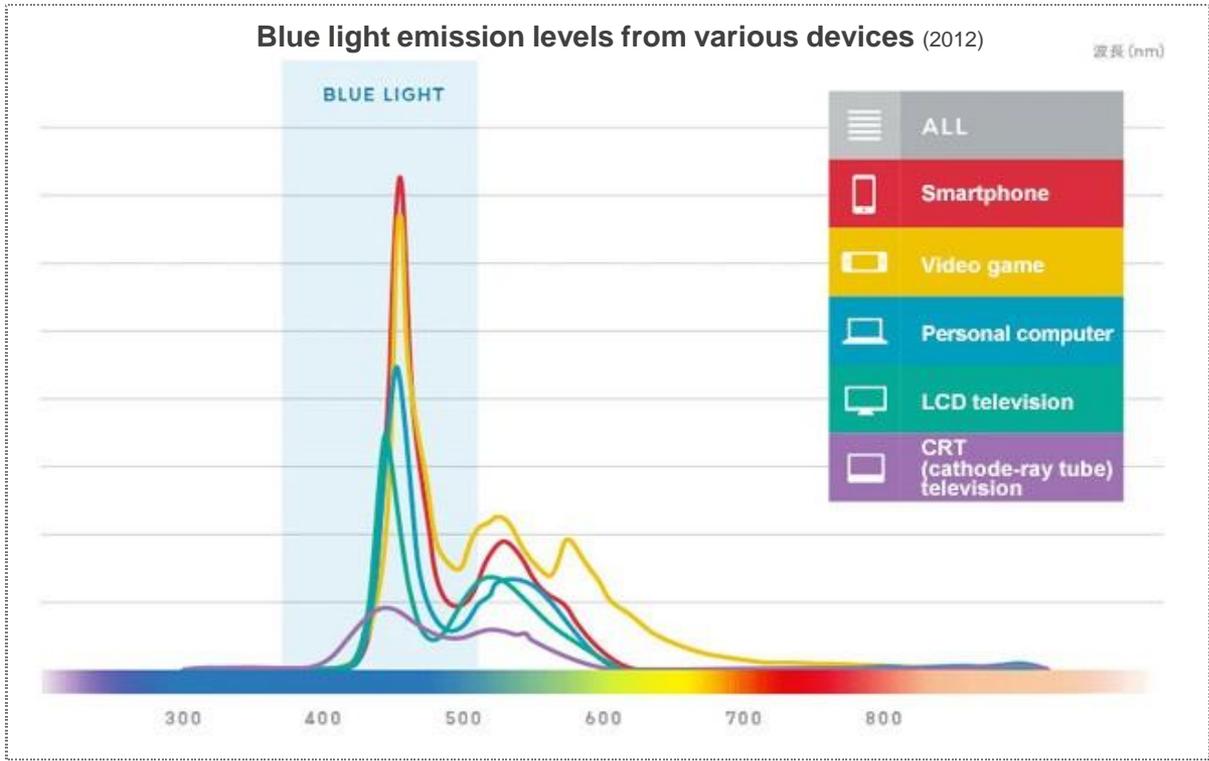
THE
SUN

OVER
100
TIMES

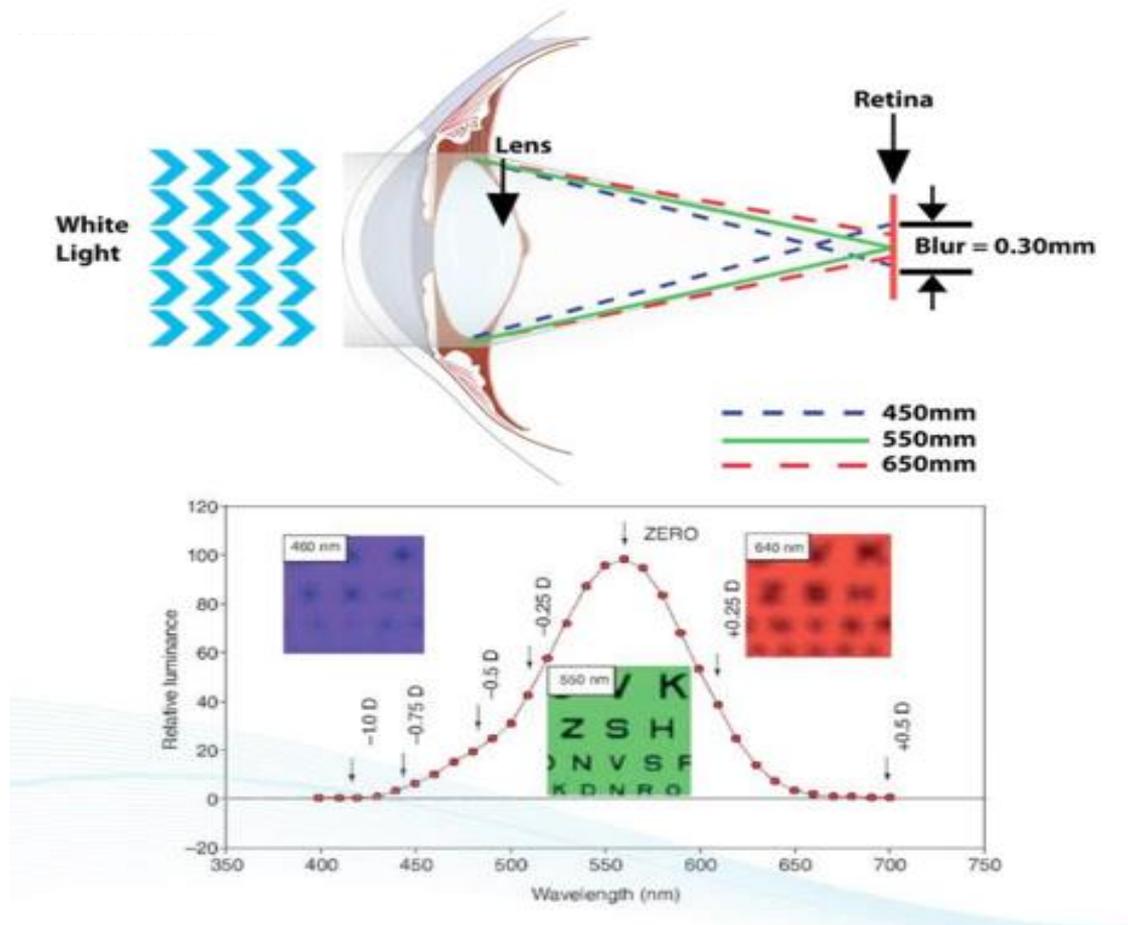
MORE INTENSE
THAN ELECTRONIC
DEVICES AND
SCREENS

Blue Light From Electronic Devices

Technology increasing in modern daily life...

