

QUESTION

A girl with a history of contact lens use presents with eye pain and decreased vision. She does not follow proper lens hygiene. Which of the following organisms is the most likely causative agent?

A Acanthamoeba

CORRECT

B Herpes simplex

C Fungal ulcer

D Pneumococcus

RIGHT ANSWER

OK

A. Acanthamoeba

WHY THIS IS RIGHT

Acanthamoeba keratitis is a severe corneal infection classically associated with contact lens use and poor hygiene.

- Severe pain disproportionate to findings
- Redness, photophobia, decreased vision
- Ring-shaped corneal infiltrate (late finding)

Risk factors:

- Improper lens cleaning
- Exposure to contaminated water (tap water, swimming)

Clinical importance: Often misdiagnosed early -> can lead to vision loss

Why not others:

- B. Herpes simplex -> dendritic ulcer, ↓ corneal sensation
- C. Fungal -> vegetative trauma, feathery margins
- D. Pneumococcus -> bacterial ulcer, not linked to lenses

QUESTION

On indirect ophthalmoscopy the examiner noticed a concave shaped out bulging of the outer layer in the posterior part of the eye. What is the likely diagnosis?

A Posterior Staphyloma

CORRECT

B Hypermetropia

C Astigmatism

D Corneal ulcer

RIGHT ANSWER

OK

A. Posterior Staphyloma

WHY THIS IS RIGHT

Posterior staphyloma is a localized outpouching of the posterior sclera, commonly seen in pathological (high) myopia.

- Concave bulging of posterior segment on ophthalmoscopy
- Associated with axial elongation of eyeball
- Leads to progressive visual deterioration

Pathophysiology:

- Thinning and stretching of sclera -> outward bulging of posterior pole
- Predisposes to retinal degeneration, maculopathy, and retinal detachment

Why not other options:

B. Hypermetropia

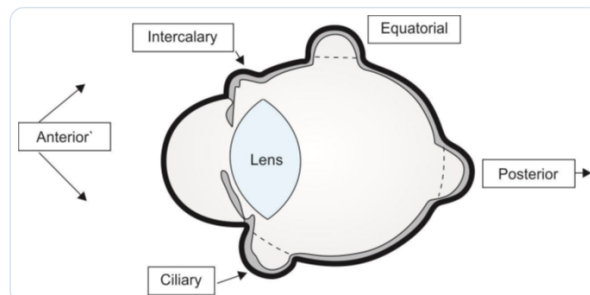
- Short eyeball -> no posterior bulging
- Retina lies anterior, not outpouched

C. Astigmatism

- Due to unequal corneal curvature
- No posterior segment abnormality

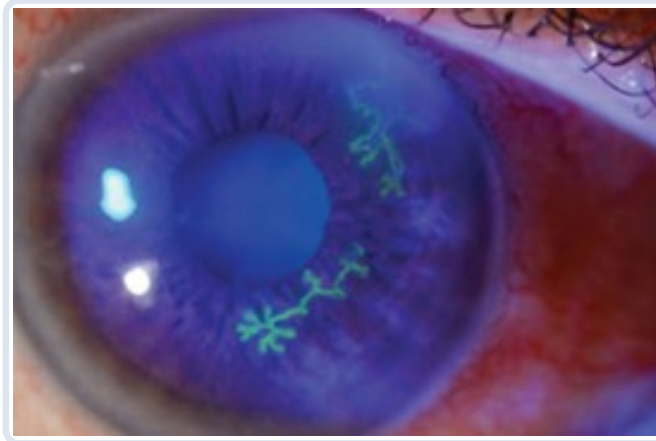
D. Corneal ulcer

- Anterior segment pathology
- Seen on cornea, not on fundus/ophthalmoscopy



QUESTION

A patient presents with a linear, branching corneal ulcer as shown in the image, decreased corneal sensation, along with loss of corneal sensation. What is the most likely diagnosis?



A Pseudomonas Keratitis

B Acanthamoeba Keratitis

C Fungal Keratitis

D Viral Keratitis

CORRECT

RIGHT ANSWER

OK

D. Viral Keratitis

WHY THIS IS RIGHT

Herpes simplex viral keratitis presents with a dendritic (branching) corneal ulcer and reduced corneal sensation.

- Linear, branching ulcer with terminal bulbs (seen on fluorescein staining)
- Decreased corneal sensation (important clue)
- Pain, redness, photophobia

Pathophysiology:

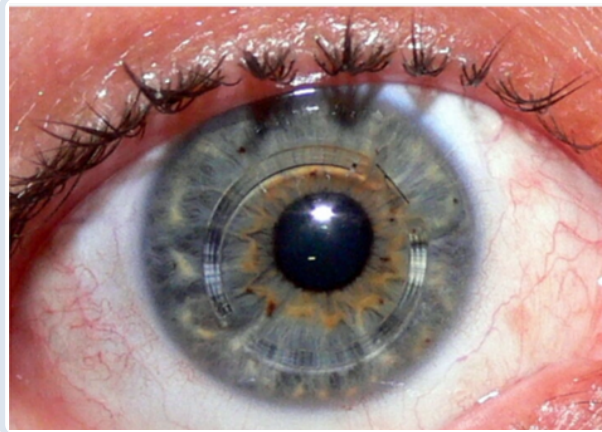
- HSV infects corneal epithelium -> dendritic epithelial ulcer

Why not others:

- Pseudomonas -> rapidly progressive suppurative ulcer
- Acanthamoeba -> severe pain, ring infiltrate
- Fungal -> feathery margins, satellite lesions

QUESTION

| What is the indication of this procedure?



A Keratoconus

CORRECT

B Vogt's limbal girdle

C Keratoglobus

D Corneal dystrophy

RIGHT ANSWER

OK A. Keratoconus

WHY THIS IS RIGHT

The image shows intrastromal corneal ring segments (ICRS), which are used in the management of keratoconus.

- Keratoconus is a progressive ectatic disorder causing corneal thinning and conical protrusion, leading to irregular astigmatism and visual distortion.

Indication of the procedure:

- To flatten the cornea and improve refractive error in moderate keratoconus
- Used when spectacles/contact lenses are not tolerated
- Helps delay or avoid corneal transplantation

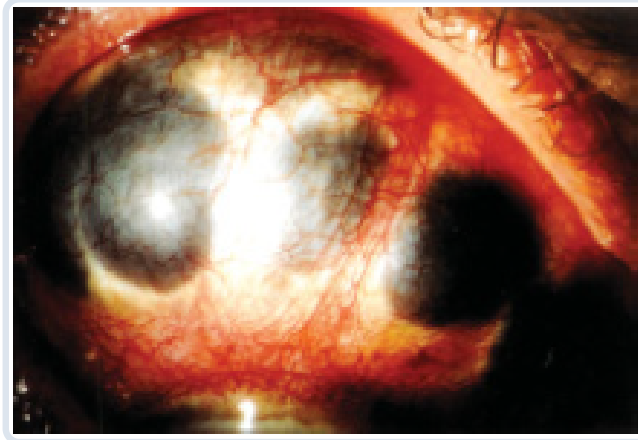
Mechanism: Ring segments inserted in corneal stroma -> arc-shortening effect -> central corneal flattening

Not used for:

- Vogt's limbal girdle (degenerative peripheral opacity)
- Keratoglobus (diffuse thinning)
- Corneal dystrophies (genetic, require different management)

QUESTION

A 35-year-old woman is diagnosed with rheumatoid arthritis. What associated complication is shown in the image?



A Scleromalacia perforans

CORRECT

B Ciliary staphyloma

C Coloboma

D Malignant melanoma

RIGHT ANSWER

OK

A. Scleromalacia perforans

WHY THIS IS RIGHT

Scleromalacia perforans is a severe ocular complication of rheumatoid arthritis, characterized by painless, progressive thinning of the sclera.

- Painless scleral thinning (important differentiating point)
- Bluish/black discoloration due to underlying uveal show
- Minimal or no inflammation
- Risk of globe perforation
- Autoimmune-mediated necrotizing scleritis without inflammation
- Associated with long-standing rheumatoid arthritis

Why not others:

- Ciliary staphyloma: Outpouching due to raised IOP
- Coloboma: Congenital defect
- Malignant melanoma: Pigmented tumor, not scleral thinning

QUESTION

| What is the dye and filter used as seen in the image?



A Fluorescein dye - visualised under cobalt blue filter

CORRECT

B Lissamine dye - green filter

C Lissamine dye cobalt blue filter

D Fluorescein dye - visualised under green filter

RIGHT ANSWER

OK

A. Fluorescein dye - visualised under cobalt blue filter

WHY THIS IS RIGHT

Fluorescein staining is used to detect corneal epithelial defects and is best visualized under a cobalt blue filter.

- Fluorescein dye accumulates in areas of epithelial loss
- Under cobalt blue light, it appears bright green (fluorescent)
- Commonly used in corneal ulcer, abrasion, dendritic ulcers (HSV), and tear film evaluation

Clinical relevance:

- Helps identify pattern of lesions (e.g., dendritic pattern in herpes keratitis)
- Used in Seidel test to detect aqueous leak

Why not others:

- Lissamine green: Stains devitalized cells, viewed in white light
- Green filter: Not used for excitation of fluorescein

QUESTION

A patient presented with redness and extreme pain in the eye. There is also diminution of vision and discharge after the use of contact lenses. Which organism can be the causative agent here?

A Acanthamoeba

CORRECT

B Listeria

C Staphylococcus aureus

D Streptococcus pyogenes

RIGHT ANSWER

OK

A. Acanthamoeba

WHY THIS IS RIGHT

Acanthamoeba keratitis is a severe, vision-threatening corneal infection classically associated with contact lens use, especially with poor hygiene or exposure to contaminated water.

- Severe pain disproportionate to clinical findings (hallmark)
- Redness, photophobia, ↓ vision
- Ring-shaped corneal infiltrate (late sign)
- History of contact lens use / water exposure

Pathogenesis:

- Free-living protozoa (Acanthamoeba) invade cornea
- Often introduced via contaminated lens solutions or water

Why not others:

- Staphylococcus / Streptococcus: Cause bacterial keratitis but pain is not disproportionately severe
- Listeria: Rare ocular infection, not typical in contact lens users

QUESTION

A 26-year-old female patient complains of a nodular lesion near the limbus as shown, with mild discomfort that resolves after treatment with the use of a topical drug. What can be the most probable diagnosis?



- A** Scleritis with Rheumatoid Arthritis
- B** Episcleritis with Rheumatoid Arthritis
- C** Pinguecula and Dry Eye
- D** Pterygium and Astigmatism

CORRECT

RIGHT ANSWER

- OK** **B. Episcleritis with Rheumatoid Arthritis**

WHY THIS IS RIGHT

Episcleritis is a benign, self-limiting inflammation of the episclera presenting with a localized nodular redness near the limbus, mild discomfort, and rapid response to topical therapy.

- Sectoral or nodular redness near limbus
- Mild pain or discomfort (not severe)
- No significant vision loss
- Vessels are superficial and mobile
- Blanch with phenylephrine

Association: Can be associated with systemic diseases, especially rheumatoid arthritis, but often idiopathic

Why not others:

- Scleritis: Severe pain, deep violaceous redness, does not blanch, vision-threatening
- Pinguecula: Yellowish degenerative lesion, non-inflammatory
- Pterygium: Fibrovascular growth crossing cornea

QUESTION

A patient presents with guttate lesions in one eye and bullous keratopathy in the other eye. What is the most likely diagnosis?

A Fuchs endothelial dystrophy

CORRECT

B Interstitial keratitis

C Viral corneal ulcer

D Keratoconjunctivitis

RIGHT ANSWER

OK

A. Fuchs endothelial dystrophy

WHY THIS IS RIGHT

Fuchs endothelial dystrophy is a progressive disorder of the corneal endothelium characterized by guttata formation and eventual stromal and epithelial edema leading to bullous keratopathy.

Key clinical progression:

- Early stage:
- Guttate lesions (corneal guttata) on Descemet's membrane
- Late stage:
- Endothelial failure -> corneal edema
- Formation of bullae (bullous keratopathy) -> pain, decreased vision

Pathophysiology:

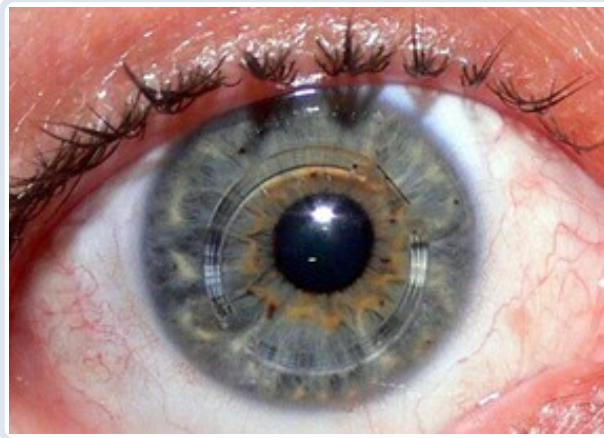
- Loss of endothelial cells -> impaired corneal deturgescence (fluid pump function)
- Leads to fluid accumulation in cornea

Why not others:

- Interstitial keratitis: Stromal inflammation, not endothelial dystrophy
- Viral corneal ulcer: Epithelial defect, dendritic pattern
- Keratoconjunctivitis: Surface inflammation, no guttata

QUESTION

Which ocular condition is treated as shown in the image?



A A) Keratoconus

CORRECT

B B) Cataract

C C) Corneal ulcer

D D) Glaucoma

RIGHT ANSWER

OK A. A) Keratoconus

WHY THIS IS RIGHT

Intracorneal ring segments (Intacs) are used in the management of keratoconus, a progressive corneal ectasia.

- Intacs are placed in the corneal stroma
- They flatten and regularize the corneal curvature
- Improve irregular astigmatism and visual acuity

Indications:

- Mild to moderate keratoconus
- Contact lens intolerance
- Alternative to delay or avoid keratoplasty

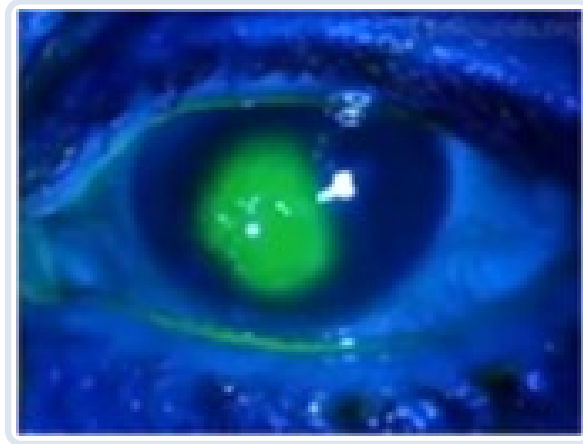
Often combined with corneal collagen cross-linking (CXL) for stabilization

Why not others:

- Cataract: Treated with lens extraction
- Corneal ulcer: Treated medically (antibiotics/antifungals)
- Glaucoma: Managed with medications/surgery affecting aqueous outflow

QUESTION

Which of the following accurately pairs the diagnostic stain with the corneal condition it indicates?



- A** Cobalt blue with trypan blue for corneal ulcer
- B** Cobalt green with Rose Bengal stain for corneal opacity
- C** Cobalt blue with fluorescein stain for corneal ulcer CORRECT
- D** Cobalt blue with lissamine green for corneal abrasion

RIGHT ANSWER

- OK** **C. Cobalt blue with fluorescein stain for corneal ulcer**

WHY THIS IS RIGHT

Fluorescein staining viewed under cobalt blue light is the standard method to detect corneal epithelial defects, such as corneal ulcers and abrasions.

- Fluorescein dye stains areas where corneal epithelium is absent
- Under cobalt blue light, these areas appear bright green

Clinical applications:

- Corneal ulcer
- Corneal abrasion
- Dendritic ulcers (herpes simplex)
- Detection of foreign body tracks

Why other options are incorrect:

- Trypan blue: Used in cataract surgery (capsule staining), not cornea
- Rose Bengal / Lissamine green: Stain devitalized or damaged epithelial cells, mainly used in dry eye, not primary for ulcers
- Cobalt green light: Not the standard filter (cobalt blue is used)

QUESTION

Which surgical procedure should a 21-year-old boxer avoid to maintain optimal visual health?

A RK

CORRECT

B PRK

C LASIK

D SMILE

RIGHT ANSWER

OK
A. RK

WHY THIS IS RIGHT

Radial keratotomy (RK) should be avoided in individuals prone to ocular trauma (e.g., boxers), as it causes permanent structural weakening of the cornea.

Why RK is contraindicated:

- Involves deep radial incisions in the cornea
- These incisions never regain full strength
- High risk of corneal rupture even with minor trauma

Why other options are relatively safer:

- PRK, LASIK, SMILE:
- Do not involve full-thickness radial cuts
- Better structural integrity compared to RK
- Though trauma precautions still apply, they are safer than RK

QUESTION

| Pterygium can lead to which of the following?

A Astigmatism

CORRECT

B Eye Pain

C Macular edema

D Purulent Discharge

RIGHT ANSWER

OK

A. Astigmatism

WHY THIS IS RIGHT

Pterygium is a fibrovascular growth of conjunctiva extending onto the cornea that can distort corneal curvature, leading to astigmatism.

Mechanism:

- Progressive growth over cornea -> mechanical traction and flattening (especially horizontal meridian)
- Causes irregular or with-the-rule astigmatism -> decreased visual acuity

Why not others:

- Eye pain: Usually asymptomatic or mild irritation, not significant pain
- Macular edema: Posterior segment pathology, unrelated to pterygium
- Purulent discharge: Seen in bacterial conjunctivitis, not pterygium

QUESTION

I In the case of macular corneal opacity, which of the following is true?

- A** Iris details are seen.
- B** Pupil margins are seen. CORRECT
- C** Both iris details and pupil margins are seen.
- D** Both iris details and pupil margins are not seen.

RIGHT ANSWER

- OK** **B. Pupil margins are seen.**

WHY THIS IS RIGHT

Macular corneal opacity is a moderate-grade corneal opacity in which:

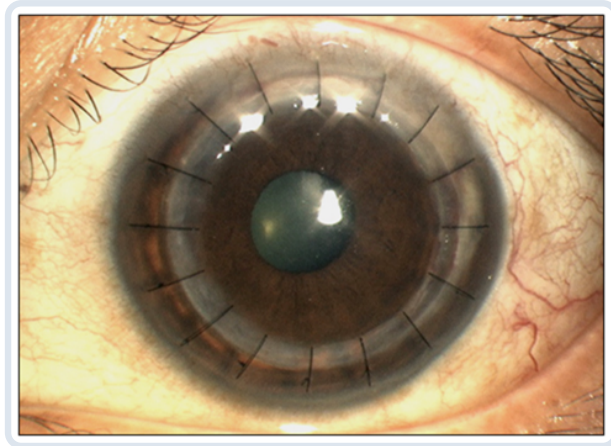
- Pupil margins are visible
- Iris details are NOT clearly visible

Grading of corneal opacities :

- Nebular opacity (mild):
 - Iris details clearly visible
- Macular opacity (moderate):
 - Pupil margin visible, but iris details blurred
- Leucomatous opacity (dense):
 - Neither iris nor pupil details visible

QUESTION

Which of the following correctly identifies the storage medium used for preserving a corneal graft and the type of suture material shown in the image below?



- A** Moist chamber; Vicryl
- B** McCarey Kaufman medium; Prolene
- C** Optisol; Silk
- D** **McCarey Kaufman medium; Nylon**

CORRECT

RIGHT ANSWER

OK

D. McCarey Kaufman medium; Nylon

WHY THIS IS RIGHT

Successful corneal transplantation (keratoplasty) requires proper donor cornea preservation and appropriate suture material for graft fixation.

Corneal preservation media: McCarey-Kaufman (MK) medium

- Short-term storage ($\approx$ 48-96 hours) at 4°C
- Commonly used in eye banks (especially in resource-limited settings)

Suture material in keratoplasty: Nylon (10-0 monofilament)

- Non-absorbable
- Minimal tissue reaction
- Provides long-term tensile strength -> ideal for corneal graft suturing

Why other options are incorrect:

- Vicryl: Absorbable -> loses strength -> not suitable for cornea
- Prolene: Non-absorbable but less commonly used than nylon in cornea
- Silk: Causes more tissue reaction -> avoided in ocular surgery

QUESTION

A 30-year-old man presents with pain, redness and photophobia. He has a history of contact lens usage. An eye examination is shown below. Which of the following stains is used to stain the causative organism?



A Calcofluor white stain

CORRECT

B Gram's stain

C Ziehl-Nelsen Acid-fast stain

D Modified Gocrott's-Gomori methenamine silver stain

RIGHT ANSWER

OK

A. Calcofluor white stain

WHY THIS IS RIGHT

A contact lens user presenting with pain, redness, photophobia, and ring-shaped corneal infiltrate suggests *Acanthamoeba* keratitis.

- The causative organism (*Acanthamoeba*, a free-living protozoa) is best demonstrated using Calcofluor white stain, which binds to cyst walls and fluoresces under UV light.

Supporting clinical clues:

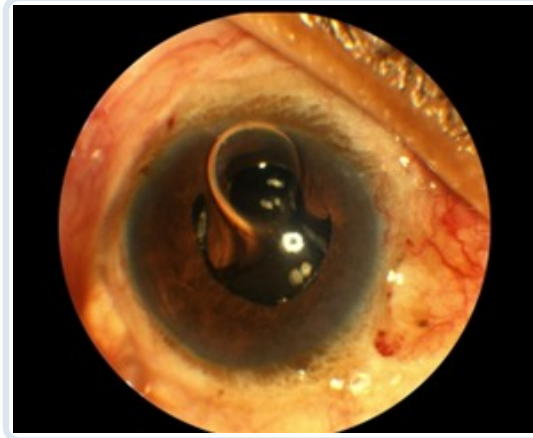
- Severe pain out of proportion to clinical findings
- History of contact lens use / exposure to contaminated water
- Ring-shaped stromal infiltrate (classic but late sign)

Why not others:

- Gram stain: Bacterial keratitis
- Ziehl-Neelsen stain: *Mycobacteria* / *Nocardia*
- Gomori methenamine silver stain: Fungi

QUESTION

A 27-year-old male presents with myopic astigmatism comes with acute onset pain, lowering of visual acuity. He has a history of frequent change of glasses and eye rubbing. An image of the eye just after a procedure is shown below. Which procedure has been done?



A Intracameral C3F8 injection

CORRECT

B DSAEK

C DALK

D Corneal collagen crosslinking with riboflavin

RIGHT ANSWER

OK

A. Intracameral C3F8 injection

WHY THIS IS RIGHT

Acute hydrops in keratoconus (suggested by history of progressive myopic astigmatism, frequent change of glasses, and eye rubbing) results from a tear in Descemet's membrane, leading to stromal edema and sudden vision loss.

Management principle:

Intracameral injection of long-acting gas (e.g., C3F8 or SF6) is used to:

- Tamponade Descemet's membrane tear
- Reduce aqueous influx into stroma
- Accelerate resolution of corneal edema
- Improve visual recovery

Why not other options:

- DSEAK: Endothelial keratoplasty for endothelial failure
- DALK: For stromal diseases, not acute hydrops
- Collagen cross-linking: Used to halt progression, not treat hydrops

QUESTION

| MK medium used for corneal preservation is effective for:

A 7 to 14 days

B 30 days

C 1 year

D 48 to 72 hours

CORRECT

RIGHT ANSWER

OK **D. 48 to 72 hours**

WHY THIS IS RIGHT

- McCarey-Kaufman (MK) medium is a short-term corneal preservation medium, effective for 48-72 hours at 4°C. It is commonly used in developing settings due to low cost and simplicity.
- 7-14 days and 30 days correspond to intermediate/long-term media like Optisol-GS or organ culture.
- 1 year storage is not possible for donor corneas.

QUESTION

| All are true about corneal dystrophies and stains used except:

- A** Macular dystrophy stains with Alcian blue
- B** Schnyder's dystrophy shows mucopolysaccharides with Congo red CORRECT
- C** Granular dystrophy is stained by Masson trichome
- D** Lattice dystrophy has amyloid deposition

RIGHT ANSWER

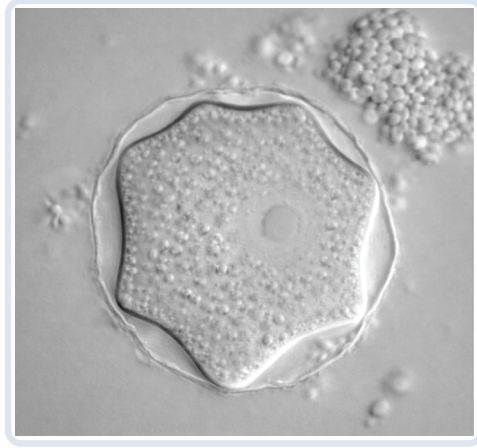
- OK** **B. Schnyder's dystrophy shows mucopolysaccharides with Congo red**

WHY THIS IS RIGHT

- Schnyder's corneal dystrophy shows cholesterol and lipid deposition, not mucopolysaccharides;
- Congo red stains amyloid, not lipids.
- Macular dystrophy stains with Alcian blue due to mucopolysaccharides (true).
- Granular dystrophy stains with Masson trichrome (true).
- Lattice dystrophy has amyloid deposition, Congo red positive (true).

QUESTION

A 21-year-old student presents with ocular redness, foreign body sensation, and excessive tearing, following the use of a contact lens. An interface contrast microscopy from his corneal scraping is shown below. Which of the following is false regarding the treatment of this condition?



A Topical Steroids

CORRECT

B Oral NSAIDs

C Topical polyhexamethylene biguanide (PHMB)

D Debridement of epithelium

RIGHT ANSWER

OK

A. Topical Steroids

WHY THIS IS RIGHT

- This is Acanthamoeba keratitis (contact lens use + cysts on microscopy).
- Topical steroids are avoided because they can worsen infection and mask progression; if ever used, it's only later with adequate anti-amoebic cover
- Oral NSAIDs help pain (often severe).
- Topical PHMB is a first-line anti-amoebic (cysts + trophozoites).
- Epithelial debridement can reduce organism load and improve drug penetration.

QUESTION

Which of these is a true statement?

1. Ferry's Line-corneal epithelial iron line at the edge of filtering blebs
2. Stockers Line-Corneal epithelial iron line at the edge of pterygium
3. Hudson-Stahli line- visible all around the base of cone in Keratoconus
4. Fleischer's ring: Horizontal corneal epithelial iron line at the inferior one third of cornea due to aging
5. Coat's white ring- A form of iron deposit at the level of Bowman's layer of cornea

A 1, 2, 3, 4, 5

B 2, 3, 4, 5

C 1, 2, 4, 5

D 1, 2, 5

CORRECT

RIGHT ANSWER

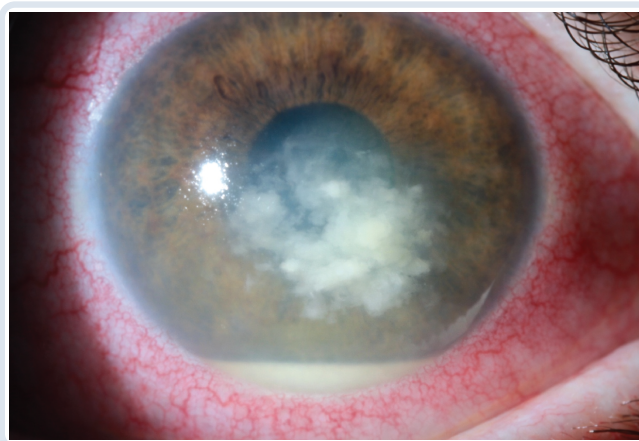
OK D. 1, 2, 5

WHY THIS IS RIGHT

- Stocker's line is an iron line at the head of a pterygium (true).
- Hudson-Stähli line is an age-related horizontal iron line, not seen around the cone in keratoconus (false).
- Fleischer's ring is seen in keratoconus, not due to aging (false).
- Coats' white ring is an iron-containing scar at Bowman's layer after foreign body injury (true).
- Ferry's line: corneal epithelial iron line at the edge of filtering blebs - (true)

QUESTION

A patient presented with foreign body sensation, redness, and excessive watering from the right eye for 15 days after a twig brushed against his eye. Examination is shown below. Which among the following is the appropriate treatment?



A Acyclovir ointment

B Propamidine isethionate

C Hydrocortisone ointment

D Amphotericin B drops

CORRECT

RIGHT ANSWER

OK

D. Amphotericin B drops

WHY THIS IS RIGHT

- The history of vegetative trauma (twig) with persistent foreign body sensation and redness suggests fungal keratitis. Amphotericin B is an effective topical antifungal, especially for yeast and some filamentous fungi.
- Acyclovir is for herpetic keratitis.
- Propamidine isethionate is used in Acanthamoeba keratitis.
- Hydrocortisone is contraindicated as steroids worsen fungal infections by promoting fungal proliferation.

QUESTION

Identify the incorrect pair:

A

Vogt striae - Keratoconus

B

Vogt triad - POAG

CORRECT

C

Vogt-Koyanagi-Harada disease: Melanocyte defect

D

Limbal girdle of Vogt: Corneal opacity that occurs in an arc concentric pattern

RIGHT ANSWER

OK

B. Vogt triad - POAG

WHY THIS IS RIGHT

• Vogt striae

These are vertical stress lines in deep stroma/Descemet membrane - *Classic sign of keratoconus*

• • Vogt triad

Finding in angle closure glaucoma- characterized by glaukomflecken (anterior subcapsular lens opacities), patchy iris atrophy, and a mid-dilated, non-reactive pupil.

• • Vogt-Koyanagi-Harada disease

Bilateral granulomatous uveitis + Meningeal signs + Vitiligo, poliosis

• • Limbal girdle of Vogt

Degenerative peripheral corneal opacity- Crescent/arc-shaped

QUESTION

In Keratoconus all are seen except:

- A** Munson's sign
- B** Thinning of cornea in center
- C** Distortion of corneal reflex at center

D Hypermetropic refractive error found

CORRECT

RIGHT ANSWER

OK D. Hypermetropic refractive error found

WHY THIS IS RIGHT

Keratoconus is a corneal ectasia causing progressive myopia and irregular astigmatism, not hypermetropia.

- Munson's sign is a classic bulging of the lower lid on downgaze.
- Central or paracentral corneal thinning is a hallmark feature.
- Distortion of the corneal reflex occurs due to irregular corneal curvature.

Thus, hypermetropic refractive error is not seen in keratoconus.

QUESTION

A 50 y/o patient presents for a corneal transplant evaluation. The patient has a history of systemic infections, including tuberculosis, and is seeking a corneal graft for a therapeutic indication. Which of the following is an absolute contraindication for cornea donation in this patient?

A Death due to an unknown cause

CORRECT

B Previous history of ocular surgery

C Ocular inflammation

D Retinoblastoma

RIGHT ANSWER

OK

A. Death due to an unknown cause

WHY THIS IS RIGHT

Death due to an unknown cause is an absolute contraindication for corneal donation because undiagnosed systemic infections or prion's disease cannot be excluded.

