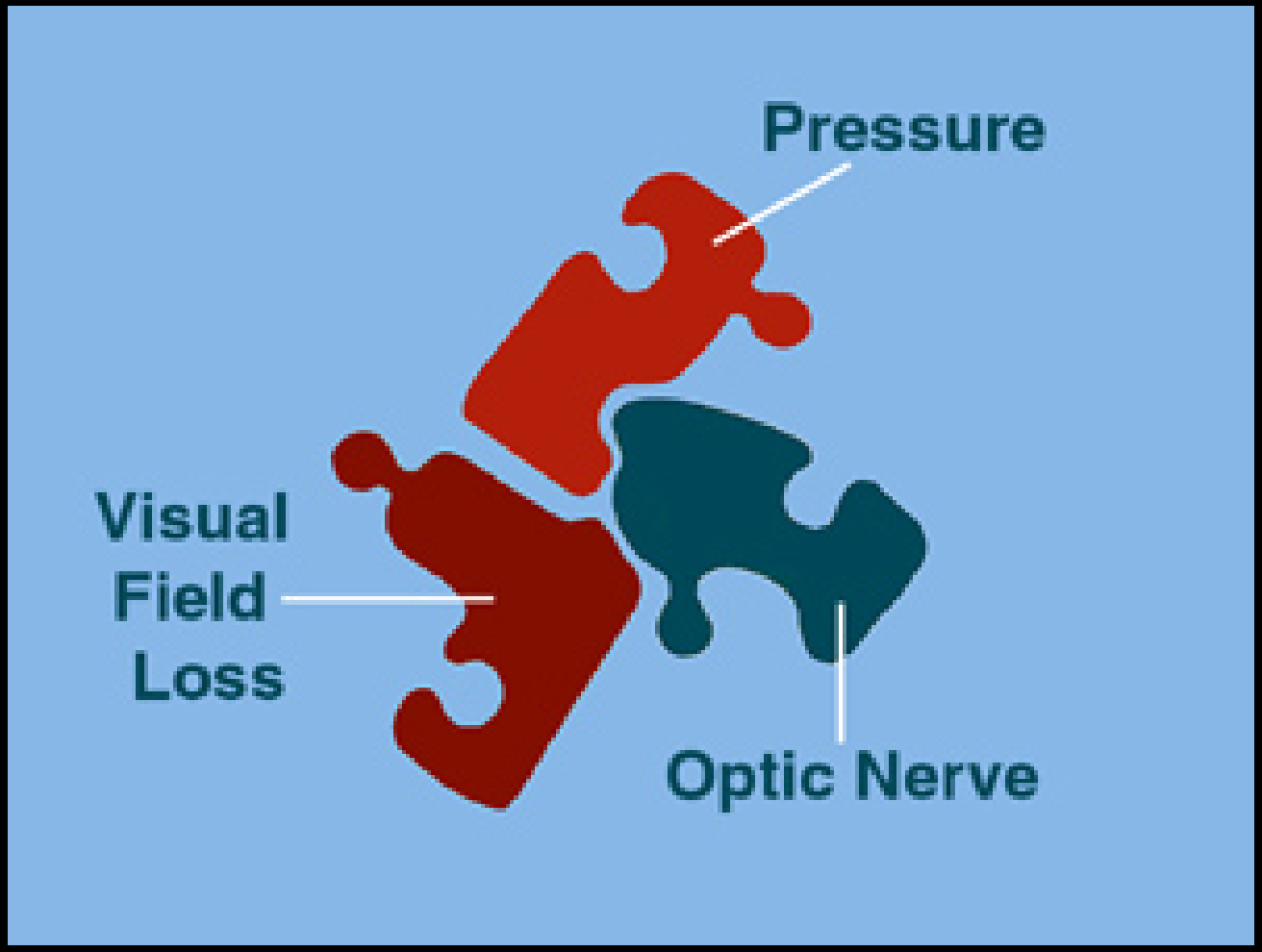
โรคตา...อันตราย

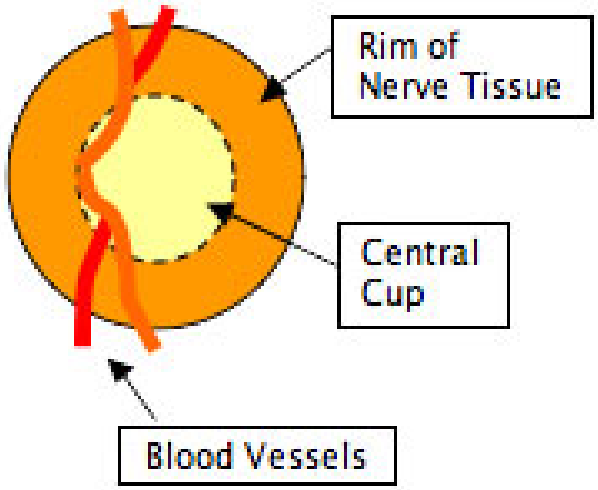
Glaucoma
(โรคต้อหิน)

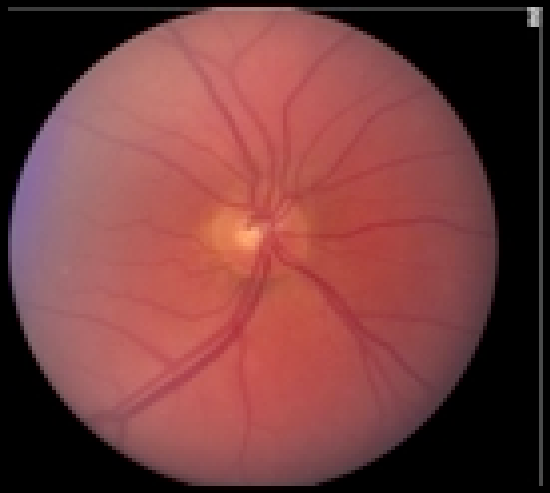
Glaucoma

- A group of diseases
  - Optic neuropathy with associated visual field loss
  - Elevated intraocular pressure (IOP) is one of primary risk factors