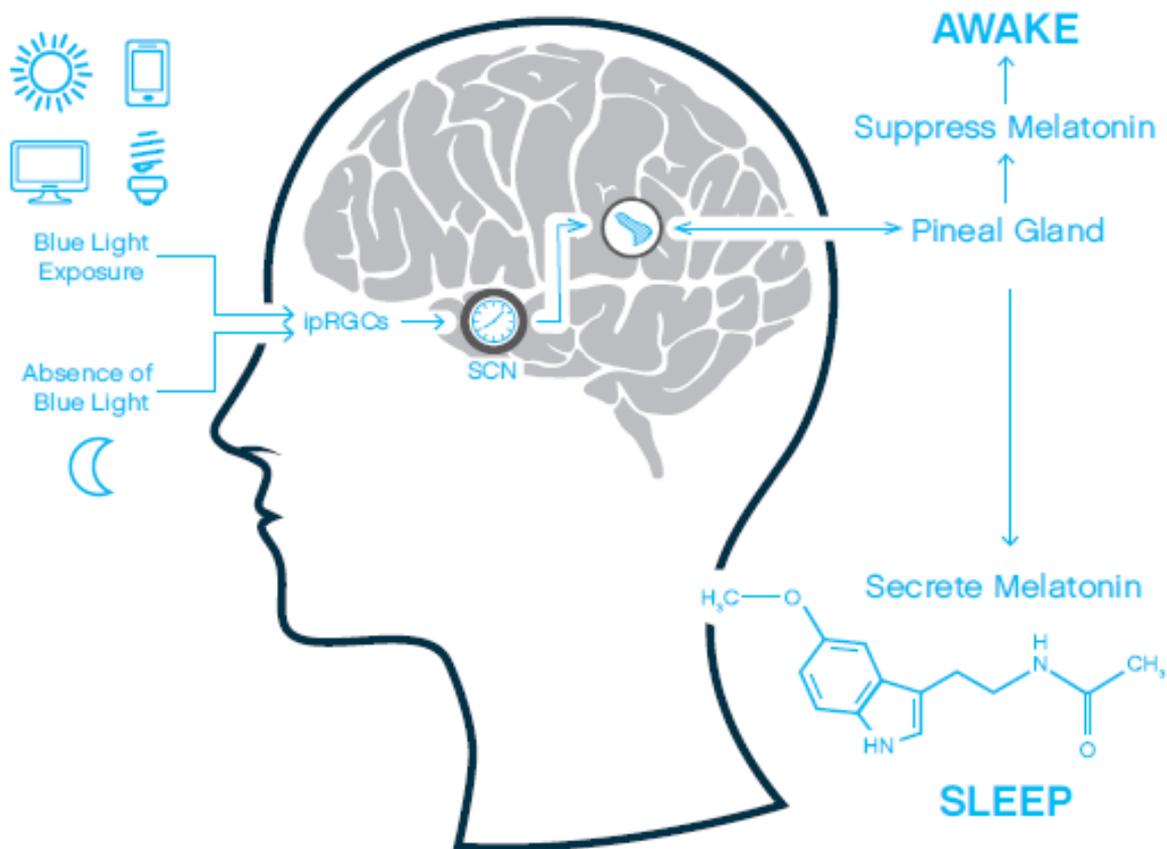


Blue Light Concern #1-Digital Eyestrain

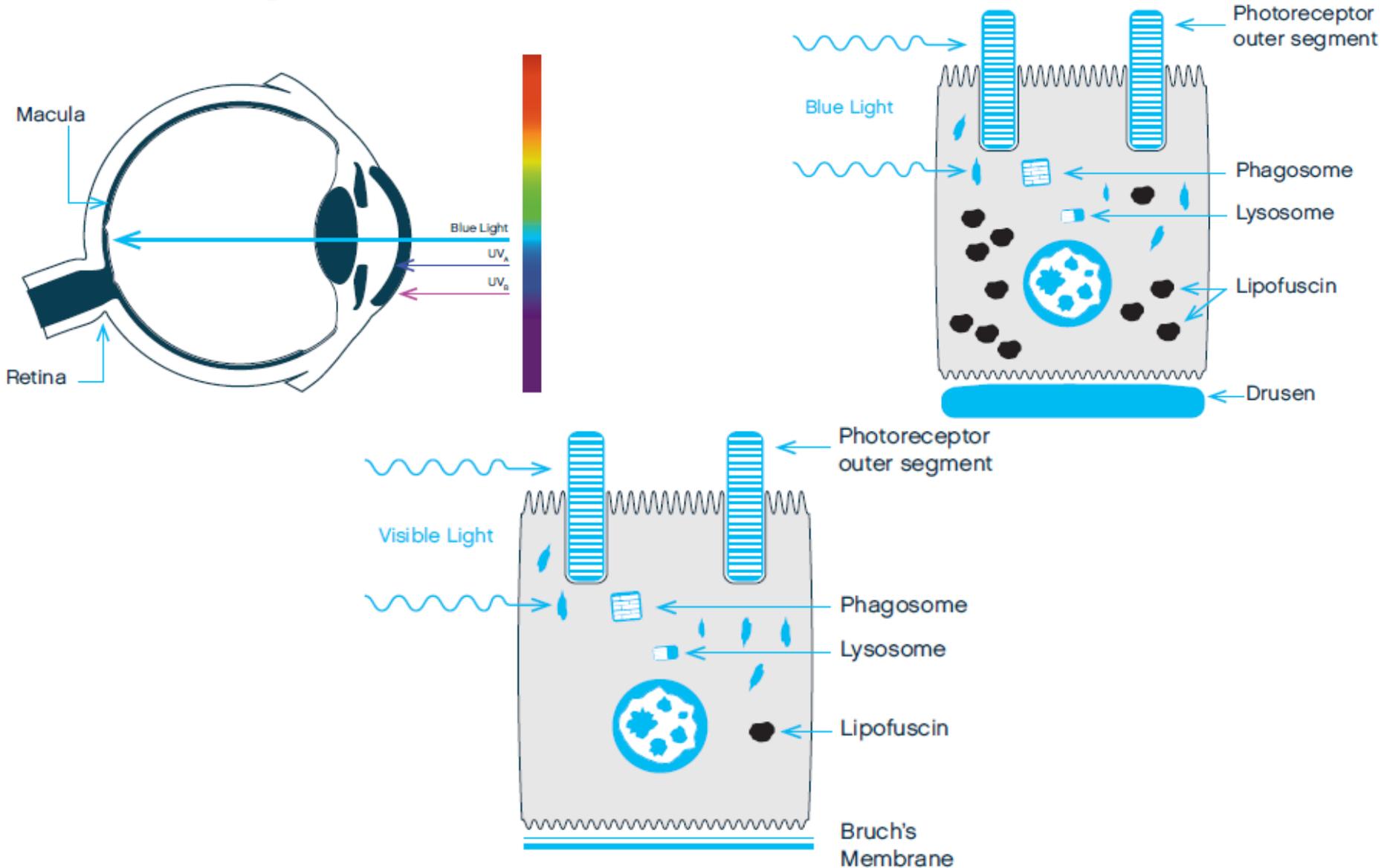


70% of adults who report regular usage of devices experienced symptoms of digital eyestrain