B. Previous ocular surgery is a relative contraindication; corneas may still be usable in selected cases.

C. Ocular inflammation affects optical quality but may still allow therapeutic grafts.

D. Retinoblastoma is an absolute contraindication only in the donor, not relevant to this recipient scenario.

• Absolute contraindications

1. Death due to an unknown cause

2. Systemic infections like HIV, Hepatitis, Congenital rubella, TB, Syphilis

3. CNS infection or diseases like Multiple sclerosis, Creutzfeldt-Jakob disease

4. Most haematological malignancies like Leukaemia

*

QUESTION

Regarding the embryological development of the eye, which of the following statements is correct?

A Retina develops from surface ectoderm

B Lens develops from neural crest cells

C Corneal endothelium develops from neural crest cells

CORRECT

D Sclera develops from neuroectoderm

RIGHT ANSWER

OK C. Corneal endothelium develops from neural crest cells

WHY THIS IS RIGHT

- Retina develops from neuroectoderm, not surface ectoderm -> A wrong
- Lens develops from surface ectoderm, not neural crest -> B wrong
- Corneal endothelium (and stroma) arise from neural crest cells -> C right
- Sclera develops from mesoderm and neural crest, not neuroectoderm -> D wrong

QUESTION

Depending on the location of the staphyloma in the eye which among the following options is matched correctly with its cause?

A Anterior staphyloma - peripheral corneal ulcer

B Intercalary staphyloma - degenerative myopia

C Equatorial staphyloma - scleritis

CORRECT

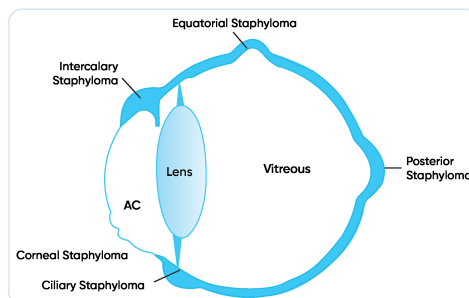
D Ciliary - pseudocornea

RIGHT ANSWER

OK C. Equatorial staphyloma - scleritis

WHY THIS IS RIGHT

- Staphyloma = Ectasia of uveal tissue through a thinned sclera
- Anterior staphyloma involves the cornea, usually after central corneal ulcer.
- Intercalary staphyloma occurs at the limbus, due to Scleritis or Secondary glaucoma.
- Equatorial staphyloma occurs at the equator of the globe due to Scleritis



QUESTION

Which of the following correctly lists the layers of the sclera from outermost to innermost?

A Lamina fusca > Sclera proper > Episclera

B Episclera > Sclera proper > Lamina fusca

CORRECT

C Sclera proper > Episclera > Lamina fusca

D Episclera > Lamina fusca > Sclera proper

RIGHT ANSWER

OK

B. Episclera > Sclera proper > Lamina fusca

WHY THIS IS RIGHT

The sclera is composed of three distinct layers arranged from outside to inside. The episclera is the outermost, loose, vascular connective tissue layer that allows movement of the globe and supplies blood.

The sclera proper forms the thick, dense, collagenous middle layer providing rigidity and protection to the eyeball. The lamina fusca is the thin, pigmented innermost layer, lying adjacent to the choroid.

QUESTION

A 45 y/o man from a tropical region presents with a painful red eye, significant watering, and sensitivity to light after working in a garden with decaying plant material. The patient is diagnosed with keratomycosis. Which of the following is not an examination finding in keratomycosis?

A Feathery extensions at the margins of the corneal ulcer

B Extensive corneal vascularization

CORRECT

C Sterile immune ring

D Endothelial plaque

RIGHT ANSWER

OK

B. Extensive corneal vascularization

WHY THIS IS RIGHT

Keratomycosis typically shows feathery margins of corneal ulcer, a sterile immune (Wessely) ring, and endothelial plaque. Extensive corneal vascularization is not an acute examination finding; it develops in chronic or healed corneal disease, not in active fungal keratitis.

QUESTION

A patient presents with a limbal scar, a deep anterior chamber, and absence of the lens on slit-lamp examination. He reports difficulty with both distance and near vision. His vision improves to 6/9 with a +11D lens. Which of the following is the most likely diagnosis?

A Pseudophakia

B Aphakia

CORRECT

C Subluxated lens

D Presbyopia

RIGHT ANSWER

OK B. Aphakia

WHY THIS IS RIGHT

Aphakia is the absence of the crystalline lens, leading to marked hypermetropia.

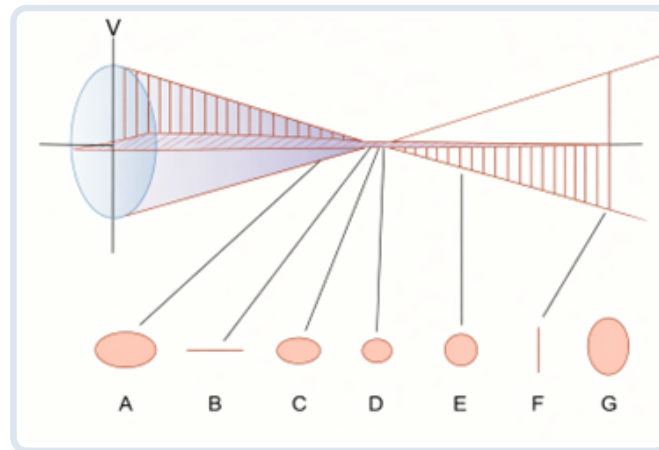
- Deep anterior chamber
- Absence of lens on slit lamp
- Severe blurred vision (distance + near)
- Improved with high plus lens (+10 to +12 D)

Clinical clues in question:

- Limbal scar -> previous surgery/trauma
- +11 D correction -> classic for aphakia
- Why not others:
 - Pseudophakia -> artificial IOL present
 - Subluxation -> lens still visible
 - Presbyopia -> only near vision affected

QUESTION

Which type of refractive error is illustrated in the given image?



A Presbyopia

B Myopia

C Astigmatism

CORRECT

D Hypermetropia

RIGHT ANSWER

OK C. Astigmatism

WHY THIS IS RIGHT

Astigmatism is a refractive error where light rays focus at different planes instead of a single point due to unequal curvature of the cornea or lens.

- Formation of two focal lines (not a point focus)
- Leads to blurred or distorted vision
- Can affect both near and distance vision

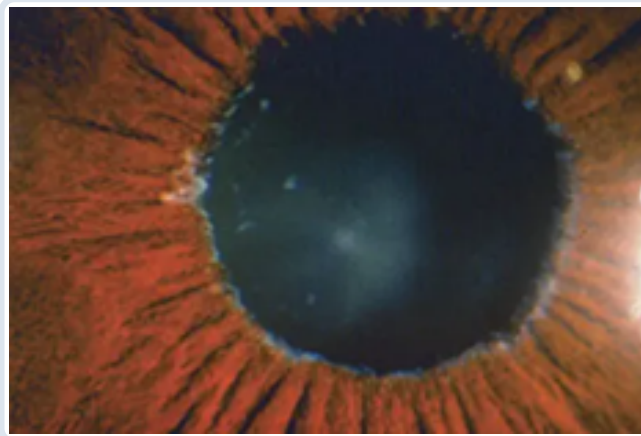
Optical concept: Produces conoid of Sturm with two principal meridians

Correction of astigmatism :

- Cylindrical lenses (aligned along specific meridian)
- Toric contact lenses or refractive surgery

QUESTION

| What is the diagnosis?



A Intraocular foreign body

B Pseudoexfoliation syndrome

CORRECT

C Ocular trauma

D Vossius ring

RIGHT ANSWER

OK

B. Pseudoexfoliation syndrome

WHY THIS IS RIGHT

Pseudoexfoliation syndrome is characterized by deposition of whitish, flaky fibrillar material on the anterior lens capsule and pupillary margin, often forming a central disc with peripheral ring and clear intermediate zone (bull's-eye pattern).

- Gray-white deposits on lens capsule (as seen in image)
- Poor pupillary dilatation
- Zonular weakness -> lens subluxation risk
- Associated with secondary open-angle glaucoma

Pathophysiology:

- Abnormal production and accumulation of extracellular fibrillary material in *anterior segment structures*

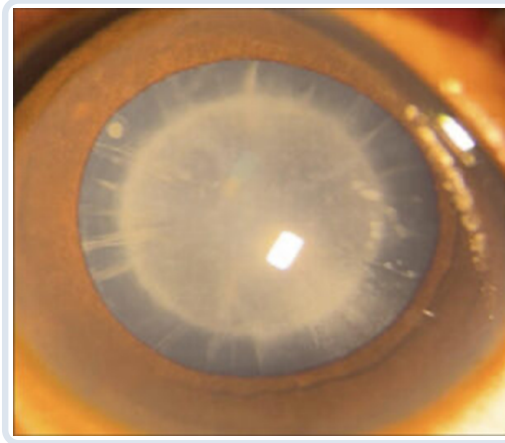
Why not others:

- Vossius ring: Pigment imprint after blunt trauma.
- Intraocular foreign body: Localized lesion, not diffuse deposits.
- Ocular trauma: No characteristic pseudoexfoliative material.

*

QUESTION

A 60-year-old female patient complaints of blurring of vision and gives history of Diabetes for the past 10 years. On examination findings as shown in image were seen. What is the most likely diagnosis and treatment for the same.



- A** Sunflower cataract with Lens extraction
- B** Rosette cataract with control of blood sugar level
- C** Immature cataract with Phacoemulsification + IOL implantation **CORRECT**
- D** Zonular Cataract with Lensectomy

RIGHT ANSWER

- OK** **C. Immature cataract with Phacoemulsification + IOL implantation**

WHY THIS IS RIGHT

Senile (age-related) immature cataract presents with progressive blurring of vision and radial spoke-like cortical opacities seen on slit-lamp examination.

- Gradual, painless diminution of vision
- Cortical spokes / lens opacities (as in image)
- Often associated with aging and systemic diseases like diabetes

Management:

- Definitive treatment = Phacoemulsification with intraocular lens (IOL) implantation
- Surgery is indicated when vision is significantly affected

Why not others:

- Sunflower cataract: Seen in Wilson's disease
- Rosette cataract: Typically seen after blunt trauma.
- Zonular cataract: Congenital, involves specific zones

QUESTION

A 10-year-old child presents with developmental delay, recurrent seizures, and history of thromboembolic episodes. On examination, he has marfanoid habitus, osteoporosis, and downward dislocation of the lens. Which of the following vitamin supplementation is most appropriate?

A Vitamin B6

CORRECT

B Vitamin B12

C Thiamine

D Vitamin B2

RIGHT ANSWER

OK A. Vitamin B6

WHY THIS IS RIGHT

The clinical picture describes homocystinuria (most commonly due to cystathionine β -synthase deficiency), an amino acid metabolism disorder.

- Intellectual disability (mental retardation)
- Seizures
- Thromboembolic tendency
- Osteoporosis / marfanoid habitus
- Ectopia lentis (downward displacement of lens)

Biochemical basis:

- Defect in conversion of homocysteine $\rightarrow$ cystathionine
- Leads to $\uparrow$ homocysteine and $\uparrow$ methionine

Treatment:

- Vitamin B6 (pyridoxine) is a cofactor for cystathionine β -synthase
- Some patients are B6-responsive, leading to $\downarrow$ homocysteine levels

Why not others:

- Vitamin B12: Involved in remethylation of homocysteine $\rightarrow$ methionine (different pathway)
- Thiamine (B1): Carbohydrate metabolism
- Vitamin B2: FAD-dependent reactions

QUESTION

A 2-month-old baby presented with the following symptoms. What is the ideal treatment for the child?



A Immediate surgery

CORRECT

B First try medical management

C Surgery after 2 years

D Surgery after 6 months of age

RIGHT ANSWER

OK

A. Immediate surgery

WHY THIS IS RIGHT

Congenital cataract in infants is a vision-threatening condition requiring urgent surgical intervention *to prevent irreversible amblyopia.*

- Leukocoria (white pupillary reflex) in a 2-month-old
- Bilateral involvement in this image
- Management principle:
 - Immediate cataract extraction (ideally within first few weeks-months of life)
 - Followed by:
 - Optical correction (aphakic glasses/contact lens/IOL later)
 - Amblyopia therapy

Why urgency matters:

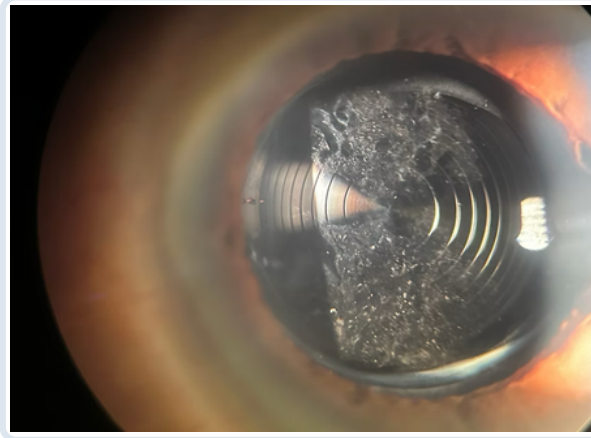
- Visual development is critical in early infancy
- Delay -> permanent visual impairment (deprivation amblyopia)

Why not others:

- Medical management has no role
- Delayed surgery -> poor visual outcome

QUESTION

A patient had a cataract surgery 3 years back, now complains of decrease in vision and presented with the following slit lamp image. What is the diagnosis?



A Posterior capsular opacification

CORRECT

B Pseudophakic Bullous Keratopathy

C Corneal dystrophy

D Posterior Subcapsular Cataract

RIGHT ANSWER

OK

A. Posterior capsular opacification

WHY THIS IS RIGHT

Posterior capsular opacification (PCO) is the most common late complication of cataract surgery, presenting months to years later with gradual, painless decrease in vision.

- Proliferation and migration of residual lens epithelial cells onto the posterior capsule
- Leads to fibrosis or pearl (Elschnig pearls) formation -> opacification

Key clinical features:

- Gradual painless visual decline after initially good post-op vision
- Glare and decreased contrast sensitivity
- Slit lamp: opacified posterior capsule behind IOL

Management: Nd: YAG laser posterior capsulotomy -> creates a central opening in the capsule -> restores vision

Why not others:

- Pseudophakic bullous keratopathy: Corneal edema, painful, epithelial bullae
- Corneal dystrophy: Bilateral, hereditary corneal changes
- Posterior subcapsular cataract: Occurs in natural lens, not after IOL implantation

QUESTION

Which of the following is true regarding viscoelastic substances used in cataract surgery?

- A** It can be left in the eye at the end of surgery.
- B** It damages the corneal epithelium or the endothelium.
- C** SF6 and perfluorocarbon are commonly used viscoelastics.
- D** It is used to maintain the anterior chamber during capsulorhexis and IOL insertion. CORRECT

RIGHT ANSWER

- OK** **D. It is used to maintain the anterior chamber during capsulorhexis and IOL insertion.**

WHY THIS IS RIGHT

Ophthalmic viscoelastic devices (OVDs) are essential in cataract surgery to maintain anterior chamber depth and protect intraocular structures.

Primary function:

- Maintain anterior chamber during critical steps:
- Capsulorhexis
- Phacoemulsification
- Intraocular lens (IOL) implantation
- Provide space and stability inside the eye
- Protect corneal endothelium from surgical trauma

Why other options are incorrect:

- A) Can be left in the eye:
- Incorrect -> must be removed at the end
- Retained OVD can cause postoperative rise in IOP
- B) Damages cornea:
- Incorrect -> actually protects endothelium
- C) SF6 & perfluorocarbon:
- These are intraocular gases/liquids used in vitreoretinal surgery, not viscoelastics

QUESTION

Four weeks after cataract surgery, a patient presents with pain, decreased vision, and redness in the eye. Examination reveals cells in the anterior chamber and vitreous haze. Identify the diagnosis and the associated microorganism:

- A PCO; Propionibacterium acne
- B Toxic Anterior Segment Syndrome; E.coli
- C Endophthalmitis; Staph epidermidis**
- D Sympathetic ophthalmia; Mucormycosis

CORRECT

RIGHT ANSWER

- C. Endophthalmitis; Staph epidermidis**

WHY THIS IS RIGHT

Postoperative endophthalmitis is an acute, sight-threatening intraocular infection occurring after procedures like cataract surgery, presenting with pain, decreased vision, redness, anterior chamber reaction, and vitreous haze.

- *Most common organism for early endophthalmitis* (<6 weeks) : *Staphylococcus epidermidis* (normal conjunctival flora); P.acnes >6 weeks
- Infection involves both anterior chamber and vitreous -> differentiates from sterile inflammation

Clinical differentiation:

- Endophthalmitis:
 - Painful
 - Severe vision loss
 - Vitreous involvement (haze)
- TASS (toxic anterior segment syndrome):
 - Sterile, painless
 - Limited to anterior segment only

Why not other options:

- Posterior capsular opacification: Painless, late complication
- Sympathetic ophthalmia: Bilateral autoimmune condition

QUESTION

Which of the following statements best describes the Fincham's test result in a patient with lenticular halo?

A Halos remain intact but brightness is reduced

B Halos disappear completely

C Halos are broken and revolve as the slit moves

CORRECT

D No halos are visible through the stenopaic slit

RIGHT ANSWER

OK C. Halos are broken and revolve as the slit moves

WHY THIS IS RIGHT

In lenticular halo (e.g., early cataract), Fincham's test with a stenopaic slit breaks the halo into segments that move with the slit, confirming a lenticular origin.

A fits corneal edema where halos persist.

B is incorrect-lenticular halos don't disappear.

D suggests absence of halos, not diagnostic.

QUESTION

| What is the primary material used in manufacturing soft contact lenses?

A Cellulose acetate butyrate

B Polymethylmethacrylate

C Hydroxyethyl methyl acrylate

CORRECT

D Silicone

RIGHT ANSWER

OK C. Hydroxyethyl methyl acrylate

WHY THIS IS RIGHT

- Soft contact lenses are made from hydrophilic hydrogel polymers, primarily hydroxyethyl methyl acrylate (HEMA), which allows high water content and flexibility for comfort.
- Cellulose acetate butyrate and polymethylmethacrylate (PMMA) are rigid lens materials.
- Silicone alone is not used; silicone hydrogel lenses combine silicone with hydrophilic polymers, not pure silicone.

QUESTION

| Local anesthesia used in cataract surgery is:

A Proparacaine 2%

B Lignocaine 2%

CORRECT

C Prilocaine 0.5%

D Ropivacaine 0.05%

RIGHT ANSWER

OK B. Lignocaine 2%

WHY THIS IS RIGHT

- Lignocaine 2% is the most commonly used local anesthetic in cataract surgery, given via peribulbar, retrobulbar, or sub-Tenon's block
- Proparacaine is a topical anesthetic used for diagnostic procedures, not surgery.
- Prilocaine is rarely used in ophthalmic blocks.
- Ropivacaine can be used in regional anesthesia but not at 0.05% and is uncommon for routine cataract surgery.

QUESTION

A patient complains of "fluctuating refractory error". What is the most probable diagnosis?

- A Cortical cataract
- B Nuclear cataract
- C Posterior subcapsular cataract

D Diabetic cataract

CORRECT

RIGHT ANSWER

OK D. Diabetic cataract

WHY THIS IS RIGHT

- Fluctuating refractive error is classically seen in diabetes mellitus due to changes in blood glucose altering the refractive index of the lens via sorbitol accumulation, causing alternating myopic and hypermetropic shifts.
- Nuclear cataract causes a fixed myopic shift ("second sight").
- Cortical cataract mainly causes glare and polyopia.
- Posterior subcapsular cataract causes glare and near vision difficulty, not refractive fluctuation.

QUESTION

A patient presents with endophthalmitis 5 days after cataract surgery. All of the following treatments can be used, except:

A Intravitreal antibiotic injection

B Intravenous steroids

CORRECT

C Pars plana vitrectomy

D Topical antibiotics

RIGHT ANSWER

OK

B. Intravenous steroids

WHY THIS IS RIGHT

- Post-operative acute endophthalmitis requires urgent infection control. Intravitreal antibiotics are the mainstay to achieve high intraocular drug levels.
- Pars plana vitrectomy is indicated in severe cases to reduce infective load and improve outcomes.
- Topical antibiotics are used as adjunct therapy.
- Intravenous steroids are not used routinely in acute endophthalmitis because they can suppress immunity and worsen infection if given before adequate antimicrobial control.

QUESTION

| Which of the following is not a feature of complicated cataracts?

- A Krukenberg spindle
- B Polychromatic lusture**
- C Occurs after uveitis
- D Breadcrumb appearance

CORRECT

RIGHT ANSWER

- OK B. Polychromatic lusture**

WHY THIS IS RIGHT

- Complicated cataract develops secondary to ocular diseases like uveitis, hence occurs after uveitis is typical.
- It often shows breadcrumb appearance due to posterior subcapsular opacities.
- Krukenberg spindle may coexist because chronic uveitis or pigment dispersion can be associated ocular conditions.
- Polychromatic lustre is a feature of Christmas tree (senile) cataract, not complicated cataract, making option B incorrect.

QUESTION

A 55-year-old woman has difficulty seeing in bright light and is diagnosed with a cataract. Which cataract type is not typically associated with this symptom?

- A** Nuclear cataract
- B** Cuneiform cataract
- C** Posterior subcapsular cataract
- D** Steroid-induced cataract

CORRECT

RIGHT ANSWER

- OK** A. Nuclear cataract

WHY THIS IS RIGHT

- Glare and difficulty seeing in bright light are classically seen with posterior subcapsular cataract, steroid-induced cataract (a type of PSC), and cuneiform (cortical) cataract, as these cause significant light scatter near the visual axis.
- Nuclear cataract typically causes gradual distance vision loss with a myopic shift and relatively better near vision, with less prominent glare.

QUESTION

Which of the following statements regarding the proteins and metabolism of the crystalline lens is false?

- A α -crystallins are the largest molecular weight crystallins
- B β -crystallins are the most abundant crystallins in the lens
- C **Maximum nutrition of the lens occurs by aerobic glycolysis**
- D Albuminoid proteins are increased in cataract

CORRECT

RIGHT ANSWER

- OK
- C. Maximum nutrition of the lens occurs by aerobic glycolysis**

WHY THIS IS RIGHT

The crystalline lens is avascular and derives most of its energy from anaerobic glycolysis, not aerobic metabolism.

- α -crystallins have the largest molecular weight and act as chaperone proteins
- β -crystallins are the most abundant lens proteins
- Albuminoid (insoluble) proteins increase in cataract due to protein denaturation

QUESTION

Regarding the hyaloid vascular system and its persistence, consider the following statements:

1. The hyaloid artery is a branch of the ophthalmic artery that supplies the developing crystalline lens during fetal life.
2. Physiological regression of the hyaloid artery begins around the third trimester and is usually complete by birth.
3. Persistence of the hyaloid artery may present clinically as persistent fetal vasculature (PFV).
4. Mittendorf dot represents a remnant of the posterior tunica vasculosa lentis on the posterior lens capsule.
5. Bergmeister papilla is a glial remnant seen on the optic disc due to incomplete regression of the hyaloid artery.
6. Persistent fetal vasculature is commonly associated with bilateral disease and normal axial length.

Which of the above statements are correct?

A 1, 2, 3 and 5

B 1, 3, 4 and 5

CORRECT

C 2, 3, 4 and 6

D 1, 2, 3, 4 and 6

RIGHT ANSWER

OK B. 1, 3, 4 and 5

WHY THIS IS RIGHT

- The hyaloid artery is a branch of the ophthalmic artery supplying the developing lens during fetal life (true). Persistence of this system results in persistent fetal vasculature (PFV) (true).
- A Mittendorf dot is a remnant of the posterior tunica vasculosa lentis on the posterior lens capsule (true), while Bergmeister papilla is a glial remnant on the optic disc due to incomplete regression of the hyaloid artery (true).
- Regression is usually complete before birth, not starting only in the third trimester, and PFV is typically unilateral with microphthalmos, not bilateral with normal axial length.

QUESTION

A 25-year-old man presents after a blunt ocular injury. Vision in the affected eye is hand movements. Slit-lamp examination shows a deep anterior chamber, and fundoscopy reveals a crystalline lens lying in the vitreous cavity. Which of the following findings is least likely in this patient?

- A Increased depth of anterior chamber
- B Presence of iridodonesis
- C Induction of axial hypermetropia
- D Reduction in the number of Purkinje images

CORRECT

RIGHT ANSWER

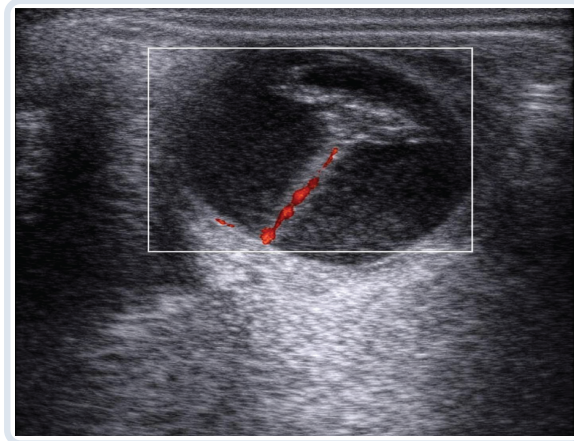
- OK C. Induction of axial hypermetropia

WHY THIS IS RIGHT

This is posterior dislocation of the lens into the vitreous after blunt trauma. Typical findings include a deep anterior chamber (aphakia), iridodonesis due to loss of lens support, and fewer Purkinje images because the lens surfaces are no longer in their normal position. The refractive error produced is aphakic (high) hypermetropia, not axial hypermetropia (which is due to a short eyeball). Hence C is least likely.

QUESTION

A child was born at 34 weeks of gestation. A thorough ophthalmology examination was performed. There was a white reflex in one eye. On further evaluation, the doctor observed finding as shown in figure. This could be due to abnormality in which embryonic structure?



A Neural crest

B Surface ectoderm

C Mesoderm

CORRECT

D Neuroectoderm

RIGHT ANSWER

OK C. Mesoderm

WHY THIS IS RIGHT

The white pupillary reflex (leukocoria) in a premature infant with the described fundus finding is most consistent with persistent hyperplastic primary vitreous (PHPV).

The primary vitreous and hyaloid vascular system develop from mesoderm.

Failure of regression leads to a fibrovascular mass behind the lens, causing leukocoria.

Neural crest and surface ectoderm contribute to other ocular structures, while neuroectoderm forms the retina, not the vitreous.

QUESTION

A patient develops bilateral ocular inflammation following a penetrating injury to one eye. Examination shows granulomatous keratic precipitates and vitritis. Which type of uveitis is most characteristic?

A Anterior uveitis

B Intermediate uveitis

C Posterior uveitis

D Panuveitis

CORRECT

RIGHT ANSWER

OK

D. Panuveitis

WHY THIS IS RIGHT

Sympathetic ophthalmia is a bilateral granulomatous panuveitis that occurs after penetrating ocular injury or surgery to one eye, leading to an autoimmune reaction against uveal antigens.

- Bilateral involvement (injured eye + sympathizing eye)
- Granulomatous inflammation (mutton-fat keratic precipitates)
- Panuveitis -> involvement of anterior chamber, vitreous, and choroid
- Dalen-Fuchs nodules (yellow-white lesions at RPE)

Pathophysiology:

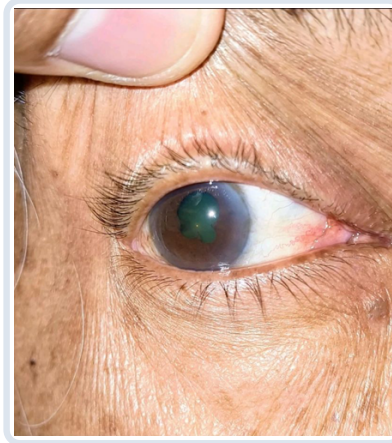
- Exposure of uveal antigens after trauma -> T-cell mediated autoimmune response

Why not others:

- Anterior uveitis (acute/chronic): Only anterior segment involved.
- Pars planitis: Intermediate uveitis (vitreous + pars plana).

QUESTION

A 65 year old male patient presented with sudden, painful diminution of vision, difficulty in vision in light, and circumferential congestion with hypopyon as shown. What is the likely diagnosis?



A Acute Congestive Glaucoma

B Acute Anterior Uveitis

CORRECT

C Acute Conjunctivitis

D Episcleritis

RIGHT ANSWER

OK

B. Acute Anterior Uveitis

WHY THIS IS RIGHT

Acute anterior uveitis (iritis) presents with painful red eye, photophobia, decreased vision, and circumcorneal (ciliary) congestion, often with cells, flare, and hypopyon in the anterior chamber.

- Circumcorneal congestion (ciliary flush)
- Photophobia (difficulty in light)
- Pain + decreased vision
- Small, irregular pupil (due to sphincter spasm/posterior synechiae)
- Hypopyon (in severe inflammation)

Pathophysiology:

- Inflammation of iris and ciliary body
- Breakdown of blood-aqueous barrier -> cells & protein (flare) in AC

Why not others:

- Acute glaucoma: Mid-dilated pupil, steamy cornea, very high IOP
- Conjunctivitis: Diffuse redness, discharge, no photophobia or hypopyon
- Episcleritis: Mild discomfort, localized redness, no AC reaction

QUESTION

62-year-old woman comes to the emergency department due to acute eye pain. She has a history of seasonal allergies and developed itchy, watery, red eyes after working outdoors in her garden. The patient used over-the-counter eye drops to treat her allergy symptoms, and several hours later, she began experiencing severe right eye pain and headache. On examination, the right eye appears red with a hazy cornea and dilated pupil that responds poorly to light. Palpation of the globes reveals notable firmness on the right compared to the left. Visual acuity in the affected eye is severely diminished. Which of the following medications was most likely used by this patient?

A Alpha-adrenergic agonist

CORRECT

B Beta blocker

C Mast cell stabilizer

D Nonsteroidal anti-inflammatory drug

RIGHT ANSWER

OK **A. Alpha-adrenergic agonist**

WHY THIS IS RIGHT

- This patient has acute angle-closure glaucoma precipitated by mydriasis from an α -adrenergic agonist (eg, phenylephrine) used in OTC “red-eye” drops. Mydriasis narrows the angle, causing sudden pain, hazy cornea, fixed dilated pupil, and high IOP.
- Beta blockers lower IOP.
- Mast cell stabilizers treat allergy without pupil dilation.
- NSAIDs do not affect pupil size or IOP.

QUESTION

An 65-year-old woman comes to the emergency department due to worsening eye pain. The patient noticed a rash around the left eye yesterday and, this morning, began experiencing left eye pain, redness, and decreased vision. Physical examination shows scattered vesicles on the left side of the forehead and nose and on the left upper and lower eyelids. Left eye examination shows conjunctival erythema, and fluorescein staining demonstrates linear, branching ulcerations on the cornea. Which of the following pathogens is most likely responsible for this patient's current condition?

