

CATARACTS:

Pathophysiology:

- Lens becomes cloudy over time (age, hereditary, injury)
- Most common in 55+

Relevant terms/definitions:

- Light is transmitted through the cornea, lens and is then focused onto the retina to be transmitted to the brain for processing. When the lens is cloudy, it affects the clarity of the image.

Symptoms (what would the patient feel):

- Increasing haziness → blurred or distorted images (often described as a 'film')
- Increased sensitivity to glare from lights (night driving)

Signs (what would the physician find):

- Cloudy lens observed through slit lamp by optometrist

Complications/Outcomes:

- Impairs daily activities → surgery is needed to remove the lens and replace it with an artificial one.

GLAUCOMA:

Pathophysiology:

- High eye pressures leads to damage to the optic nerve → loss of peripheral vision
- Caused by build-up of fluid; not proper draining out the angle (area where iris + cornea meet)

Symptoms (what would the patient feel):

- Blurred vision
- Loss of peripheral vision

Signs (what would the physician find):

- Measure eye pressure by eye doctor
- Observe health of optic nerve using ophthalmoscope

Complications/Outcomes:

- Early detection is important! - manage eye pressure with eye drops/medicine
- Damage usually not reversible

MACULAR DEGENERATION:

Pathophysiology:

- Leading cause of vision loss for people over 60
- Change in macula (responsible for clear sharp vision) → loss of central vision
 - 1) Dry AMD (most common) => deposits on the retina (age)
 - no preventative treatment - researching how nutrition might help
 - 2) Wet AMD (less common) => fluids from newly formed blood vessels

leak under the macula → vision loss

- laser therapy, injections into the eye (early detection!!)

Symptoms (what would the patient feel):

- Gradual loss of ability to see objects clearly
- Objects appear distorted in shape or straight lines appear wavy/crooked
- Gradual loss of clear color vision

Complications/Outcomes:

- No way to restore central vision due to macular degeneration

Prevention:

General habits:

1. Eat a balanced diet
 - a. Diabetes is the leading cause of blindness in adults
2. Take care of general health (blood pressure, cholesterol)
3. Wear sunglasses - protect against UV exposure!
4. Look away from the computer
5. Get regular eye exams

What can be done?

Treatment: Glasses, contacts, Lasik, eye surgeries, medications

Screening: Annual eye exam!

- What happens at a checkup
 - **An eye chart** uses letters of decreasing size to determine the sharpness of your vision at a distance
 - **The retinoscope** projects a thin beam of light into the eye. Measures refractive error like nearsightedness, farsightedness, or astigmatism
 - **A slit-lamp microscope** examines the surface of each eye and internal structures
 - **Pressure** also measured
 - **Exams with an ophthalmoscope** looks at the retina, macula, optic nerve, and other parts of the eye
 - **Dilating eye drops** may be given in order for the doctor to complete a full exam. The purpose of dilation is to open the pupil or “window” to allow a much better view of the lens, retina, and optic nerve. Can cause blurriness