Blue Light Concern #2-Sleep Disruption

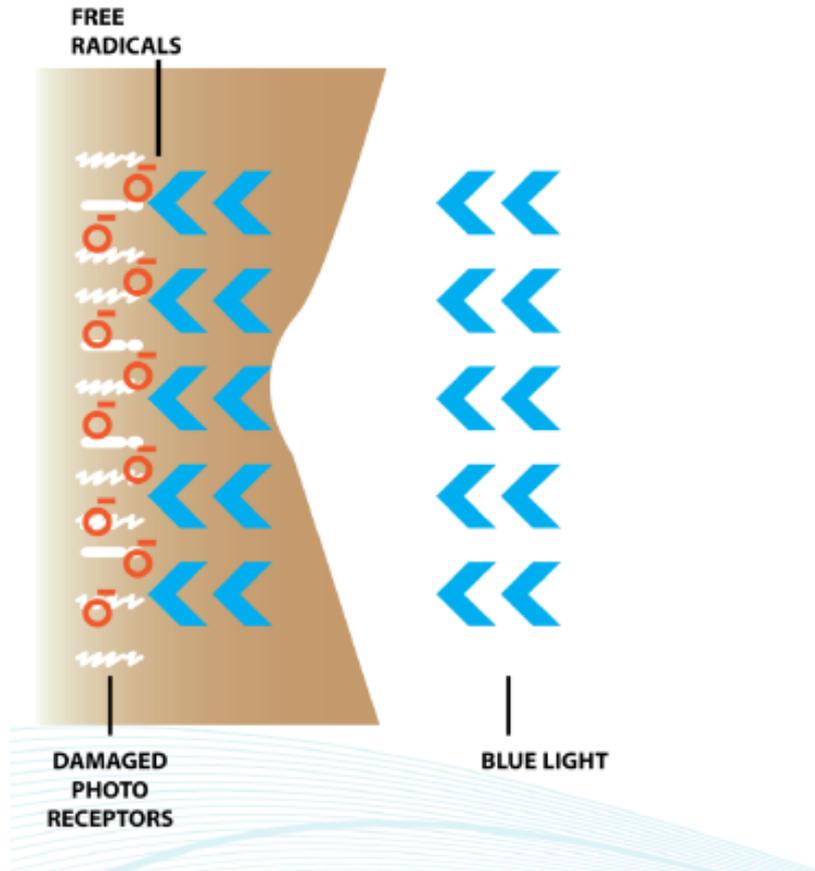


Blue Light Concern #3-Retina Damage

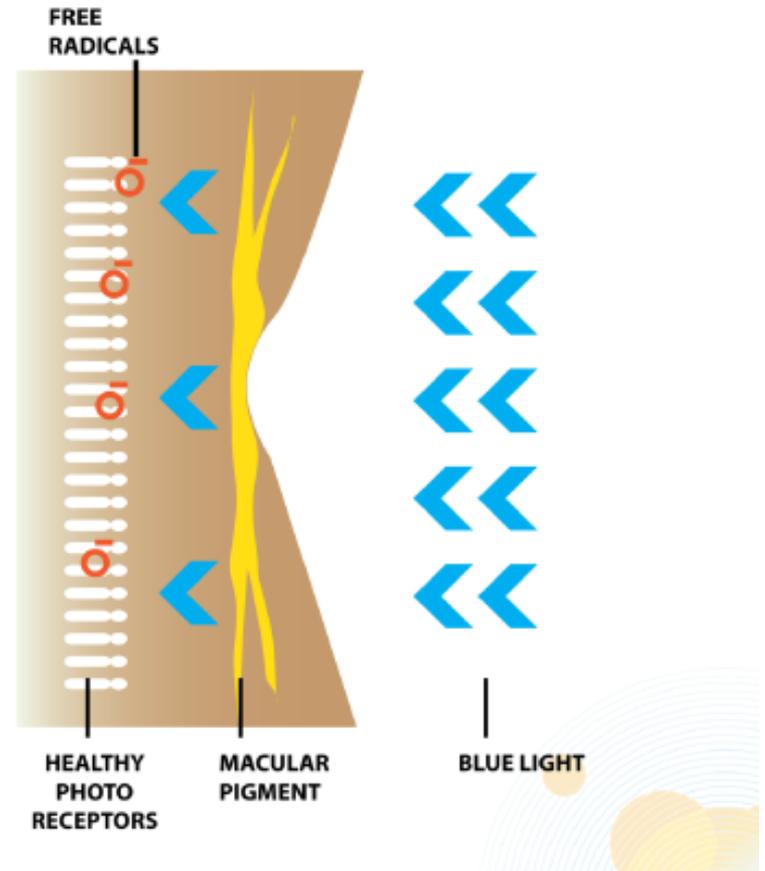


Protection Solution-Internal

MACULA WITHOUT MACULAR PIGMENT

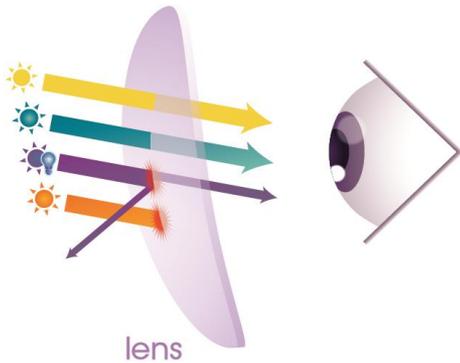


MACULA WITH MACULAR PIGMENT

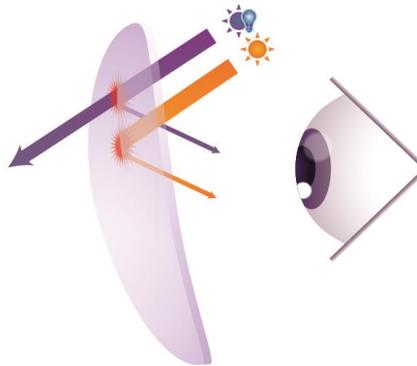


Protection Solution-External

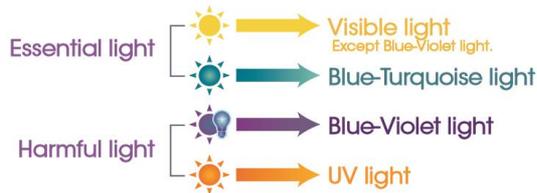
FRONT SIDE PROTECTION
Cut **20%**⁽¹⁾ Blue-Violet light and 100%⁽²⁾ UV



BACK SIDE PROTECTION
Backside reflection virtually eliminated ($\approx 4\%$)



(1) The Blue-Violet light cut may slightly differ depending on lens material
(2) For any Crizal® Prevensia™ lens material other than clear 1.5 plastic



Blue Light Protective A/R Coatings

- Hoya Recharge-30% HEV block
- Essilor Prevensia-20% HEV block



Eye exam service elements

- Visual acuity
- Visual field screening
- Pupils and iris
- Area surrounding the eye (Adnexa)
- Bulbar and palpebral conjunctiva
- Extra-ocular muscles
- Slit lamp exam cornea
- Slit lamp exam-lens
- Slit lamp exam-Anterior Chamber
- Eye pressure (IOP)
- Optic nerve
- Retina (Posterior segment)
- Neurological (Time/Place/Person)
- Psychiatric:
(Depression/Anxiety/Agitation)



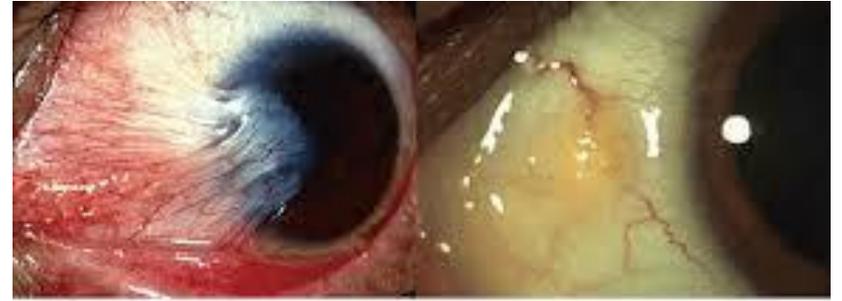
A **visual acuity test** is a diagnostic test that determines how well you can see the details of a word or symbol from a specific distance away.



A **visual field screening** is a procedure that can detect dysfunction in central and/or peripheral vision which may be caused by various medical conditions such as glaucoma, stroke, brain tumors or other neurological deficits.

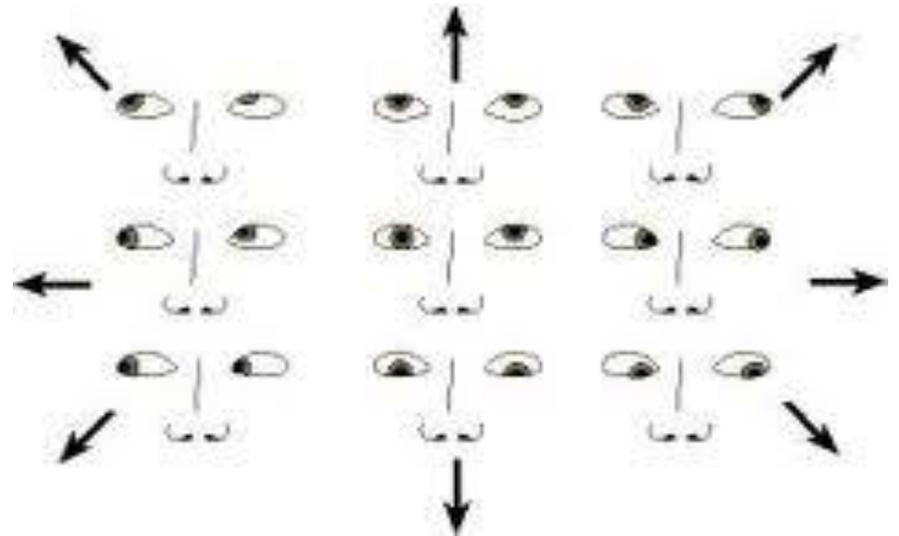
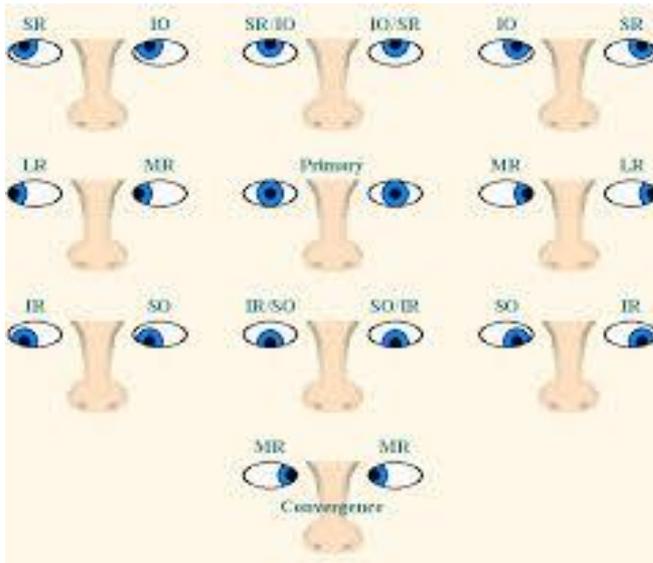