A Adenovirus

B Candida albicans

C Herpes simplex virus

D Varicella-zoster virus

CORRECT

RIGHT ANSWER

OK

D. Varicella-zoster virus

WHY THIS IS RIGHT

- This presentation is herpes zoster ophthalmicus: elderly patient, vesicular rash in V1 distribution (forehead, nose-Hutchinson sign) with branching corneal lesions. VZV reactivation causes severe pain, keratitis, and vision loss.
- Adenovirus causes epidemic keratoconjunctivitis without vesicles.
- Candida causes fungal keratitis, not dermatomal rash.
- HSV causes dendritic ulcers but typically without a dermatomal vesicular rash.

QUESTION

A carpenter develops bilateral eye irritation and vision loss after trauma to the right eye. Fundus exam reveals Dalen-Fuchs nodules. Which type of hypersensitivity is involved?



A Type 1

B Type 2

C Type 3

D Type 4

CORRECT

RIGHT ANSWER

OK

D. Type 4

WHY THIS IS RIGHT

- This presentation suggests sympathetic ophthalmia, where trauma to one eye leads to bilateral granulomatous uveitis with Dalen-Fuchs nodules. It is mediated by a delayed (Type IV) hypersensitivity reaction against ocular antigens.
- Type I is IgE-mediated allergy.
- Type II involves antibody-mediated cytotoxicity.
- Type III is immune-complex deposition.
- Only Type IV explains T-cell-mediated granulomatous inflammation here.

QUESTION

A 35-year-old male presents with progressively worsening blurry vision, eye pain, and redness in the right eye. Examination reveals restricted eye movement, and fundoscopic evaluation identifies a well-defined cystic lesion in the vitreous humor, accompanied by surrounding inflammation. What is the most probable diagnosis in this patient?

- A Ocular toxoplasmosis
- B Endophthalmitis
- C Ocular cysticercosis**
- D Posterior uveitis due to tuberculosis

CORRECT

RIGHT ANSWER

- OK **C. Ocular cysticercosis**

WHY THIS IS RIGHT

The presence of a well-defined cystic lesion in the vitreous with surrounding inflammation is characteristic of ocular cysticercosis caused by *Taenia solium* larvae.

Symptoms include progressive blurring of vision, ocular pain, redness, and restricted eye movements due to inflammatory response.

- Ocular toxoplasmosis usually presents as retinochoroiditis.
- Endophthalmitis is a diffuse purulent infection.
- Tubercular posterior uveitis does not produce a discrete vitreous cyst.

QUESTION

An elderly woman presents with a sudden onset of severe ocular pain, redness, and decreased vision. On examination, she has a hazy cornea, a fixed mid-dilated pupil, and a shallow anterior chamber. What is the most likely diagnosis?

A Acute angle closure Glaucoma

CORRECT

B Acute anterior Uveitis

C Acute conjunctivitis

D Open angle Glaucoma

RIGHT ANSWER

OK

A. Acute angle closure Glaucoma

WHY THIS IS RIGHT

Acute angle-closure glaucoma (AACG) is an ophthalmic emergency caused by sudden obstruction of aqueous outflow, leading to a rapid rise in intraocular pressure.

- Severe ocular pain + headache
- Red eye with hazy (edematous) cornea
- Fixed mid-dilated pupil
- Shallow anterior chamber
- Sudden decrease in vision ± halos

Pathophysiology: Closure of anterior chamber angle → blocked trabecular outflow → ↑ IOP

Why not others:

- Uveitis → constricted pupil, not mid-dilated
- Conjunctivitis → no vision loss or high IOP
- Open-angle glaucoma → painless, gradual

*

QUESTION

An infant presents to ophthalmology OPD with lacrimation and photophobia. What is the diagnosis?



A Mucopolysaccharidoses

B Congenital Cataract

C Congenital Glaucoma

CORRECT

D Ophthalmia neonatorum

RIGHT ANSWER

OK

C. Congenital Glaucoma

WHY THIS IS RIGHT

Congenital glaucoma (buphthalmos) presents in infants with the classic triad of:

- Epiphora (lacrimation)
- Photophobia
- Blepharospasm

Key clinical features:

- Enlarged eye (buphthalmos) due to raised IOP
- Corneal edema -> hazy/blue cornea (as seen in image)
- Increased corneal diameter (>12 mm)
- Optic disc cupping (late)

Developmental anomaly of trabecular meshwork -> impaired aqueous drainage -> ↑ IOP

Why not others:

- Congenital cataract: White pupillary reflex (leukocoria), no photophobia triad
- Ophthalmia neonatorum: Purulent discharge, not corneal haze
- Mucopolysaccharidosis: Corneal clouding but systemic features present

QUESTION

A 55-year-old woman presents to the emergency department with severe unilateral eye pain, headache, and blurred vision after watching a movie in a dark theatre. On examination, the eye is red, cornea is hazy, and pupil is mid-dilated and non-reactive. What is the first line of management?

A Mannitol + Pilocarpine

CORRECT

B Mannitol + Moxifloxacin

C Mannitol + Atropine

D Mannitol + lubricating eye drops

RIGHT ANSWER

OK

A. Mannitol + Pilocarpine

WHY THIS IS RIGHT

Sudden eye pain and decreased vision after being in a dark environment (movie theater) suggests acute angle-closure glaucoma (AACG).

- Darkness -> pupillary dilation (mid-dilated pupil)
- Leads to pupillary block -> iris bows forward -> angle closure
- Rapid rise in IOP

First-line management:

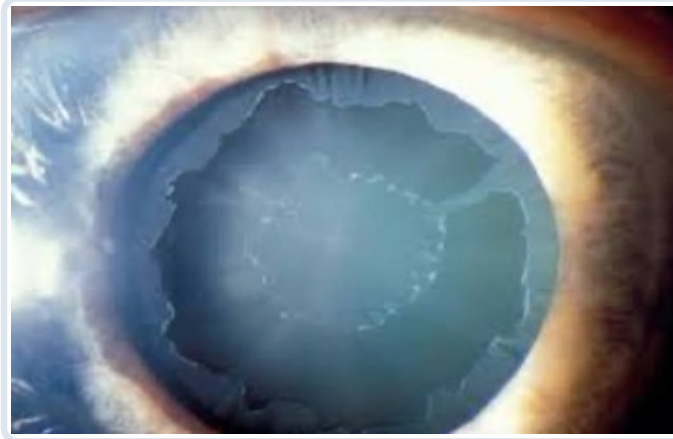
- Mannitol (IV): Rapidly lowers IOP by osmotic dehydration
- Pilocarpine: Causes miosis -> opens angle by pulling iris away from trabecular meshwork

Why not others:

- Moxifloxacin: Antibiotic, no role
- Atropine: Causes mydriasis -> worsens angle closure
- Lubricants: No role in IOP reduction

QUESTION

An elderly patient presents with white, dandruff-like deposits on the anterior surface of the lens, observed during a slit-lamp examination. What is the most likely diagnosis?



A Pseudoexfoliation syndrome

CORRECT

B Iris cyst

C Persistent pupillary membrane

D Pigment dispersion syndrome

RIGHT ANSWER

OK

A. Pseudoexfoliation syndrome

WHY THIS IS RIGHT

Pseudoexfoliation syndrome is characterized by deposition of whitish, dandruff-like fibrillar material on the anterior lens capsule, typically seen in elderly patients.

Classic slit-lamp finding: Three-zone pattern on lens:

- Central disc
- Clear intermediate zone
- Associated with secondary open-angle glaucoma (pseudoexfoliative glaucoma)
- Causes zonular weakness -> risk of lens subluxation and complications during cataract surgery

Why not others:

- Iris cyst: Localized cystic lesion, not diffuse deposits
- Persistent pupillary membrane: Congenital strands across pupil
- Pigment dispersion syndrome: Pigment deposition (not white flakes), seen in younger patients

QUESTION

A 80 year old male presented with diminution of vision since 2 years. The right eye was red and painful. On examination, the IOP was 50 mmHg in left eye and 16 mmHg in right eye. The right eye had deep anterior chamber with some cells and flare. What could be the possibility?

A

Phacolytic glaucoma

CORRECT

B

Malignant glaucoma

C

Fuch heterochromic iridocyclitis

D

Phacomorphic glaucoma

RIGHT ANSWER

OK

A. Phacolytic glaucoma

WHY THIS IS RIGHT

Phacolytic glaucoma is a lens-induced secondary open-angle glaucoma seen in elderly patients with long-standing hypermature cataract.

- Elderly patient with gradual visual loss (cataract history)
- Painful red eye
- Very high IOP (e.g., ~50 mmHg)
- Deep anterior chamber (open angle)
- Cells and flare in anterior chamber due to inflammatory response
- Pathophysiology:
 - Leakage of lens proteins from hypermature cataract
 - Macrophages ingest proteins -> block trabecular meshwork
 - Leads to acute rise in IOP
- Why not others:
 - Phacomorphic glaucoma:
 - Due to intumescent lens -> shallow anterior chamber (angle closure)
 - Malignant glaucoma:
 - Shallow/flat anterior chamber, usually post-surgery
 - Fuchs heterochromic iridocyclitis:
 - Chronic, mild uveitis with low-grade inflammation, not markedly raised IOP

*

QUESTION

A patient presents with vision problem in his right eye. On examination IOP of his right eye is 50 mmHg and left eye is 16 mm Hg. Slit lamp examination shows presence of flare cells in anterior chamber and cataractous lens in the right eye. What is the diagnosis of this condition?

A Phacolytic glaucoma

CORRECT

B Malignant glaucoma

C Fuch heterochromic iridocyclitis

D Phacomorphic glaucoma

RIGHT ANSWER

OK

A. Phacolytic glaucoma

WHY THIS IS RIGHT

Phacolytic glaucoma is a lens-induced secondary open-angle glaucoma caused by leakage of high-molecular-weight lens proteins from a hypermature (cataractous) lens.

- Elderly patient with mature/hypermature cataract
- Very high IOP (e.g., 50 mmHg)
- Open anterior chamber angle
- Flare and cells in anterior chamber (due to macrophages ingesting lens proteins)
- Pain and decreased vision

Pathophysiology:

- Leakage of lens proteins -> macrophage response
- Protein-laden macrophages block trabecular meshwork
- Leads to raised IOP

Why not others:

- Phacomorphic glaucoma:
 - Due to intumescent (swollen) lens causing angle closure
- Malignant glaucoma:
 - Aqueous misdirection, shallow anterior chamber, usually post-surgery
- Fuchs heterochromic iridocyclitis:
 - Chronic mild uveitis, not associated with very high IOP and hypermature lens

QUESTION

A 60-year-old female comes with a sudden onset of pain in the right eye. It is associated with colored halos, decreased visual acuity and a steamy cornea is seen, the pupil is mid-dilated and fixed. IOP is 60 mmHg. What is the diagnosis?

A Acute angle closure glaucoma

CORRECT

B Neovascular glaucoma

C Secondary angle closure glaucoma by uveitis

D Phacomorphic glaucoma

RIGHT ANSWER

OK

A. Acute angle closure glaucoma

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$19” here and does not include a written explanation for this item.

QUESTION

Krukenberg spindles are seen in:

A Acute angle closure glaucoma

B Open angle glaucoma

C Pigmentary glaucoma

CORRECT

D Juvenile glaucoma

RIGHT ANSWER

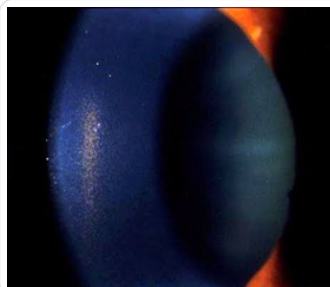
OK

C. Pigmentary glaucoma

WHY THIS IS RIGHT

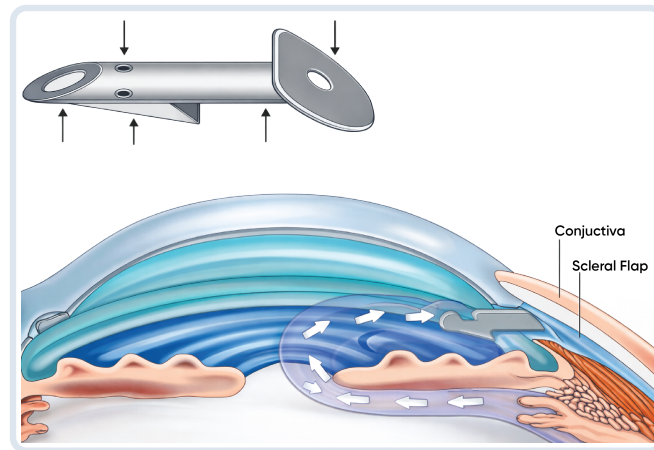
Krukenberg spindle is a vertical, spindle-shaped deposition of pigment on the corneal endothelium, classically seen in pigment dispersion syndrome (PDS) and pigmentary glaucoma.

- Posterior bowing of iris -> friction between iris pigment epithelium and zonules
- Release of pigment granules into aqueous humor
- Pigment deposits on:
 - Corneal endothelium -> Krukenberg spindle
 - Trabecular meshwork -> ↑ outflow resistance -> secondary open-angle glaucoma



QUESTION

Identify the device:



A Ex-Press implant

CORRECT

B Ahmed glaucoma valve

C Molteno implant

D Baerveldt implant

RIGHT ANSWER

OK A. Ex-Press implant

WHY THIS IS RIGHT

- The Ex-Press implant is a small stainless-steel microshunt placed under a scleral flap to drain aqueous humor from the anterior chamber, functioning like a modified trabeculectomy without a plate or valve.
- The Ahmed glaucoma valve is a valved plate device.
- Molteno and Baerveldt implants are non-valved glaucoma drainage devices with large end plates, unlike the compact Ex-Press shunt.

QUESTION

64-year-old woman is brought to the clinic by her husband due to a fall. She was walking in her living room when she tripped over an electrical cord. The patient has had several other ground-level falls in the last 6 months but has had no significant injuries. She also gave up driving a year ago following a near-miss motor vehicle accident. Ophthalmic examination reveals reduced vision in her peripheral visual fields bilaterally and an elevated intraocular pressure. After discussion of treatment options, the patient is initiated on timolol ophthalmic drops. Which of the following structures is the most likely target of this medication?

A Ciliary epithelium

CORRECT

B Ciliary muscle

C Pupil sphincter

D Trabecular meshwork

RIGHT ANSWER

OK A. Ciliary epithelium

WHY THIS IS RIGHT

- This patient has primary open-angle glaucoma (peripheral field loss, raised IOP). Timolol, a non-selective beta-blocker, lowers IOP by reducing aqueous humor production from the ciliary epithelium.
- Ciliary muscle is targeted by miotics to increase outflow.
- Pupil sphincter is acted on by parasympathomimetics.
- Trabecular meshwork is mainly affected by prostaglandin analogs and miotics, not beta-blockers.

QUESTION

| Which of these statements is true regarding perimetry?

- A** Kinetic perimetry is used in quantification and tracking of visual changes in established glaucoma
- B** In Static perimetry, stimulus intensity is held constant and moved centrally with detection
- C** Visual field defect to be classified as glaucoma, it should have the corresponding optic nerve head abnormalities
- D** Early signs include generalised constriction of isopters and barring of blind spot CORRECT

RIGHT ANSWER

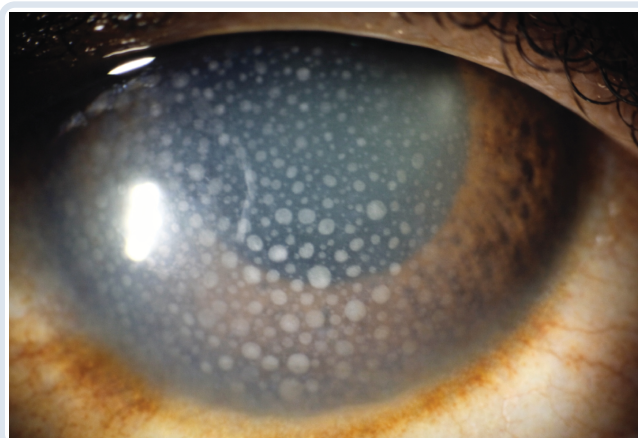
- OK** **D. Early signs include generalised constriction of isopters and barring of blind spot**

WHY THIS IS RIGHT

- Initial indications of glaucoma in perimetry involve a widespread narrowing of isopters and the appearance of a blockage within the blind spot.
- Perimetry is a diagnostic test used to assess a person's visual field.
- Static Perimetry: Traditional method involving fixed stimulus points presented on a static grid. Goldmann perimetry and Humphrey Visual Field Analyzer are common devices for static perimetry.
- Kinetic Perimetry: Moving stimuli are used to determine the boundaries of the visual field. Useful for mapping the extent of peripheral vision.

QUESTION

A 30-year-old female presents with redness and pain in the eye. Examination revealed an IOP of 38 mm of Hg, aqueous flare and is shown below. Which of the following drugs must be avoided in her?



- A** Beta blockers
- B** Mannitol
- C** Carbonic anhydrase inhibitors
- D** Prostaglandin analogs

CORRECT

RIGHT ANSWER

- OK** **D. Prostaglandin analogs**

WHY THIS IS RIGHT

- This patient has secondary inflammatory glaucoma (uveitic glaucoma) suggested by high IOP with aqueous flare. Prostaglandin analogs are avoided because they increase intraocular inflammation and can worsen uveitis.
- Beta blockers reduce aqueous production and are safe.
- Carbonic anhydrase inhibitors effectively lower IOP in inflammatory glaucoma.
- Mannitol can be used short-term for acute IOP reduction.

QUESTION

A male patient with a history of hypermature cataract presents with a 2 day history of ciliary congestion, photophobia, blurring of vision and on examination has a deep anterior chamber in the right eye. The left eye is normal. The diagnosis is:

A Phacomorphic glaucoma

B Phacolytic glaucoma

CORRECT

C Phacotoxic glaucoma

D Phacoanaphylactic uveitis

RIGHT ANSWER

OK

B. Phacolytic glaucoma

WHY THIS IS RIGHT

- Phacolytic glaucoma occurs in hypermature cataract due to leakage of high-molecular-weight lens proteins, causing secondary open-angle glaucoma with deep anterior chamber, ciliary congestion, photophobia, and raised IOP.
- Phacomorphic glaucoma has a shallow AC from an intumescent lens.
- Phacotoxic glaucoma is an older term, not commonly used.
- Phacoanaphylactic uveitis is a granulomatous inflammatory reaction following lens capsule rupture, usually post-surgery or trauma.

QUESTION

A 58-year-old airline captain comes to the OPD after he was found to have abnormal vision testing during a pilot medical certification examination. The patient feels well and has no ocular symptoms. Vision testing shows normal visual acuity but moderate loss of peripheral vision in both eyes. Results of the funduscopic examination are shown in the image below. He is started on latanoprost eyedrops. The medication is most likely to improve this patient's condition through which of the following mechanisms?



- A** Decreased bicarbonate formation in ciliary body
- B** Decreased formation of abnormal blood vessels in retina
- C** Decreased secretion of aqueous humor
- D** Increased outflow of aqueous humor

CORRECT

RIGHT ANSWER

- OK** **D. Increased outflow of aqueous humor**

WHY THIS IS RIGHT

This asymptomatic patient with peripheral field loss and glaucomatous fundus changes has primary open-angle glaucoma. Latanoprost, a prostaglandin F_{2α} analog, lowers IOP by increasing uveoscleral outflow of aqueous humor.

QUESTION

An elderly patient with a sclerotic type of hypermature cataract presents with sudden rise in intraocular pressure and iridocorneal touch. Slit-lamp examination shows lens subluxation. The most likely diagnosis is:

- A Phacomorphic glaucoma
- B Phacolytic glaucoma
- C Phacotopic glaucoma**
- D Phacoanaphylactic glaucoma

CORRECT

RIGHT ANSWER

- OK
- C. Phacotopic glaucoma**

WHY THIS IS RIGHT

- In this elderly patient, a sclerotic hypermature cataract with lens subluxation, sudden rise in IOP, and iridocorneal touch points to phacotopic glaucoma. This occurs due to dislocation or subluxation of the lens, which mechanically blocks aqueous outflow or causes pupillary block.
- Phacomorphic glaucoma is due to an intumescent lens, phacolytic glaucoma results from protein leakage without subluxation, and phacoanaphylactic glaucoma is an inflammatory response after lens protein exposure.

QUESTION

A 55-year-old patient presents with features suggestive of glaucoma. On examination, the cornea is densely opacified, making visualization of the anterior segment difficult. You want to measure the intraocular pressure (IOP) accurately. Which of the following tonometers is most appropriate in this situation?

- A** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KKK7H9S7JAEXCA DVKMHWC7HJ.png
- B** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KKK7H9XE1F92TE WJNHM7XNAS.png
- C** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KKK7HA3E0JNWDJW30EAS9HZ5.png CORRECT
- D** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KKK7HA78YK3PAE XSPBPK89BX.png

RIGHT ANSWER

- OK** **C.** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KKK7HA3E0JNWDJW30EAS9HZ5.png

WHY THIS IS RIGHT

- A: Schiotz tonometer
B: Goldmann applanation tonometer
C: Reichert applanation Tono-Pen
D: Perkins Mk3 Hand-Held Tonometer

We have been given a suspected glaucoma with densely opacified cornea and poor visualization of anterior segment. Standard applanation methods require a clear, regular corneal surface.

Reichert Applanation Tono-pen Requires minimal corneal surface area

Can measure IOP in:

- Corneal scars
- Edematous cornea
- Post-keratoplasty eyes
- Bedridden patients
- Does not require slit lamp visualization

Most appropriate when cornea is opaque.

QUESTION

A 6-month-old infant with congenital glaucoma has corneal enlargement, clouding, and Haab's striae. Medical treatment has failed, and the angle is difficult to visualize due to corneal clouding. Which surgical procedure is most appropriate for this infant?

- A** Goniotomy
- B** Trabeculotomy with Trabeculectomy CORRECT
- C** Trabeculectomy with antimetabolites
- D** Glaucoma drainage devices

RIGHT ANSWER

- B. Trabeculotomy with Trabeculectomy**

WHY THIS IS RIGHT

In congenital glaucoma with corneal clouding and Haab's striae, angle visualization is poor, *making goniotomy unsuitable.*

Trabeculotomy does not require a clear cornea.

Combined trabeculotomy-trabeculectomy offers higher success in advanced cases and is preferred after failure of medical therapy.

QUESTION

A patient presents with the eyeball positioned down and out. Which cranial nerve palsy is most likely present?

A Third nerve palsy

CORRECT

B Sixth nerve palsy

C Fourth nerve palsy

D Seventh nerve palsy

RIGHT ANSWER

OK A. Third nerve palsy

WHY THIS IS RIGHT

Third nerve (oculomotor nerve) palsy results in a characteristic “down and out” eye position due to unopposed action of:

- Lateral rectus (CN VI) -> abducts eye
- Superior oblique (CN IV) -> depresses and intorts

Key features:

- Eye deviated down and out
- Ptosis (levator palpebrae paralysis)
- Dilated pupil (parasympathetic involvement)
- Loss of adduction, elevation, and depression

Why not others:

- Sixth nerve -> only abduction defect
- Fourth nerve -> vertical diplopia, head tilt
- Seventh nerve -> facial muscle involvement

*

QUESTION

A patient presents with a pupil that does not react to light but constricts with a near stimulus. Where is the lesion most likely located?

- A Optic nerve
- B Edinger Westphal nucleus
- C Pretectal area of Midbrain**
- D Oculomotor Nerve

CORRECT

RIGHT ANSWER

- C. Pretectal area of Midbrain**

WHY THIS IS RIGHT

Light-near dissociation (pupil does not react to light but constricts to accommodation) indicates a lesion in the pretectal area of the midbrain.

Pathophysiology:

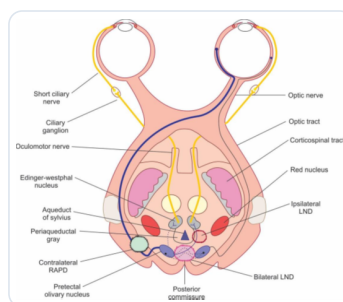
- Light reflex pathway is interrupted at the pretectal nucleus
- Near reflex pathway bypasses pretectal area, so it remains intact

Clinical associations:

- Seen in Argyll Robertson pupil (neurosyphilis)
- Also in dorsal midbrain lesions

Why not others:

- Optic nerve -> both light and near affected
- Edinger-Westphal nucleus -> both reflexes lost
- Oculomotor nerve -> no constriction at all



QUESTION

A patient with a pituitary macroadenoma causing compression of the optic chiasm now develops a characteristic pattern of visual disturbance. What type of visual field defect is expected in this condition?

A Homonymous Hemianopia

B Superior Quadrantanopia

C Bitemporal Hemianopia

CORRECT

D Hemianopia sparing Macular Vision

RIGHT ANSWER

OK

C. Bitemporal Hemianopia

WHY THIS IS RIGHT

Compression of the optic chiasm (classically by a pituitary macroadenoma) leads to bitemporal hemianopia due to involvement of decussating nasal retinal fibers.

- Nasal retinal fibers carry temporal visual field information
- These fibers cross at the optic chiasm
- Chiasmal compression -> loss of both temporal fields

Clinical features:

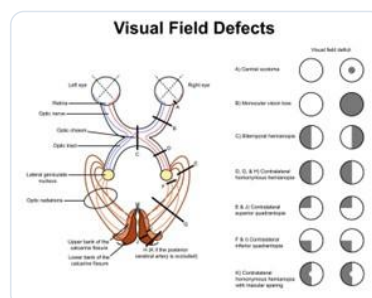
- "Tunnel vision" (loss of peripheral vision)
- Difficulty with side vision (e.g., bumping into objects)

Visual pathway correlation:

- Optic nerve -> monocular loss
- Optic chiasm -> bitemporal hemianopia
- Optic tract -> homonymous hemianopia

Why not others:

- o Homonymous hemianopia -> post-chiasmal lesion (optic tract/radiations)
- o B. Superior quadrantanopia -> temporal lobe (Meyer's loop) lesion
- o D. Macular sparing hemianopia -> occipital cortex lesion



QUESTION

A patient has Bilateral right sided loss of vision. What is the most likely site of lesion?

A Left optic tract

CORRECT

B Right optic tract

C Optic chiasma

D Optic radiation

RIGHT ANSWER

OK A. Left optic tract

WHY THIS IS RIGHT

Bilateral right-sided loss of vision = Right homonymous hemianopia, which indicates a lesion posterior to the optic chiasma on the left side.

Localization logic:

- Right visual field (both eyes) is processed by the left visual pathway
- Lesions after the chiasma cause homonymous hemianopia

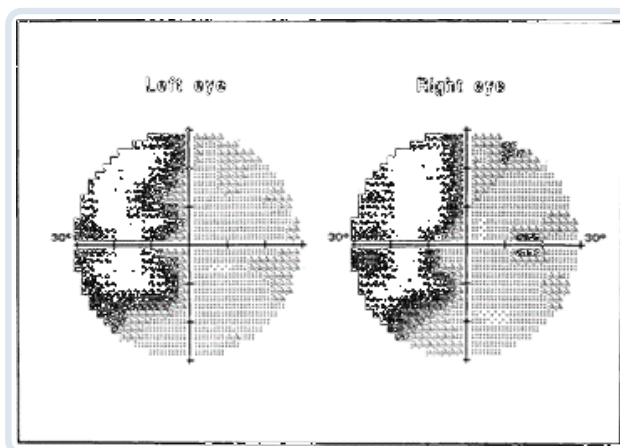
Most likely site: Left optic tract

Why not others:

- Right optic tract: Causes left homonymous hemianopia
- Optic chiasma: Causes bitemporal hemianopia
- Optic radiation: Can cause homonymous hemianopia but often with quadrantic defects depending on location

QUESTION

Which defect is shown below?



- A** Bitemporal hemianopia
- B** Binasal hemianopia
- C** Altitudinal defect
- D** Homonymous hemianopia

CORRECT

RIGHT ANSWER

- OK** D. Homonymous hemianopia

WHY THIS IS RIGHT

Homonymous hemianopia is a visual field defect involving loss of the same half of the visual field in both eyes (e.g., right half in both eyes).

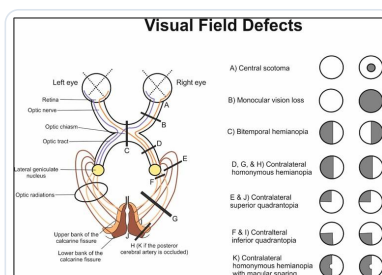
- Occurs due to lesions posterior to the optic chiasm:
 - Optic tract
 - Lateral geniculate body
 - Optic radiations
 - Occipital cortex

Clinical interpretation:

- Right homonymous hemianopia -> lesion in left visual pathway
- Left homonymous hemianopia -> lesion in right visual pathway

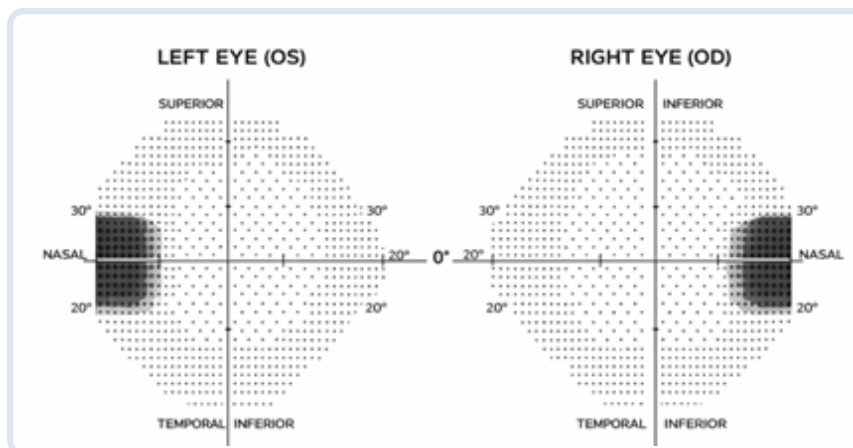
Why not others:

- Bitemporal hemianopia: Chiasmal lesion (e.g., pituitary tumor)
- Binasal hemianopia: Rare, due to bilateral lateral retinal/optic nerve lesions
- Altitudinal defect: Seen in ischemic optic neuropathy



QUESTION

Which visual field defect is shown in the image below?



A Altitudinal field defects

B Enlarged blind spots

CORRECT

C Arcuate field defects

D Roennes nasal step

RIGHT ANSWER

OK

B. Enlarged blind spots

WHY THIS IS RIGHT

Enlarged blind spot-on visual field testing indicates pathology involving the optic nerve head or peripapillary retina.

- Enlargement of the normal physiological blind spot
- Seen temporal to fixation in visual field charts
- Often bilateral if due to raised intracranial pressure

Common causes:

- Papilledema (most important cause)
- Optic disc edema
- Optic neuritis (early)
- Peripapillary lesions

Why not others:

- Altitudinal defect: Seen in ischemic optic neuropathy
- Arcuate scotoma: Seen in glaucoma (follows nerve fiber layer)
- Nasal step (Roenne's): Early glaucomatous defect

QUESTION

| Which is not a feature of 3rd nerve palsy?

A Pupil dilatation

B Ptosis

C Down and out eye

D Abduction limitation

CORRECT

RIGHT ANSWER

OK D. Abduction limitation

WHY THIS IS RIGHT

Oculomotor nerve (3rd nerve) palsy affects most extraocular muscles except lateral rectus (CN VI) and superior oblique (CN IV).

