Fundoscopy Skills

A short course

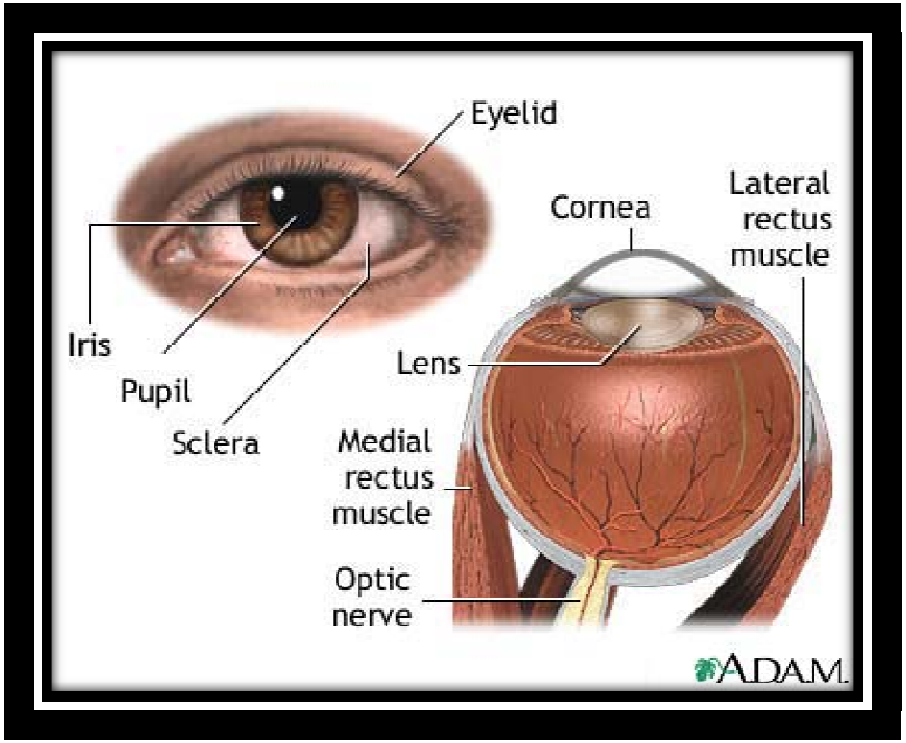
11-5-13 v5

Why do a fundus exam?

- **To enable detection of the three most common causes of blindness early enough to prevent blindness:**
  1. **Diabetic retinopathy (age group: 20-50 years)**
  2. **Glaucoma (age group: 50-70 years)**
  3. **Age related macular degeneration (70+ years)**

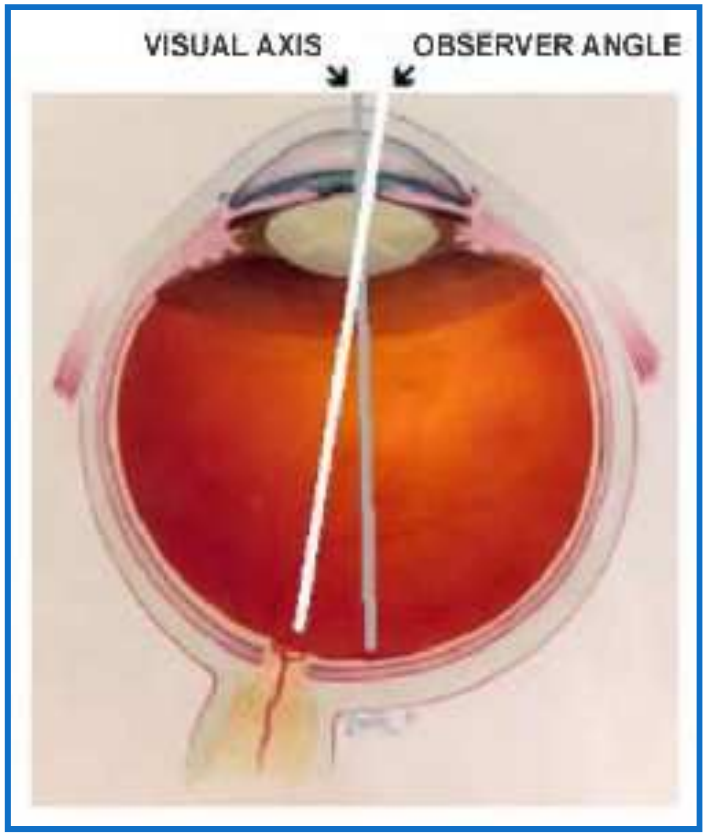
These are all detectable by examination of the posterior pole of the eye by using a direct ophthalmoscope. Vision-saving treatments are available for these disorders if detected and referred to ophthalmologists early.