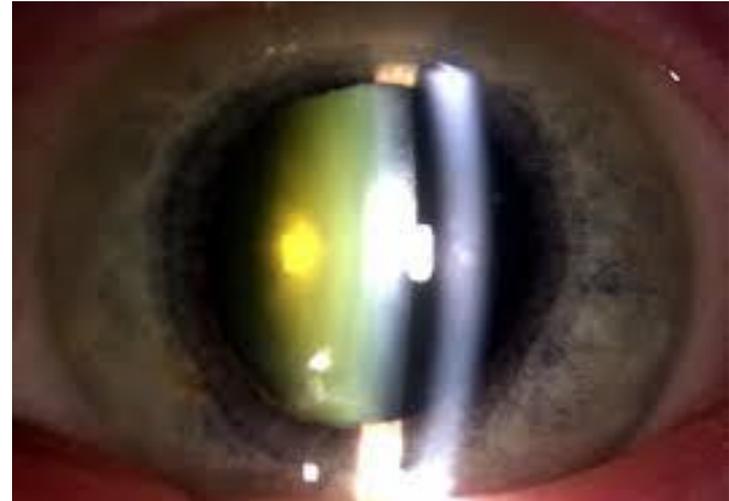
Area Surrounding the Eyes



Conjunctiva

Normal and Abnormal EOM



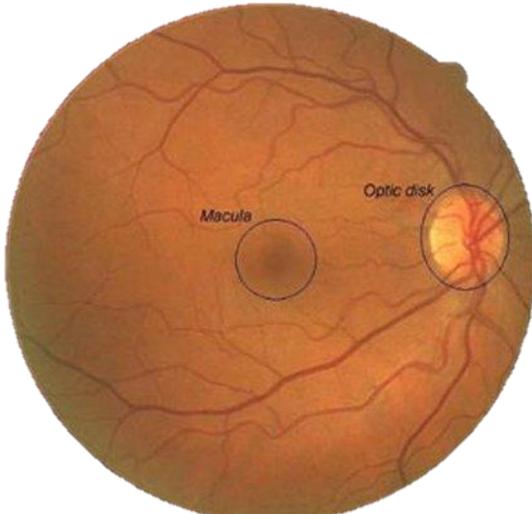
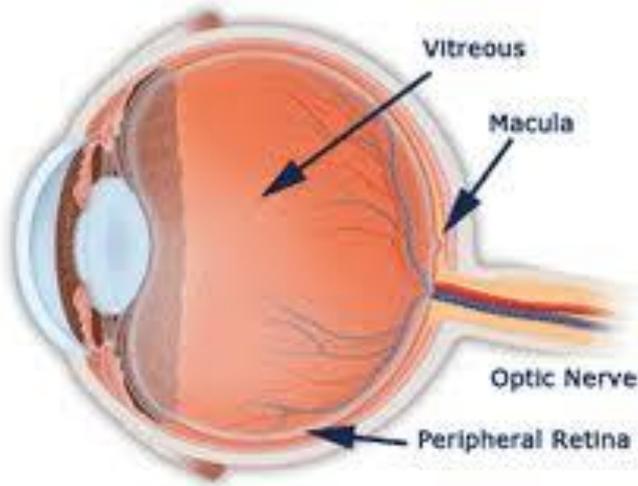


Slit Lamp Cornea, Anterior Chamber and Lens

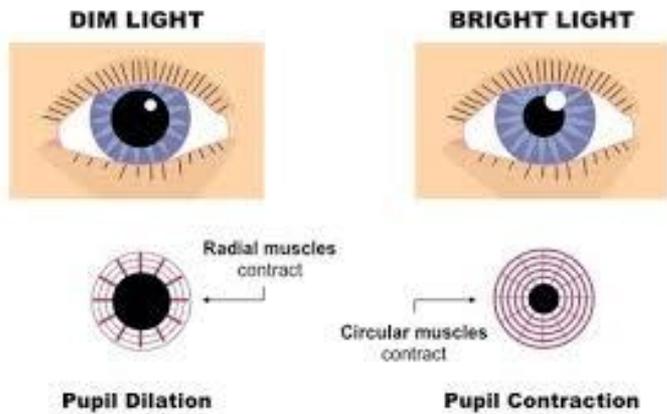


Intraocular Pressure Testing

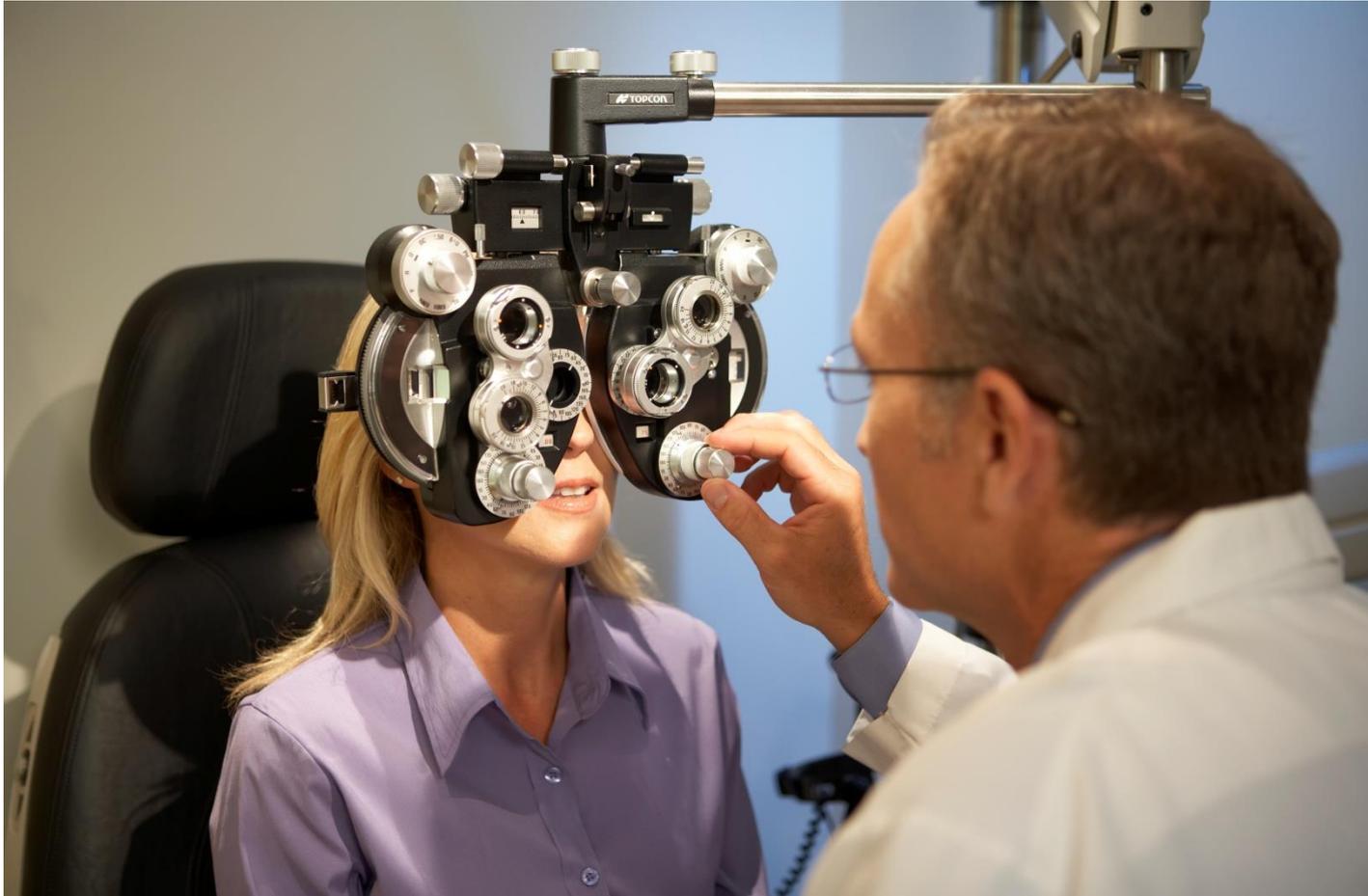
Posterior Segment, Retina and Optic Nerve