Typical features of 3rd nerve palsy:

- Ptosis -> paralysis of levator palpebrae superioris
- Pupil dilatation (mydriasis) -> loss of parasympathetic supply
- "Down and out" eye -> unopposed action of lateral rectus and superior oblique
- Loss of adduction, elevation, and depression

Why D is correct (NOT a feature):

- Abduction is preserved because it is controlled by the lateral rectus (CN VI)
- Hence, no abduction limitation in isolated 3rd nerve palsy

QUESTION

| Which cranial nerve provides sensory innervation to the orbit?

A Trigeminal nerve

CORRECT

B Vagus nerve

C Oculomotor nerve

D Facial nerve

RIGHT ANSWER

OK

A. Trigeminal nerve

WHY THIS IS RIGHT

The sensory innervation of the orbit is provided by the ophthalmic division (V1) of the trigeminal nerve (CN V).

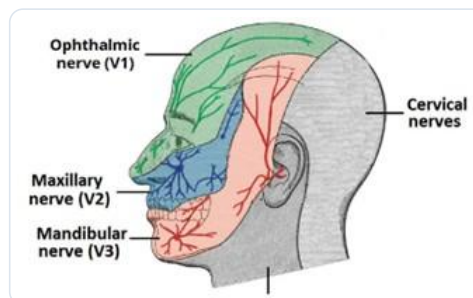
- Trigeminal nerve (CN V) -> main sensory nerve of the face
- Ophthalmic division (V1) supplies:
 - Cornea (highly sensitive)
 - Conjunctiva
 - Eyelids
 - Lacrimal gland
 - Orbit and surrounding structures

Important branches of V1:

- Nasociliary nerve -> corneal sensation (afferent limb of corneal reflex)
- Frontal nerve
- Lacrimal nerve

Why not others:

- Vagus nerve (CN X): Visceral functions, no orbital sensory role
- Oculomotor nerve (CN III): Motor to extraocular muscles + parasympathetic to pupil
- Facial nerve (CN VII): Motor to facial muscles; lacrimation (parasympathetic), but no sensory supply to orbit



QUESTION

A patient presents with difficulty in left gaze; right gaze is normal, but on attempting left gaze, the right eye shows limited movement while the left eye exhibits nystagmus. What is the likely diagnosis?

A Thyroid eye disease

B Right 3rd nerve palsy

C Esotropia

D Right Internuclear Ophthalmoplegia

CORRECT

RIGHT ANSWER

OK

D. Right Internuclear Ophthalmoplegia

WHY THIS IS RIGHT

Internuclear Ophthalmoplegia (INO) results from a lesion in the medial longitudinal fasciculus (MLF), which coordinates conjugate horizontal eye movements between the two eyes.

- On gaze toward the side opposite the lesion:
- Ipsilateral eye (to lesion) -> impaired adduction
- Contralateral eye -> abducting nystagmus
- Convergence is typically preserved (helps differentiate from 3rd nerve palsy)

In this question:

- Difficulty in left gaze
- Right eye fails to adduct + left eye shows nystagmus

-> Indicates right-sided MLF lesion -> Right INO

Why not others:

- Thyroid eye disease: Restrictive myopathy, not abducting nystagmus pattern
- 3rd nerve palsy: Affects multiple movements + ptosis, pupil involvement
- Esotropia: Static deviation, not gaze-specific internuclear defect

QUESTION

Which of the following is/are true about optic neuritis?

- I. Proportionate loss of colour vision and contrast to visual acuity
- II. 70% cases of multiple sclerosis are affected
- III. Treatment is done by oral steroids
- IV. Optic neuritis presents with normal fundus or disc edema

A I and II

B I and III

C I, II and IV

D Only IV

CORRECT

RIGHT ANSWER

OK

D. Only IV

WHY THIS IS RIGHT

I. Proportionate loss of colour vision and contrast to visual acuity : FALSE

- In optic neuritis, colour vision loss is disproportionately severe compared to visual acuity
- Especially red desaturation

II. 70% cases of multiple sclerosis are affected :FALSE

- Optic neuritis is common in MS, but:
- ~20-25% present with optic neuritis as first manifestation
- ~50% of MS patients develop optic neuritis during lifetime

III. Treatment is done by oral steroids :FALSE

- Based on Optic Neuritis Treatment Trial (ONTT):
- IV methylprednisolone -> speeds recovery
- Oral steroids alone are contraindicated (↑ recurrence risk)

IV. Optic neuritis presents with normal fundus or disc edema : TRUE

- Two forms:
- Retrobulbar neuritis -> fundus normal ("**patient sees nothing, doctor sees nothing**")
- Papillitis -> disc edema present

QUESTION

A 60-year-old man comes to the physician because his wife has noticed that his left eye looks smaller than his right. He has had worsening left shoulder and arm pain for 3 months. He has smoked two packs of cigarettes daily for 35 years. Examination shows left-sided ptosis. The pupils are unequal but reactive to light; when measured in dim light, the left pupil is 3 mm and the right pupil is 5 mm. Which of the following is the most likely cause of this patient's ophthalmologic symptoms?

- A Thrombosis of the cavernous sinus
- B Aneurysm of the posterior cerebral artery
- C Infarction of the hypothalamus
- D Compression of stellate ganglion**

CORRECT

RIGHT ANSWER

- OK D. Compression of stellate ganglion**

WHY THIS IS RIGHT

- This patient has Horner syndrome (ptosis, miosis worse in dim light) with shoulder/arm pain and heavy smoking, suggesting a Pancoast tumor compressing the cervicothoracic (stellate) ganglion.
- Cavernous sinus thrombosis causes ophthalmoplegia and chemosis.
- Posterior cerebral artery aneurysm causes CN III palsy with dilated pupil.
- Hypothalamic infarction is rare and would cause broader neurologic deficits.

QUESTION

A 34-year-old woman comes to the office due to double vision. The patient first experienced difficulty focusing her eyes while at work yesterday. On awakening this morning, her symptoms had progressed to frank diplopia. A complete physical examination is performed, including a full neurologic assessment. Shining light into the patient's right eye causes constriction of her right pupil, but not the left pupil. Shining light into her left eye causes constriction of only her right pupil. Which of the following additional physical examination findings is likely to be found in this patient?

A Absence of the left corneal reflex

B Drooping of the left eyelid

CORRECT

C Inability to close the left eye

D Inward deviation of the left eye

RIGHT ANSWER

OK B. Drooping of the left eyelid

WHY THIS IS RIGHT

- Both light tests show only the right pupil constricts, meaning afferent pathways are intact, but the left pupil cannot constrict to direct or consensual light -> a left efferent pupillary defect (left CN III parasympathetic involvement).
- A CN III palsy also causes ptosis from levator palpebrae weakness.
- Absent left corneal reflex = V1/VII lesion.
- Inability to close left eye = CN VII palsy.
- Inward deviation suggests CN VI palsy.

QUESTION

| Which of the following can occur in a patient with prolactinoma?

A Superior quadrantanopia

CORRECT

B Inferior quadrantanopia

C Priapism

D Failure of lactation

RIGHT ANSWER

OK

A. Superior quadrantanopia

WHY THIS IS RIGHT

- A prolactinoma can compress the inferior fibers of the optic chiasm, which carry information from the superior temporal visual fields, leading to superior quadrantanopia.
- Inferior quadrantanopia occurs with superior chiasmal or temporal lobe lesions.
- Priapism is unrelated and seen with spinal or autonomic disorders.
- Failure of lactation is incorrect-prolactinoma causes galactorrhea, not failure of lactation.

QUESTION

A construction worker has unilateral facial anhidrosis after a back injury. Examination finding is shown below. Which location is the most likely site of lesion?



A Grey ramus of T1

B Grey ramus of C8

C White ramus of T1

CORRECT

D White ramus of C8

RIGHT ANSWER

OK

C. White ramus of T1

WHY THIS IS RIGHT

- Unilateral facial anhidrosis with the shown findings indicates Horner syndrome due to a preganglionic sympathetic lesion. Preganglionic fibers supplying the eye and face originate from the ciliospinal center (C8-T2) and pass through the white ramus communicantes of T1.
- Grey rami carry postganglionic fibers, so lesions there spare sweating.
- C8 white ramus does not contribute significantly to ocular sympathetic supply.

QUESTION

I All are true about Foster-Kennedy syndrome except:

- A** Ipsilateral optic atrophy
- B** Often caused by olfactory meningioma
- C** Can be seen in occipital lobe neoplasms
- D** Contralateral papilledema

CORRECT

RIGHT ANSWER

- OK** **C. Can be seen in occipital lobe neoplasms**

WHY THIS IS RIGHT

- Foster-Kennedy syndrome classically shows ipsilateral optic atrophy due to direct optic nerve compression and contralateral papilledema from raised intracranial pressure. It is most commonly caused by frontal lobe or olfactory groove meningiomas.
- Occipital lobe tumors produce visual field defects (homonymous hemianopia) and do not cause Foster-Kennedy syndrome, making option C incorrect.

QUESTION

I All are true about the oculocardiac reflex except:

- A** Mediated via V1 trigeminal afferent
- B** Triggered during strabismus surgery
- C** Most commonly due to inferior rectus stimulation
- D** Managed by stopping surgical stimulation

CORRECT

RIGHT ANSWER

- OK** C. Most commonly due to inferior rectus stimulation

WHY THIS IS RIGHT

- The oculocardiac reflex is mediated by trigeminal (V1) afferents and vagal efferents, and is commonly triggered during strabismus surgery, especially on extraocular muscle traction. It is most commonly elicited by medial rectus stimulation, not inferior rectus, making option C incorrect.
- Initial management is immediate cessation of surgical stimulation, which usually reverses bradycardia; anticholinergics may be used if persistent.

QUESTION

In which of the following situations is retrobulbar block considered safe?

A Penetrating eye trauma

B High myopia

C Coagulopathy

D Enucleation

CORRECT

RIGHT ANSWER

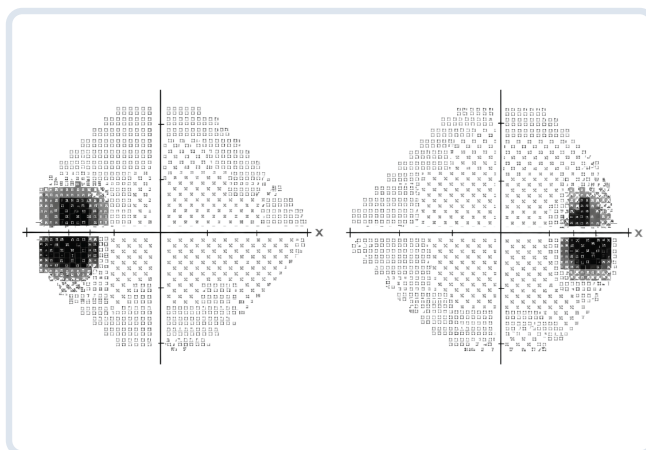
OK **D. Enucleation**

WHY THIS IS RIGHT

- Retrobulbar block is safe in enucleation, as the globe is being removed and risk of perforation is irrelevant.
- Penetrating eye trauma is a contraindication due to risk of globe rupture.
- High myopia increases the risk of scleral perforation from elongated globe.
- Coagulopathy raises the risk of retrobulbar hemorrhage.
- Hence, enucleation is the situation where retrobulbar anesthesia is considered safe.

QUESTION

Identify the visual field defect?



- A Central scotoma
- B Roennes Nasal step
- C Blind spot enlargement**
- D Arcuate scotoma

CORRECT

RIGHT ANSWER

- OK
- C. Blind spot enlargement**

WHY THIS IS RIGHT

- Blind spot enlargement refers to an increase in the physiological scotoma corresponding to the optic disc.
- It commonly occurs due to papilledema, where raised intracranial pressure causes swelling of the optic nerve head.
- Other causes include optic neuritis, peripapillary inflammation, and high myopia.
- *Visual acuity is usually preserved initially,* but perimetry shows enlargement of the blind spot.
- It is an important early visual field sign in intracranial space-occupying lesions.

QUESTION

Identify the correct statements:

1. Direct invasion is the primary method of spread for retinoblastoma
2. The appearance of punched-out lesions in the retina is crucial for diagnosing toxoplasmosis.
3. The optimal sequence of dyes for ocular surface examination is as follows: Rose Bengal --> Lissamine green --> Fluorescein
4. Rostral Interstitial Nucleus of Cajal is the center for vertical gaze.

A 1, 2, 3, 4

B 1, 3

C 1, 2, 4

CORRECT

D 2, 3, 4

RIGHT ANSWER

OK C. 1, 2, 4

WHY THIS IS RIGHT

- Retinoblastoma most commonly spreads by direct invasion along the optic nerve and adjacent tissues.
- Toxoplasmosis shows characteristic punched-out chorioretinal lesions (true).
- The dye sequence is incorrect-fluorescein should be instilled first, not last (false).
- The rostral interstitial nucleus of Cajal is a key center for vertical gaze holding (true).

QUESTION

What would you expect to see on the instillation of 1% hydroxyamphetamine into both the eyes of a patient with right-sided postganglionic Horner syndrome?

- A** Both pupils dilate
- B** No change observed in both eyes
- C** Only left eye dilates
- D** Only right eye dilates

CORRECT

RIGHT ANSWER

- OK** C. Only left eye dilates

WHY THIS IS RIGHT

Hydroxyamphetamine test is used to localize Horner syndrome.

It helps differentiate:

- Preganglionic (1st or 2nd order) lesion
- Postganglionic (3rd order) lesion

Hydroxyamphetamine:

- Causes release of norepinephrine (NA) from intact postganglionic sympathetic nerve terminals.
- Does not act directly on the iris dilator.
- Requires functioning postganglionic neurons.

Eye	Postganglionic status	Response to hydroxyamphetamine
Right	Damaged	No dilation
Left	Normal	Dilates

QUESTION

A 27-year-old woman with multiple sclerosis is experiencing double vision. On examination, her eye movements are normal except for her right gaze where her left eye fails to adduct and her right eye shows nystagmus. What is the most likely diagnosis?

A Right internuclear ophthalmoplegia

B Left internuclear ophthalmoplegia

CORRECT

C Right Abducens nerve palsy

D Left Abducens nerve palsy

RIGHT ANSWER

OK

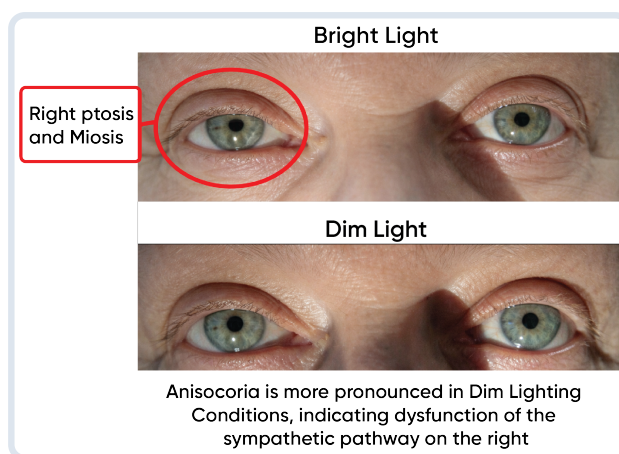
B. Left internuclear ophthalmoplegia

WHY THIS IS RIGHT

- In multiple sclerosis, internuclear ophthalmoplegia (INO) is common due to a lesion in the medial longitudinal fasciculus (MLF). Failure of the left eye to adduct on right gaze with abducting nystagmus of the right eye localizes to the left MLF.
- Right INO would affect right adduction.
- Abducens palsy causes impaired abduction, not adduction failure with nystagmus.

QUESTION

The physician noticed the following finding in a patient that came to the OPD for an eye exam. What is the most likely diagnosis?



A Horner syndrome

CORRECT

B Myasthenia gravis

C 3rd CN palsy

D LPS over-function

RIGHT ANSWER

OK

A. Horner syndrome

WHY THIS IS RIGHT

- Horner syndrome presents with mild ptosis, miosis, and anhidrosis due to sympathetic pathway disruption, producing a characteristic appearance often noticed on routine exam.
- Myasthenia gravis causes variable, fatigable ptosis without pupillary involvement.
- 3rd cranial nerve palsy typically shows ptosis with dilated pupil and ophthalmoplegia.
- LPS over-function causes lid retraction rather than ptosis.

QUESTION

A 35-year-old man presents with complaints of blurred vision following a minor head injury. On pupillary examination using the swinging flashlight test, illumination of the right eye causes both pupils to constrict, but when the light is quickly moved to the left eye, both pupils paradoxically dilate. Which of the following is the most likely diagnosis?

A Left oculomotor nerve palsy

B Right optic nerve lesion

C Left optic nerve lesion

CORRECT

D Physiological anisocoria

RIGHT ANSWER

OK C. Left optic nerve lesion

WHY THIS IS RIGHT

- Marcus Gunn pupil = Relative Afferent Pupillary Defect (RAPD).
- Occurs due to partial or complete lesion of the optic nerve or severe retinal disease.

In the swinging flashlight test:

- Light in normal eye -> both pupils constrict
- Light in affected eye -> reduced afferent signal -> pupils dilate instead of constricting

Since shifting light to the left eye causes dilation, the left optic nerve is affected.

QUESTION

Regarding the parvocellular and magnocellular visual pathways, consider the following statements:

1. The parvocellular pathway is primarily involved in color vision and fine spatial resolution.
2. The magnocellular pathway is more sensitive to motion and temporal changes in visual stimuli.
3. Parvocellular fibers predominantly terminate in layers 3-6 of the lateral geniculate nucleus.
4. Magnocellular fibers project mainly to layers 1 and 2 of the lateral geniculate nucleus.
5. Lesions affecting the magnocellular pathway preferentially impair red-green color discrimination.
6. Parvocellular ganglion cells have smaller receptive fields and slower conduction velocity compared to magnocellular cells.

Which of the above statements are correct?

A 1, 2, 3, 4 and 6

CORRECT

B 1, 2, 4 and 5

C 1, 3, 5 and 6

D 2, 3, 4 and 6

RIGHT ANSWER

OK A. 1, 2, 3, 4 and 6

WHY THIS IS RIGHT

There are two major parallel visual pathways from retina -> LGN -> visual cortex:

- Parvocellular (P pathway) -> detail & color
- Magnocellular (M pathway) -> motion & luminance contrast

Both terminate in the Lateral geniculate nucleus.

Feature	Parvocellular (P pathway)	Magnocellular (M pathway)
Cell size	Small	Large
Receptive field	Small	Large
Conduction speed	Slower	Faster
Function	Color & detail	Motion

QUESTION

A 52-year-old man presents with progressive painless visual loss. Visual field examination shows a central scotoma in the right eye and a superotemporal visual field defect in the left eye. Fundus examination is normal. Which of the following best explains this pattern of visual field loss?

- A Lesion of the optic tract
- B Lesion at the optic chiasm
- C Lesion at the optic nerve-chiasm junction**
- D Lesion of the lateral geniculate body

CORRECT

RIGHT ANSWER

- OK
- C. Lesion at the optic nerve-chiasm junction**

WHY THIS IS RIGHT

- This visual field pattern is classic for a junctional scotoma. A lesion at the optic nerve-chiasm junction compresses the optic nerve on one side, causing a central scotoma in that eye, and simultaneously affects the crossing inferonasal fibers from the opposite eye, producing a superotemporal visual field defect contralaterally.
- Optic tract or lateral geniculate body lesions cause homonymous defects, while pure chiasmal lesions cause bitemporal hemianopia.

QUESTION

Which of the following statements regarding the innervation of extraocular muscles is false?

- A Medial rectus muscle is innervated by the ipsilateral oculomotor nerve
- B Superior rectus muscle is supplied by the contralateral oculomotor nuclear complex
- C Levator palpebrae superioris is innervated by a single midline (central caudal) nucleus

D Inferior oblique muscle is supplied by the contralateral oculomotor nerve

CORRECT

RIGHT ANSWER

OK D. Inferior oblique muscle is supplied by the contralateral oculomotor nerve

WHY THIS IS RIGHT

- Medial rectus receives ipsilateral oculomotor supply (true).
- Superior rectus is innervated by the contralateral oculomotor nuclear complex (true).
- Levator palpebrae superioris is supplied by the single midline central caudal nucleus (true).

QUESTION

Assertion (A):

With 10% cocaine, a normal pupil dilates, but a Horner pupil does not dilate.

Reason (R):

Cocaine blocks the reuptake of noradrenaline released at the postganglionic sympathetic nerve endings.

A Both A and R are true and R is the correct explanation of A

CORRECT

B Both A and R are true but R is not the correct explanation of A

C A is true but R is false

D Both A and R are false

RIGHT ANSWER

OK

A. Both A and R are true and R is the correct explanation of A

WHY THIS IS RIGHT

Sympathetic pathway to the pupil:

1. Hypothalamus
2. Cilio-spinal center (C8-T2)
3. Superior cervical ganglion
4. Postganglionic fibers -> dilator pupillae

Cocaine:

- Blocks reuptake of noradrenaline
- Increases synaptic NA concentration
- Enhances sympathetic effect -> mydriasis

Normal Eye

- NA is released normally.
- Cocaine blocks reuptake.
- NA accumulates.
- Pupil dilates.

Horner Pupil

- Sympathetic denervation -> little or no NA released.
- Cocaine blocks reuptake, but there is no NA to accumulate.
- No dilation occurs.

QUESTION

During administration of an anesthetic block for ophthalmic surgery, which of the following extraocular muscles is least likely to be affected?

A Medial rectus (MR)

B Superior rectus (SR)

C Superior oblique (SO)

CORRECT

D Lateral rectus (LR)

RIGHT ANSWER

OK C. Superior oblique (SO)

WHY THIS IS RIGHT

- Retrobulbar and peribulbar blocks mainly anesthetize structures within the muscle cone.
- Superior oblique lies outside the muscle cone for most of its course and is supplied by the trochlear nerve (CN IV), which is relatively spared.
- Hence, SO is least likely to be affected compared to the recti and inferior oblique muscles.

QUESTION

During routine ocular examination, a patient is found to have anisocoria. Slit-lamp evaluation shows a well-formed iris with normal architecture and a round pupil. On pharmacological testing, the larger pupil fails to constrict with instillation of dilute pilocarpine, and also shows no response to 1% pilocarpine. Which of the following is the most likely cause of the pupillary abnormality?

- A Tonic (Adie) pupil
- B Oculomotor nerve palsy
- C Traumatic damage to iris sphincter
- D Atropine use**

CORRECT

RIGHT ANSWER

OK **D. Atropine use**

WHY THIS IS RIGHT

The larger pupil failing to constrict with both dilute and 1% pilocarpine indicates pharmacologic mydriasis.

Atropine blocks muscarinic receptors of the iris sphincter, making the pupil unresponsive to cholinergic agents.

In Adie pupil, constriction occurs with dilute pilocarpine due to denervation hypersensitivity.

Oculomotor nerve palsy and sphincter trauma usually show some response to strong pilocarpine, unlike atropine-induced blockade.

QUESTION

A patient with known myopia presents with complaints of floaters and flashes of light. On examination, the anterior chamber appears deep. What is the most likely diagnosis?

A Exudative retinal detachment

B Tractional retinal detachment

C Central serous retinopathy

D Rhegmatogenous retinal detachment

CORRECT

RIGHT ANSWER

OK

D. Rhegmatogenous retinal detachment

WHY THIS IS RIGHT

Rhegmatogenous retinal detachment (RRD) occurs due to a retinal break/tear, allowing vitreous fluid to accumulate under the retina.

- Flashes (photopsia) + floaters
- Sudden, painless vision loss
- Common in myopia (predisposition to retinal thinning/tears)
- Deep anterior chamber (seen in high myopes)

Pathophysiology:

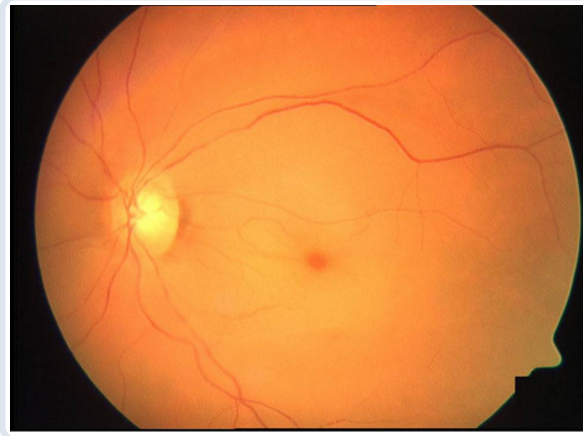
- Vitreous traction -> retinal tear -> fluid enters subretinal space -> detachment

Why not others:

- Exudative RD -> no flashes/floaters (no tear)
- Tractional RD -> seen in diabetes, gradual
- CSR -> central vision distortion, no flashes

QUESTION

A 3-year-old boy presents with mental retardation and an inability to walk. The fundoscopy image is given below. What is the most likely diagnosis?



A Tay-Sachs disease

CORRECT

B Hunter disease

C Hurler syndrome

D Gaucher disease

RIGHT ANSWER

OK

A. Tay-Sachs disease

WHY THIS IS RIGHT

Tay-Sachs disease is a lysosomal storage disorder caused by hexosaminidase A deficiency, leading to accumulation of GM2 ganglioside in neurons.

- Developmental delay / regression
- Hypotonia -> inability to walk
- Exaggerated startle response
- Progressive neurodegeneration

Fundoscopy finding:

- Cherry red spot at macula with surrounding retinal pallor (due to ganglion cell accumulation)

Important distinction:

- Tay-Sachs -> no hepatosplenomegaly
- Gaucher / Niemann-Pick -> organomegaly present

QUESTION

A diabetic patient presented to you with visual acuity of 6/9 in one eye. Further investigations revealed pre-retinal hemorrhages with neovascularization at the optic disc. What is the next step in management?

A Focal laser photocoagulation

B Pan-retinal photocoagulation

CORRECT

C Grid laser photocoagulation

D Scleral buckling

RIGHT ANSWER

OK

B. Pan-retinal photocoagulation

WHY THIS IS RIGHT

Neovascularization at the disc (NVD) with preretinal hemorrhage = Proliferative diabetic retinopathy (PDR), which requires urgent treatment.

Management of choice: Pan-retinal photocoagulation (PRP)

- Causes regression of neovascularization
- Reduces risk of vitreous hemorrhage and tractional retinal detachment

Pathophysiology:

- Retinal ischemia -> ↑ VEGF -> abnormal fragile new vessels
- These vessels bleed -> preretinal/vitreous hemorrhage

Why not others:

- Focal laser: For macular edema
- Grid laser: For diffuse macular edema
- Scleral buckling: For rhegmatogenous retinal detachment

QUESTION

A child presented with hydrocephalus, intracranial calcification, and bilateral chorioretinitis. What can be the most probable diagnosis?

A Congenital Toxoplasmosis

CORRECT

B Congenital Syphilis

C Congenital Rubella

D Neisseria gonorrhea

RIGHT ANSWER

OK **A. Congenital Toxoplasmosis**

WHY THIS IS RIGHT

Congenital toxoplasmosis classically presents with the triad of:

- Hydrocephalus
- Intracranial calcifications (diffuse)
- Chorioretinitis

Etiology: Caused by transplacental infection with *Toxoplasma gondii* (often from undercooked meat or cat feces exposure in mother)

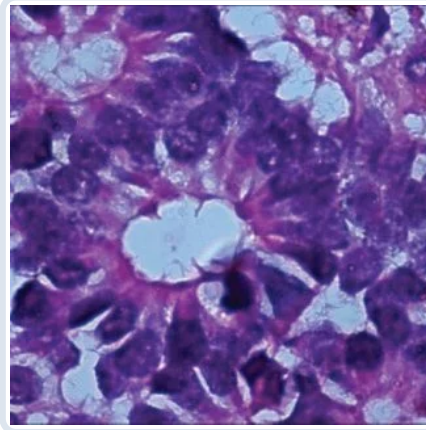
- Diffuse intracranial calcifications (vs periventricular in CMV)
- Severe ocular involvement -> chorioretinitis
- May also have seizures, developmental delay

Why not others:

- Congenital rubella: Cataract, PDA, deafness
- Congenital syphilis: Hutchinson teeth, saddle nose, interstitial keratitis
- Gonorrhea: Neonatal conjunctivitis, not CNS involvement

QUESTION

A child presented with leukocoria and an intraocular mass. On microscopic examination, following appearance was seen. The mass was also positive for synaptophysin. The diagnosis can be:



A Medulloblastoma

B Retinal detachment

C Retinoblastoma

CORRECT

D Pinealoblastoma

RIGHT ANSWER

OK C. Retinoblastoma

WHY THIS IS RIGHT

Retinoblastoma is the most common intraocular malignancy of childhood, classically presenting with leukocoria.

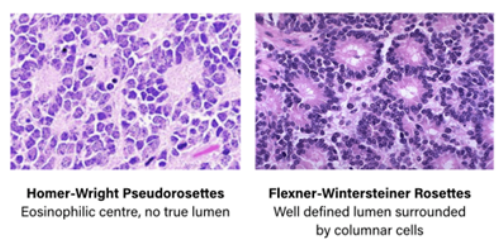
- *Flexner-Wintersteiner rosettes* on histology
- Tumor cells arranged around a central lumen
- Indicative of photoreceptor differentiation
- Scant cytoplasm, hyperchromatic nuclei
- Immunopositivity for synaptophysin -> confirms neuroectodermal origin

Clinical clues:

- Leukocoria
- Strabismus
- Intraocular mass $\pm$ calcification (on imaging)

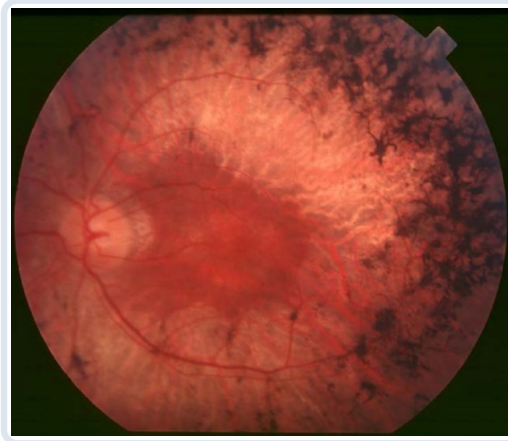
Why not others:

- Medulloblastoma / Pinealoblastoma: CNS tumors (may show rosettes but not intraocular mass)
- Retinal detachment: No tumor cells or rosettes



QUESTION

A patient presents with gradual loss of night vision and peripheral vision. Which of the following conditions is most likely responsible for these symptoms according to the given fundoscopic image?