Pressure
Visual
Field
Loss
Optic Nerve


CBlackwell,MD 2008

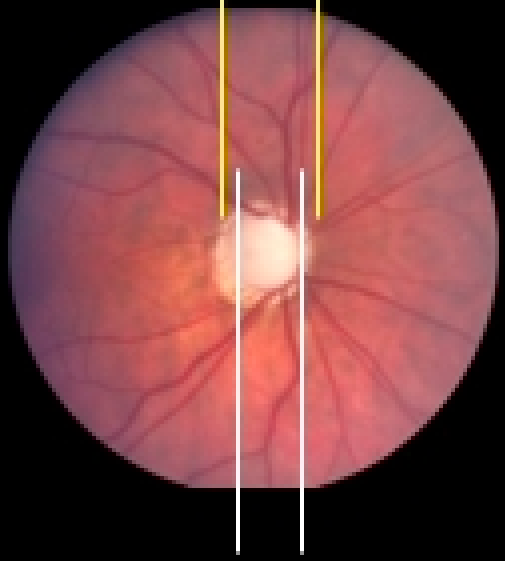

Rim of
Nerve Tissue
Central
Cup
Blood Vessels



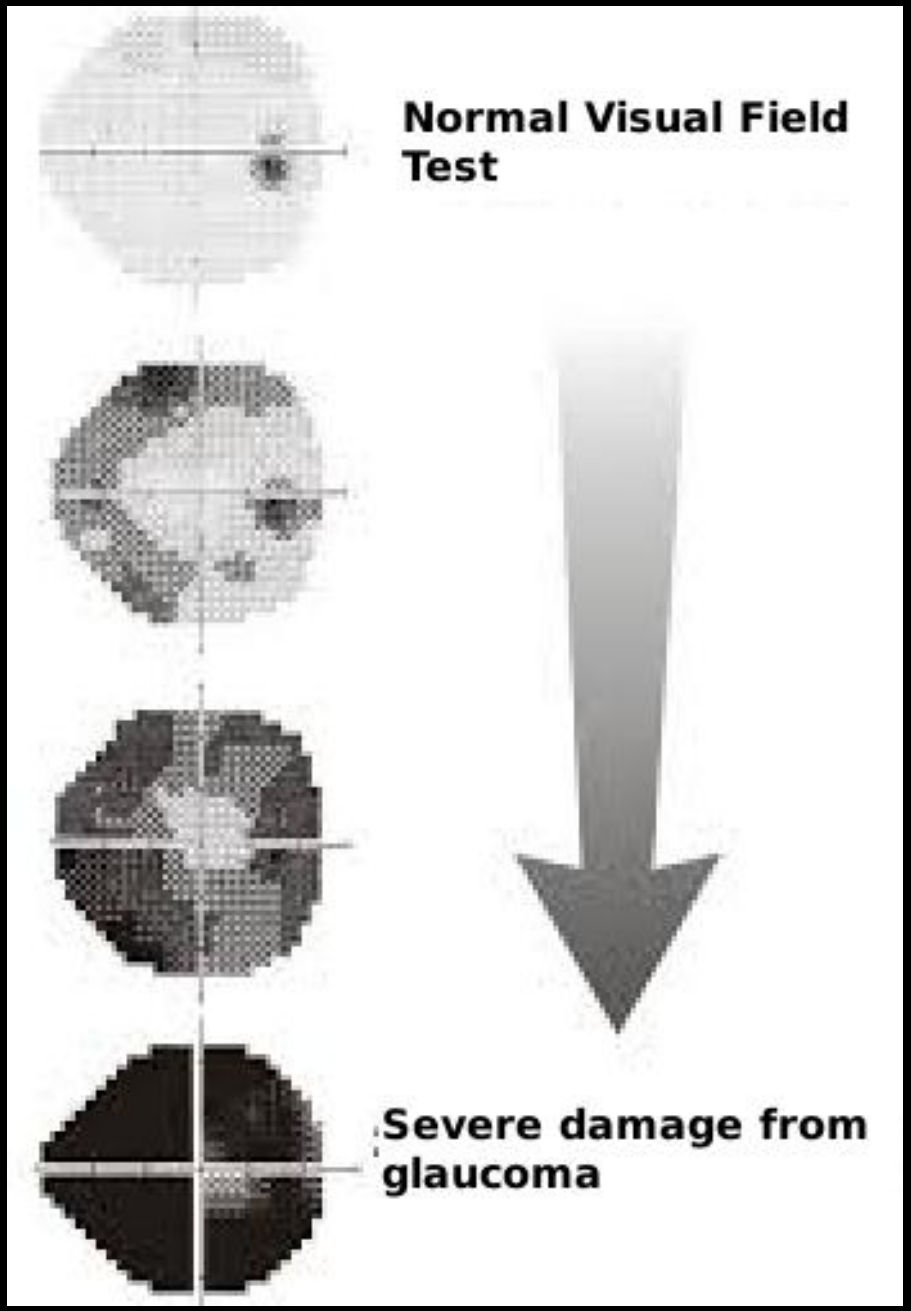
Normal Appearance

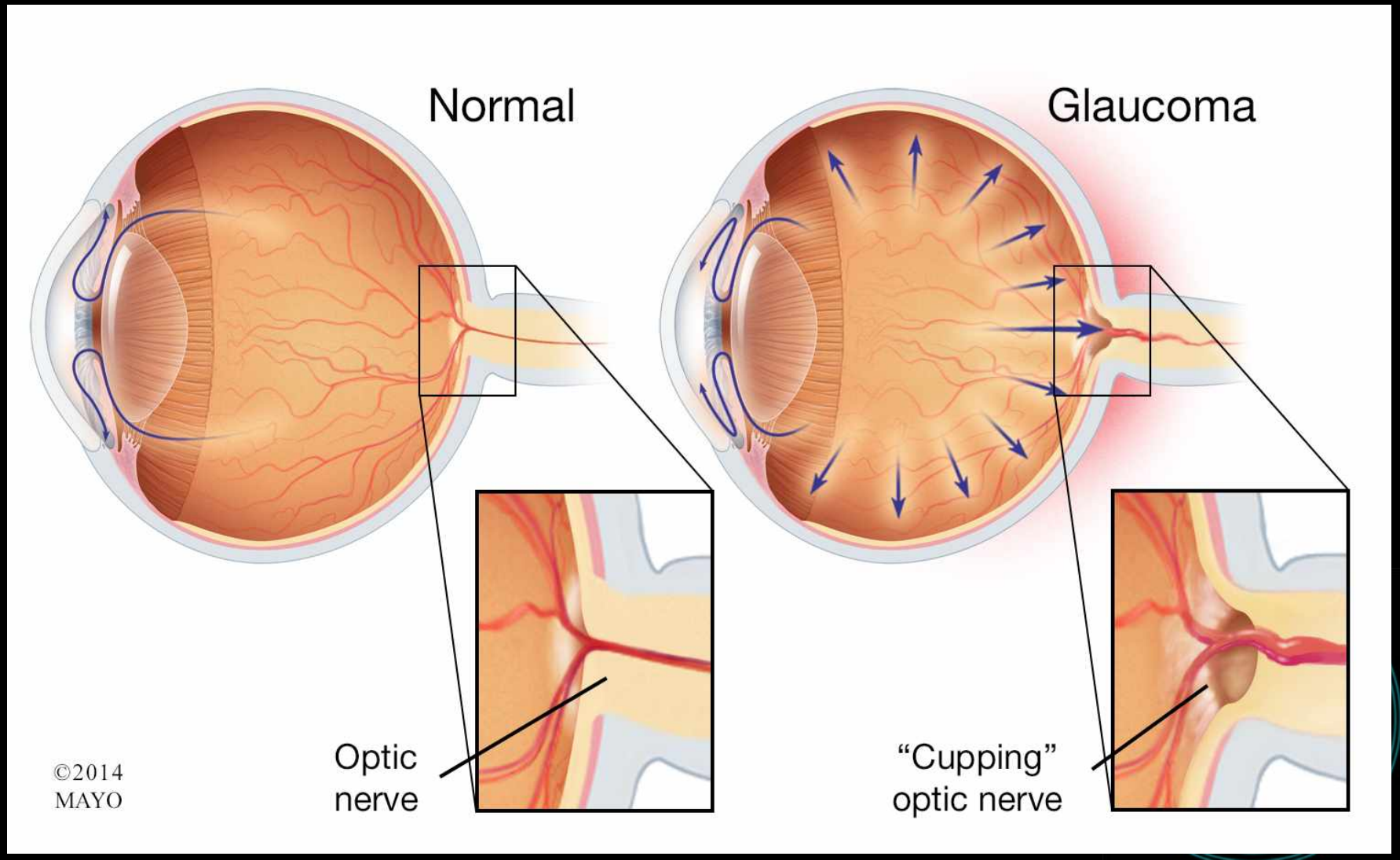
Cup:disc ratio

~0.3

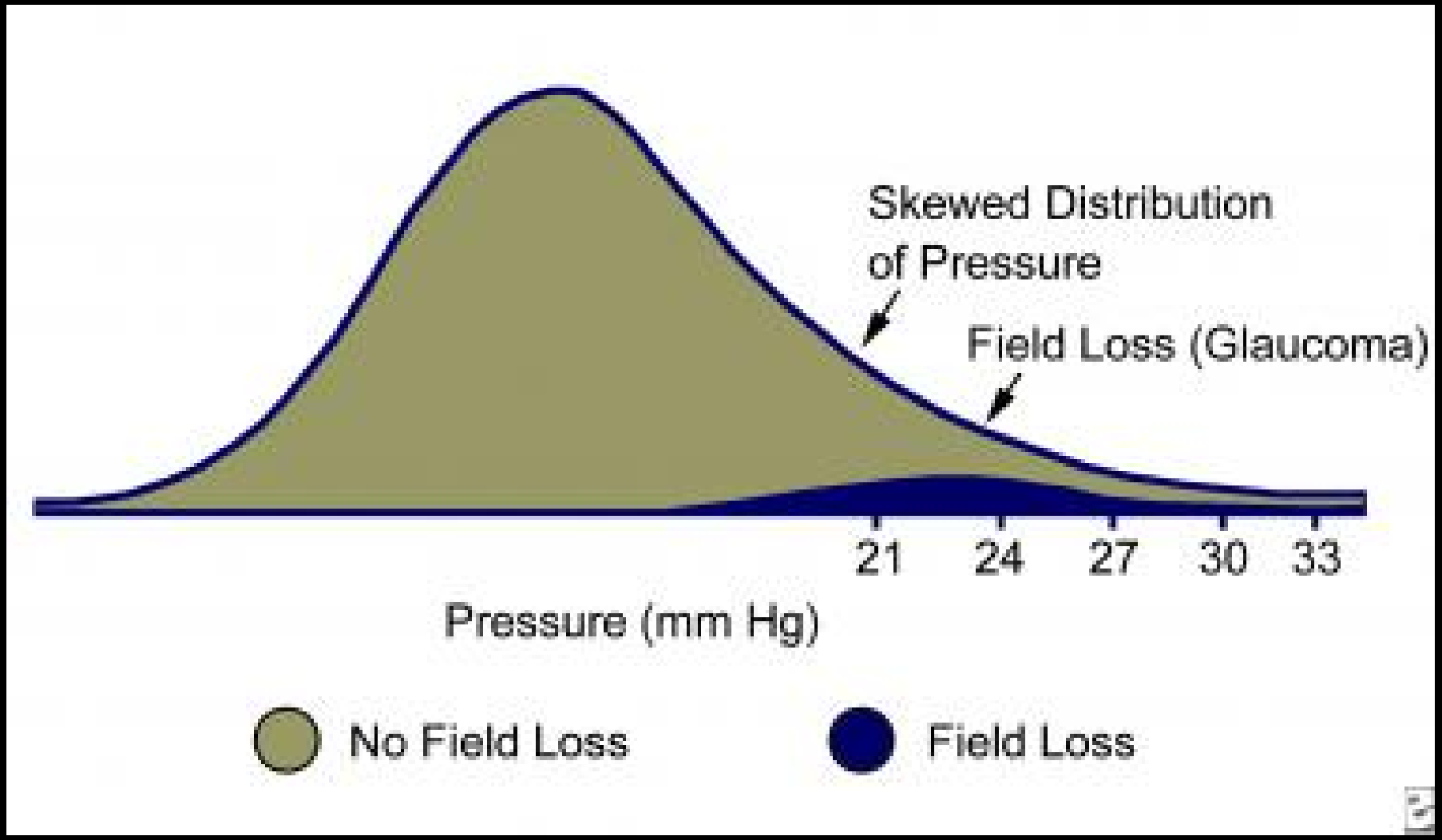


Abnormal Appearance
cup:disc ratio
0.9


Normal Visual Field Test
Severe damage from glaucoma


Normal
Glaucoma
Optic nerve
"Cupping" optic nerve
©2014 MAYO

Distribution of normal IOP (5,220 eyes in Framingham Eye Study)



Normal Vision

Early Glaucoma

Advanced Glaucoma

Extreme Glaucoma

(Photo by CHONA M. DUROGA)

Are you at risk?

Glaucoma Risk Factors

Being over 60 years old

Being of African, Asian or Hispanic descent

Having a family history of glaucoma

Being very nearsighted

Having a thin central cornea

Long-term steroid use

Having conditions such as heart disease, diabetes and hypothyroidism

Having high blood pressure

Tool: Are You At Risk?

http://bit.ly/1IFUiy8

Other risk factors?

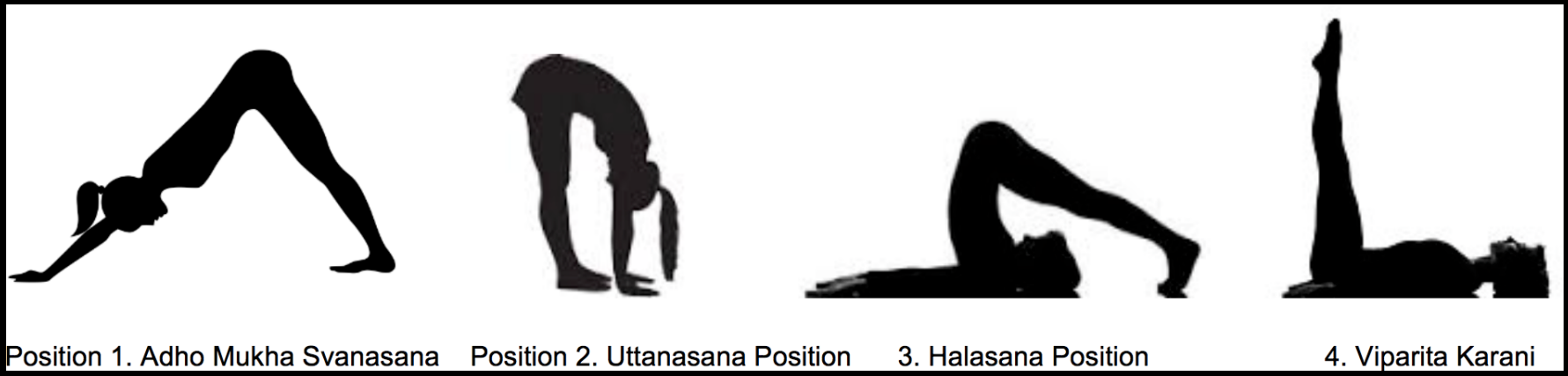
Physical exercise