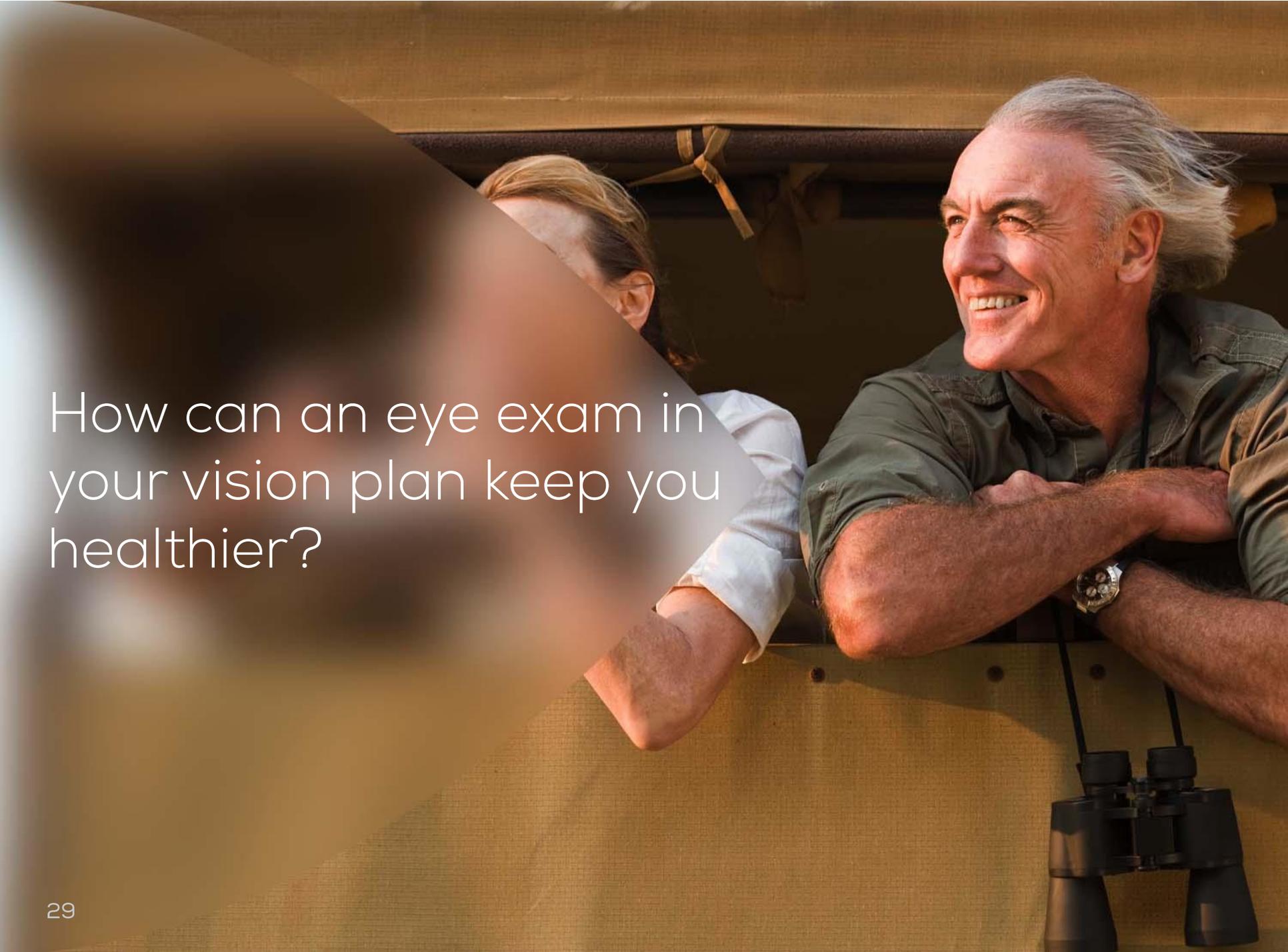


The Iris & the Pupil



Refraction-obtaining the Rx



A photograph of a man and a woman looking out from a boat. The man, on the right, has grey hair and is smiling broadly, wearing a green short-sleeved shirt and a watch. The woman, on the left, has blonde hair and is wearing a white long-sleeved shirt. They are both leaning on a wooden railing. In the foreground, a pair of black binoculars is visible. The background is a bright, hazy outdoor setting. A large, semi-transparent, light-colored shape is overlaid on the left side of the image, containing the text.

How can an eye exam in
your vision plan keep you
healthier?

Eye diseases that can impact you today and tomorrow

Regular comprehensive eye exams, including dilation, are the key to early detection of prevalent eye diseases afflicting millions of people in the US:

Glaucoma

- Minimal symptoms until advanced stage and affects the cells of the optic nerve
- Diagnosed in 3 million Americans 40 years of age and older, resulting in irreversible loss of vision*
- An equal number have glaucoma but are undiagnosed or elected to discontinue needed treatment*
- Second leading cause of blindness in the world*

Cataracts

- Causes the lens of the eye to become cloudy
- Affects over 20 million Americans, resulting in double or blurred images**
- Causes nearly 50% of worldwide blindness***



Cataracts Simulation

*Glaucoma Research Foundation 2011

**Centers for Disease Control (CDC) 2009

***World Health Organization 2009

More impactful eye diseases

Diabetic Retinopathy

- A complication of diabetes that adversely affects the retina
- Results in vision loss and blindness in 20% (over 2 million) of diabetics*
- Increase of 89% of diabetics with retinopathy since 2000
- Diabetes is responsible for 8% of legal blindness in the US**

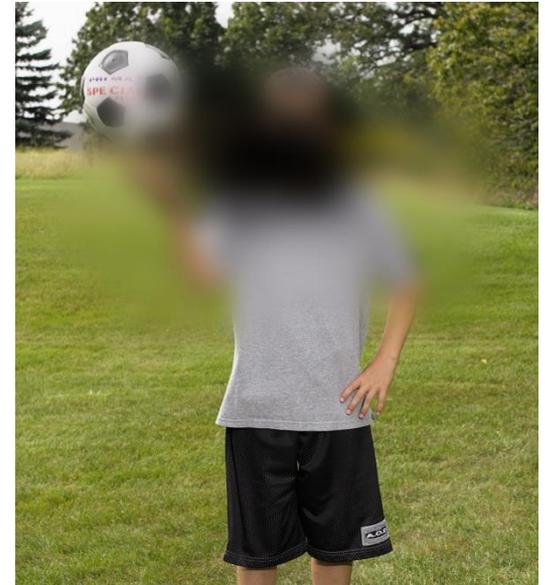
Macular Degeneration

- Age-related condition that causes loss of central vision
- People who smoke, >50 years of age are at higher risk and not protecting against blue light
- Leading cause of legal blindness in the Western world***
- Affects 13 million Americans***

*American Diabetes Association

**American Optometric Association

***AMD Alliance International



Macular Degeneration
Simulation

Chronic diseases and the impact on your health

Diabetes	<p>32.3 million or 13% of the US population age 20 and older</p> <ul style="list-style-type: none">▪ 22.7 million diagnosed▪ 9.6 million undiagnosed▪ 86 million pre-diabetics (increase of 10% in 10-yrs) and <u>90% are in denial of their condition</u>
Hypertension	<p>100 million with over 50% not controlled</p>
Hypercholesterolemia	<p>Over 105 million adults have total cholesterol over 200 mg/dL and of this group over 36 million are over 240 mg/dL</p>