A Retinitis Pigmentosa

CORRECT

B Fundus flavimaculatus

C Retinal Hemorrhage

D Fundus Albipunctatus

RIGHT ANSWER

OK

A. Retinitis Pigmentosa

WHY THIS IS RIGHT

Retinitis pigmentosa (RP) is a progressive rod-cone dystrophy presenting with:

- Early night blindness (nyctalopia) due to primary degeneration of rod photoreceptors
- Progressive peripheral visual field loss -> tunnel vision due to later involvement of cones

Fundoscopic features (classic triad):

- Bone spicule pigmentation in mid-periphery
- Attenuated (narrow) retinal vessels
- Waxy pallor of optic disc

Why not others:

- Fundus flavimaculatus (Stargardt): Yellow pisciform flecks, central vision loss
- Retinal hemorrhage: Acute condition, not progressive night blindness
- Fundus albipunctatus: White dots but stationary night blindness, not progressive

QUESTION

In evaluating a patient with nonproliferative diabetic retinopathy (NPDR), which of the following findings would be atypical for a classification of 'very severe'?

A Venous bleeding

B Neovascularization of disc

CORRECT

C Retinal hemorrhages

D Microaneurysm

RIGHT ANSWER

OK

B. Neovascularization of disc

WHY THIS IS RIGHT

Very severe nonproliferative diabetic retinopathy (NPDR) is defined by the "4-2-1 rule":

- 4 quadrants of severe retinal hemorrhages/microaneurysms
- 2 quadrants of venous beading
- 1 quadrant of IRMA (intraretinal microvascular abnormalities)

These findings indicate severe ischemia but WITHOUT neovascularization.

| NPDR Severity Level | Findings on Dilated Eye Exam |

| ----- | ----- |

| Mild NPDR | Microaneurysms only |

| Moderate NPDR | Microaneurysms with additional findings (dot & blot hemorrhages, hard exudates, cotton wool spots), but less than severe NPDR |

| Severe NPDR | Any one of the following (4-2-1 rule) and no signs of proliferative DR: • ≥20 intraretinal hemorrhages in all 4 quadrants • Venous beading in ≥2 quadrants • IRMA in ≥1 quadrant |

| Very Severe NPDR | Any two of the 4-2-1 rule features |

QUESTION

A patient of rheumatic heart disease who is noncompliant with treatment presents with complaints of superior field vision loss for the past 1 week. What is the probable cause of the given condition?

A Branched retinal artery occlusion

B Central retinal artery occlusion

C Branched retinal vein occlusion (BRVO)

CORRECT

D Central retinal vein occlusion

RIGHT ANSWER

OK

C. Branched retinal vein occlusion (BRVO)

WHY THIS IS RIGHT

Branch retinal vein occlusion (BRVO) typically presents with sectoral (localized) visual field loss, such as superior field defect, corresponding to the involved retinal quadrant.

In patients with rheumatic heart disease (especially if noncompliant), there is an increased risk of embolism and vascular stasis, predisposing to retinal vein occlusion.

Pathophysiology:

- Venous occlusion (usually at arteriovenous crossing) -> venous congestion
- Leads to retinal hemorrhages, edema, and ischemia
- Causes sectoral visual loss rather than complete vision loss

Why not others:

- Central retinal artery occlusion -> sudden, profound, painless vision loss (entire field)
- Branch retinal artery occlusion -> sectoral loss but typically sudden and arterial ischemic, not linked to venous congestion pattern
- Central retinal vein occlusion -> diffuse retinal involvement ("blood and thunder"), not sectoral

QUESTION

Which of the following statement is incorrect about Retinitis Pigmentosa?



- A** It primarily affects rod photoreceptors in early stages
- B** Peripheral field loss typically precedes central vision loss
- C** Electroretinography shows reduced a- and b-wave amplitudes
- D** Nyctalopia is a late manifestation of the disease

CORRECT

RIGHT ANSWER

OK

D. Nyctalopia is a late manifestation of the disease

WHY THIS IS RIGHT

Retinitis Pigmentosa (RP) is a progressive rod-cone dystrophy in which rod photoreceptors are affected first, followed later by cones.

- Early feature:
- Night blindness (nyctalopia) due to rod dysfunction
- Progression:
- Peripheral visual field loss -> "tunnel vision"
- Late stage:
- Central vision loss (cone involvement)

Investigations:

- ERG: Shows reduced or extinguished a- and b-wave amplitudes (early diagnostic test)

Why option D is incorrect:

- Night blindness is NOT a late feature
- It is the earliest and most characteristic symptom

QUESTION

Which of the following is not seen in an inner segment of the photoreceptor?

A Golgi apparatus

B ER

C Mitochondria

D Disc

CORRECT

RIGHT ANSWER

OK

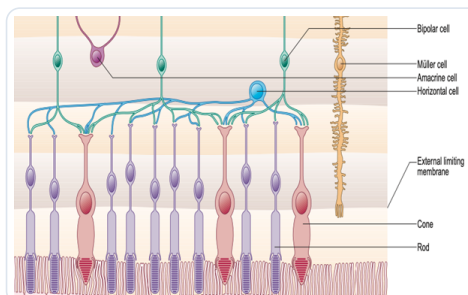
D. Disc

WHY THIS IS RIGHT

Disc membranes are specifically located in the outer segment of the photoreceptor, not the inner segment. The inner segment contains most cellular organelles, including:

- Mitochondria
- Endoplasmic reticulum (ER)
- Golgi apparatus
- Nucleus

The outer segment is characterized by the presence of disc membranes, which are crucial for phototransduction.



QUESTION

I In fluorescein angiography, how do microaneurysms typically appear?

A Hypofluorescent spots

B Hyperfluorescent dots

CORRECT

C Fluorescent leakage

D Dark shadows

RIGHT ANSWER

OK

B. Hyperfluorescent dots

WHY THIS IS RIGHT

In fundus fluorescein angiography (FFA), microaneurysms-the earliest clinically visible lesions in diabetic retinopathy-appear as multiple small hyperfluorescent dots.

Why they appear hyperfluorescent:

- Microaneurysms are outpouchings of capillary walls
- They fill with fluorescein dye -> appear as bright pinpoint spots in early phases

Important distinction:

- Microaneurysms:
 - Early hyperfluorescence (dots)
 - May show late leakage
- Leakage (e.g., macular edema, neovascularization):
 - Progressive increase in size and intensity over time
- Hypofluorescence (dark areas):
 - Due to blockage (hemorrhage) or capillary non-perfusion

QUESTION

| Which of the following is typically seen in diabetic retinopathy?

A Tractional retinal detachment

CORRECT

B Myopic refractive error

C Posterior staphyloma

D Retinoschisis

RIGHT ANSWER

OK

A. Tractional retinal detachment

WHY THIS IS RIGHT

Diabetic retinopathy, especially in its advanced stage (proliferative diabetic retinopathy, PDR), is characterized by neovascularization and fibrovascular proliferation, which can lead to tractional retinal detachment (TRD).

- Chronic hyperglycemia -> retinal ischemia
- ↑ VEGF -> new fragile vessels form
- Associated fibrous tissue contracts -> pulls retina away -> TRD

Why not others:

- Myopic refractive error: Related to axial elongation, not diabetes
- Posterior staphyloma: Seen in pathological myopia
- Retinoschisis: Splitting of retinal layers, unrelated to diabetic changes

*

QUESTION

| Which is the investigation of choice for Best disease?

A Electrooculogram (EOG)

CORRECT

B Electroretinogram (ERG)

C Visual Evoked potential

D Multifocal electro retinogram

RIGHT ANSWER

OK

A. Electrooculogram (EOG)

WHY THIS IS RIGHT

Best disease (Vitelliform macular dystrophy) is characterized by dysfunction of the retinal pigment epithelium (RPE), and the investigation of choice is Electrooculogram (EOG).

- Measures RPE function
- Shows reduced Arden ratio (↓ light peak to dark trough ratio)
- Abnormal even in early disease, before fundus changes are obvious

Why not others:

- ERG (Electroretinogram):
 - Assesses photoreceptor function
 - Usually normal in Best disease
- VEP (Visual Evoked Potential):
 - Evaluates visual pathway beyond retina
 - Not specific for macular dystrophies
- Multifocal ERG:
 - Can detect macular dysfunction but not the primary diagnostic test

QUESTION

Arrange the following layers of the retina in the correct order from the outermost to the innermost layer.

A 1 - Retinal Pigment Epithelium, 2 - Outer Nuclear Layer, 3 - Inner Plexiform Layer, 4 - Ganglion Cell Layer CORRECT

B 1 - Outer Nuclear Layer, 2 - Retinal Pigment Epithelium, 3 - Ganglion Cell Layer, 4 - Inner Plexiform Layer

C 1 - Ganglion Cell Layer, 2 - Inner Plexiform Layer, 3 - Retinal Pigment Epithelium, 4 - Outer Nuclear Layer

D 1 - Retinal Pigment Epithelium, 2 - Inner Plexiform Layer, 3 - Outer Nuclear Layer, 4 - Ganglion Cell Layer

RIGHT ANSWER

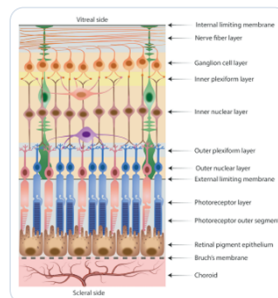
OK A. 1 - Retinal Pigment Epithelium, 2 - Outer Nuclear Layer, 3 - Inner Plexiform Layer, 4 - Ganglion Cell Layer

WHY THIS IS RIGHT

The retina is organized from outer (choroid side) to inner (vitreous side) in a highly structured manner that reflects the flow of visual information.

Correct order (outer -> inner):

1. Retinal Pigment Epithelium (RPE)
2. Outer Nuclear Layer (photoreceptor cell bodies)
3. Inner Plexiform Layer (synapses between bipolar & ganglion cells)
4. Ganglion Cell Layer



QUESTION

A patient presents with bilateral sudden onset painless vision loss. What is the most likely diagnosis?

A Diabetic retinopathy

CORRECT

B Iridocyclitis

C Acute congestive glaucoma

D Keratoconus

RIGHT ANSWER

OK A. Diabetic retinopathy

WHY THIS IS RIGHT

Sudden, painless, bilateral vision loss is most commonly due to vitreous hemorrhage secondary to proliferative diabetic retinopathy (PDR).

- Chronic hyperglycemia -> retinal ischemia
- ↑ VEGF -> neovascularization
- Fragile new vessels rupture -> vitreous hemorrhage -> sudden vision loss

Painless + sudden + bilateral -> think vascular cause, especially diabetes

Why not others:

- Iridocyclitis (anterior uveitis): Painful, photophobia, redness
- Acute congestive glaucoma: Severe pain, halos, red eye, high IOP
- Keratoconus: Gradual, progressive visual decline (not sudden)

QUESTION

A 1-year-old child who was born premature at 34 weeks POG weighing 1400 gms presents with leukocoria. On CT, intraocular calcification is seen. What is the most probable diagnosis?

- A R.O.P
- B Congenital Cataract
- C Retinoblastoma
- D Coat's Disease

CORRECT

RIGHT ANSWER

- OK
- C. Retinoblastoma

WHY THIS IS RIGHT

Leukocoria (white pupillary reflex) + intraocular calcification on CT is highly suggestive of retinoblastoma, the most common intraocular malignancy in children.

- Intraocular calcification -> hallmark of retinoblastoma
- Best detected on CT scan

Clinical features of retinoblastoma:

- Leukocoria (most common presenting sign)
- Strabismus
- Decreased vision
- May be unilateral or bilateral (bilateral often hereditary)

Why not others:

- ROP (Retinopathy of Prematurity):
- Occurs in premature infants but shows fibrovascular proliferation/retinal detachment, no calcification
- Congenital cataract:
- Leukocoria present, but no calcification
- Coats disease:
- Retinal telangiectasia with exudation
- Can mimic leukocoria but no calcification



QUESTION

| What is the normal arteriovenous ratio at the optic disc?

A 2:5

B 2:3

CORRECT

C 1:5

D 1:3

RIGHT ANSWER

OK

B. 2:3

WHY THIS IS RIGHT

The normal arteriovenous (A:V) ratio at the optic disc is 2:3, meaning:

- Retinal arteries are narrower
- Retinal veins are wider

Clinical significance:

- This ratio is an important indicator of retinal vascular health
- Arteriolar narrowing ($\downarrow$ A:V ratio) is seen in:
 - Hypertensive retinopathy
 - Chronic vascular diseases
- Associated signs:
 - AV nicking
 - Copper/silver wiring of arteries

QUESTION

Which type of complication is most commonly associated with advanced diabetic retinopathy?

A Rhegmatogenous retinal detachment

B Exudative retinal detachment

C **Tractional retinal detachment**

CORRECT

D No retinal detachment

RIGHT ANSWER

OK

C. Tractional retinal detachment

WHY THIS IS RIGHT

In advanced diabetic retinopathy (proliferative diabetic retinopathy, PDR), the most common complication is tractional retinal detachment (TRD).

- Chronic retinal ischemia -> VEGF release
- Formation of neovascularization (on disc and elsewhere)
- These vessels are associated with fibrovascular proliferation
- Contraction of these membranes -> pulls the retina -> tractional detachment

Why not others:

- Rhegmatogenous RD:
 - Caused by retinal tear + vitreous fluid entry
 - Not the primary mechanism in diabetic retinopathy
- Exudative RD:
 - Due to fluid accumulation without traction/tear (e.g., tumors, inflammation)
 - Not typical of diabetes
- No retinal detachment:
 - Incorrect, as TRD is a well-known late complication

QUESTION

| Which investigation is best used to visualize the inner layers of the retina in vivo?

A Fundus Fluorescein Angiography

B USG B scan

C Ophthalmoscope

D Optical Coherence Tomography

CORRECT

RIGHT ANSWER

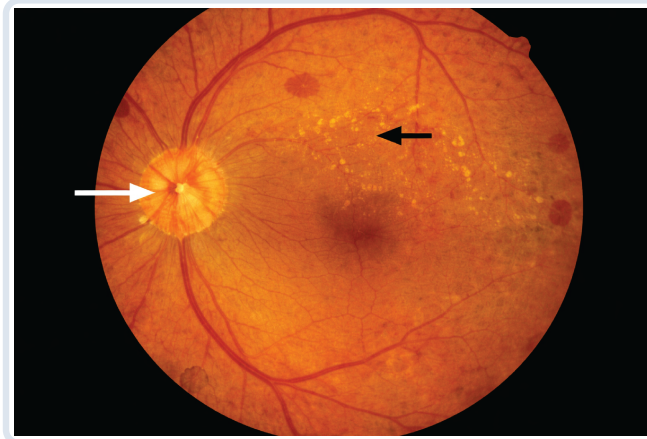
OK D. Optical Coherence Tomography

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

A 68-year-old woman is evaluated for vision impairment. The patient has a decrease in both distant and near vision and has had occasional floaters. She has had no pain or redness in her eyes, headache, focal weakness, or sensory loss. Medical history is notable for type 2 diabetes mellitus, hypertension, and chronic kidney disease. Fundusoscopic examination is shown here. Which of the following contributed most to the pathogenesis of this patient's current ocular condition?



- A Age-related degeneration of retinal pigment epithelium
- B Chronic hyperglycemia-induced microvascular injury**
- C Ganglion cell death due to high intraocular pressure
- D Retinal arterial occlusion from atherosclerotic disease

CORRECT

RIGHT ANSWER

- B. Chronic hyperglycemia-induced microvascular injury**

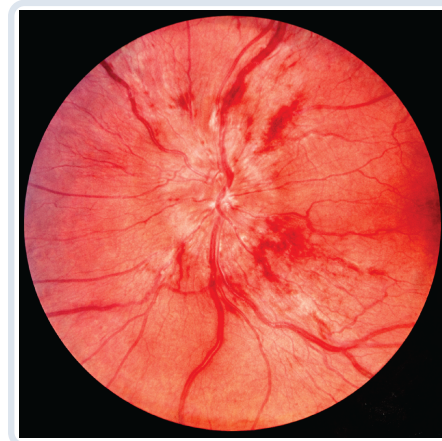
WHY THIS IS RIGHT

The fundus findings with gradual bilateral visual impairment and floaters in a patient with long-standing diabetes indicate diabetic retinopathy, caused by chronic hyperglycemia leading to microvascular damage, capillary leakage, and ischemia.

- A describes age-related macular degeneration.
- C refers to glaucoma with peripheral field loss from ganglion cell death.
- D causes sudden, profound vision loss, not a chronic progressive picture.

QUESTION

31-year-old woman comes to the office due to transient visual changes that are characterized by "loss of vision for a minute" and commonly precipitated by bending forward or lifting objects. During the last 3 months, she has had persistent headaches that she attributes to migraines. The patient takes over-the-counter analgesics as needed. Blood pressure is 140/90 mm Hg and pulse is 72/min and regular. BMI is 32.4 kg/m². Fundusoscopic findings of the left eye are shown in the image below, with similar findings in the right eye. Which of the following is the most likely cause of the observed fundusoscopic findings in this patient?



- A** Choroidal inflammation
- B** Elevated intracranial pressure
- C** Elevated intraocular pressure
- D** Optic nerve inflammation

CORRECT

RIGHT ANSWER

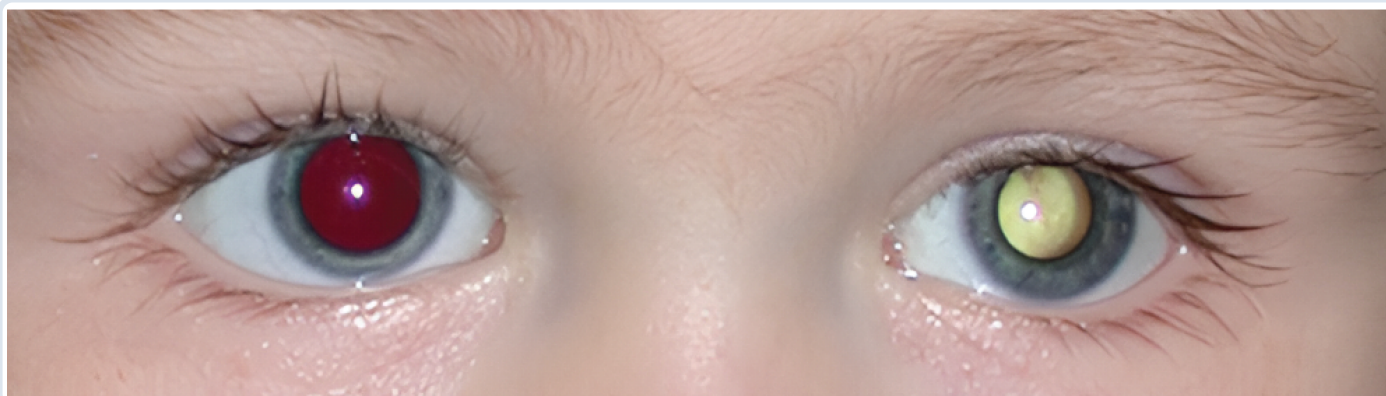
- OK** **B. Elevated intracranial pressure**

WHY THIS IS RIGHT

- This patient has papilledema, suggested by transient visual obscurations precipitated by bending, chronic headache, obesity, and bilateral disc edema. Papilledema is caused by raised intracranial pressure with preserved visual acuity initially.
- Choroidal inflammation causes choroiditis, not disc edema.
- Elevated intraocular pressure causes glaucomatous cupping, not swelling.
- Optic nerve inflammation (optic neuritis) causes painful vision loss and unilateral disc edema, not bilateral papilledema.

QUESTION

A neonate was found to have the following finding on routine examination of the eye. All of the following may be differentials except:



A Congenital cataract

B PHPV

C Retinopathy of prematurity

CORRECT

D Congenital glaucoma

RIGHT ANSWER

OK

C. Retinopathy of prematurity

WHY THIS IS RIGHT

- The routine neonatal finding implied here is leukocoria, seen at or soon after birth. Congenital cataract and persistent hyperplastic primary vitreous (PHPV) are classic causes of leukocoria present at birth.
- Congenital glaucoma can also cause corneal haze and enlarged eye early in life.
- Retinopathy of prematurity, however, develops weeks after birth in premature infants and is not present on routine neonatal examination, making it the incorrect differential.

QUESTION

All are true about diabetic retinopathy features except:

- A** NVD of any disc area with VH is high-risk
- B** Vitreous hemorrhage with NVE is a high-risk feature
- C** Clinically significant macular edema includes thickening within 500 μm of fovea
- D** Tractional retinal detachment is a sign of NPDR

CORRECT

RIGHT ANSWER

OK

D. Tractional retinal detachment is a sign of NPDR

WHY THIS IS RIGHT

Tractional retinal detachment (TRD) is a feature of proliferative, not non-proliferative diabetic retinopathy.

Clinically Significant Macular Edema (CSME)

(Any 1 of the 3 criteria):

- Thickening of retina within 500 microns of foveal center
- Hard exudates within 500 microns of center
- Zone of retinal thickening ≥ 1 DD

Advanced Diabetic Eye Disease:

- Persistent vitreous hemorrhage
- Tractional retinal detachment
- Neovascular glaucoma

Early PDR (without high-risk characteristics):

- Neovascularization at optic disc (NVD) or elsewhere (NVE)

High-risk PDR:

- NVD $< 1/4$ disc area + VH or PRH
- NVD $1/4$ - $1/3$ disc area $\pm$ VH or PRH
- NVE $> 1/2$ disc area + VH or PRH

QUESTION

A 2-year-old child with leukocoria and calcified intraocular masses is found to have tumors 4-10 DD in size behind the equator. According to Reese-Ellsworth classification, to which group does this case belong?

A Group 3

CORRECT

B Group 1

C Group 2

D Group 4

RIGHT ANSWER

OK

A. Group 3

WHY THIS IS RIGHT

In the Reese-Ellsworth classification, Group 3 includes tumors 4-10 disc diameters in size, located behind the equator.

Group 1 has small tumors (<4 DD) behind the equator.

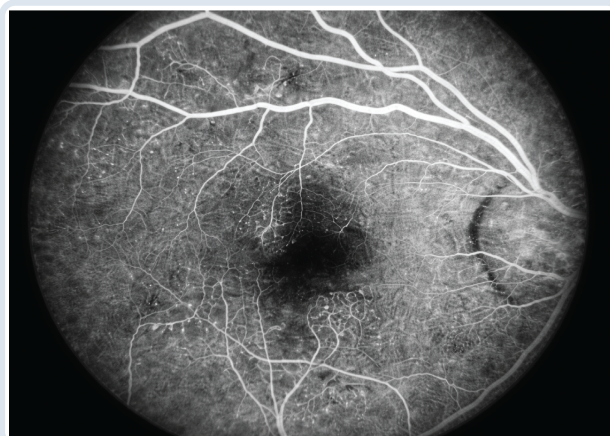
Group 2 includes 4-10 DD tumors at the equator.

Group 4 involves large tumors (>10 DD) or multiple lesions.

Thus, a 4-10 DD tumor behind the equator fits Group 3.

QUESTION

A patient with a history of diabetes and hypertension underwent fundus fluorescein angiography (FFA) to evaluate his decreasing vision. The FFA yields an image as shown below. The given FFA is characteristic of which of the following?



A Macular ischemia

CORRECT

B Macular edema

C Submacular haemorrhage

D Premacular haemorrhage

RIGHT ANSWER

OK A. Macular ischemia

WHY THIS IS RIGHT

- The FFA is showing enlarged fovea avascular zone arrow (white arrow), and capillary non-perfused areas (blue arrow).
- Both of which are suggestive of macular ischemia which when combined with the history of diabetes in this patient points towards diabetic macular ischemia.

QUESTION

Identify the correct statements:

1. Microaneurysms appear as hyperfluorescent branching pattern on FFA
2. Hard exudates are found in outer plexiform layer
3. Normal A:V ratio is 3:2 at the fundus
4. IOC for best disease is EOG

A 1,2,3,4

B 2,4

CORRECT

C 2,3,4

D 1,4

RIGHT ANSWER

OK B. 2,4

WHY THIS IS RIGHT

- Hard exudates are lipid deposits located in the outer plexiform layer (true).
- EOG is the investigation of choice for Best disease (true).
- Microaneurysms show punctate hyperfluorescence.
- The normal artery:vein ratio is 2:3.

QUESTION

Identify the correct pair:

A Vogt triad-Open angle glaucoma

B Vogt striae-Congenital buphthalmos

C Shield ulcer-Atopic dermatitis

D Foster Fuch spots-Myopia

CORRECT

RIGHT ANSWER

OK

D. Foster Fuch spots-Myopia

WHY THIS IS RIGHT

- Foster-Fuchs spots are areas of chorioretinal atrophy or hemorrhage seen in pathologic (high) myopia, making this pair correct.
- Vogt triad is seen in angle closure glaucoma.
- Vogt striae occur in keratoconus.
- Shield ulcer is classically associated with vernal keratoconjunctivitis.

QUESTION

A 68-year-old woman comes to the physician for evaluation of diminished vision for several months. Twenty-eight years ago, she was diagnosed with systemic lupus erythematosus, which has been well controlled with hydroxychloroquine. Fundoscopic examination shows concentric rings of hypopigmentation and hyperpigmentation surrounding the fovea bilaterally. Visual field examination of this patient is most likely to show which of the following findings?

- A Bitemporal hemianopia
- B Right monocular blindness
- C Hemianopia with macular sparing

D Paracentral scotoma

CORRECT

RIGHT ANSWER

OK

D. Paracentral scotoma

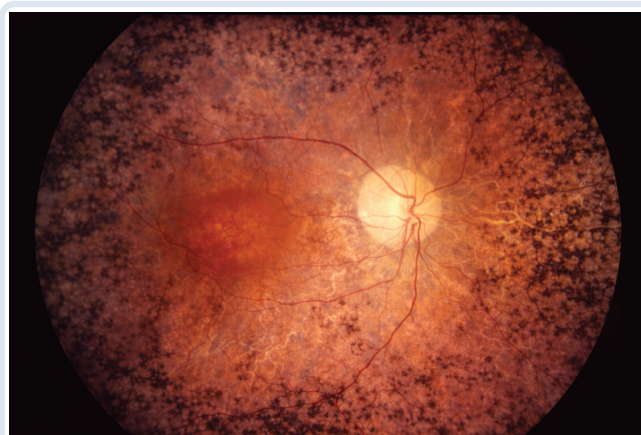
WHY THIS IS RIGHT

Hydroxychloroquine toxicity causes bull's-eye maculopathy (concentric parafoveal pigment changes), producing paracentral scotomas on visual field testing.

- Bitemporal hemianopia suggests chiasmal lesions.
- Right monocular blindness indicates optic nerve/retinal artery occlusion.
- Hemianopia with macular sparing is typical of occipital cortex lesions.

QUESTION

Which of the following statement is incorrect about Retinitis Pigmentosa?



A ERG shows decreased amplitude of a and b wave

B Rod dystrophy > Cone dystrophy

C Late presentation is loss of peripheral vision

D Night blindness is a late feature

CORRECT

RIGHT ANSWER

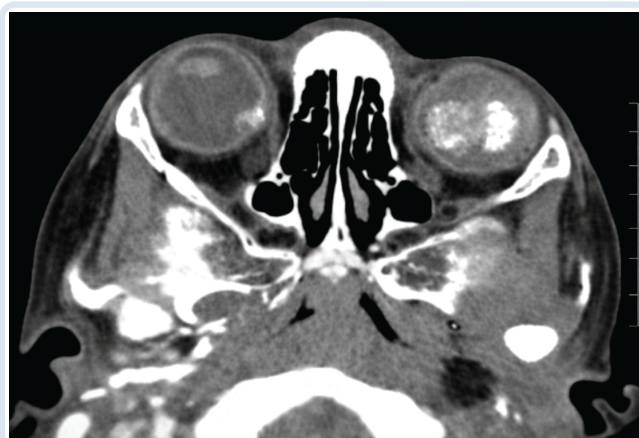
OK D. Night blindness is a late feature

WHY THIS IS RIGHT

- Retinitis pigmentosa is a rod-cone dystrophy, so rod involvement predominates early, causing early night blindness (nyctalopia), not late.
- ERG characteristically shows reduced a- and b-wave amplitudes due to photoreceptor dysfunction.
- Patients initially develop peripheral visual field loss (tunnel vision), with central vision affected later as cones degenerate. Hence, calling night blindness a late feature is incorrect.

QUESTION

A 2-year-old child presents with leukocoria in the left eye. The CT is shown below. The most likely mutated gene is on the same chromosome as which of the following genes:



A BRCA1

B BRCA2

CORRECT

C NF1

D APC

RIGHT ANSWER

OK

B. BRCA2

WHY THIS IS RIGHT

- Leukocoria with CT showing intraocular calcification suggests retinoblastoma, caused by mutation of the RB1 tumor suppressor gene on chromosome 13q14. BRCA2 is also located on chromosome 13, so it's on the same chromosome as RB1.
- BRCA1 is on chromosome 17.
- NF1 is on chromosome 17.
- APC is on chromosome 5.

QUESTION

Which of the following has familial inheritance:

1. Retinoblastoma
2. Retinitis pigmentosa
3. Myopia
4. Primary open angle glaucoma

A 1, 2, 3, 4

CORRECT

B 1, 2, 3

C 1, 3

D 3, 4

RIGHT ANSWER

OK A. 1, 2, 3, 4

WHY THIS IS RIGHT

Retinoblastoma

- Caused by mutation in RB1
- Inherited form: autosomal dominant with high penetrance
- Bilateral cases usually familial

Retinitis pigmentosa

- Modes of inheritance:
- Autosomal dominant/ Autosomal recessive/ X-linked

Myopia

- Multifactorial inheritance
- Strong familial clustering
- High myopia has identifiable genetic loci

Primary open-angle glaucoma

- Polygenic inheritance
- Associated genes: MYOC, OPTN etc.
- Positive family history is a major risk factor

QUESTION

A 14-day-old neonate born at 28 weeks of gestation had developed respiratory distress syndrome at birth. You want to screen for retinopathy of prematurity. How many weeks from now would you schedule the screening?

A 4 weeks

CORRECT

B 2 weeks

C 8 weeks

D 12 weeks

RIGHT ANSWER

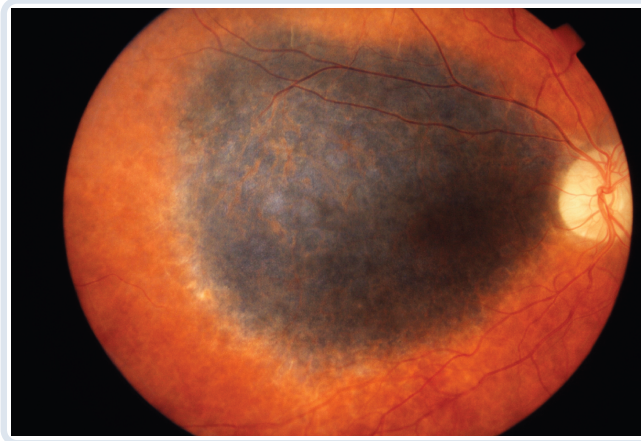
OK
A. 4 weeks

WHY THIS IS RIGHT

Screening for retinopathy of prematurity (ROP) is recommended at 4 weeks of postnatal age or 31 weeks postmenstrual age, whichever is later. In a 28-week preterm neonate, the standard exam answer is 4 weeks.

QUESTION

A patient presented with painless decrease in vision and metamorphopsia. Fundus examination revealed the lesion shown in the image. What is the expected finding on ultrasonography?