Exercise Training Reduces Intraocular Pressure Among Subjects Suspected of Having Glaucoma

Michael S. Passo, MD; Linn Goldberg, MD; Diane L. Elliot, MD; E. Michael Van Buskirk, MD

- Regular exercise can reduce eye pressure
- Mean IOP decreased 4.6 +/- 0.4 mmHg (20%)

Yoga

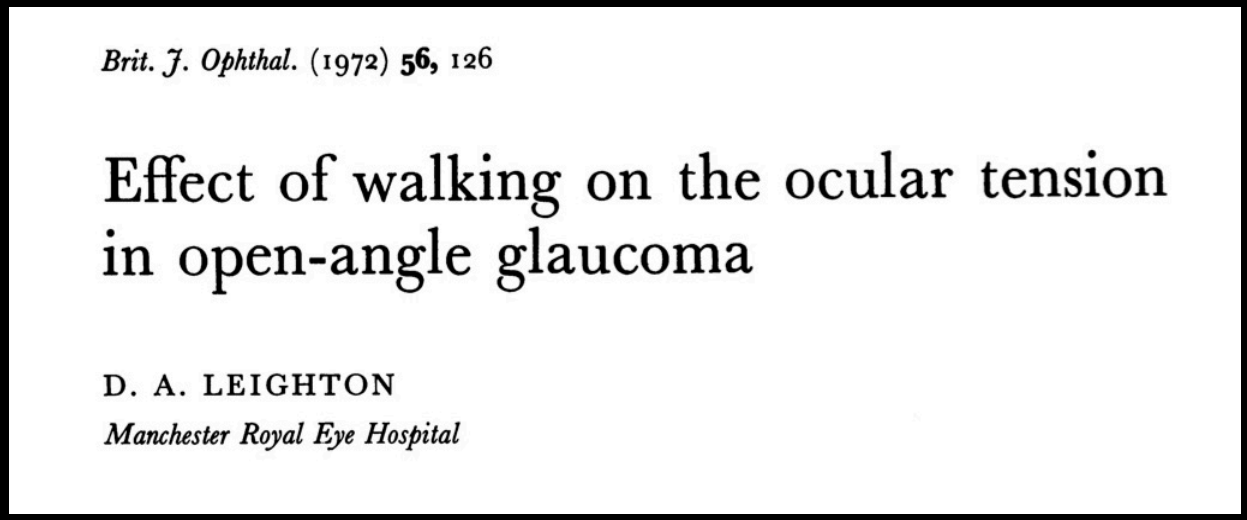


Position 1. Adho Mukha Svanasana Position 2. Uttanasana Position 3. Halasana Position 4. Viparita Karani

Jasien JV, Jonas JB, de Moraes CG, Ritch R (2015) Intraocular Pressure Rise in Subjects with and without Glaucoma during Four Common Yoga Positions. PLoS ONE 10(12): e0144505. doi:10.1371/journal.pone.0144505

Walking

- Walking for 50 minutes
- The mean IOP fall after walking was 4.5 mmHg



Brit. J. Ophthal. (1972) **56,** 126

Effect of walking on the ocular tension in open-angle glaucoma

D. A. LEIGHTON
Manchester Royal Eye Hospital

Eating and Drinking

- No conclusive studies prove a connection between specific foods and glaucoma

- Effect on the disease

Caffeine

- Some studies – significant caffeine intake over a short time can slightly elevate IOP

Coffee in glaucoma patient?