* American Diabetes Association

** Centers for Disease Control (CDC)

Eye Examination Value in Overall Health

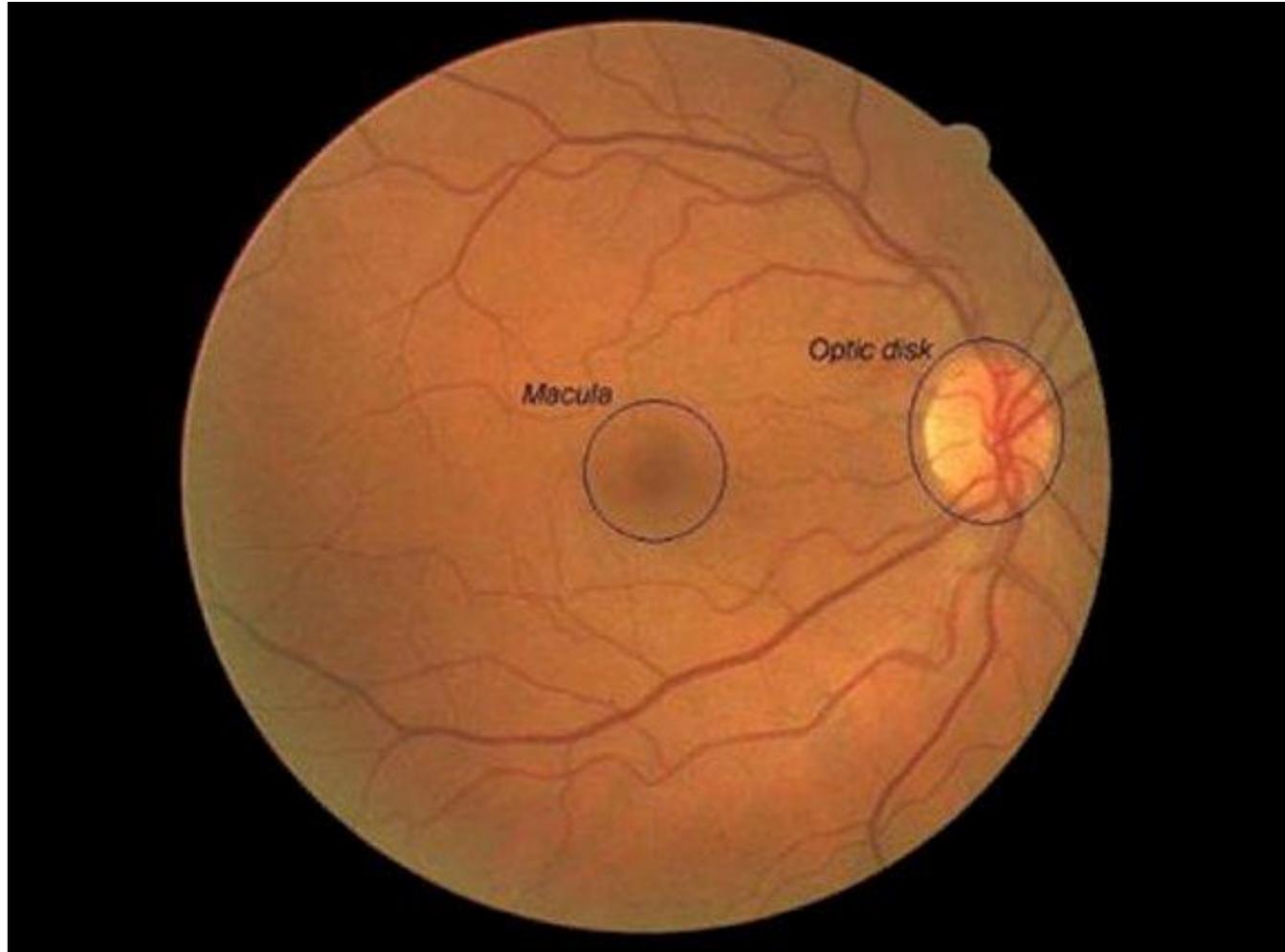
- 1 A primary vision care benefit is an important for everyone
- 2 Comprehensive eye exams with dilation, are often early indicators of serious health conditions.¹

Serious health conditions that may be identified through an eye exam:

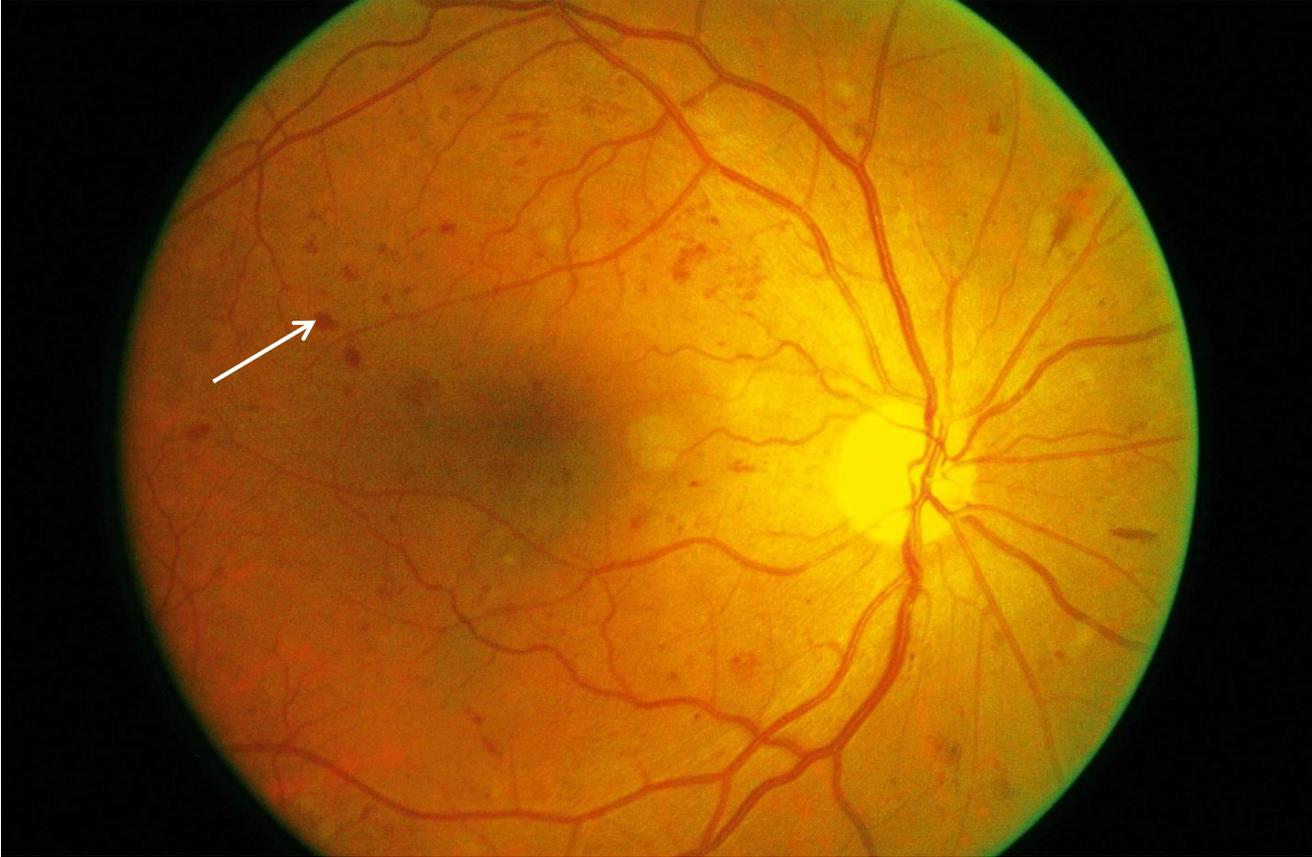
- Brain Tumors
- Diabetes
- High Blood Pressure
- Hypercholesterolemia
- Lupus
- Multiple Sclerosis
- Aids
- Arteriosclerosis
- Rheumatoid Arthritis
- Age-related Macular Degeneration
- Diabetic Retinopathy

¹ National Eye Institute, <https://www.nei.nih.gov/healthyeyes/eyehealthtips>, Dec 2011