The normal eye



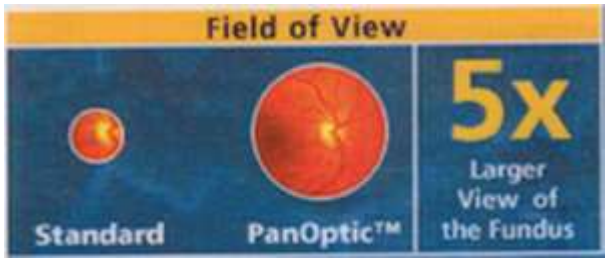
ANATOMICAL RELATIONSHIPS

- **Find the disc!**



Direct Ophthalmoscopes

Standard Welch Allyn Welch Allyn Panoptic



Settings


Welch Allyn
SKANEATELES FALLS, N.Y. U.S.A.
U.S. PAT. 4,526,449 PAT. PENDING
MODEL 11720


WelchAllyn

Tips for successful viewing

Stabilization:

- Room lights dimmed
- Patient seated, removes eyeglasses; observer standing with eyes at same level. Observer may leave eyeglasses on
- Do not remove contact lenses
- Observer at same eye level, standing, with hand on chair or shoulder
- Patient should fixate straight ahead
- Use your right hand and right eye to view patient's right eye
- Use your left hand and left eye to view patient's left eye
- Grasp handle near the top

Technique:

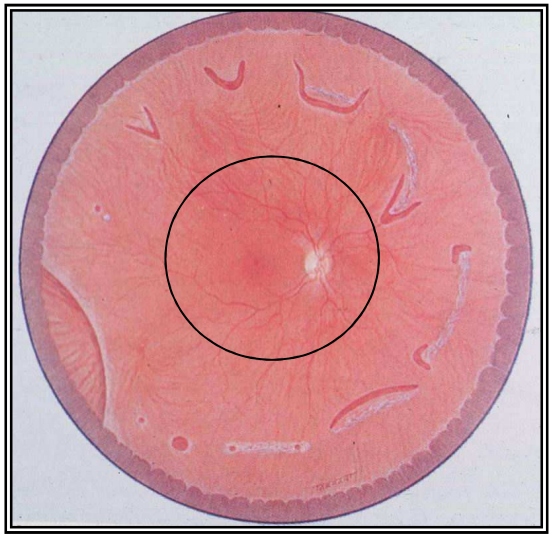
- Center red reflex in view beginning about 10 inches from face
- Maintain 15-20 degree temporal angle from direct frontal approach
- Rapidly close distance to about 0.5 inch or less from eye (standard scope) maintaining red reflex centrally in view; with Panoptic place collapsible tube on face
- If disc not in view after 5-10 seconds of viewing, give yourself and patient a 10 second break
- Repeat if necessary until disc is in view; focus if necessary

Find the disc!