A Smoke-stack appearance

B Inkblot appearance

C Collar stud appearance

CORRECT

D Double circulation

RIGHT ANSWER

OK

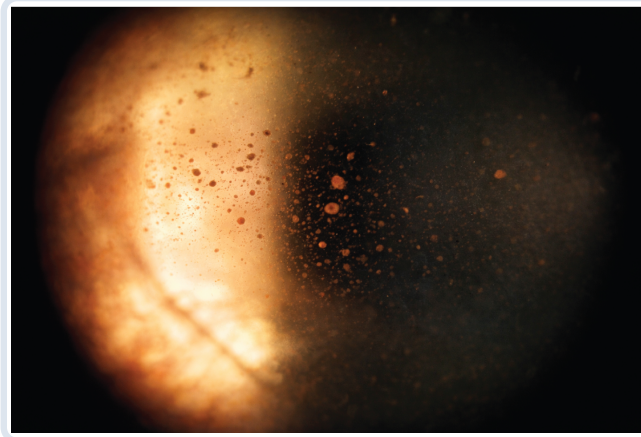
C. Collar stud appearance

WHY THIS IS RIGHT

- Painless visual loss with metamorphopsia and the shown fundus lesion suggest choroidal melanoma. On ultrasonography, melanoma classically shows a collar-stud (mushroom) appearance due to tumor breaking through Bruch's membrane.
- Smoke-stack and inkblot patterns are FFA findings of central serous chorioretinopathy, not USG features.
- Double circulation is an angiographic sign of melanoma, not an ultrasound finding.

QUESTION

A 47-year-old man presents with a 2-day history of sudden painless visual loss in his right eye. The patient describes the loss of vision as a veil covering the visual field. He is slightly myopic and had a successful cataract extraction with intraocular lens implantation 3 years ago. The examination finding is shown below. What is the most likely diagnosis?



A Breaks in Descemet membrane

B Exudative retinal detachment

C Tractional retinal detachment

D Rhegmatogenous retinal detachment

CORRECT

RIGHT ANSWER

OK

D. Rhegmatogenous retinal detachment

WHY THIS IS RIGHT

- Surgery (pseudophakia) strongly suggest rhegmatogenous retinal detachment, caused by a retinal break allowing liquefied vitreous to enter subretinal space.
- Breaks in Descemet membrane cause corneal edema.
- Exudative RD is due to inflammation or tumors without retinal breaks.
- Tractional RD occurs from fibrovascular membranes, typically in diabetic retinopathy.

QUESTION

During fundus examination of a 58-year-old patient with long-standing systemic hypertension, the ophthalmologist notes that at the sites where retinal arterioles cross retinal veins, the venous segment appears narrowed on either side of the crossing. This fundus finding is known as:

A Salus sign

B Bonnet sign

C Gunn sign

CORRECT

D Elschnig sign

RIGHT ANSWER

OK

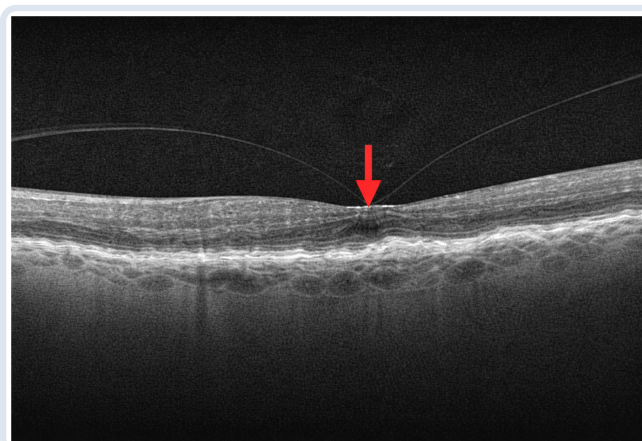
C. Gunn sign

WHY THIS IS RIGHT

- Gunn sign refers to venous narrowing on either side of an arteriovenous crossing, caused by arteriolar sclerosis compressing the vein in long-standing hypertension
- Salus sign is deflection of the vein at the AV crossing.
- Bonnet sign describes venous banking distal to the crossing.
- Elschnig sign refers to choroidal infarcts seen in malignant hypertension, not AV crossing changes.

QUESTION

| What can be the reason for following condition?



- A** Vitreomacular traction
- B** Vitreomacular adhesion
- C** Central serous retinopathy
- D** Cystoid macular edema

CORRECT

RIGHT ANSWER

- OK** **B. Vitreomacular adhesion**

WHY THIS IS RIGHT

- Vitreomacular adhesion occurs due to incomplete posterior vitreous detachment, where the vitreous remains adherent to the macula without causing traction or retinal distortion.
- Vitreomacular traction causes macular distortion and symptoms, not simple adhesion.
- Central serous retinopathy results from choroidal hyperpermeability with subretinal fluid.
- Cystoid macular edema is due to breakdown of the blood-retinal barrier causing intraretinal cysts, not vitreous attachment.

QUESTION

A 40-year-old man develops sudden bilateral visual loss 24 hours after an episode of acute pancreatitis. Fundus examination shows cotton wool spots and polygonal areas of retinal whitening around the optic disc. The most likely diagnosis is:

A Central retinal artery occlusion

B Commotio retinae

C Purtscher retinopathy

CORRECT

D Diabetic retinopathy

RIGHT ANSWER

OK C. Purtscher retinopathy

WHY THIS IS RIGHT

- The key clues are sudden bilateral visual loss following acute pancreatitis and fundus findings of cotton wool spots with polygonal areas of retinal whitening (Purtscher flecken) around the optic disc.
- These are classic for Purtscher retinopathy, a microvascular occlusive retinopathy seen after trauma, acute pancreatitis, and other systemic insults.

QUESTION

A 28-year-old woman presents with progressive decrease in central vision. She also has yellowish papular lesions on the neck and axillae with a “plucked-chicken” appearance. Fundus is shown below. Which of the following is the most likely diagnosis?

A Ehlers-Danlos syndrome

B Marfan syndrome

C Pseudoxanthoma elasticum

CORRECT

D Stargardt disease

RIGHT ANSWER

OK

C. Pseudoxanthoma elasticum

WHY THIS IS RIGHT

- This patient's progressive central vision loss with yellowish papular skin lesions in flexural areas showing a “plucked-chicken” appearance is classic for pseudoxanthoma elasticum (PXE).
- Fundus typically shows angioid streaks due to breaks in Bruch's membrane, predisposing to choroidal neovascularization.
- Ehlers-Danlos and Marfan syndromes cause connective tissue laxity but not these skin or retinal findings, while Stargardt disease lacks characteristic skin lesions.

QUESTION

A 45-year-old patient presents with complaints of difficulty reading and delayed visual recovery after exposure to bright sunlight. On examination, visual acuity returns to baseline only after 70 seconds following intense light exposure. Which of the following is the most likely interpretation of this test result?

A Normal macular function

B Optic nerve disease

C Macular pathology

CORRECT

D Media opacity

RIGHT ANSWER

OK C. Macular pathology

WHY THIS IS RIGHT

This is the Photostress Recovery Test (PSRT).

It evaluates:

- Macular function
- Specifically foveal photoreceptor and RPE recovery
- ##### Normal Physiology

After bright light exposure:

- Photopigments (especially in cones) are bleached
- Recovery depends on:
 - Photoreceptor integrity
 - Retinal pigment epithelium (RPE) function

Normal recovery time:

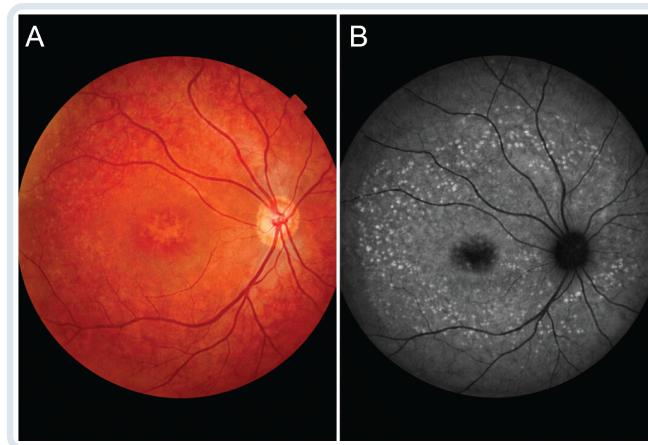
- ≤ 50 seconds (usually 15-35 seconds)

Recovery time = 70 seconds

- > Prolonged recovery
- > Suggests impaired photoreceptor/RPE function
- > Indicates macular pathology

QUESTION

All of the following statements regarding the condition shown in given image are correct except?



- A** It is the most common juvenile macular dystrophy
- B** Vitamin A supplement improve this condition
- C** Fundus fluorescein angiography shows a dark choroid
- D** Peripheral vision is relatively preserved

CORRECT

RIGHT ANSWER

- OK** B. Vitamin A supplement improve this condition

WHY THIS IS RIGHT

The fundus photograph shows:

- Beaten-bronze appearance at macula
- FFA image showing dark (silent) choroid

This is classic for Stargardt disease.

- Most common juvenile macular dystrophy
- Caused by mutation in ABCA4
- Lipofuscin accumulation in RPE
- FFA -> Dark choroid
- Central vision loss
- Peripheral vision relatively preserved

QUESTION

Regarding development of ocular structures, consider the following statements:

1. The eye begins to develop by the third week of intrauterine life.
2. The macula develops fully by around 4 years of postnatal life.
3. The cornea attains adult diameter by approximately 2 years of age.
4. The lens continues to grow throughout life.

Which of the above statements are true?

A 1, 2 and 4

B 1, 3 and 4

CORRECT

C 2 and 3 only

D 1, 2, 3 and 4

RIGHT ANSWER

OK B. 1, 3 and 4

WHY THIS IS RIGHT

- The eye starts developing in the 3rd week of intrauterine life with formation of the optic pit.
- The cornea reaches near-adult diameter by about 2 years, earlier than many other ocular structures.
- The lens continues to grow throughout life due to continuous addition of lens fibers. However, the macula does not fully develop by 4 years; foveal maturation and visual acuity continue to improve until around 6-8 years of age.

QUESTION

| Which of the following is the correct order of development?

A Optic pit -> optic vesicle -> optic cup

CORRECT

B Optic vesicle -> optic pit -> optic cup

C Optic pit -> optic cup -> optic vesicle

D Optic cup -> optic pit -> optic vesicle

RIGHT ANSWER

OK

A. Optic pit -> optic vesicle -> optic cup

WHY THIS IS RIGHT

Eye development begins with formation of the optic pit in the forebrain neuroectoderm, which then evaginates to form the optic vesicle. Subsequent invagination of the optic vesicle results in the double-walled optic cup, giving rise to the retina and optic nerve structures.

QUESTION

A patient presents with painful swelling on the eyelid and a lesion with pus at the base of the eyelash. Which of the following glands is involved in this case?

A Meibomian gland

B Lacrimal gland

C Tarsal gland

D Zeis gland

CORRECT

RIGHT ANSWER

OK D. Zeis gland

WHY THIS IS RIGHT

External hordeolum (stye) is an acute, painful infection of the glands of Zeis (sebaceous glands of eyelash follicles).

- Painful, tender swelling at eyelid margin
- Pus point at base of eyelash
- Usually caused by *Staphylococcus aureus*

Differentiation:

- Meibomian (tarsal) gland -> internal hordeolum/chalazion (deeper, less pointed)
- Lacrimal gland -> superolateral swelling, not at lash base

QUESTION

A patient with a history of blunt ocular trauma undergoes CT imaging as shown in the image. What is the most likely diagnosis?



A Lateral orbital wall fracture

B Mandibular fracture

C **Blowout fracture**

CORRECT

D Medial wall fracture

RIGHT ANSWER

OK **C. Blowout fracture**

WHY THIS IS RIGHT

Blowout fracture is a fracture of the orbital floor (most common) or medial wall due to blunt trauma, causing herniation of orbital contents into the maxillary sinus.

- Diplopia (especially on upward gaze)
- Enophthalmos (sunken eye)
- Infraorbital nerve anesthesia (cheek, upper lip numbness)

CT findings:

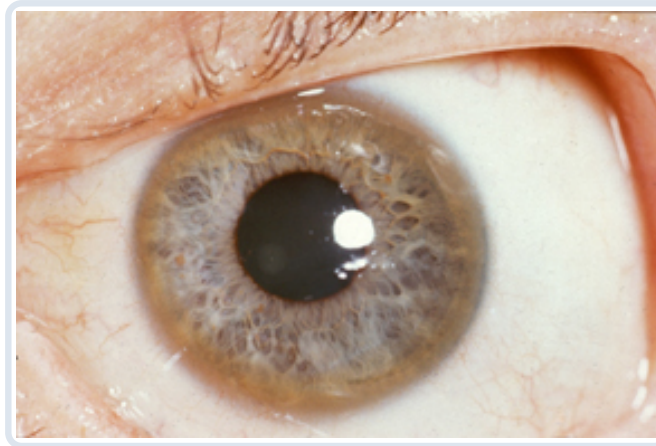
- Discontinuity of orbital floor
- Herniation of fat/inferior rectus into maxillary sinus ("teardrop sign")

Pathophysiology:

- Sudden increase in orbital pressure -> weakest wall (floor) fractures

QUESTION

The pathological finding shown in the image is typically associated with which of the following diseases?



A Wilson's disease

CORRECT

B Siderosis

C Primary Biliary Cirrhosis

D Chalcosis

RIGHT ANSWER

OK

A. Wilson's disease

WHY THIS IS RIGHT

Kayser-Fleischer ring is a golden-brown ring at the corneal periphery due to copper deposition in Descemet's membrane, classically seen in Wilson's disease.

- Seen on slit lamp examination
- Begins superiorly and inferiorly -> becomes circumferential
- Associated with hepatic + neurological symptoms

Pathophysiology:

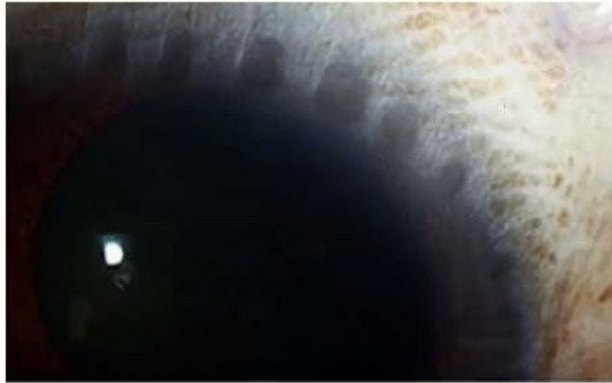
- Defect in copper metabolism (ATP7B mutation) -> copper accumulation

Differentiation:

- Siderosis -> iron deposition (rusty discoloration)
- Chalcosis -> sunflower cataract
- Primary biliary cirrhosis -> no KF ring typically

QUESTION

Examine the image provided. The ocular finding demonstrated is characteristic of which of the following conditions?



A Horner Trantas spots

B Pannus

C Arlt's line

D Herbert's pits

CORRECT

RIGHT ANSWER

OK D. Herbert's pits

WHY THIS IS RIGHT

Herbert's pits are small, shallow depressions at the limbus, seen as healed lesions of trachoma.

- Result from healing of limbal follicles
- Indicative of chronic trachoma (*Chlamydia trachomatis*)
- Often associated with other signs like pannus and Arlt's line

Differentiation:

- Horner-Trantas spots -> allergic (VKC), limbal white dots
- Pannus -> superficial corneal vascularization
- Arlt's line -> conjunctival scarring

QUESTION

| What is the most likely diagnosis in the image given below?



A Pterygium

B Pinguecula

C Dermoid

CORRECT

D Dermolipoma

RIGHT ANSWER

OK

C. Dermoid

WHY THIS IS RIGHT

Limbal dermoid is a congenital choristoma presenting as a well-circumscribed, whitish/yellowish mass at the limbus, often seen in childhood.

- Present since birth or early childhood
- Firm, elevated lesion at inferotemporal limbus
- May contain hair follicles, sebaceous glands
- Can induce astigmatism -> amblyopia

Associations: Goldenhar syndrome (oculoauriculovertebral dysplasia)

Differentiation:

- Pterygium: Triangular fibrovascular growth encroaching onto cornea (acquired)
- Pinguecula: Yellow conjunctival degeneration, does not involve cornea
- Dermolipoma: Soft, yellow mass in superotemporal conjunctiva

QUESTION

A 20-year-old male presents with golden-brown ring over iris on examination. What next is done to diagnose the condition?



A Serum ceruloplasmin

CORRECT

B Serum iron level

C Alpha 1 antitrypsin

D Alpha fetoprotein

RIGHT ANSWER

OK

A. Serum ceruloplasmin

WHY THIS IS RIGHT

A golden-brown ring at the corneal periphery (Kayser-Fleischer ring) is characteristic of Wilson's disease due to copper deposition in Descemet's membrane.

Next best diagnostic step: Serum ceruloplasmin ↓ (initial screening test)

Supporting investigations:

- ↑ 24-hour urinary copper excretion
- ↑ hepatic copper (gold standard confirmation)
- Slit-lamp exam for KF ring

Why not others:

- Serum iron: Hemochromatosis
- Alpha-1 antitrypsin: AAT deficiency (liver/lung disease)
- Alpha-fetoprotein: Hepatocellular carcinoma marker

QUESTION

| What is the best step to establish a diagnosis in this patient?



A Urine copper

B Serum ceruloplasmin

C Serum copper

D Hepatic copper estimation

CORRECT

RIGHT ANSWER

OK

D. Hepatic copper estimation

WHY THIS IS RIGHT

Wilson's disease is a disorder of copper metabolism characterized by impaired biliary excretion of copper -> accumulation in liver, brain, and cornea (Kayser-Fleischer ring).

> Best diagnostic test: Hepatic copper estimation (liver biopsy) = gold standard

>

> * Shows markedly increased hepatic copper ($>250 \mu\text{g/g}$ dry weight)

Supporting findings:

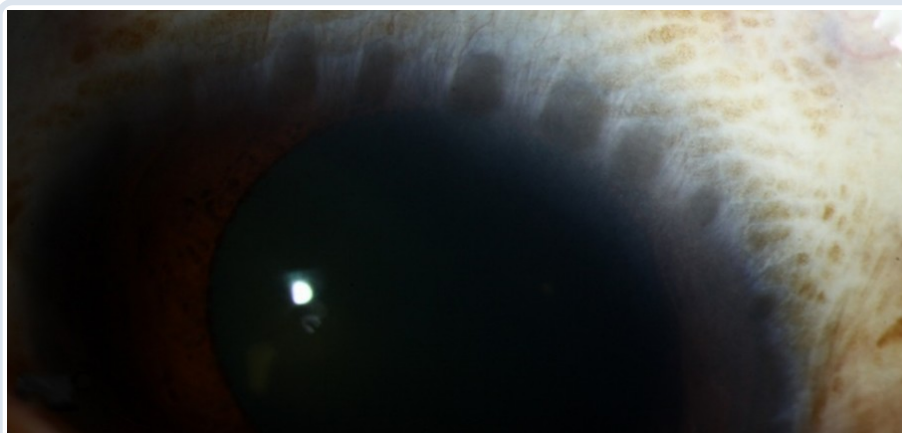
- ↓ Serum ceruloplasmin
- ↑ 24-hour urinary copper excretion
- Kayser-Fleischer ring on slit-lamp (as shown)

Why not others:

- Serum ceruloplasmin: Low but not specific (can be low in other conditions)
- Urinary copper: Sensitive but not definitive
- Serum copper: Variable and unreliable

QUESTION

| Diagnose the image seen in a 10-year-old child.



A Horner Trantas spots

B Herbert pits

CORRECT

C Pannus

D Corneal dystrophy

RIGHT ANSWER

OK **B. Herbert pits**

WHY THIS IS RIGHT

Herbert pits are depressed scars at the limbus resulting from healed follicles in trachoma.

- Seen in chronic trachoma (Chlamydia trachomatis infection)
- Represent healed limbal follicles
- Typically located at the superior limbus
- Associated with other sequelae:
 - Pannus formation (superior corneal vascularization)
 - Trichiasis
 - Entropion

Why not others:

- Horner-Trantas spots: White limbal dots in vernal keratoconjunctivitis
- Pannus: Superficial vascularization, not pits
- Corneal dystrophy: Bilateral, hereditary, non-inflammatory

QUESTION

Which of the following statements is NOT true about the given image?



A Improves on treatment of thyroid status

CORRECT

B Vision loss may be seen in some cases

C 10% may be euthyroid at presentation

D NOSPECS classification is used

RIGHT ANSWER

OK A. Improves on treatment of thyroid status

WHY THIS IS RIGHT

The image depicts thyroid eye disease (Graves' orbitopathy) characterized by proptosis, lid retraction, and conjunctival congestion.

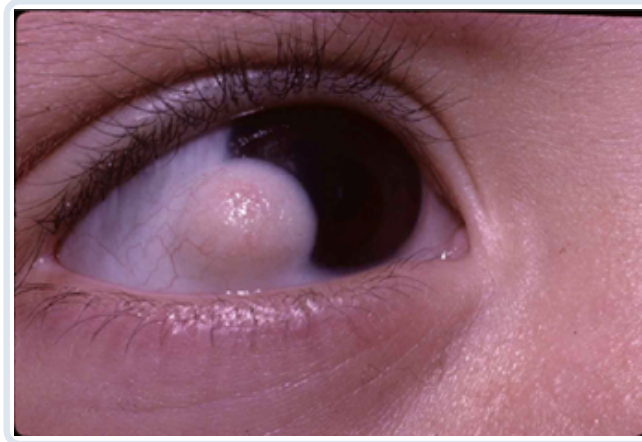
Ophthalmopathy does NOT reliably improve with correction of thyroid status -> It follows an independent autoimmune course

Important facts:

- Can occur in hyperthyroid, hypothyroid, or euthyroid patients (~10% euthyroid)
- May cause vision loss due to:
 - Optic nerve compression
- Severity is graded using NOSPECS classification
- Treating thyroid dysfunction does not necessarily reverse eye disease

QUESTION

A 10-year-old male child presented with the following finding. What's your diagnosis?



- A Papilloma
- B Limbal dermoid**
- C Pyogenic granuloma
- D Pinguecula

CORRECT

RIGHT ANSWER

OK **B. Limbal dermoid**

WHY THIS IS RIGHT

Limbal dermoid is a congenital choristoma (normal tissue in an abnormal location) typically seen at the inferotemporal limbus.

- Present since childhood
- Painless, well-defined, whitish/yellow mass at the limbus
- May contain hair follicles, sebaceous glands
- Can cause astigmatism or amblyopia if large

Pathogenesis:

- Developmental anomaly with ectodermal tissue (skin-like elements) in the cornea/conjunctiva

Why not others:

- Papilloma: Pedunculated, vascular lesion (HPV-related)
- Pyogenic granuloma: Red, vascular, rapidly growing lesion
- Pinguecula: Degenerative yellow lesion in adults, not congenital

QUESTION

A 45-year-old male presents with drooping of the right upper eyelid and constricted pupil following a neck injury. On examination, there is mild ptosis with preserved ocular movements. Which muscle is primarily responsible for the ptosis in this condition?

A Levator palpebrae superioris

B Orbicularis oculi

C Muller's muscle

CORRECT

D Horner muscle

RIGHT ANSWER

OK C. Muller's muscle

WHY THIS IS RIGHT

In Horner syndrome, ptosis occurs due to paralysis of Müller's muscle (superior tarsal muscle), which is supplied by the sympathetic nervous system.

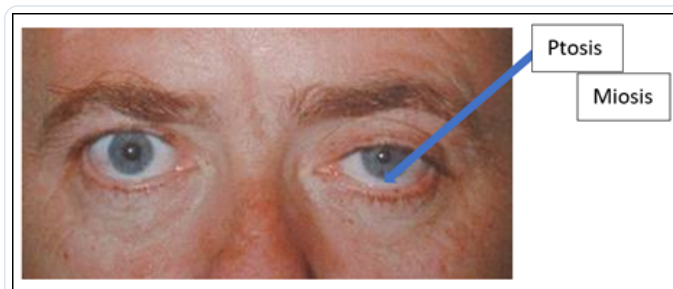
- Müller's muscle provides minor eyelid elevation (~1-2 mm)
- Loss of sympathetic supply -> mild ptosis

Associated features of Horner syndrome:

- Ptosis (mild)
- Miosis (constricted pupil)
- Anhidrosis (loss of sweating)
- ± Apparent enophthalmos

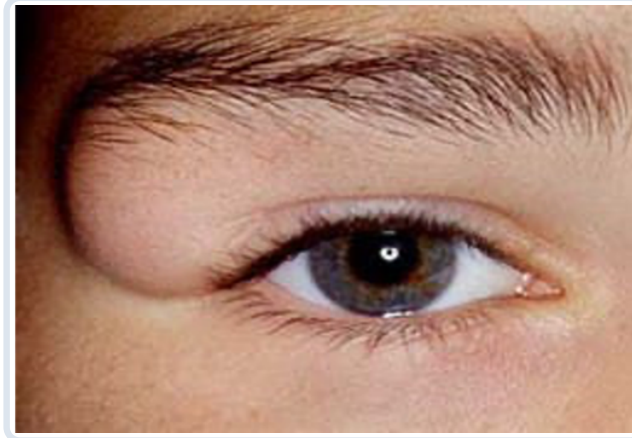
Why not others:

- Levator palpebrae superioris (LPS):
- Supplied by oculomotor nerve (CN III)
- Causes severe ptosis in 3rd nerve palsy
- Orbicularis oculi:
- Closes eyelids (CN VII), not involved in ptosis
- "Horner muscle": Not a standard anatomical term



QUESTION

A 15-year-old girl presents with a painless, slowly enlarging mass situated lateral to the lateral canthus, which has been present for the past 10 years. On examination, the swelling is non-tender and gradually progressive. What is the most likely diagnosis?



A Dermoid cyst

CORRECT

B Capillary hemangioma

C Lacrimal gland tumor

D Epidermoid cyst

RIGHT ANSWER

OK A. Dermoid cyst

WHY THIS IS RIGHT

A dermoid cyst is the most common congenital orbital tumor in children, typically presenting as a painless, slow-growing mass near the lateral canthus (superotemporal orbit).

Key clinical features:

- Present since childhood
- Gradually enlarging, non-tender swelling
- Commonly located at zygomaticofrontal suture (lateral eyebrow region)
- Firm, well-defined, mobile mass

Developmental inclusion cyst containing ectodermal elements (hair follicles, sebaceous glands).

Why not others:

- Capillary hemangioma: Appears in infancy, rapidly grows, may regress
- Lacrimal gland tumor: Usually presents later, may cause globe displacement
- Epidermoid cyst: Similar but deeper, less common in this location

QUESTION

| Which of the following statement is true about orbital cellulitis?

- A** It is present anterior to the orbital septum
- B** Treated effectively with topical antibiotic
- C** Presents with proptosis, orbital swelling, normal pupil, and extraocular movements
- D** Ethmoid sinusitis is the most common etiology CORRECT

RIGHT ANSWER

OK

D. Ethmoid sinusitis is the most common etiology

WHY THIS IS RIGHT

Orbital cellulitis is a postseptal infection of the orbit, most commonly arising from ethmoid sinusitis due to the thin lamina papyracea.

Key clinical features:

- Proptosis
- Painful and restricted extraocular movements
- Decreased vision $\pm$ afferent pupillary defect
- Eyelid edema, fever

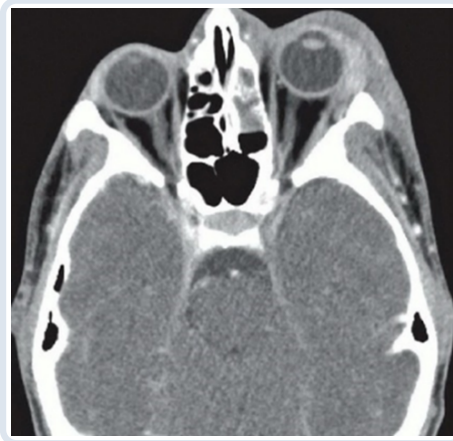
Ethmoid sinusitis is the most common source of orbital cellulitis spread.

Why other options are incorrect:

- A) Anterior to septum = preseptal cellulitis, not orbital
- B) Requires IV antibiotics, not just topical
- C) EOM are restricted and painful, not normal

QUESTION

A 35-year-old male with a history of recurrent sinusitis presents with decreased vision, eye protrusion, and fever. A computed tomography (CT) scan was done. What is the most likely diagnosis?



A. Preseptal cellulitis with sinusitis

B. Orbital cellulitis with sinusitis

CORRECT

C. Sub periosteal abscess

D. Cellulitis

RIGHT ANSWER

OK

B. B. Orbital cellulitis with sinusitis

WHY THIS IS RIGHT

Orbital cellulitis is a postseptal orbital infection, most commonly due to spread from paranasal sinusitis (especially ethmoid sinus). Key distinguishing features (vs preseptal cellulitis):

- Proptosis
- Painful/restricted eye movements
- Decreased vision
- Fever and systemic toxicity

Imaging (CT scan):

- Orbital soft tissue inflammation behind the orbital septum
- Associated sinus opacification
- Helps detect complications (abscess, intracranial spread)

Why not others:

- Preseptal cellulitis: No proptosis, no vision loss, no ophthalmoplegia
- Subperiosteal abscess: Localized collection; would show a well-defined lenticular collection on CT
- Cellulitis (nonspecific): Does not localize to orbit

QUESTION

Following instrument is used to measure:



A Proptosis

CORRECT

B Squint

C Ptosis

D Diplopia

RIGHT ANSWER

OK A. Proptosis

WHY THIS IS RIGHT

The instrument shown is a Hertel exophthalmometer, used to measure proptosis (forward protrusion of the eyeball).

- Measures the distance between the lateral orbital rim and the corneal apex
- Allows quantification and comparison between both eyes

Detects and monitors proptosis in conditions such as:

- Thyroid eye disease
- Orbital tumors
- Orbital cellulitis

Why not others:

- Squint: Assessed by cover test, prism bar
- Ptosis: Measured by MRD (margin reflex distance)
- Diplopia: Evaluated by Hess chart, diplopia charting

QUESTION

| What is the most common cause of proptosis in a middle-aged person?

- A** Orbital varix
- B** **Thyroid eye disease**
- C** Retinoblastoma
- D** Cavernous hemangioma

CORRECT

RIGHT ANSWER

- OK** **B. Thyroid eye disease**

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

| All the following are functions of the superior oblique muscle except?

A Adduction

CORRECT

B Abduction

C Depression

D Intorsion

RIGHT ANSWER

OK

A. Adduction

WHY THIS IS RIGHT

The superior oblique muscle has three primary actions:

- Intorsion (primary action)
- Depression (especially in adducted eye)
- Abduction

Why A is correct (NOT a function):

- Adduction is NOT a function of the superior oblique
- Adduction is mainly performed by the medial rectus

Superior oblique passes through the trochlea, giving it a unique action:

- Pulls the eye downward and outward
- Rotates the top of the eye inward (intorsion)

QUESTION

A patient presents with a foreign body (chuna) in his eyes and complains of irritability and lacrimation. What is the first step of management in this patient?