- Regular coffee vs decaffeinated coffee
- Statistically change in IOP in each group at 60 and 90 mins
- Intake of caffeinated beverage (≥ 180 mg caffeine) may not be recommended for patients with glaucoma

Effect of Coffee Consumption on Intraocular Pressure

Coffee vs Tea

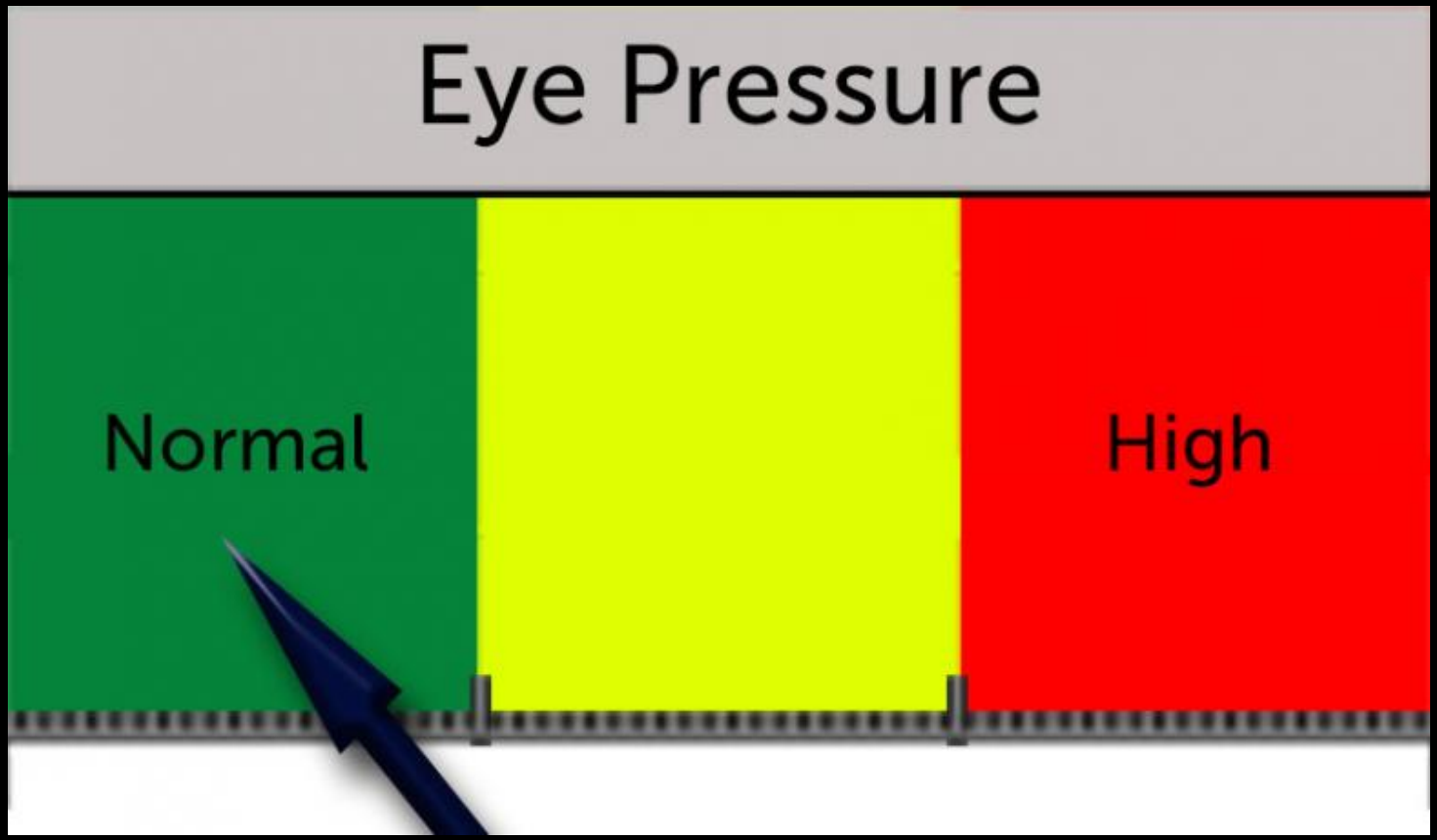
- Drinking regular coffee vs herbal tea in glaucoma patients
- IOP at 30, 60 and 90 minutes
- Statistically significant change in IOP at 90 mins (1.04+/- 0.37 mmHg vs -0.42 +/- 0.44 mmHg)

The Effect of Caffeine on Intraocuular Pressure in Glaucoma Patents+++

Eve J. Higginbotham, MD, Heidi A. Kilimanjaro, MD, Jacob T. Wilensky, MD, Randal L. Batenhorst, PharmD, David Hermann, PharmD
UIC Eye Center, University of Illinois at Chicago College of Medicine, Chicago

Coffee

- However, other studies indicate that caffeine has no meaningful impact on IOP
- To be safe, people with glaucoma are advised to limit their caffeine intake to moderate level



Normal IOP?

Normal tension glaucoma (NTG)

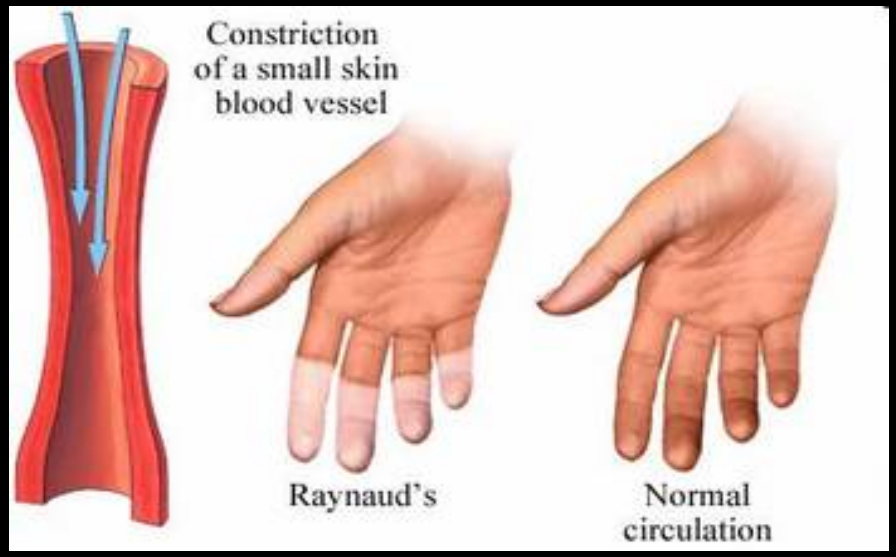
- IOP ≤ 21 mmHg
- Glaucomatous optic disc damage
- Open drainage angle on gonioscopy
- Absence of secondary cause