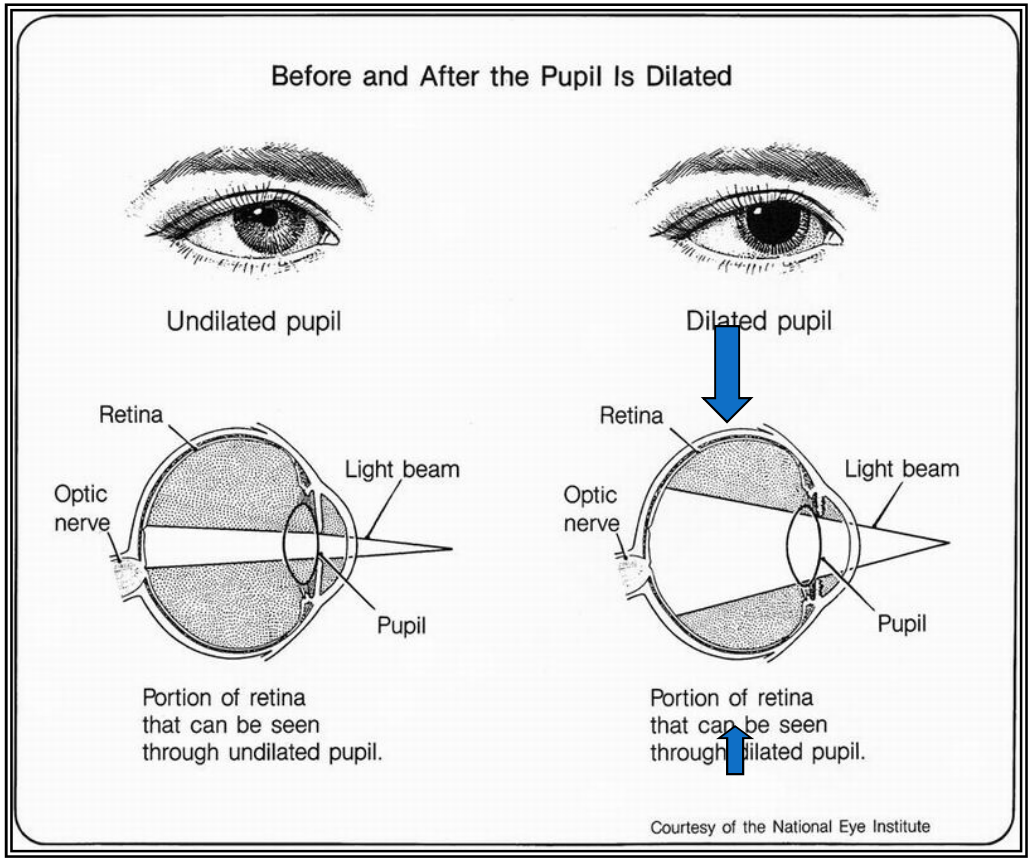
Using the standard
Welch-Allyn head

Using the Panoptic

What can I see?



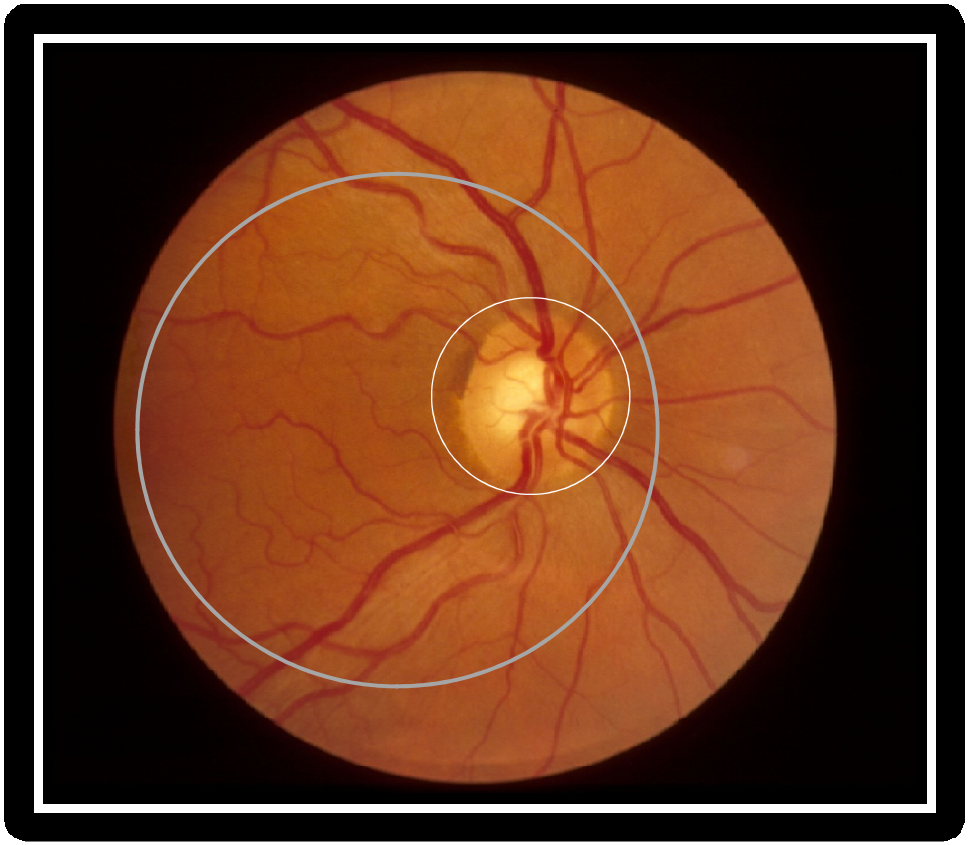
Maximum viewing area with regular ophthalmoscope