A Antibiotics drops in eye

B Temporary tarsorrhaphy

C Irrigation of eye with normal saline

CORRECT

D Complete Scraping

RIGHT ANSWER

OK

C. Irrigation of eye with normal saline

WHY THIS IS RIGHT

Chemical injury to the eye (e.g., chuna/lime = alkali burn) is an ocular emergency, and the first and most important step is immediate copious irrigation.

- Alkali substances penetrate rapidly and cause liquefactive necrosis
- Immediate dilution/removal of the chemical limits depth of damage and improves prognosis

Management priority:

- Start irrigation immediately (do not wait for history or examination)
- Use normal saline, Ringer lactate, or even clean water if saline unavailable
- Continue until ocular pH normalizes ($\sim 7-7.4$)
- Evert eyelids to remove retained particles

Why not others:

- Antibiotic drops: Given later to prevent infection
- Tarsorrhaphy: For healing in severe cases, not initial step
- Scraping: Not indicated initially and may worsen injury

QUESTION

A 3-month-old child presents with photophobia and watering. Which of the following cannot be the cause?

A Congenital nasolacrimal duct obstruction

CORRECT

B Congenital entropion

C Congenital glaucoma

D Congenital distichiasis

RIGHT ANSWER

OK A. Congenital nasolacrimal duct obstruction

WHY THIS IS RIGHT

In infants, photophobia + watering (epiphora) suggests corneal irritation or raised intraocular pressure, not just a drainage problem.

- Congenital nasolacrimal duct obstruction (CNLDO) causes:
 - Watering and discharge
 - NO photophobia
 - Cornea remains clear -> hence not a cause here

Conditions that DO cause photophobia + watering:

- Congenital glaucoma:
 - Triad: Epiphora + Photophobia + Blepharospasm
 - Due to corneal edema and raised IOP
- Congenital entropion / distichiasis:
 - Misdirected lashes rub cornea -> corneal irritation
 - Leads to photophobia and tearing

QUESTION

A 6-year-old child is brought with complaints of poor vision in one eye. On examination, there is no obvious squint. Visual acuity is 6/6 in the right eye and 6/24 in the left eye. Cycloplegic refraction reveals +1.00 D in the right eye and +5.50 D in the left eye. Fundus examination is normal. What is the most likely diagnosis?

A Isoametropic amblyopia

B Strabismic amblyopia

C Anisometropic amblyopia

CORRECT

D Deprivation amblyopia

RIGHT ANSWER

OK C. Anisometropic amblyopia

WHY THIS IS RIGHT

Anisometropia is defined as a difference in refractive error between the two eyes, leading to unequal image clarity.

Difference in myopia, hypermetropia, or astigmatism between eyes.

Clinical significance:

- Can cause anisometropic amblyopia (lazy eye) in children
- Due to unequal image size/clarity (aniseikonia) -> brain suppresses one eye
- Important cause of unilateral amblyopia

Why other options are incorrect:

- Difference in iris color: Heterochromia
- Difference in axial length: May cause anisometropia but is not the definition
- Difference in visual acuity: Could be a consequence, not the definition

| Term | Description |

| ---- | ----- |

| Anisometropia | Difference in refractive error between two eyes |

| Aniseikonia | Difference in image size perceived by two eyes |

| Anisocoria | Difference in pupil size between two eyes |

| Anisopia | Difference in vision between two eyes |

QUESTION

In case of a chemical injury to the eye, what is the immediate first step in the management?

- A** Check visual acuity
- B** Take history
- C** Intraocular pressure measurement
- D** Copious irrigation with saline

CORRECT

RIGHT ANSWER

- OK** **D. Copious irrigation with saline**

WHY THIS IS RIGHT

Chemical injury to the eye is an absolute ocular emergency, and the immediate first step is copious irrigation with saline (or any clean fluid available).

- Chemicals (especially alkali) penetrate rapidly and cause ongoing tissue damage
- Immediate dilution and removal of the chemical limits severity of injury and improves prognosis

Key management principles:

- Start irrigation immediately (do NOT delay for history or examination)
- Use normal saline, Ringer lactate, or even clean water if nothing else is available
- Continue until ocular surface pH normalizes ($\approx 7-7.4$)
- Evert eyelids to remove retained particles

Why not others:

- Visual acuity, history, IOP measurement -> important but only after irrigation
- Any delay worsens corneal and limbal damage

QUESTION

Which of the following organisms are associated with acute haemorrhagic conjunctivitis?

- I. Coxsackie B
- II. Coxsackie A
- III. Enterovirus 70
- IV. Polio virus

A I and II

B I and III

C III and IV

D I, II and III

CORRECT

RIGHT ANSWER

OK

D. I, II and III

WHY THIS IS RIGHT

Acute hemorrhagic conjunctivitis is a contagious viral conjunctivitis characterized by sudden onset redness, subconjunctival hemorrhage, pain, and watering.

Causative organisms:

- Enterovirus 70 -> classic and most common cause in epidemics
- Coxsackie A (especially A24 variant)
- Coxsackie B (less common but associated)

Why not Poliovirus:

- Poliovirus primarily affects the central nervous system -> causes poliomyelitis
- Not associated with hemorrhagic conjunctivitis

*

QUESTION

| According to the grading of trachoma, what defines the follicular stage?

A 5 or more follicles in the upper tarsal conjunctiva

CORRECT

B 3 or more follicles in the lower tarsal conjunctiva

C 5 or more follicles in the lower tarsal conjunctiva

D 3 or more follicles in the upper tarsal conjunctiva

RIGHT ANSWER

OK **A. 5 or more follicles in the upper tarsal conjunctiva**

WHY THIS IS RIGHT

The follicular stage of trachoma (TF) is defined by the presence of ≥ 5 follicles, each ≥ 0.5 mm, on the upper tarsal conjunctiva.

QUESTION

A 5-year-old boy was brought with the complaints of protrusion of the right eye with no h/o fever. CT Scan showed a well-defined mass in the orbit with an irregular border and adjacent bony destruction. Biopsy showed small, round cells which were positive for Desmin in Immunohistochemistry. What is the probable diagnosis?

- A** Retinoblastoma
- B** Cavernous Hemangioma
- C** Orbital Cellulitis

D Rhabdomyosarcoma

CORRECT

RIGHT ANSWER

OK D. Rhabdomyosarcoma

WHY THIS IS RIGHT

A rapidly progressive proptosis in a child, absence of fever, orbital mass with bony destruction, and small round cells positive for desmin are classic for orbital rhabdomyosarcoma, the most common primary orbital malignancy in children.

- Retinoblastoma arises intraocularly with calcification.
- Cavernous hemangioma is benign, well-circumscribed, and seen in adults.
- Orbital cellulitis presents with fever, pain, and inflammatory signs, not a desmin-positive tumor.

QUESTION

Identify the incorrect pair:

- A** Moraxella lacunata: Angular conjunctivitis
- B** Pneumococcus: Ulcus serpens
- C** Acute hemorrhagic conjunctivitis: Enterovirus 70, Coxsackievirus A24
- D** 100-day glaucoma: Coxackie B virus

CORRECT

RIGHT ANSWER

- OK** **D. 100-day glaucoma: Coxackie B virus**

WHY THIS IS RIGHT

- Moraxella lacunata causes angular conjunctivitis (true).
- Pneumococcus classically causes ulcus serpens corneal ulcer (true).
- Acute hemorrhagic conjunctivitis is caused by Enterovirus 70 and Coxsackie A24 (true)

“100-day glaucoma” refers to:

- Secondary glaucoma following:
- Central retinal vein occlusion
- Ocular ischemia
- Due to neovascularization of angle (rubeotic glaucoma)

QUESTION

A patient presented with unilateral proptosis and bilateral abducent palsy. What is the most probable cause?

A Retinoblastoma

B Orbital pseudotumor

C Orbital cellulitis

D Cavernous sinus thrombosis

CORRECT

RIGHT ANSWER

OK

D. Cavernous sinus thrombosis

WHY THIS IS RIGHT

- Unilateral proptosis with bilateral abducent (VI nerve) palsy is classic for cavernous sinus thrombosis, as both abducens nerves run centrally within the cavernous sinus and are commonly affected.
- Orbital cellulitis causes proptosis but usually unilateral nerve involvement.
- Orbital pseudotumor causes painful proptosis without bilateral VI palsy.
- Retinoblastoma presents in children with leukocoria, not cranial nerve palsies.

QUESTION

| Steroids are used in all except:

- A Vernal conjunctivitis
- B Phlyctenular conjunctivitis
- C Acute dacryocystitis**
- D Acute iridocyclitis

CORRECT

RIGHT ANSWER

- OK C. Acute dacryocystitis**

WHY THIS IS RIGHT

- Steroids are contraindicated in acute dacryocystitis because it is an active bacterial infection, and steroids can worsen infection and delay healing.
- Vernal conjunctivitis benefits from topical steroids to control severe allergic inflammation.
- Phlyctenular conjunctivitis is a type IV hypersensitivity reaction where steroids reduce inflammation.
- Acute iridocyclitis requires steroids to suppress intraocular inflammation and prevent synechiae.

QUESTION

| Which of the following is false:

- A** External hordeolum is an acute inflammation of the Zeis gland
- B** Meibomian gland is a modified apocrine gland CORRECT
- C** Internal hordeolum is an acute suppurative inflammation of meibomian gland
- D** Chalazion is a chronic granulomatous inflammation of the meibornian gland

RIGHT ANSWER

- OK** **B. Meibomian gland is a modified apocrine gland**

WHY THIS IS RIGHT

- The Meibomian gland is a modified sebaceous gland, not apocrine.
- External hordeolum is an acute suppurative infection of Zeis (or Moll) glands (true).
- Internal hordeolum is an acute suppurative inflammation of the Meibomian gland (true).
- Chalazion is a chronic granulomatous inflammation of the Meibomian gland due to lipid retention (true).

QUESTION

A 42-year-old woman with inactive thyroid-related orbitopathy presents with proptosis, diplopia due to restrictive myopathy, and upper eyelid retraction. She is planned for surgical rehabilitation. Which of the following represents the most appropriate and recommended sequence of surgical management?

- A Eyelid retraction surgery -> Strabismus surgery -> Orbital decompression
- B Orbital decompression -> Strabismus surgery -> Eyelid retraction surgical repair**
- C Strabismus surgery -> Orbital decompression -> Eyelid retraction surgical repair
- D Orbital decompression -> Eyelid retraction surgical repair -> Strabismus surgery

CORRECT

RIGHT ANSWER

OK

B. Orbital decompression -> Strabismus surgery -> Eyelid retraction surgical repair

WHY THIS IS RIGHT

- In inactive thyroid eye disease, surgical rehabilitation follows a strict sequence.
- Orbital decompression is done first to correct proptosis and alters globe position.
- Strabismus surgery follows, as muscle alignment can change after decompression.
- Eyelid retraction repair is performed last because lid position depends on both globe position and ocular alignment.
- This staged approach ensures stable, predictable outcomes and avoids the need for repeat surgeries.

QUESTION

A 62-year-old diabetic patient presents with severe ocular pain, lid edema, proptosis, chemosis, and complete loss of vision following a penetrating eye injury 5 days ago. Ocular movements are restricted and fundus view is not possible. Which of the following is the most likely diagnosis?

A Sympathetic ophthalmia

B Endophthalmitis

C Panophthalmitis

CORRECT

D Orbital cellulitis

RIGHT ANSWER

OK C. Panophthalmitis

WHY THIS IS RIGHT

Panophthalmitis = Suppurative inflammation involving:

- All coats of the eyeball
- Intraocular contents
- Tenon's capsule
- Often spreads to orbit

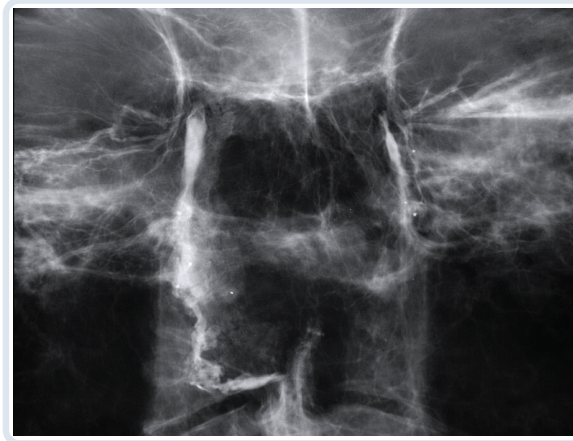
Key distinguishing features: Proptosis, Lid edema, Chemosis, Restricted movements, No fundus view, Rapid vision loss

Typically follows:

- Penetrating trauma
- Post-surgical infection
- Uncontrolled diabetes

QUESTION

A 30 year old patient with chief complaint of watering for 1 week after a road traffic accident. The following test was advised after a few initial clinical tests. Which of the following is not true regarding the given test?



- A** This test gives an idea about anatomy of lacrimal pathway
- B** It provides information regarding lacrimal pump failure
- C** The increased watering from his right eye can be termed as epiphora
- D** A non-ionic iodinated contrast is injected into canaliculus

CORRECT

RIGHT ANSWER

- OK** **B. It provides information regarding lacrimal pump failure**

WHY THIS IS RIGHT

- The described test is dacryocystography, done for post-traumatic epiphora.
- It evaluates the anatomy of the lacrimal drainage pathway by injecting a non-ionic iodinated contrast into the canaliculus and taking radiographs. Watering of the eye is correctly termed epiphora.
- However, dacryocystography does not assess lacrimal pump function; pump failure is evaluated by functional tests like dye disappearance or Jones tests.

QUESTION

A 10-year-old child presents with itching, watering, and redness in both eyes. On examination, small round yellow nodules are observed near the limbus, and conjunctival congestion is noted. The child has a history of recurrent styes and has a past h/o TB. Which of the following best explains the pathophysiology of this condition?

- A** Type I hypersensitivity reaction caused by environmental allergens
- B** Type IV hypersensitivity reaction to endogenous bacterial antigens CORRECT
- C** Type II hypersensitivity reaction triggered by viral infections
- D** Autoimmune reaction against corneal epithelial cells

RIGHT ANSWER

- OK** **B. Type IV hypersensitivity reaction to endogenous bacterial antigens**

WHY THIS IS RIGHT

This child's symptoms and yellow limbal nodules (phlyctenules) with recurrent styes point to phlyctenular keratoconjunctivitis.

The condition is caused by a delayed (Type IV) hypersensitivity reaction to endogenous bacterial antigens, commonly *Staphylococcus* proteins, and may be associated with tuberculosis.

It is not an IgE-mediated allergy or an autoimmune process, but a cell-mediated immune response leading to localized ocular inflammation.

QUESTION

A 65-year-old woman with rheumatoid arthritis presents with dry eyes and mouth. Rose bengal staining shows corneal damage, and tear analysis reveals a tear-to-lysozyme ratio of 0.1. Which tear film layer is primarily deficient in this condition?

A Mucinous layer

B Aqueous layer

CORRECT

C Lipid layer

D All layers are equally affected

RIGHT ANSWER

OK B. Aqueous layer

WHY THIS IS RIGHT

This patient has secondary Sjögren syndrome associated with rheumatoid arthritis, characterized by dry eyes and dry mouth.

The markedly reduced tear-to-lysozyme ratio indicates decreased lacrimal gland secretion.

Lysozyme is produced by the lacrimal glands and reflects aqueous tear production.

Deficiency of the aqueous layer leads to keratoconjunctivitis sicca, epithelial damage seen with Rose bengal staining, and symptoms of ocular surface dryness rather than primary lipid or mucin layer dysfunction.

QUESTION

A patient presents with the ocular deviation as shown in the image. What is the degree of deviation?



A 90 PD Esotropia

B 90 PD Exotropia

CORRECT

C 90 degree Esotropia

D 90 degree Exotropia

RIGHT ANSWER

OK B. 90 PD Exotropia

WHY THIS IS RIGHT

Ocular deviation is quantified in prism diopters (PD), not degrees.

- Exotropia = outward deviation of the eye
- Esotropia = inward deviation

A deviation of 90 PD exotropia represents a large-angle outward squint, commonly seen in conditions like long-standing sensory strabismus or third nerve palsy.

Key concept:

- 1 PD = deviation of 1 cm at 1 meter
- Clinical measurement of strabismus is always expressed in prism diopters, not degrees

QUESTION

A 40-year-old patient presented with a squint. On examination, the secondary deviation was found to be more than the primary deviation. Forced duction test is positive. Which of the following types of squint is most likely in this patient?

A Comitant squint

B Paralytic squint

C Restrictive squint

CORRECT

D Apparent squint

RIGHT ANSWER

OK C. Restrictive squint

WHY THIS IS RIGHT

- In restrictive squint, forced duction test is positive due to mechanical restriction of eye movement, and secondary deviation exceeds primary deviation because the normal eye overacts against restriction.
- Comitant squint has equal deviations in all gazes.
- Paralytic squint shows increased secondary deviation but has a negative forced duction test.
- Apparent squint is a false appearance with normal ocular alignment and movements.

QUESTION

A patient presents with left-sided head tilt which on straightening leads to right hypotropia. This increases on dextroversion and right head tilt. Paralysis of which of the following muscles is involved?

A Right superior oblique

B Right superior rectus

CORRECT

C Right inferior oblique

D Left inferior oblique

RIGHT ANSWER

OK

B. Right superior rectus

WHY THIS IS RIGHT

Park 3 step test:

Right hypotropia = Left eye is hypertropic -> Weak depressor or weak elevator of the right eye

In dextroversion:

- Right eye abducts
- Vertical movers in abduction:
 - Right superior rectus (elevator)
 - Right inferior rectus (depressor)

If hypotropia worsens in dextroversion -> problem in an elevator in abduction -> Suggests Right superior rectus palsy

QUESTION

In Hirschberg test, each 1 mm of corneal reflex displacement corresponds to approximately:

A 7 prism diopters

B 10 prism diopters

C 15 prism diopters

CORRECT

D 25 prism diopters

RIGHT ANSWER

OK

C. 15 prism diopters

WHY THIS IS RIGHT

In the Hirschberg test, the position of the corneal light reflex is used to estimate ocular deviation. Each 1 mm displacement of the corneal reflex from the center of the pupil corresponds to approximately 15 prism diopters of deviation.

This makes Hirschberg a quick screening test, giving only a rough estimate compared to prism bar cover testing.

QUESTION

A 24-year-old patient presents with complaints of ocular deviation noticed by family members. On examination, a cover-uncover test reveals a manifest deviation. To quantify the angle of deviation at distance and near, which of the following tests is most appropriate?

A Hirschberg test

B Maddox rod test

C Prism bar cover test

CORRECT

D Synoptophore

RIGHT ANSWER

OK C. Prism bar cover test

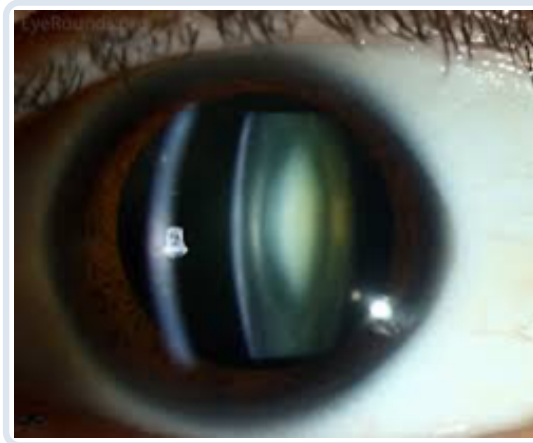
WHY THIS IS RIGHT

The prism bar cover test is the most accurate clinical method to quantify the angle of manifest strabismus detected on cover-uncover testing. It allows measurement of deviation at both distance and near by neutralizing the ocular movement with prisms.

Hirschberg gives only a rough estimate, Maddox rod is mainly for subjective heterophoria, and synoptophore is primarily for assessing binocular functions rather than routine angle measurement.

QUESTION

A 70-year-old patient presents with distant visual acuity of 6/18, which improved on pin-hole testing. On ocular examination findings as shown in image were seen. Patient has which of the following refractory error.



- A Axial Myopia
- B Curvatural Myopia
- C Positional Myopia
- D Index Myopia**

CORRECT

RIGHT ANSWER

OK

D. Index Myopia

WHY THIS IS RIGHT

Index myopia is caused by an increase in the refractive index of the lens, most commonly due to nuclear sclerosis (early cataract).

- Elderly patient with decreased distance vision (6/18)
- Improves with pinhole -> refractive error
- Improved near vision ("second sight") -> hallmark of nuclear cataract
- Slit lamp: nuclear sclerosis

Pathophysiology:

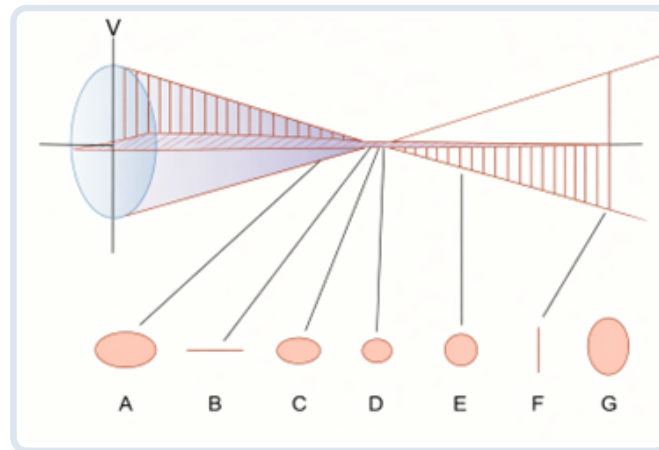
- Increased lens density -> $\uparrow$ refractive index
- Light bends more -> image shifts in front of retina -> myopia

Why not others:

- Axial myopia: Due to increased eyeball length
- Curvatural myopia: Due to increased curvature (cornea/lens)
- Positional myopia: Due to forward displacement of lens

QUESTION

Which of the following refractory condition is depicted in the figure.



A Presbyopia

B Myopia

C Astigmatism

CORRECT

D Hypermetropia

RIGHT ANSWER

OK C. Astigmatism

WHY THIS IS RIGHT

Astigmatism is a refractive error caused by unequal curvature of the cornea or lens, leading to different refractive powers in different meridians.

- Light rays do not converge to a single focal point
- Instead, they form two focal lines (line foci) at different planes ; This results in a blurred or distorted image

Types:

- Regular astigmatism: Principal meridians perpendicular
- Irregular astigmatism: Non-orthogonal meridians (e.g., keratoconus)

Correction:

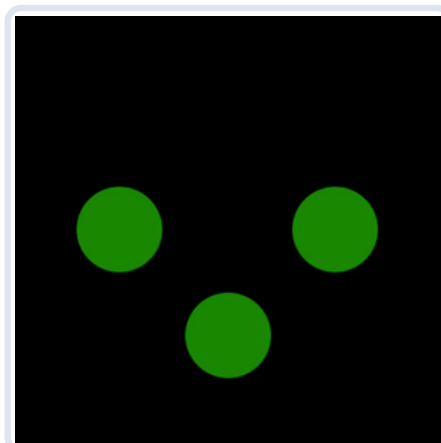
- Cylindrical lenses (spectacles/contact lenses)
- Refractive surgery (LASIK, etc.)

Why not others:

- Myopia: Image forms in front of retina
- Hypermetropia: Image forms behind retina
- Presbyopia: Loss of accommodation with age

QUESTION

| Patient can see 3 green dots on the Worth's 4 dots test. What is the likely diagnosis?



A Crossed diplopia

B Uncrossed diplopia

C RE suppression

CORRECT

D LE suppression

RIGHT ANSWER

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Worth's 4-dot test assesses binocular single vision, suppression, and diplopia using red-green goggles.

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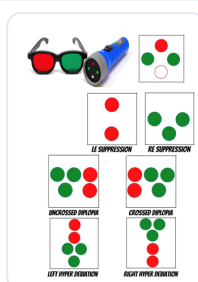
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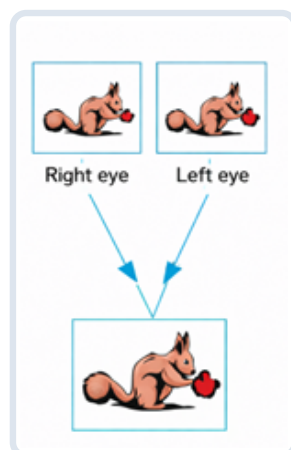
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- 4 dots (2 green + 1 red + 1 yellow) -> Normal fusion
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- 5 dots -> Diplopia



QUESTION

Which of the following stages of binocular vision does this image represent?



A Fusion

CORRECT

B Stereopsis

C Simultaneous Macular Perception

D Binocular vision

RIGHT ANSWER

OK A. Fusion

WHY THIS IS RIGHT

Binocular single vision (BSV) is achieved through three sequential components:

1. Simultaneous Macular Perception :

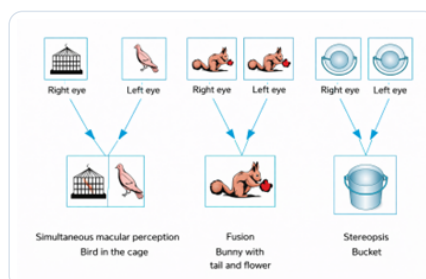
- Ability to perceive two different images from both eyes at the same time
- Example: each eye sees a different part of an image

2. Fusion:

- Brain combines the two images into one single image
- Requires proper ocular alignment

3. Stereopsis:

- Highest level -> depth perception (3D vision)
- Based on slight disparity between images from two eyes



QUESTION

A patient is prescribed a corrective lens with the following prescription: -1D spherical, -2D cylinder at 180 degrees. What type of refractive error is being corrected?

A With the rule astigmatism

CORRECT

B Against the rule astigmatism

C Simple astigmatism

D Mixed astigmatism

RIGHT ANSWER

OK

A. With the rule astigmatism

WHY THIS IS RIGHT

A prescription of -1 D sphere with -2 D cylinder at axis 180° indicates compound myopic astigmatism with a with-the-rule (WTR) axis.

Concept of axis:

- Cylinder axis at 180° ($\pm 20^\circ$) -> with-the-rule astigmatism
- Steepest meridian is vertical (90°)
- Horizontal meridian is flatter

Interpretation of this prescription:

- Both meridians are myopic (because sphere and cylinder are negative)
- Difference in power between meridians -> astigmatism
- Axis 180° -> with-the-rule

Why not others:

- Against-the-rule: Axis around 90°
- Simple astigmatism: Only one meridian affected (not here)
- Mixed astigmatism: One meridian myopic, other hypermetropic

*

QUESTION

22-year-old patient with high myopia presents with floaters in his eyes. What is the cause of this condition?

A Subarachnoid hemorrhage

B Retinal detachment

CORRECT

C Vitreous hemorrhage

D Branched retinal artery occlusion

RIGHT ANSWER

OK

B. Retinal detachment

WHY THIS IS RIGHT

High myopia predisposes to retinal thinning and peripheral degenerations (e.g., lattice degeneration), increasing the risk of retinal tears and retinal detachment.

- Floaters ($\pm$ flashes) in a young myopic patient $\rightarrow$ think retinal tear/detachment
- Caused by vitreoretinal traction leading to retinal break and separation

Pathophysiology:

- Elongated eyeball in myopia $\rightarrow$ stretched retina
- Degenerative changes $\rightarrow$ weak areas
- Vitreous traction $\rightarrow$ retinal tear $\rightarrow$ fluid accumulation $\rightarrow$ detachment

Why not others:

- Subarachnoid hemorrhage: Neurological symptoms, not isolated floaters
- Vitreous hemorrhage: Can cause floaters, but typically associated with diabetes/trauma
- Branch retinal artery occlusion: Causes sudden visual field defect, not floaters

QUESTION

| What is the definition of blindness as per NPCB, India?

A Vision less than 6/60 in better eye after best possible correction

B Presenting vision less than 3/60 in better eye

CORRECT

C Best corrected vision less than 3/60 in better eye

D Vision less than 6/60 in better eye after correction

RIGHT ANSWER

OK B. Presenting vision less than 3/60 in better eye

WHY THIS IS RIGHT

As per the National Programme for Control of Blindness (NPCB), India, blindness is defined as:

- Presenting visual acuity < 3/60 in the better eye

Important concepts:

- Presenting vision = vision with available correction (current glasses if any), not best possible correction
- NPCB uses this definition for public health screening and program implementation

Contrast with WHO definition:

- WHO defines blindness as best corrected visual acuity < 3/60 in the better eye
- NPCB uses a more practical, field-based definition (presenting vision)

QUESTION

| Which of the following is not the treatment of amblyopia?

- A Video games
- B Strabismus Surgery**
- C Occlusion by patching
- D Refractive error correction

CORRECT

RIGHT ANSWER

- B. Strabismus Surgery**

WHY THIS IS RIGHT

Amblyopia ("lazy eye") is a developmental decrease in visual acuity due to abnormal visual experience during the critical period, and treatment aims to improve visual input and force use of the amblyopic eye.

- Amblyopia treatment aims to improve visual acuity by stimulating the weaker eye, not just correcting alignment.

Actual treatments of amblyopia:

- Occlusion therapy (patching) -> gold standard
- Refractive error correction -> spectacles/contact lenses
- Penalization (e.g., atropine)
- Video games / perceptual learning -> newer adjunct (especially dichoptic therapy)

Why *Strabismus surgery* is NOT a treatment:

- It corrects ocular alignment (cosmesis + binocular function)
- Does NOT directly improve amblyopia
- Amblyopia must be treated before or along with surgery, not by surgery itself

First vision is fixed amblyopia, then alignment (strabismus)".

QUESTION

Given below are some tests for visual acuity. Which of these is used for a pre-verbal child?

1. ETDRS chart
2. Optokinetic nystagmus
3. Teller's visual acuity chart
4. Landolt's C chart

A 2 and 3

CORRECT

B 1 and 2

C 2, 3 and 4

D 2 and 4

RIGHT ANSWER

OK

A. 2 and 3

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

A student with myopia wishes to undergo surgery. Which option is not suitable for correcting her refractive error?

A SMILE

B Radial keratotomy

C Intracorneal ring implantation

D Conductive keratoplasty

CORRECT

RIGHT ANSWER

OK

D. Conductive keratoplasty

WHY THIS IS RIGHT

- Conductive keratoplasty is used to treat hypermetropia and presbyopia, not myopia, making it unsuitable.
- SMILE corrects myopia by removing a stromal lenticule.
- Radial keratotomy was historically used for myopia, though now obsolete.
- Intracorneal ring segments flatten the cornea and can reduce low-to-moderate myopia or irregular astigmatism.

QUESTION

Which surgical procedure should a 21-year-old boxer avoid to maintain optimal visual health?