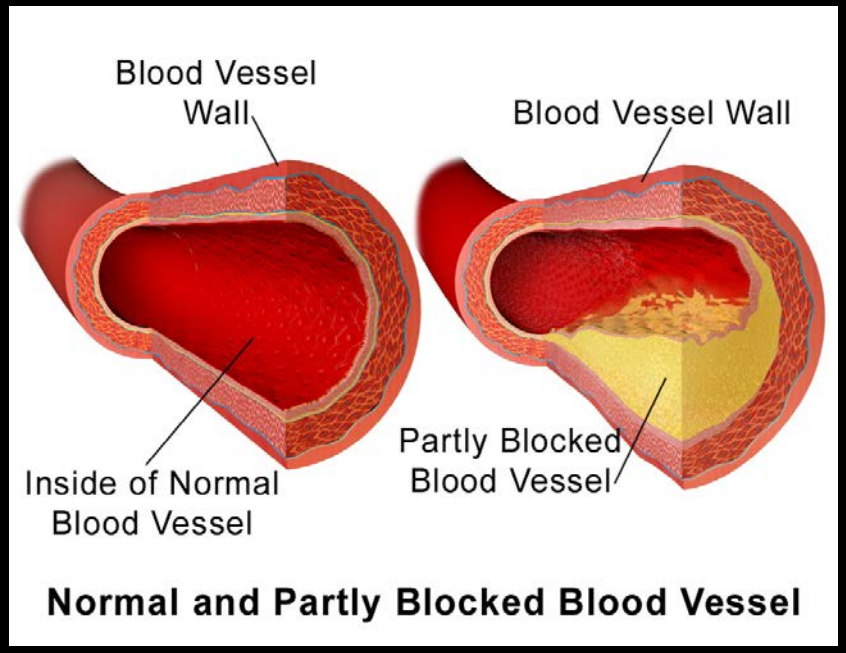
NTG

- IOP is not the only risk factor
- Other risk factors may play a more important role

?


Migraine
Headache
PainAssist.com


Constriction
of a small skin
blood vessel
Raynaud's
Normal
circulation


Blood Vessel
Wall
Blood Vessel Wall
Inside of Normal
Blood Vessel
Partly Blocked
Blood Vessel
Normal and Partly Blocked Blood Vessel


AUTOIMMUNE
DISEASE
GLYCOPROTEIN
RHEUMATOID
ACETYLCHOLINE
INFLAMMATORY
PEPTIDE
HEPATITIS
ANTIBODY
IDIOPATHIC
SYSTEMIC
ARTHRITIS
MYOSITIS
ENCEPHALITIS
UVEITIS
LUPUS
AUTOIMMUNE
COMPONENT

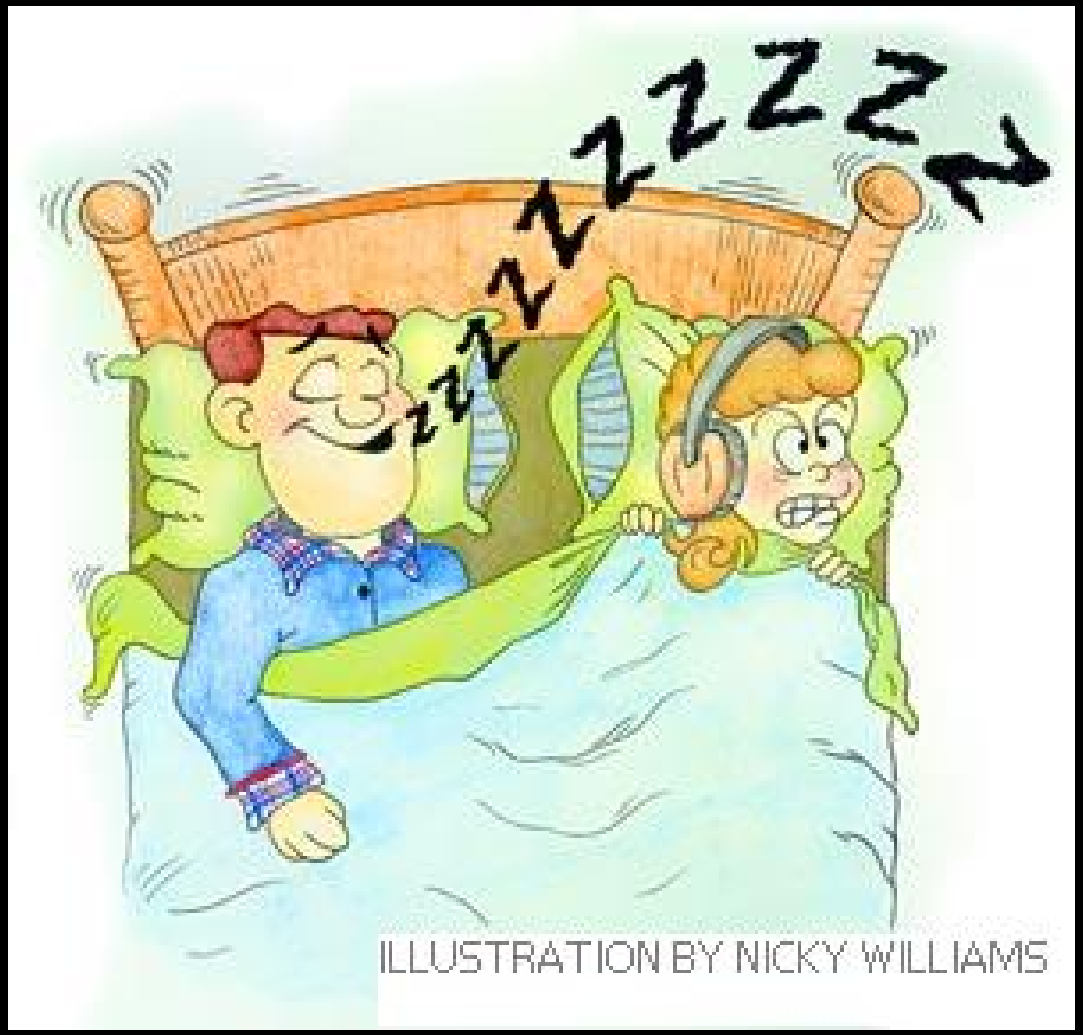


ILLUSTRATION BY NICKY WILLIAMS

Management

- Regular checkup

Age-related macular degeneration (AMD)
(โรคจอตาเสื่อมในผู้สูงวัย)