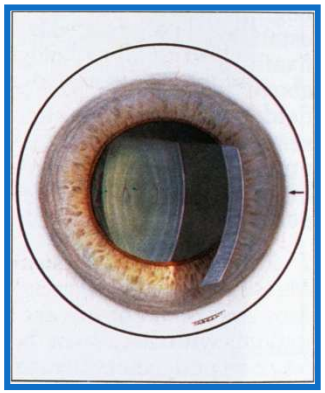
The View

White circle: Standard direct ophthalmoscope view

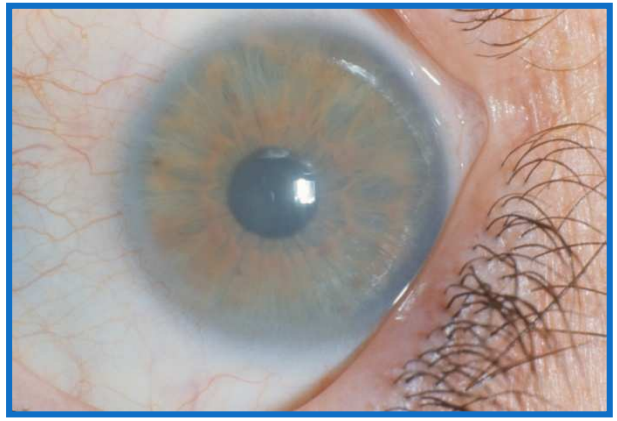
Large grey circle: Panoptic view

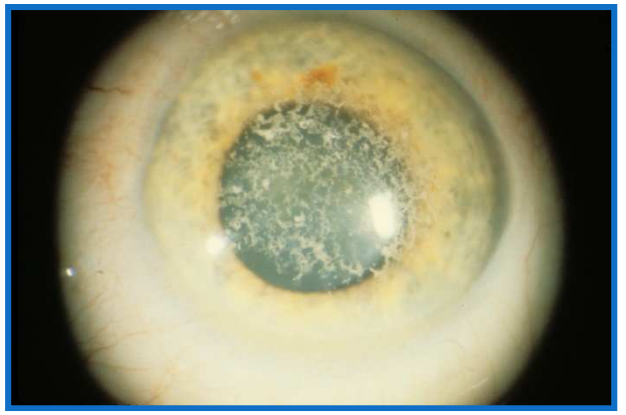


Obstacles to viewing



Cataracts

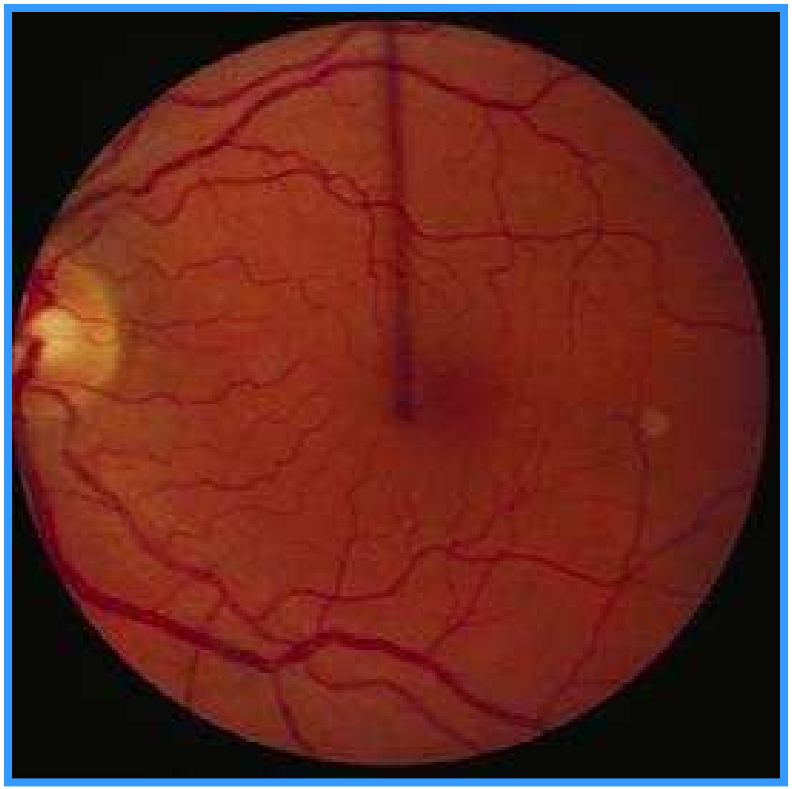


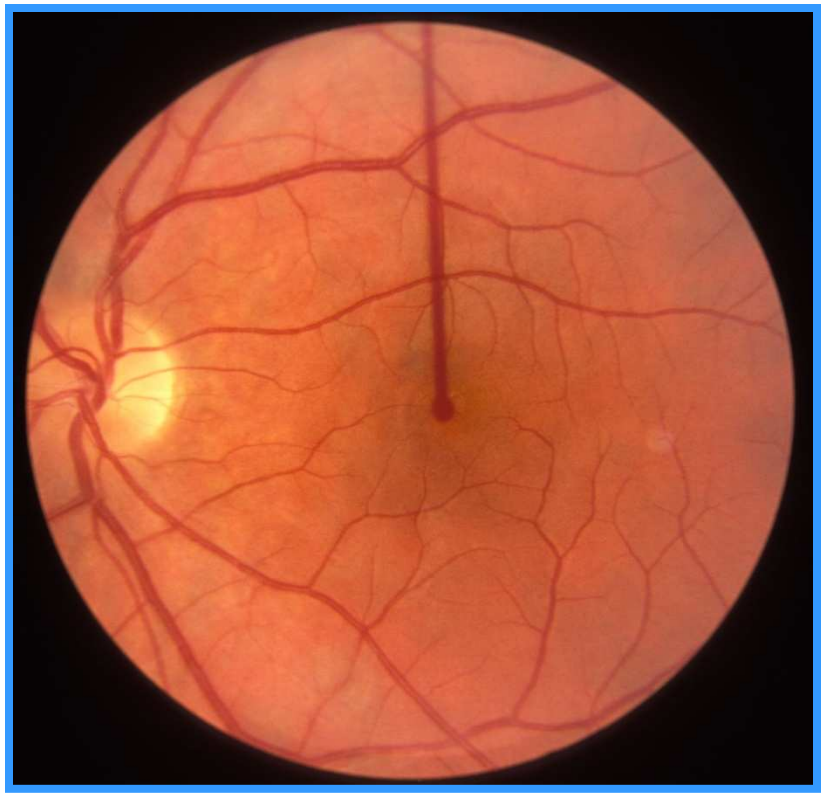


Corneal Disease

The posterior pole

Where is the macula?





Patient uses foveola (center of macula) to fixate on target.

What am I supposed to do?

Have a plan:

1. Examine the disc for:
   - color
   - size
   - sharpness of margins
   - size and shape of cup