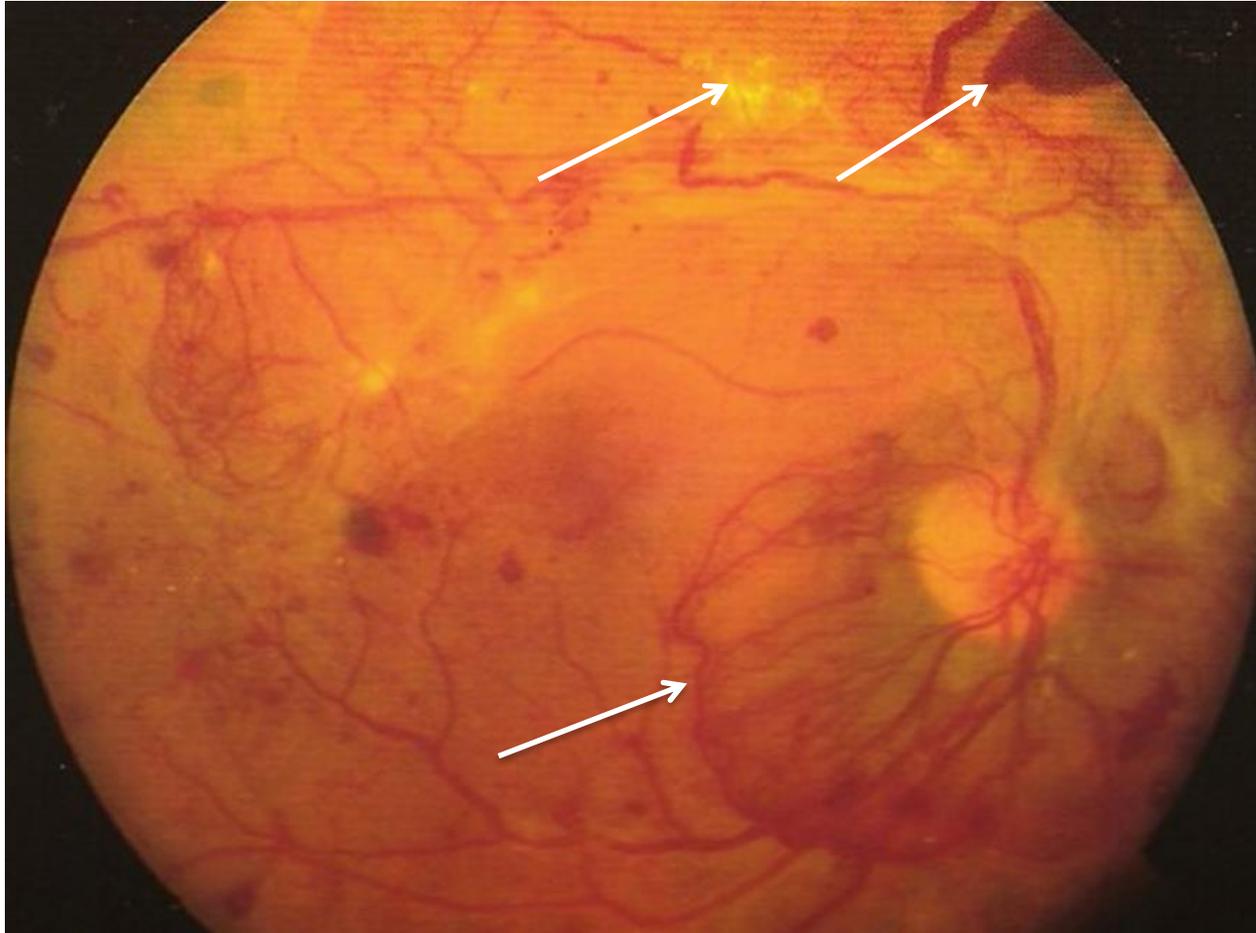
View of a normal retina



Mild Non-proliferative Diabetic Retinopathy

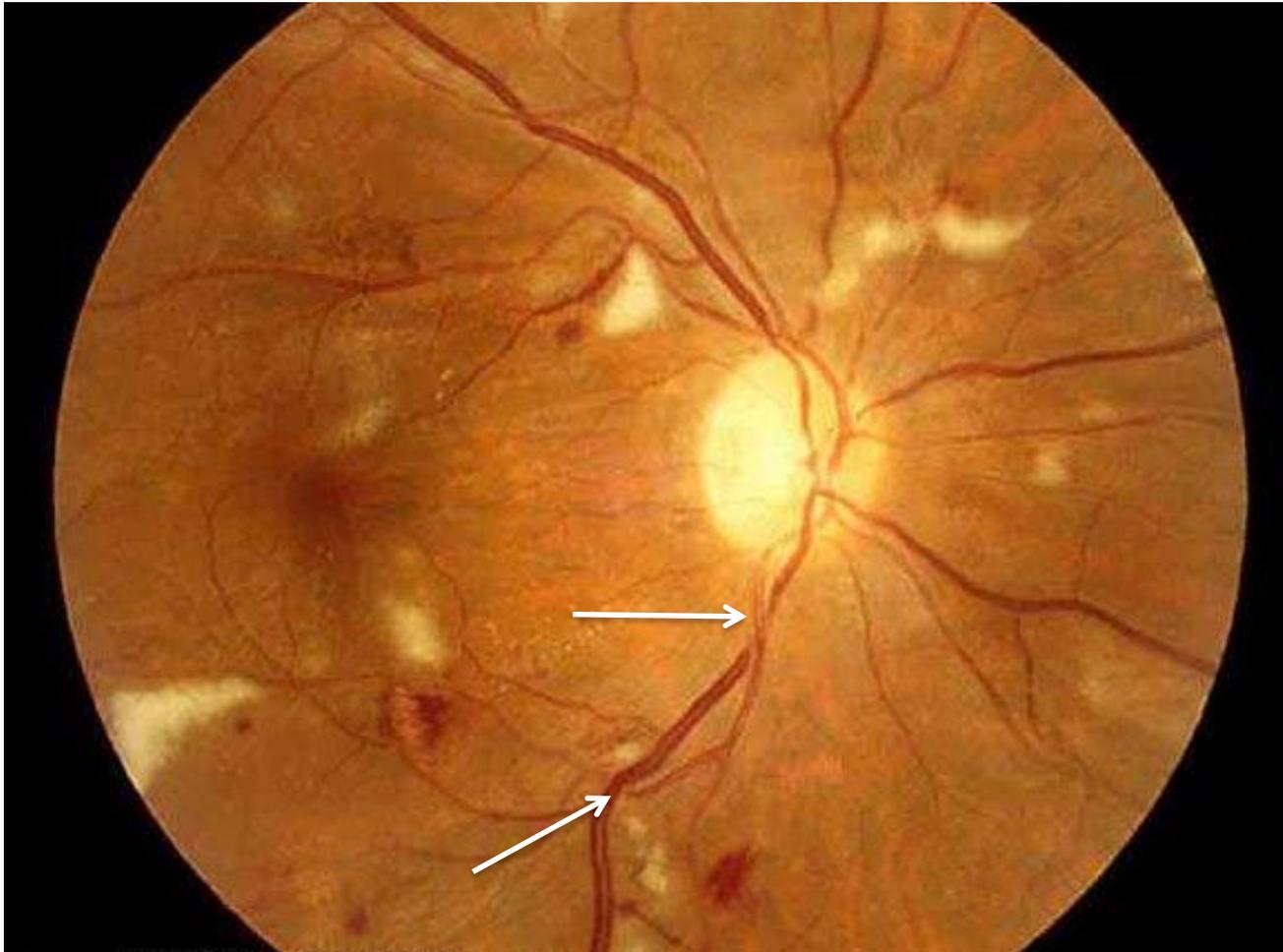


Proliferative Diabetic Retinopathy



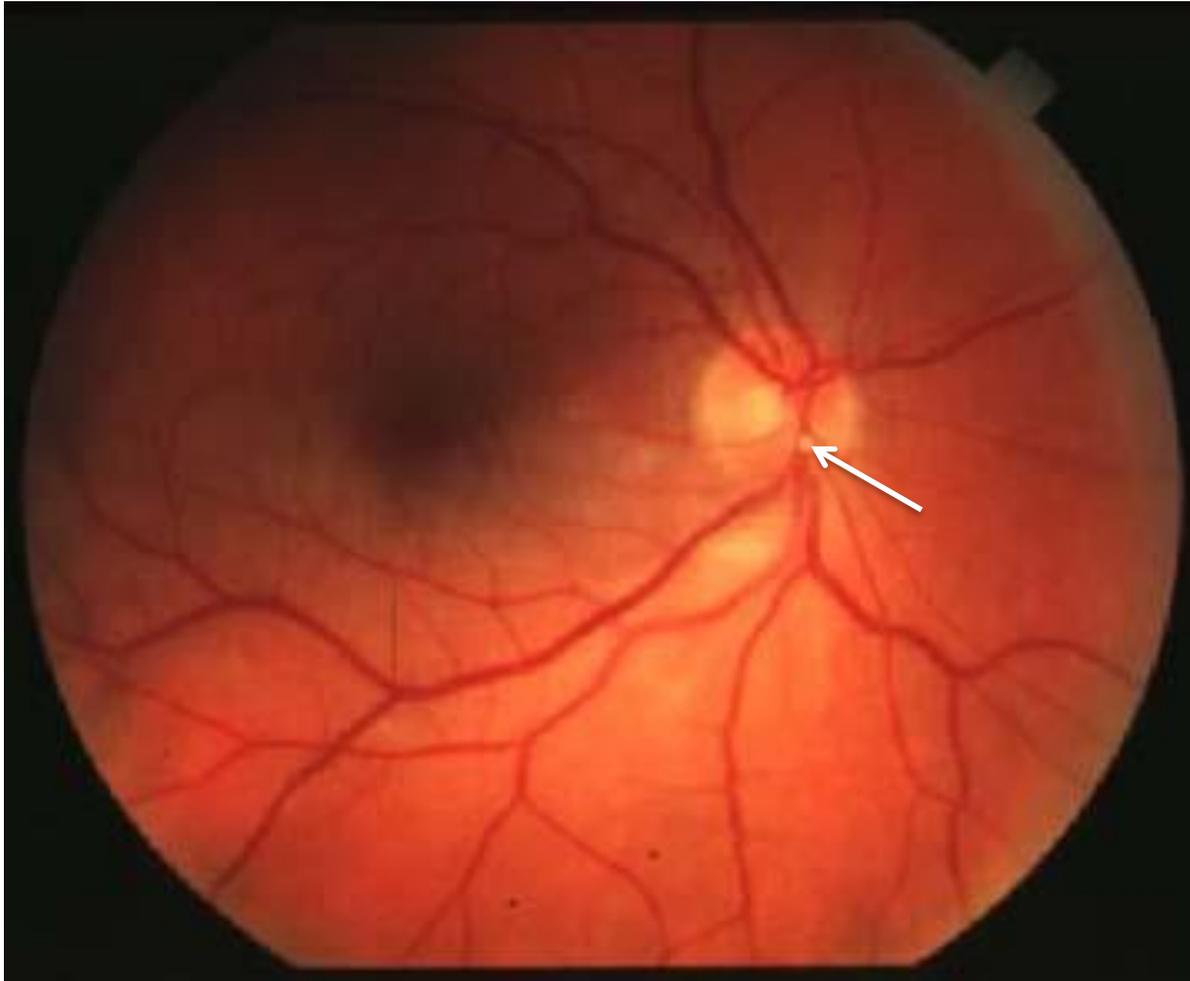
New vessel growth, hemorrhages and swelling

Hypertension



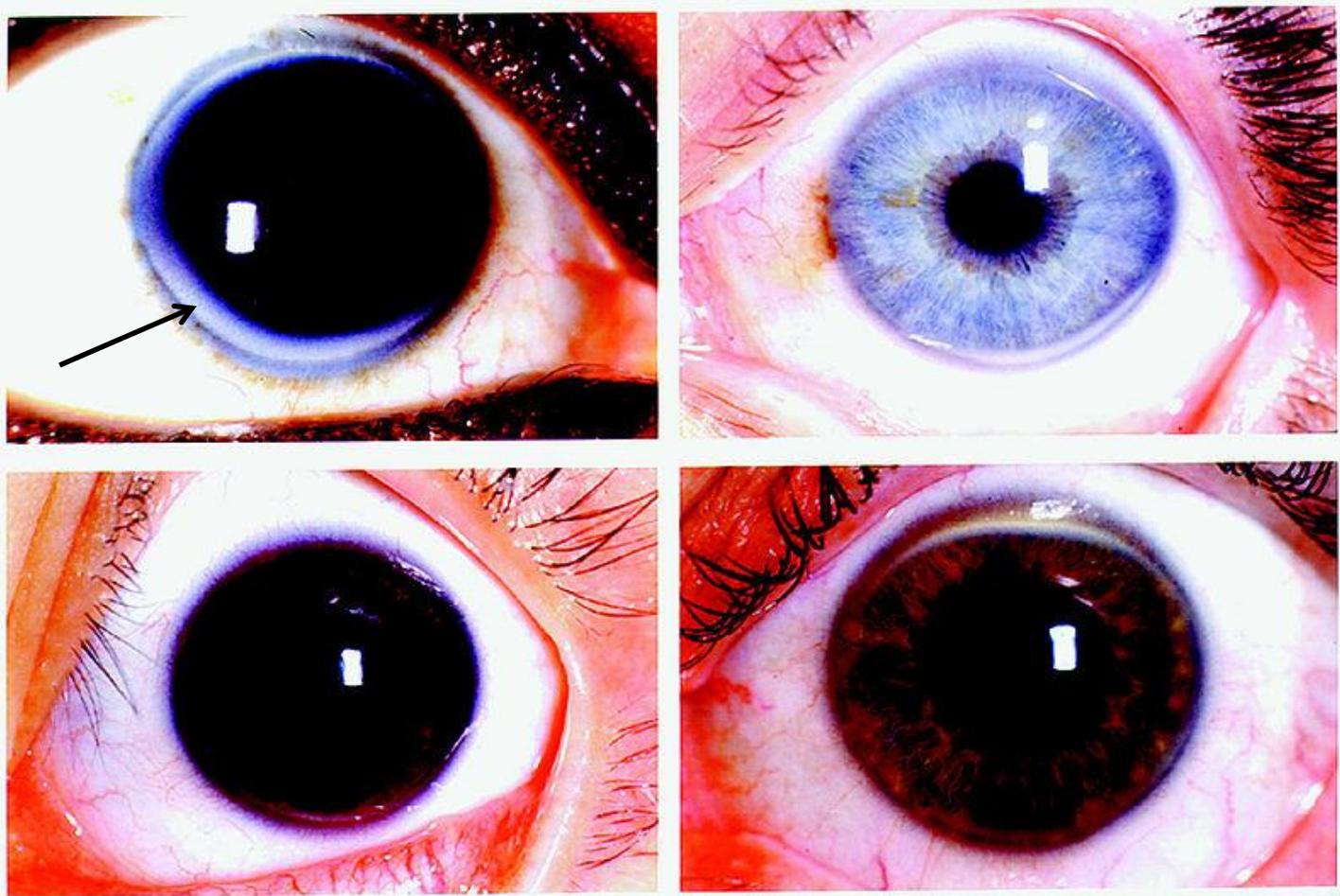
Hypertensive Retinopathy

Hypercholesterolemia



Hollenhorst (Cholesterol) Plaque

Hypercholesterolemia



Corneal Arcus

Keeping Eyes Comfortable and Healthy

- Regular eye exams
- If wearing contact lenses, replace as prescribed!
- Eyeglass & sunglass lenses with UV and Blue Light protection
- If your everyday glasses are not ideal for a concentrated work task, obtain a special Rx
- Good nutrition
- Stay hydrated, drink adequate fluids
 - Males-3 liters per day (13 cups)
 - Females-2.2 liters per day (9 cups)
- Think blink!
- If eyes feel dry at work, use a quality artificial tear
- Consider nutritional supplements:
 - Quality Omega 3 fish oil
 - Lutein
 - Zeaxanthin



What's trending in Vision Benefits

What's trending with network ?

- Market trending towards mix of independent and retail
- Typical analysis is a good base
 - Geo-access (2/10 miles urban/suburban and 1/20 miles rural)
 - Number of overall locations
 - Disruption?
- Consumer preference is choice of in-network independent and retail
- Out of network reimbursements offered to enhance full choice for members
- In-network claims
- Increasing interest in online purchases (contacts)

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- In-network claims
- Increasing interest in online purchases (contacts) and now eyeglasses!



Any questions?