AMD

- Dry AMD : 85-90%
- Wet AMD : 10-15%

Dry AMD

- Drusen
- RPE abnormalities

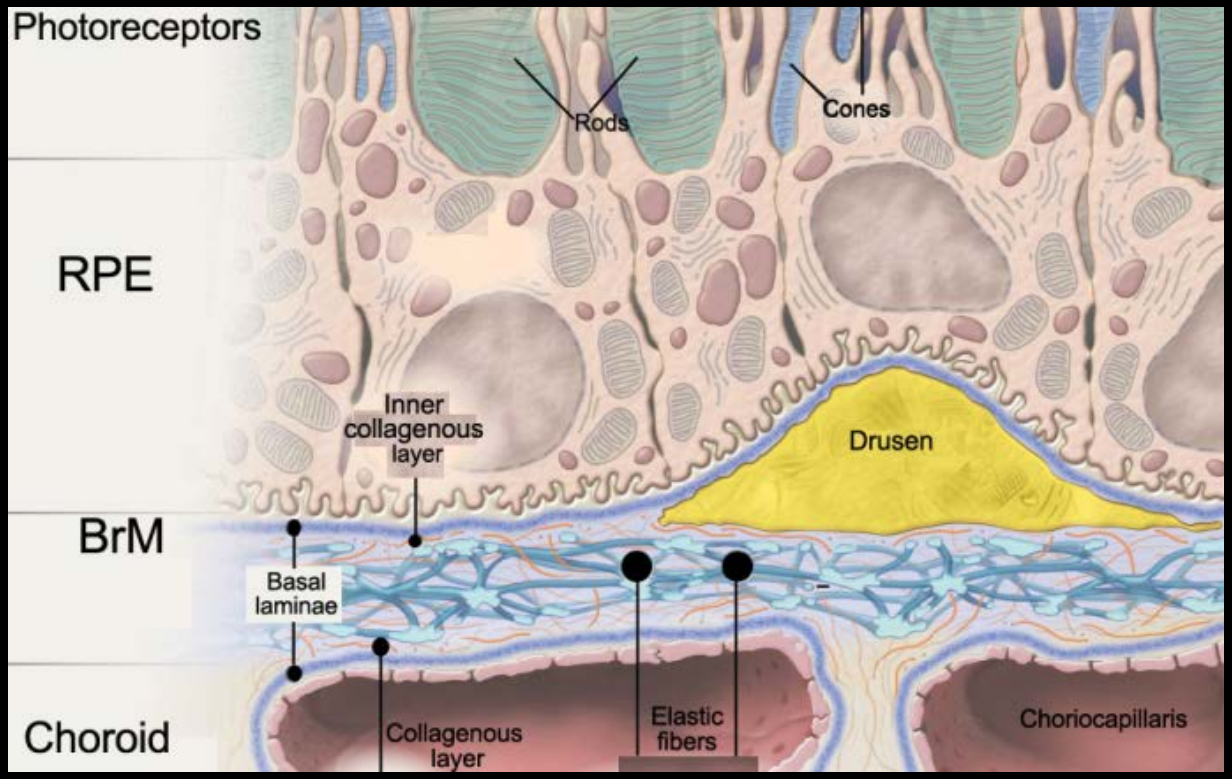
Risk factors

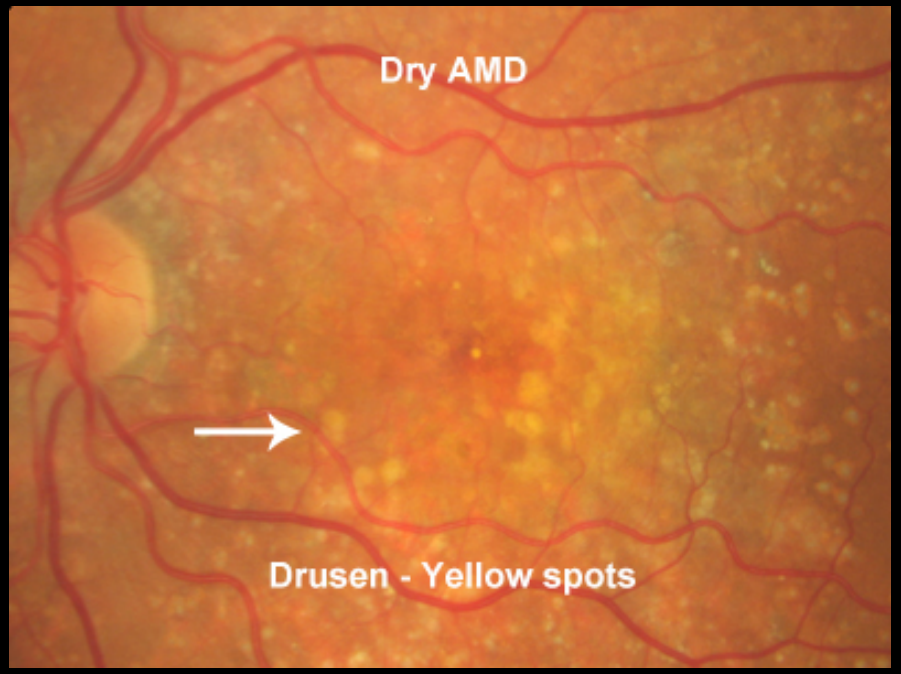
Dry AMD

- Risk factors:
  - Older age
  - Family history
  - Smoking
  - Hyperopia
  - Female
  - Hypertension
  - Hypercholesterolemia
  - Cardiovascular disease

Drusen

- Small, round, yellow lesions located at the level of RPE within the macular

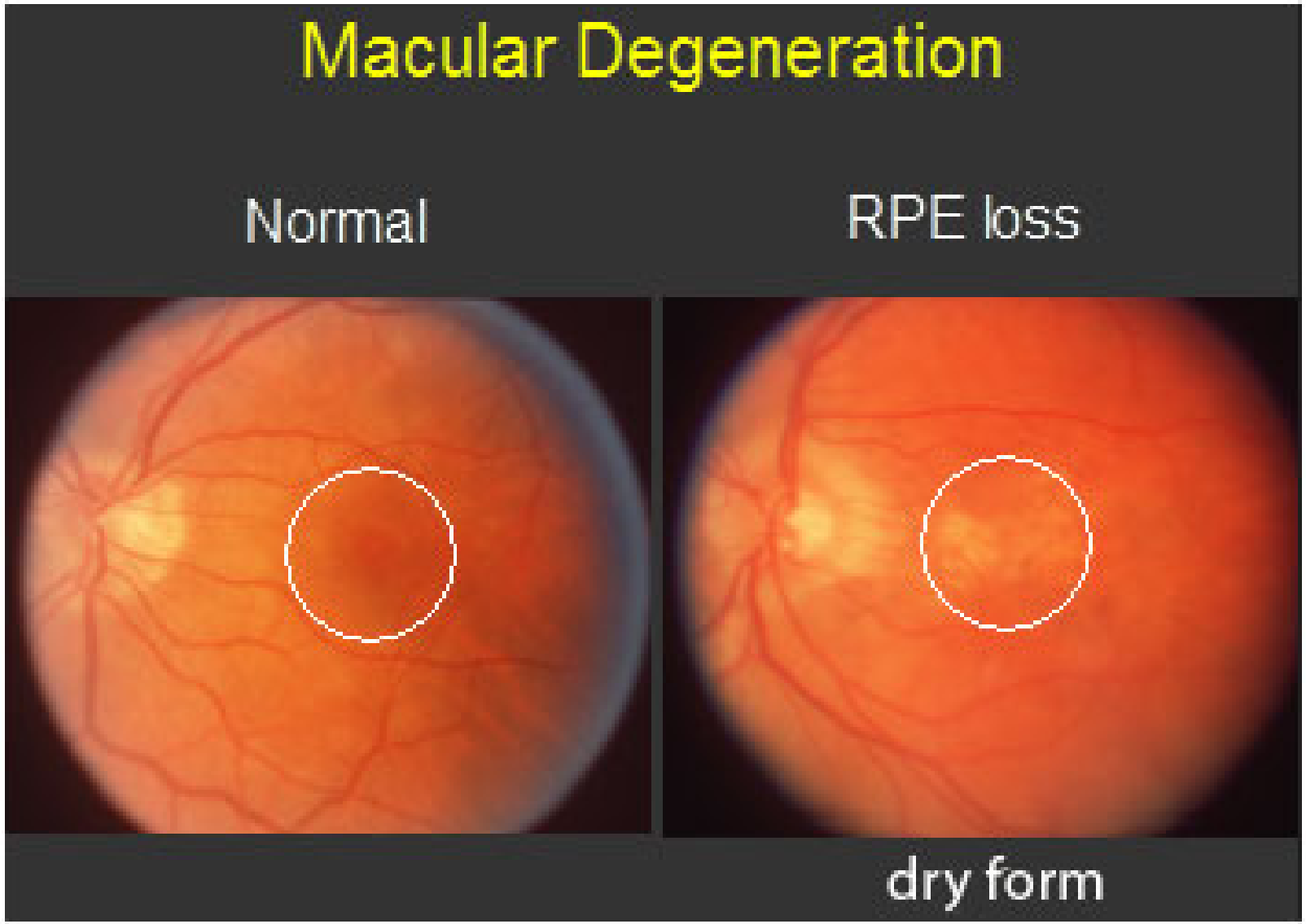



Dry AMD
Drusen - Yellow spots

RPE abnormalities

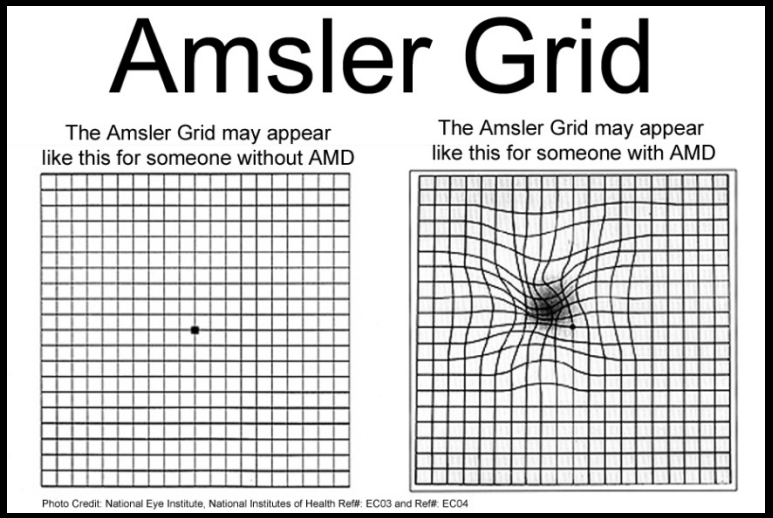
- Atrophy or attenuation
- Flatten of RPE