   - pattern of disc vessels

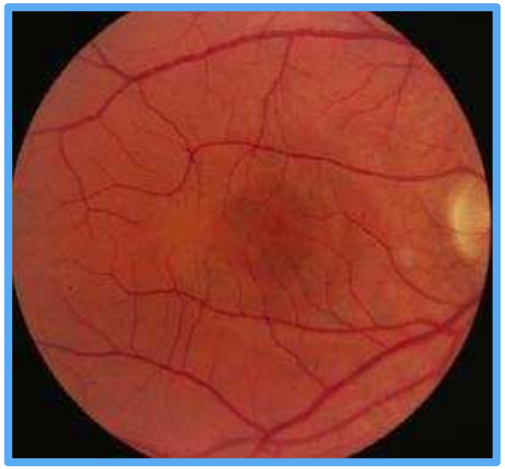
2. Look at vessels and their pattern

3. Look at the macular area for:
   - pigmentary changes
   - hemorrhages
   - exudates
   - cotton wool spots

4. Briefly examine all four quadrants

Normal disc

Normal Macula



Examination of the optic nerve

Normal optic nerve

Papilledema

Note blurring of margin, swollen (choked) appearance
tortuosity of vessels, and small hemorrhages

Hypertensive retinopathy

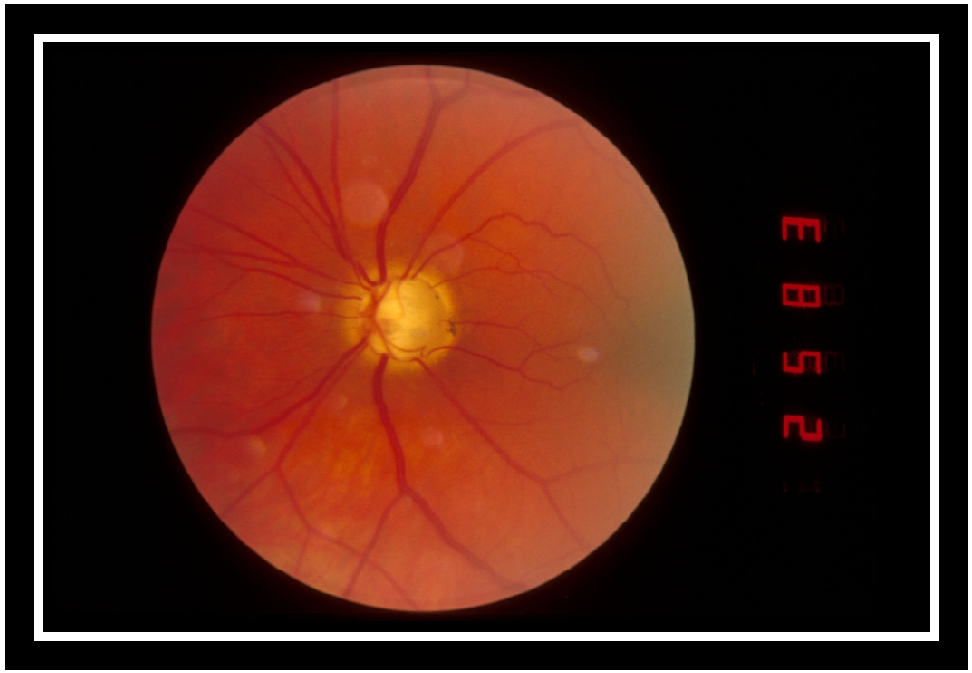
Papilledema, papillary hemorrhages, “cotton wool” spots, and narrowed aterioles