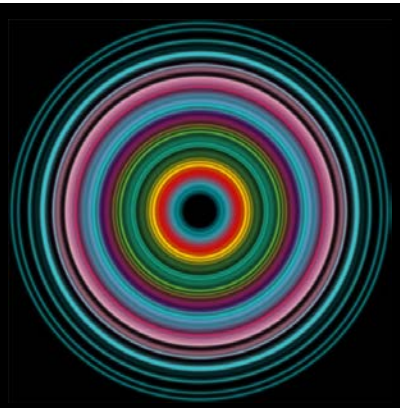
Macular Degeneration



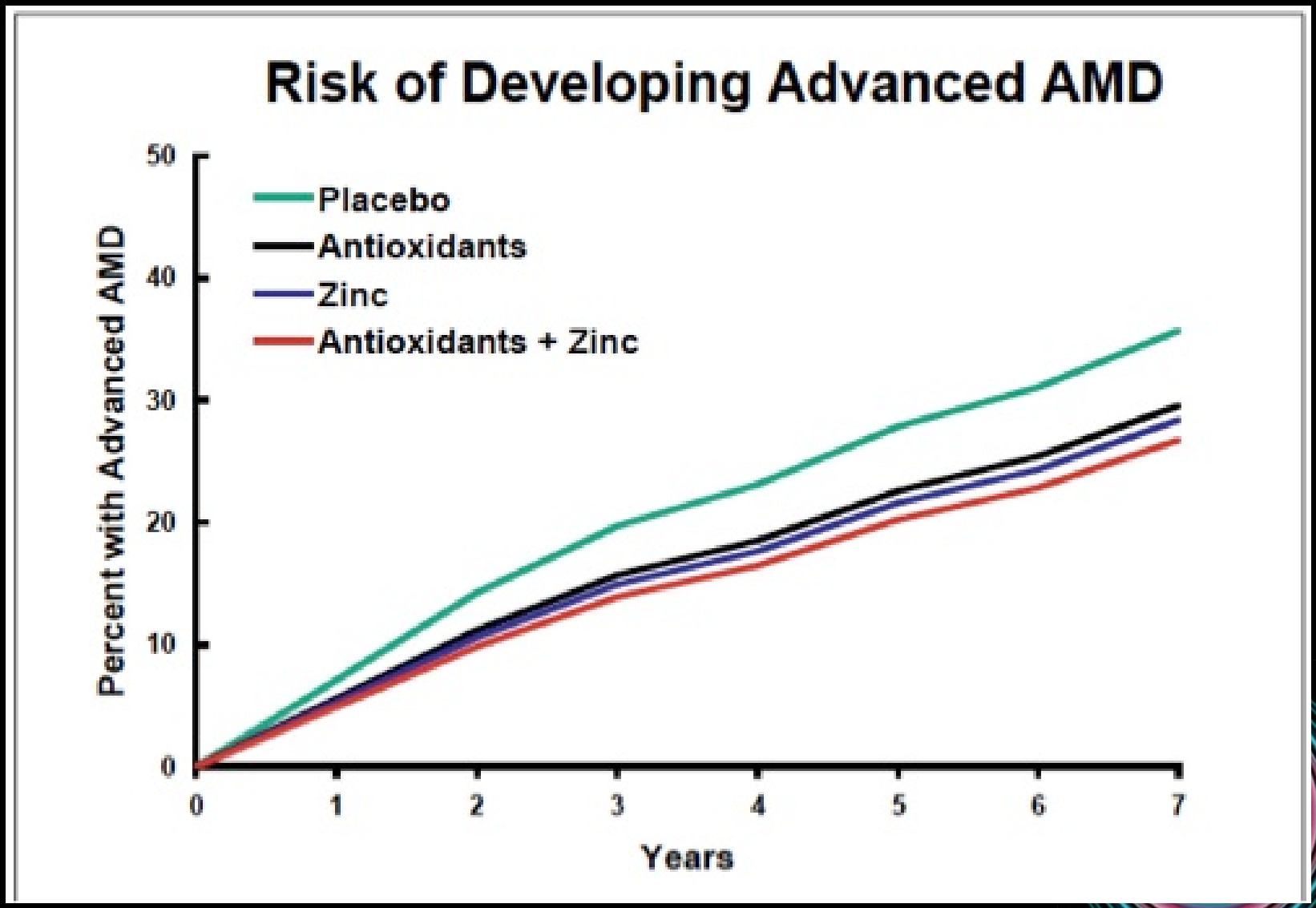
Management

- Education and follow up
- Lifestyle change:
  - obesity and smoking
- Avoid UV light
- Amsler grid
- Laser photocoagulation