Examination of the optic nerve

Normal Optic Nerve

Note size, color, shape, margin, size of cup and lesions

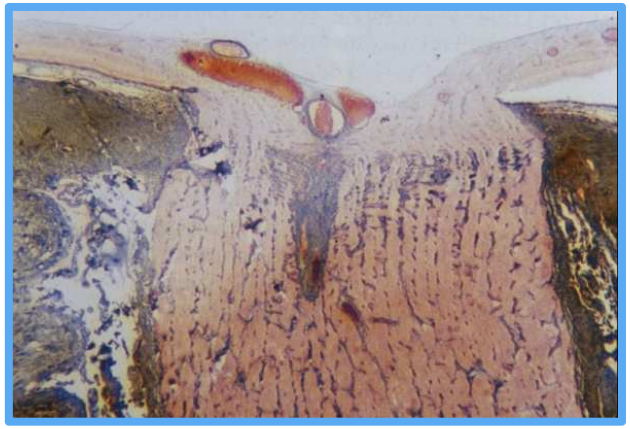
Glaucomatous Nerve

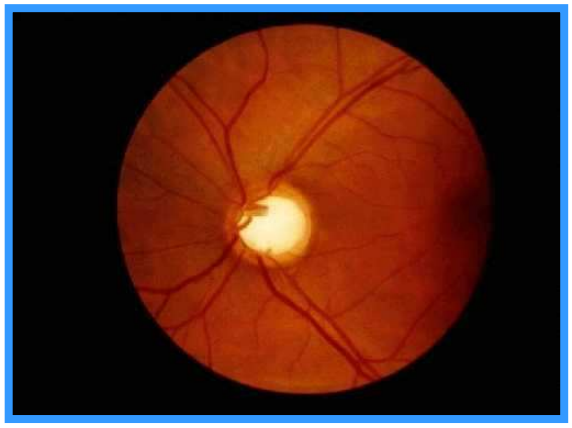


Note large cup, nasalization of vessels

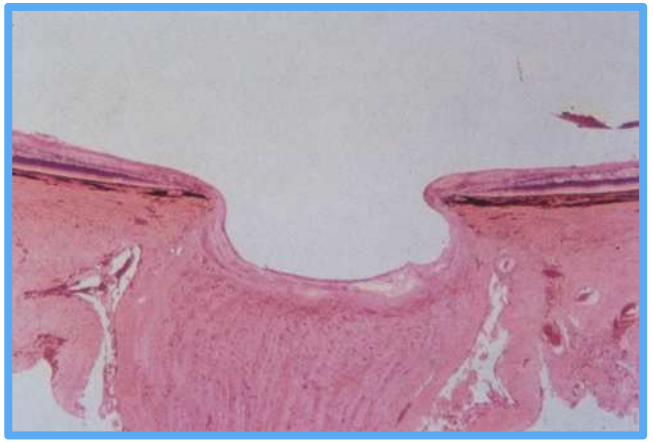
The optic nerve in glaucoma

Normal



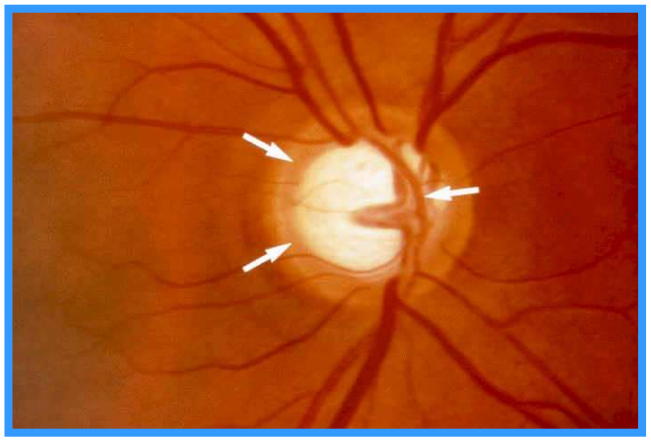