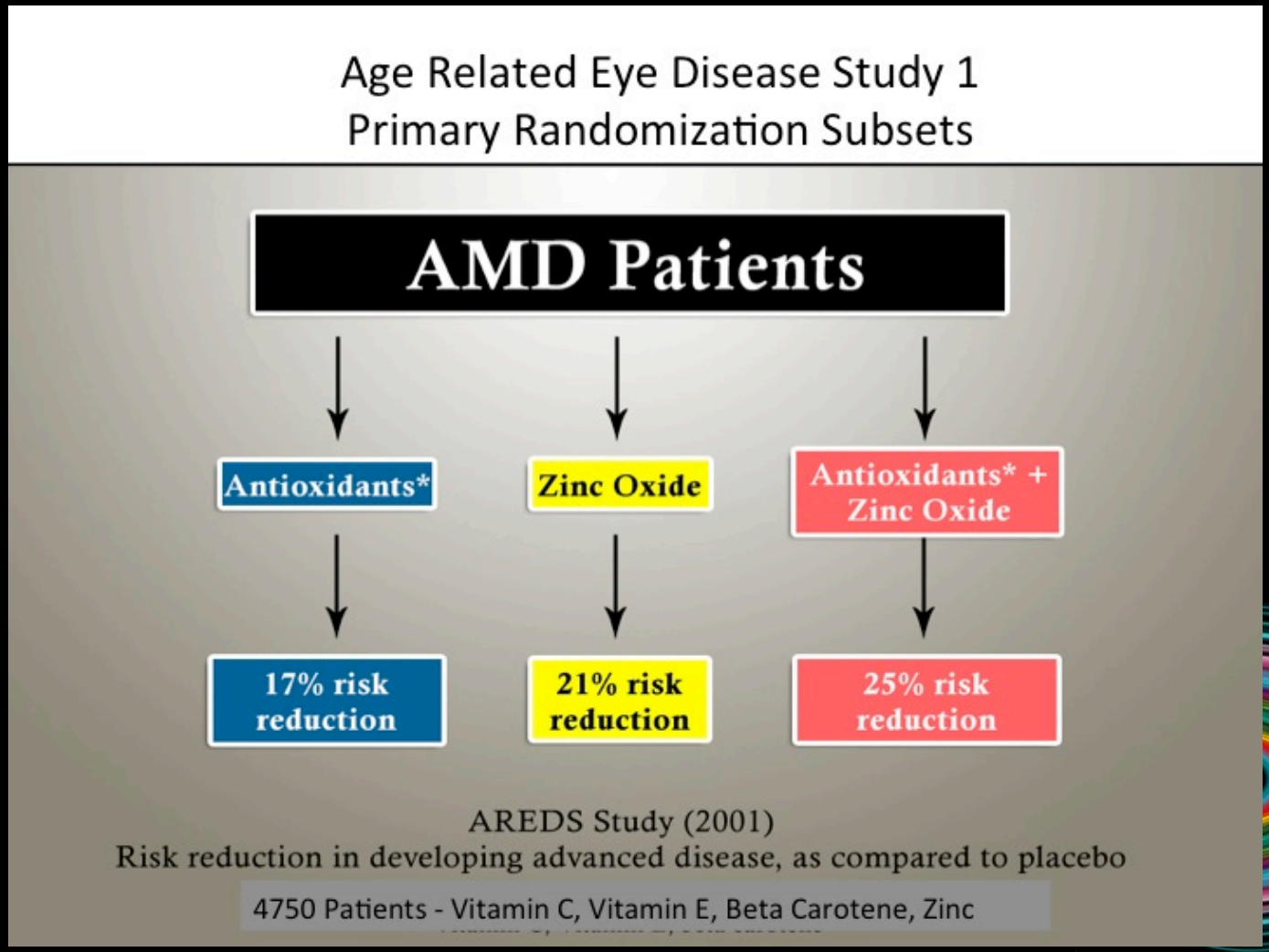




Can AMD be treated or prevented through use of antioxidant supplements?


Risk of Developing Advanced AMD
Placebo
Antioxidants
Zinc
Antioxidants + Zinc
Percent with Advanced AMD
50
40
30
20
10
0
0
1
2
3
4
5
6
7
Years

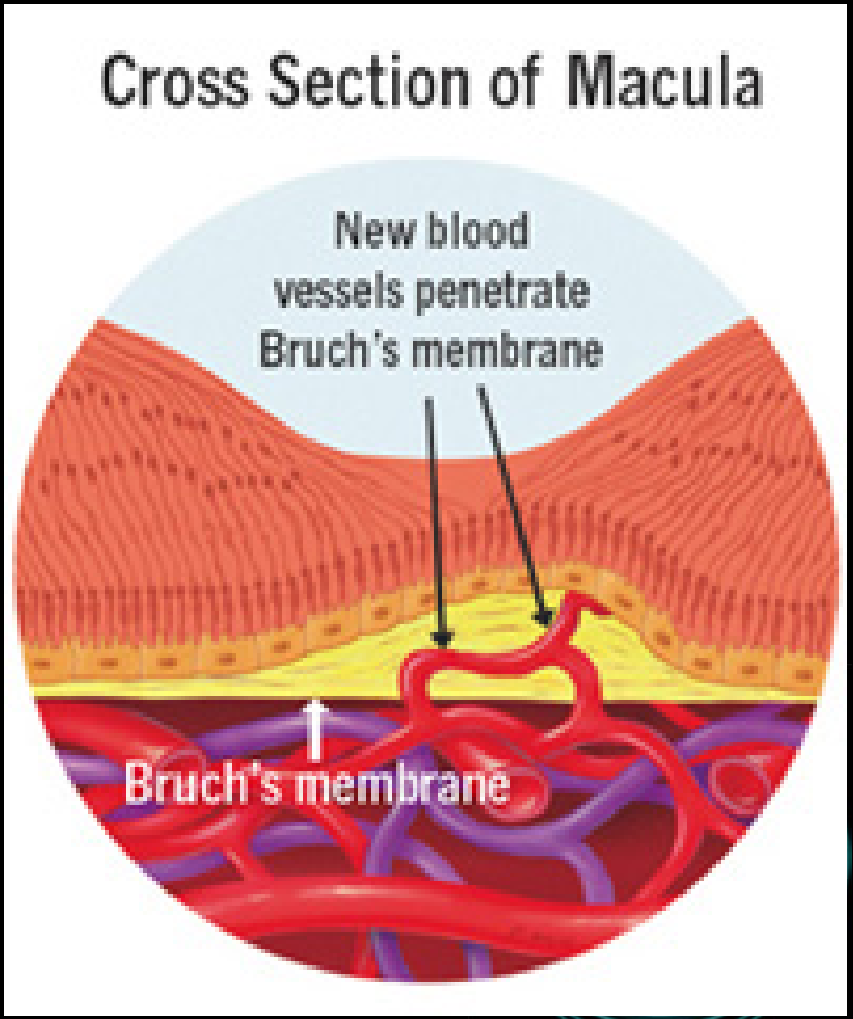
AREDS1
(Age-related Eye Disease Study)



Nutrient	Daily Dose
Vitamin C	500 mg
Vitamin E	400 IU
Beta-carotene	15 mg
Zinc	80 mg
Copper	2 mg

Wet AMD

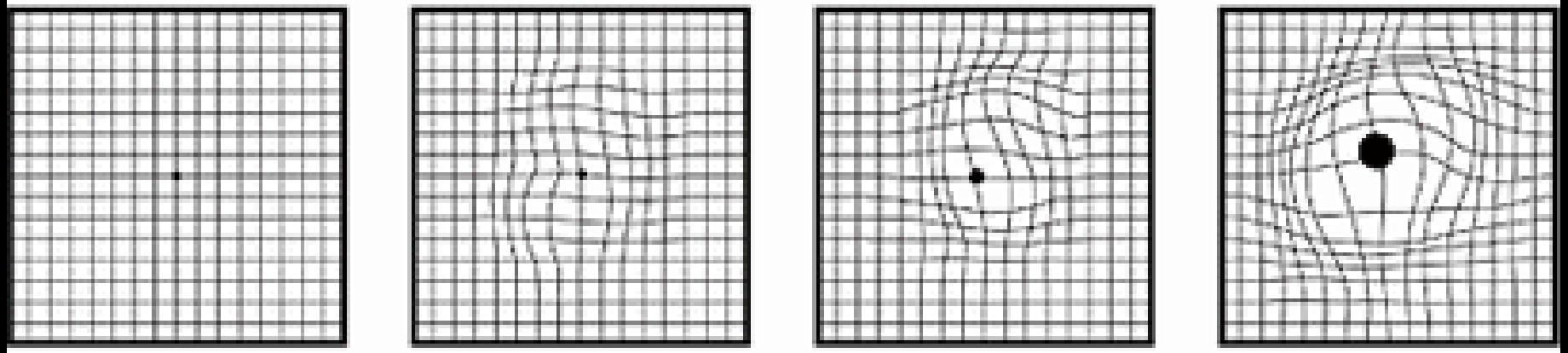
- Presence of CNV
- Destroy choriocapillaris, Bruch's membrane, RPE, photoreceptor
- Disciform scar



The progression of wet AMD

Normal vision

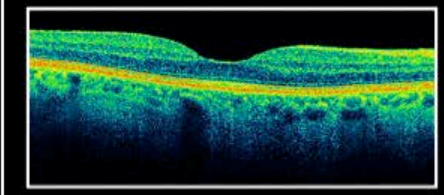
Wet AMD



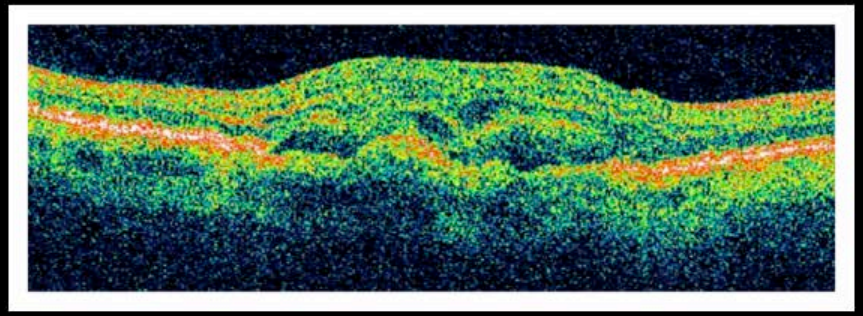
Amsler grid

Sign

normal retina



WET AMD




Macular Degeneration with
Disciform Scarring

Treatment

- Laser photocoagulation
- PDT
- Anti-angiogenesis
- Surgery

Thank You