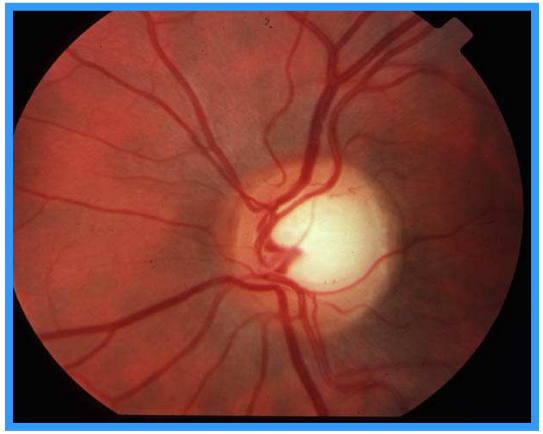
Glaucoma



GLAUCOMA

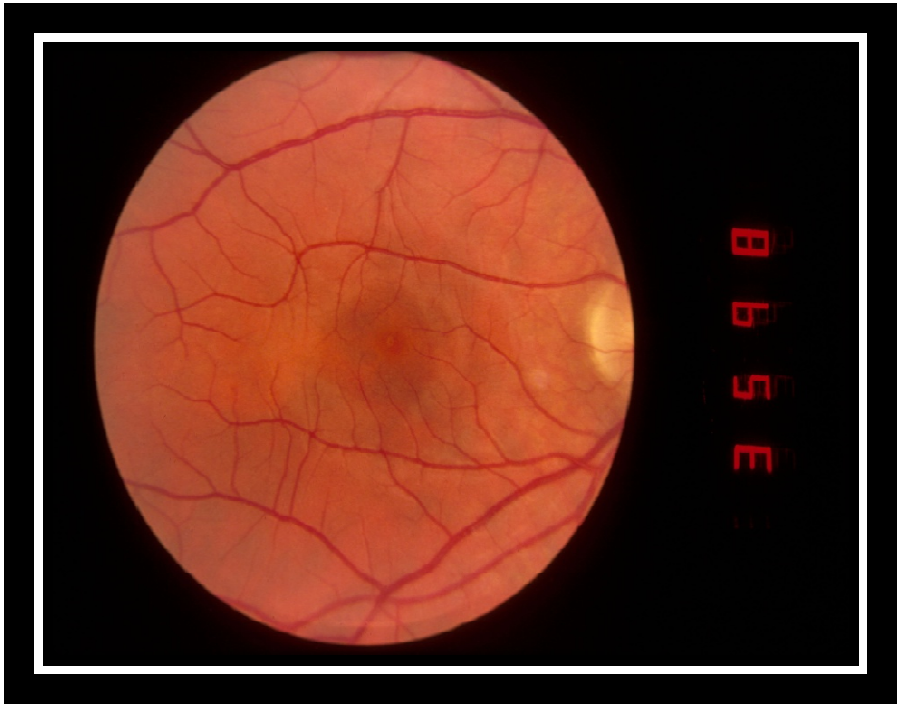
Glaucomatous cupping





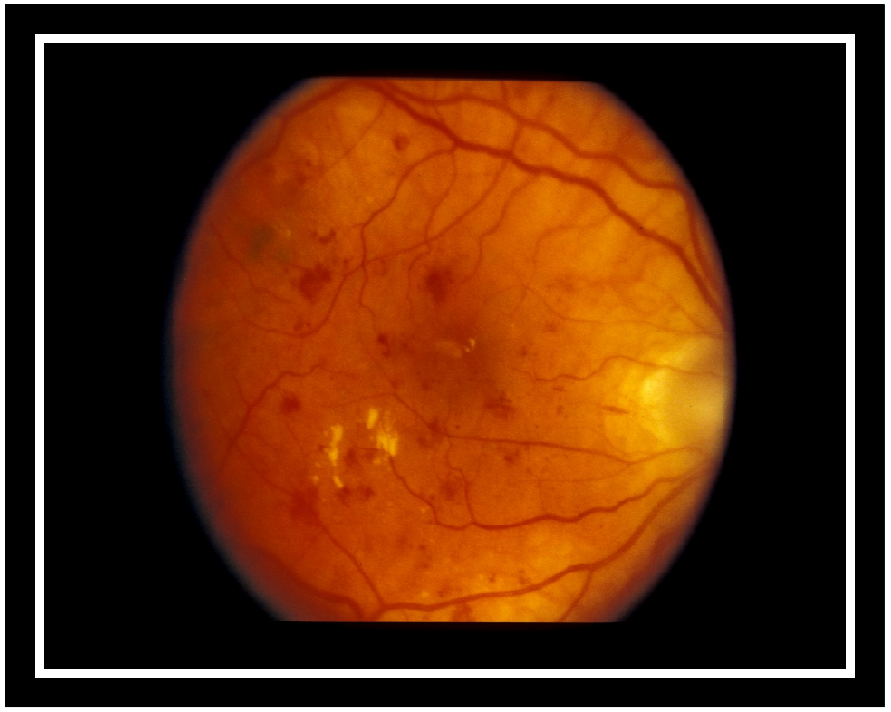
Examination of the macula

Normal macula



Note absence of landmarks and vascularity

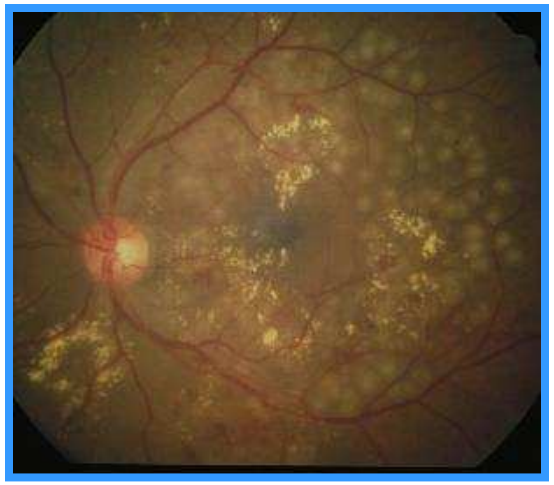
Background diabetic disease

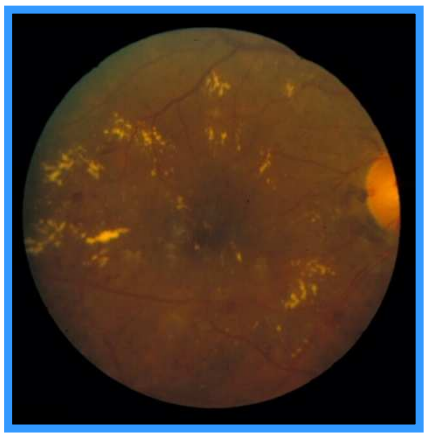


Note hemorrhages and exudates

Diabetic retinopathy

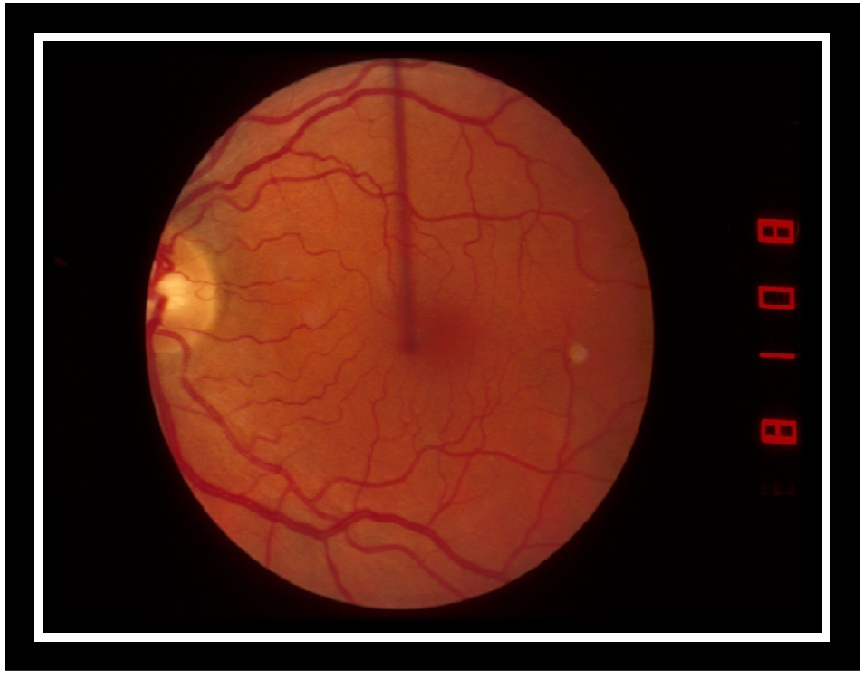
Advanced background diabetic retinopathy

Examination of the macula

Normal macula



Fixation marker to locate foveola

Age-related macular degeneration

Note hemorrhage and pigment changes

Age-related macular degeneration (ARMD)

Atrophic ARMD: loss of Retinal pigment epithelium

Drusen: early disease