A RK

CORRECT

B PRK (Photorefractive Keratectomy)

C LASIK (Laser-Assisted in Situ Keratomileusis)

D SMILE (Small Incision Lenticule Extraction)

RIGHT ANSWER

OK
A. RK

WHY THIS IS RIGHT

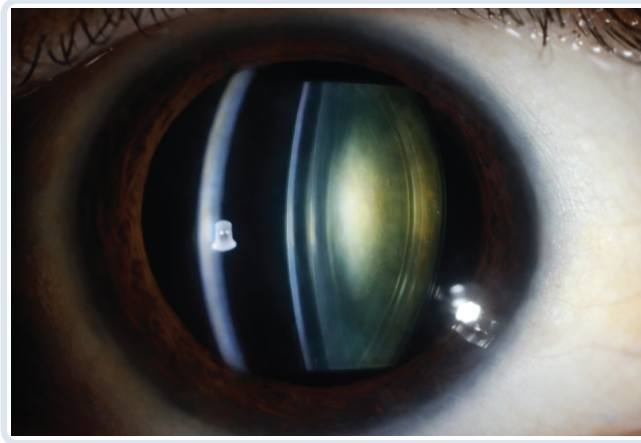
Radial keratotomy (RK) is a refractive surgical procedure used to correct myopia, involving radial full-thickness corneal incisions that flatten the central cornea.

Although effective initially, RK is associated with long-term complications such as progressive hyperopic shift, diurnal fluctuation of vision, glare, and weakened corneal integrity.

Due to the risk of corneal instability and poor predictability, RK has largely been replaced by laser-based refractive procedures like PRK, LASIK, and SMILE.

QUESTION

A 60-year-old patient complains of decreased distant vision but he does not use spectacles for near vision. The image of his ocular examination is given below. What is this type of refractive error called?



A Index myopia

CORRECT

B Axial myopia

C Curvatural myopia

D Positional myopia

RIGHT ANSWER

OK

A. Index myopia

WHY THIS IS RIGHT

- Index myopia occurs due to increase in refractive index of the crystalline lens, classically seen in nuclear cataract, causing decreased distance vision with preserved near vision ("second sight").
- Axial myopia results from increased axial length of the eyeball.
- Curvatural myopia is due to increased corneal or lenticular curvature.
- Positional myopia occurs when the lens is displaced anteriorly.

QUESTION

A patient with 1.5D myopia undergoes streak retinoscopy. The patient is seated one meter from the light source and is asked to fixate on a distant object as the retinoscopy is performed. With respect to the movement of the plane mirror in the retinoscope, the red reflex in the eye exhibits:

A Movement with the plane

B Movement against the plane

CORRECT

C No movement

D Oblique movement

RIGHT ANSWER

OK

B. Movement against the plane

WHY THIS IS RIGHT

In streak retinoscopy using a plane mirror, a myopic eye (>1 D) shows against movement because the patient's far point lies in front of the retinoscope (working distance $1\text{ m} = 1\text{ D}$).

- A. With movement is seen in emmetropia, hypermetropia, or myopia <1 D.
- C. No movement occurs when refractive error equals working distance.
- D. Oblique movement suggests irregular astigmatism, not simple myopia.

QUESTION

What is the first step in the management of an 18-month-old child with both eyes deviated medially?

- A Forced ductions test
- B Examination under anesthesia
- C Refractive error testing**
- D Examination of fundus

CORRECT

RIGHT ANSWER

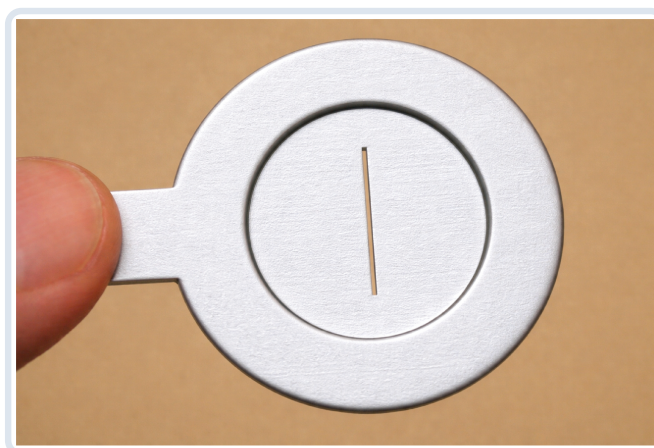
- OK C. Refractive error testing**

WHY THIS IS RIGHT

The source quiz contains the placeholder “\$1a” here and does not include a written explanation for this item.

QUESTION

The following device is used for all of the following indications except:



A Fincham test

B Find out axis of astigmatism

C Corneal tattooing

CORRECT

D Optical iridectomy

RIGHT ANSWER

OK C. Corneal tattooing

WHY THIS IS RIGHT

- The device referred to is the stenopaic slit. It is used in the Fincham test to differentiate aphakia from pseudophakia, to determine the axis of astigmatism by narrowing the effective pupil, and for planning optical iridectomy by allowing vision through a small aperture.
- Corneal tattooing is a cosmetic/therapeutic procedure performed with needles or trephines and does not use a stenopaic slit, making it the incorrect option.

QUESTION

A 58-year-old man with diabetic macular edema is being followed up as part of a multicenter clinical trial. His baseline visual acuity was recorded using a standardized chart that allows accurate detection of small changes in vision over serial visits. The chart used has five letters per line, uniform spacing, and visual acuity is expressed in logMAR units. Which of the following charts is being used?

A Snellen chart

B Landolt's C chart

C Pelli-Robson chart

D ETDRS chart

CORRECT

RIGHT ANSWER

OK D. ETDRS chart

WHY THIS IS RIGHT

Key Characteristics of ETDRS Chart

- Developed for the Early Treatment Diabetic Retinopathy Study
- Logarithmic progression of letter size (0.1 logMAR per line)
- Equal number of letters per line (5)
- Equal spacing between letters and rows
- Standardized luminance

Advantage:

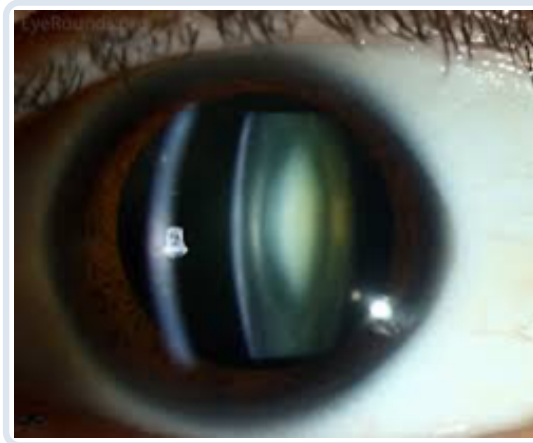
More reproducible and sensitive than Snellen for:

- Diabetic macular edema
- AMD trials
- Multicenter studies

*

QUESTION

A 70-year-old patient presents with distant visual acuity of 6/18, which improved on pin-hole testing. On ocular examination findings as shown in image were seen. Patient has which of the following refractory error.



- A** Axial Myopia
- B** Curvatural Myopia
- C** Positional Myopia
- D** Index Myopia

CORRECT

RIGHT ANSWER

OK D. Index Myopia

WHY THIS IS RIGHT

Index myopia is caused by an increase in the refractive index of the lens, most commonly due to nuclear sclerosis (early cataract).

- Elderly patient with decreased distance vision (6/18)
- Improves with pinhole -> refractive error
- Improved near vision ("second sight") -> hallmark of nuclear cataract
- Slit lamp: nuclear sclerosis

Pathophysiology:

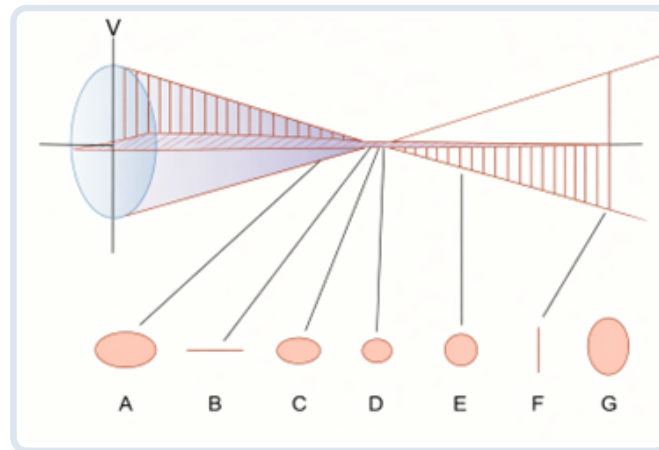
- Increased lens density -> $\uparrow$ refractive index
- Light bends more -> image shifts in front of retina -> myopia

Why not others:

- Axial myopia: Due to increased eyeball length
- Curvatural myopia: Due to increased curvature (cornea/lens)
- Positional myopia: Due to forward displacement of lens

QUESTION

Which of the following refractory condition is depicted in the figure.



A Presbyopia

B Myopia

C Astigmatism

CORRECT

D Hypermetropia

RIGHT ANSWER

OK C. Astigmatism

WHY THIS IS RIGHT

Astigmatism is a refractive error caused by unequal curvature of the cornea or lens, leading to different refractive powers in different meridians.

- Light rays do not converge to a single focal point
- Instead, they form two focal lines (line foci) at different planes ; This results in a blurred or distorted image

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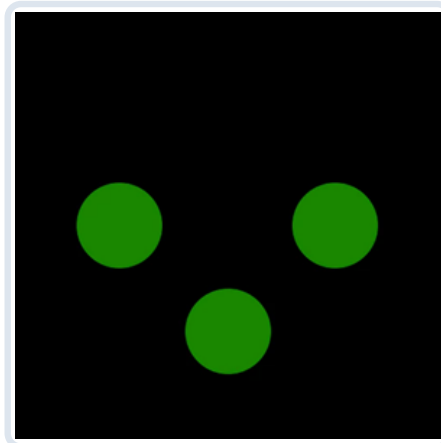
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QUESTION

| Patient can see 3 green dots on the Worth's 4 dots test. What is the likely diagnosis?



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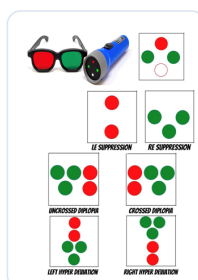
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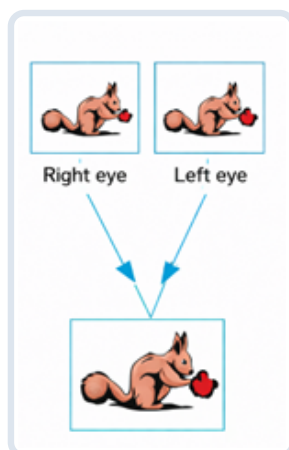
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Which of the following stages of binocular vision does this image represent?



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CORRECT

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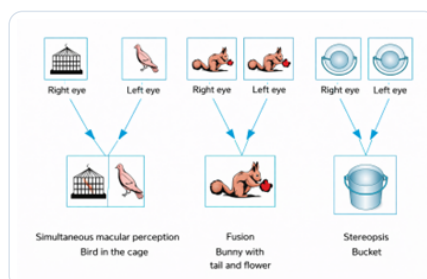
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CORRECT

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RIGHT ANSWER

OK

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QUESTION

| Which of the following is not the treatment of amblyopia?

A

Video games

B

Strabismus Surgery

CORRECT

C

Occlusion by patching

D

Refractive error correction

RIGHT ANSWER

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WHY THIS IS RIGHT

Amblyopia ("lazy eye") is a developmental decrease in visual acuity due to abnormal visual experience during the critical period, and treatment aims to improve visual input and force use of the amblyopic eye.

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4. Landolt's C chart

A 2 and 3

CORRECT

B 1 and 2

C 2, 3 and 4

D 2 and 4

RIGHT ANSWER

OK

A. 2 and 3

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

A girl with a history of contact lens use presents with eye pain and decreased vision. She does not follow proper lens hygiene. Which of the following organisms is the most likely causative agent?

A Acanthamoeba

CORRECT

B Herpes simplex

C Fungal ulcer

D Pneumococcus

RIGHT ANSWER

OK

A. Acanthamoeba

WHY THIS IS RIGHT

Acanthamoeba keratitis is a severe corneal infection classically associated with contact lens use and poor hygiene.

- Severe pain disproportionate to findings
- Redness, photophobia, decreased vision
- Ring-shaped corneal infiltrate (late finding)

Risk factors:

- Improper lens cleaning
- Exposure to contaminated water (tap water, swimming)

Clinical importance: Often misdiagnosed early -> can lead to vision loss

Why not others:

- B. Herpes simplex -> dendritic ulcer, ↓ corneal sensation
- C. Fungal -> vegetative trauma, feathery margins
- D. Pneumococcus -> bacterial ulcer, not linked to lenses

QUESTION

On indirect ophthalmoscopy the examiner noticed a concave shaped out bulging of the outer layer in the posterior part of the eye. What is the likely diagnosis?

A Posterior Staphyloma

CORRECT

B Hypermetropia

C Astigmatism

D Corneal ulcer

RIGHT ANSWER

OK

A. Posterior Staphyloma

WHY THIS IS RIGHT

Posterior staphyloma is a localized outpouching of the posterior sclera, commonly seen in pathological (high) myopia.

- Concave bulging of posterior segment on ophthalmoscopy
- Associated with axial elongation of eyeball
- Leads to progressive visual deterioration

Pathophysiology:

- Thinning and stretching of sclera -> outward bulging of posterior pole
- Predisposes to retinal degeneration, maculopathy, and retinal detachment

Why not other options:

B. Hypermetropia

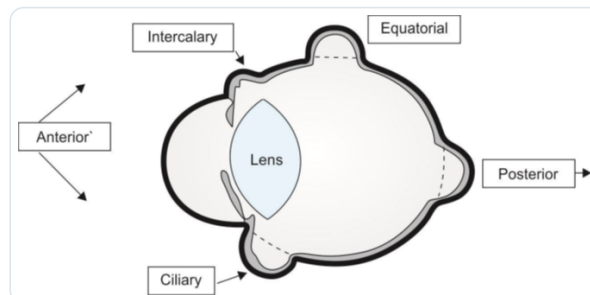
- Short eyeball -> no posterior bulging
- Retina lies anterior, not outpouched

C. Astigmatism

- Due to unequal corneal curvature
- No posterior segment abnormality

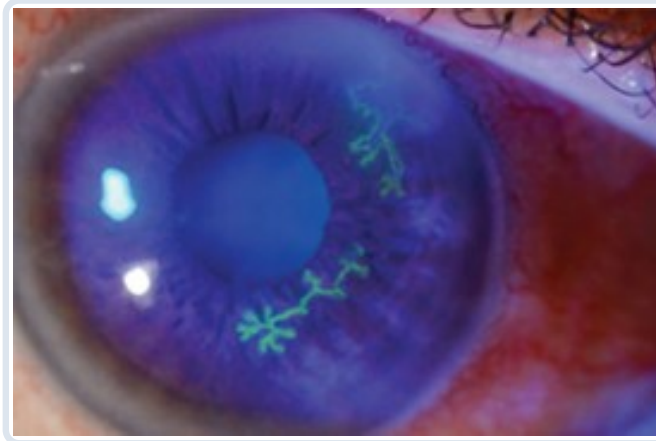
D. Corneal ulcer

- Anterior segment pathology
- Seen on cornea, not on fundus/ophthalmoscopy



QUESTION

A patient presents with a linear, branching corneal ulcer as shown in the image, decreased corneal sensation, along with loss of corneal sensation. What is the most likely diagnosis?



A Pseudomonas Keratitis

B Acanthamoeba Keratitis

C Fungal Keratitis

D Viral Keratitis

CORRECT

RIGHT ANSWER

OK

D. Viral Keratitis

WHY THIS IS RIGHT

Herpes simplex viral keratitis presents with a dendritic (branching) corneal ulcer and reduced corneal sensation.

- Linear, branching ulcer with terminal bulbs (seen on fluorescein staining)
- Decreased corneal sensation (important clue)
- Pain, redness, photophobia

Pathophysiology:

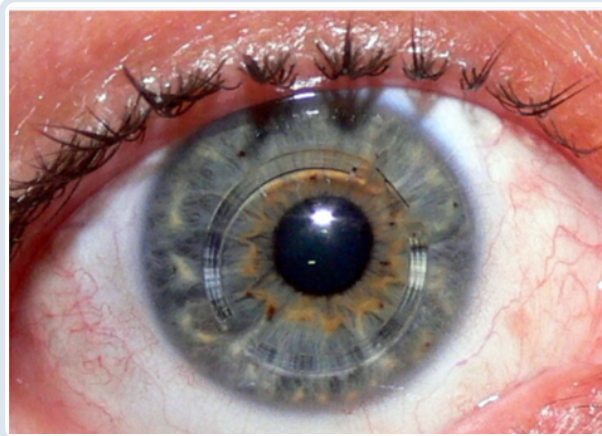
- HSV infects corneal epithelium -> dendritic epithelial ulcer

Why not others:

- Pseudomonas -> rapidly progressive suppurative ulcer
- Acanthamoeba -> severe pain, ring infiltrate
- Fungal -> feathery margins, satellite lesions

QUESTION

| What is the indication of this procedure?



A Keratoconus

CORRECT

B Vogt's limbal girdle

C Keratoglobus

D Corneal dystrophy

RIGHT ANSWER

OK A. Keratoconus

WHY THIS IS RIGHT

The image shows intrastromal corneal ring segments (ICRS), which are used in the management of keratoconus.

- Keratoconus is a progressive ectatic disorder causing corneal thinning and conical protrusion, leading to irregular astigmatism and visual distortion.

Indication of the procedure:

- To flatten the cornea and improve refractive error in moderate keratoconus
- Used when spectacles/contact lenses are not tolerated
- Helps delay or avoid corneal transplantation

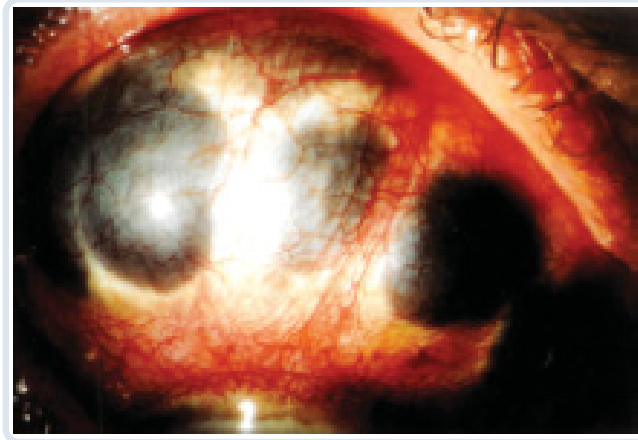
Mechanism: Ring segments inserted in corneal stroma -> arc-shortening effect -> central corneal flattening

Not used for:

- Vogt's limbal girdle (degenerative peripheral opacity)
- Keratoglobus (diffuse thinning)
- Corneal dystrophies (genetic, require different management)

QUESTION

A 35-year-old woman is diagnosed with rheumatoid arthritis. What associated complication is shown in the image?



A Scleromalacia perforans

CORRECT

B Ciliary staphyloma

C Coloboma

D Malignant melanoma

RIGHT ANSWER

OK

A. Scleromalacia perforans

WHY THIS IS RIGHT

Scleromalacia perforans is a severe ocular complication of rheumatoid arthritis, characterized by painless, progressive thinning of the sclera.

- Painless scleral thinning (important differentiating point)
- Bluish/black discoloration due to underlying uveal show
- Minimal or no inflammation
- Risk of globe perforation
- Autoimmune-mediated necrotizing scleritis without inflammation
- Associated with long-standing rheumatoid arthritis

Why not others:

- Ciliary staphyloma: Outpouching due to raised IOP
- Coloboma: Congenital defect
- Malignant melanoma: Pigmented tumor, not scleral thinning

QUESTION

| What is the dye and filter used as seen in the image?



A Fluorescein dye - visualised under cobalt blue filter

CORRECT

B Lissamine dye - green filter

C Lissamine dye cobalt blue filter

D Fluorescein dye - visualised under green filter

RIGHT ANSWER

OK **A. Fluorescein dye - visualised under cobalt blue filter**

WHY THIS IS RIGHT

Fluorescein staining is used to detect corneal epithelial defects and is best visualized under a cobalt blue filter.

- Fluorescein dye accumulates in areas of epithelial loss
- Under cobalt blue light, it appears bright green (fluorescent)
- Commonly used in corneal ulcer, abrasion, dendritic ulcers (HSV), and tear film evaluation

Clinical relevance:

- Helps identify pattern of lesions (e.g., dendritic pattern in herpes keratitis)
- Used in Seidel test to detect aqueous leak

Why not others:

- Lissamine green: Stains devitalized cells, viewed in white light
- Green filter: Not used for excitation of fluorescein

QUESTION

A patient presented with redness and extreme pain in the eye. There is also diminution of vision and discharge after the use of contact lenses. Which organism can be the causative agent here?

A Acanthamoeba

CORRECT

B Listeria

C Staphylococcus aureus

D Streptococcus pyogenes

RIGHT ANSWER

OK

A. Acanthamoeba

WHY THIS IS RIGHT

Acanthamoeba keratitis is a severe, vision-threatening corneal infection classically associated with contact lens use, especially with poor hygiene or exposure to contaminated water.

- Severe pain disproportionate to clinical findings (hallmark)
- Redness, photophobia, ↓ vision
- Ring-shaped corneal infiltrate (late sign)
- History of contact lens use / water exposure

Pathogenesis:

- Free-living protozoa (Acanthamoeba) invade cornea
- Often introduced via contaminated lens solutions or water

Why not others:

- Staphylococcus / Streptococcus: Cause bacterial keratitis but pain is not disproportionately severe
- Listeria: Rare ocular infection, not typical in contact lens users

QUESTION

A 26-year-old female patient complains of a nodular lesion near the limbus as shown, with mild discomfort that resolves after treatment with the use of a topical drug. What can be the most probable diagnosis?



- A** Scleritis with Rheumatoid Arthritis
- B** Episcleritis with Rheumatoid Arthritis
- C** Pinguecula and Dry Eye
- D** Pterygium and Astigmatism

CORRECT

RIGHT ANSWER

- OK** **B. Episcleritis with Rheumatoid Arthritis**

WHY THIS IS RIGHT

Episcleritis is a benign, self-limiting inflammation of the episclera presenting with a localized nodular redness near the limbus, mild discomfort, and rapid response to topical therapy.

- Sectoral or nodular redness near limbus
- Mild pain or discomfort (not severe)
- No significant vision loss
- Vessels are superficial and mobile
- Blanch with phenylephrine

Association: Can be associated with systemic diseases, especially rheumatoid arthritis, but often idiopathic

Why not others:

- Scleritis: Severe pain, deep violaceous redness, does not blanch, vision-threatening
- Pinguecula: Yellowish degenerative lesion, non-inflammatory
- Pterygium: Fibrovascular growth crossing cornea

QUESTION

A patient presents with guttate lesions in one eye and bullous keratopathy in the other eye. What is the most likely diagnosis?

A Fuchs endothelial dystrophy

CORRECT

B Interstitial keratitis

C Viral corneal ulcer

D Keratoconjunctivitis

RIGHT ANSWER

OK A. Fuchs endothelial dystrophy

WHY THIS IS RIGHT

Fuchs endothelial dystrophy is a progressive disorder of the corneal endothelium characterized by guttata formation and eventual stromal and epithelial edema leading to bullous keratopathy.

Key clinical progression:

- Early stage:
- Guttate lesions (corneal guttata) on Descemet's membrane
- Late stage:
- Endothelial failure -> corneal edema
- Formation of bullae (bullous keratopathy) -> pain, decreased vision

Pathophysiology:

- Loss of endothelial cells -> impaired corneal deturgescence (fluid pump function)
- Leads to fluid accumulation in cornea

Why not others:

- Interstitial keratitis: Stromal inflammation, not endothelial dystrophy
- Viral corneal ulcer: Epithelial defect, dendritic pattern
- Keratoconjunctivitis: Surface inflammation, no guttata

QUESTION

| Which ocular condition is treated as shown in the image?



A A) Keratoconus

CORRECT

B B) Cataract

C C) Corneal ulcer

D D) Glaucoma

RIGHT ANSWER

OK A. A) Keratoconus

WHY THIS IS RIGHT

Intracorneal ring segments (Intacs) are used in the management of keratoconus, a progressive corneal ectasia.

- Intacs are placed in the corneal stroma
- They flatten and regularize the corneal curvature
- Improve irregular astigmatism and visual acuity

Indications:

- Mild to moderate keratoconus
- Contact lens intolerance
- Alternative to delay or avoid keratoplasty

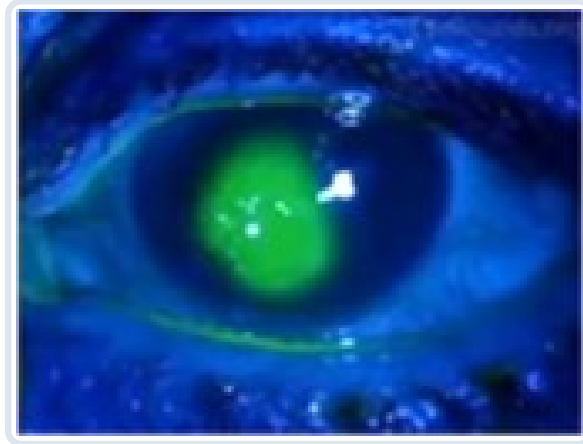
Often combined with corneal collagen cross-linking (CXL) for stabilization

Why not others:

- Cataract: Treated with lens extraction
- Corneal ulcer: Treated medically (antibiotics/antifungals)
- Glaucoma: Managed with medications/surgery affecting aqueous outflow

QUESTION

Which of the following accurately pairs the diagnostic stain with the corneal condition it indicates?



- A** Cobalt blue with trypan blue for corneal ulcer
- B** Cobalt green with Rose Bengal stain for corneal opacity
- C** Cobalt blue with fluorescein stain for corneal ulcer CORRECT
- D** Cobalt blue with lissamine green for corneal abrasion

RIGHT ANSWER

- OK** **C. Cobalt blue with fluorescein stain for corneal ulcer**

WHY THIS IS RIGHT

Fluorescein staining viewed under cobalt blue light is the standard method to detect corneal epithelial defects, such as corneal ulcers and abrasions.

- Fluorescein dye stains areas where corneal epithelium is absent
- Under cobalt blue light, these areas appear bright green

Clinical applications:

- Corneal ulcer
- Corneal abrasion
- Dendritic ulcers (herpes simplex)
- Detection of foreign body tracks

Why other options are incorrect:

- Trypan blue: Used in cataract surgery (capsule staining), not cornea
- Rose Bengal / Lissamine green: Stain devitalized or damaged epithelial cells, mainly used in dry eye, not primary for ulcers
- Cobalt green light: Not the standard filter (cobalt blue is used)

QUESTION

Which surgical procedure should a 21-year-old boxer avoid to maintain optimal visual health?

A RK

CORRECT

B PRK

C LASIK

D SMILE

RIGHT ANSWER

OK
A. RK

WHY THIS IS RIGHT

Radial keratotomy (RK) should be avoided in individuals prone to ocular trauma (e.g., boxers), as it causes permanent structural weakening of the cornea.

Why RK is contraindicated:

- Involves deep radial incisions in the cornea
- These incisions never regain full strength
- High risk of corneal rupture even with minor trauma

Why other options are relatively safer:

- PRK, LASIK, SMILE:
- Do not involve full-thickness radial cuts
- Better structural integrity compared to RK
- Though trauma precautions still apply, they are safer than RK

QUESTION

| Pterygium can lead to which of the following?

A Astigmatism

CORRECT

B Eye Pain

C Macular edema

D Purulent Discharge

RIGHT ANSWER

OK

A. Astigmatism

WHY THIS IS RIGHT

Pterygium is a fibrovascular growth of conjunctiva extending onto the cornea that can distort corneal curvature, leading to astigmatism.

Mechanism:

- Progressive growth over cornea -> mechanical traction and flattening (especially horizontal meridian)
- Causes irregular or with-the-rule astigmatism -> decreased visual acuity

Why not others:

- Eye pain: Usually asymptomatic or mild irritation, not significant pain
- Macular edema: Posterior segment pathology, unrelated to pterygium
- Purulent discharge: Seen in bacterial conjunctivitis, not pterygium

QUESTION

I In the case of macular corneal opacity, which of the following is true?

- A** Iris details are seen.
- B** Pupil margins are seen. CORRECT
- C** Both iris details and pupil margins are seen.
- D** Both iris details and pupil margins are not seen.

RIGHT ANSWER

- OK** **B. Pupil margins are seen.**

WHY THIS IS RIGHT

Macular corneal opacity is a moderate-grade corneal opacity in which:

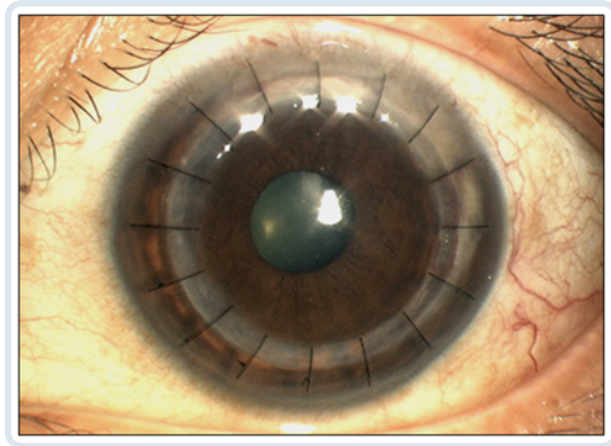
- Pupil margins are visible
- Iris details are NOT clearly visible

Grading of corneal opacities :

- Nebular opacity (mild):
 - Iris details clearly visible
- Macular opacity (moderate):
 - Pupil margin visible, but iris details blurred
- Leucomatous opacity (dense):
 - Neither iris nor pupil details visible

QUESTION

Which of the following correctly identifies the storage medium used for preserving a corneal graft and the type of suture material shown in the image below?



- A** Moist chamber; Vicryl
- B** McCarey Kaufman medium; Prolene
- C** Optisol; Silk
- D** **McCarey Kaufman medium; Nylon**

CORRECT

RIGHT ANSWER

- OK** **D. McCarey Kaufman medium; Nylon**

WHY THIS IS RIGHT

Successful corneal transplantation (keratoplasty) requires proper donor cornea preservation and appropriate suture material for graft fixation.

Corneal preservation media: McCarey-Kaufman (MK) medium

- Short-term storage ($\approx$ 48-96 hours) at 4°C
- Commonly used in eye banks (especially in resource-limited settings)

Suture material in keratoplasty: Nylon (10-0 monofilament)

- Non-absorbable
- Minimal tissue reaction
- Provides long-term tensile strength $\rightarrow$ ideal for corneal graft suturing

Why other options are incorrect:

- Vicryl: Absorbable $\rightarrow$ loses strength $\rightarrow$ not suitable for cornea
- Prolene: Non-absorbable but less commonly used than nylon in cornea
- Silk: Causes more tissue reaction $\rightarrow$ avoided in ocular surgery

QUESTION

A 30-year-old man presents with pain, redness and photophobia. He has a history of contact lens usage. An eye examination is shown below. Which of the following stains is used to stain the causative organism?



A Calcofluor white stain

CORRECT

B Gram's stain

C Ziehl-Nelsen Acid-fast stain

D Modified Gocrott's-Gomori methenamine silver stain

RIGHT ANSWER

OK

A. Calcofluor white stain

WHY THIS IS RIGHT

A contact lens user presenting with pain, redness, photophobia, and ring-shaped corneal infiltrate suggests *Acanthamoeba* keratitis.

- The causative organism (*Acanthamoeba*, a free-living protozoa) is best demonstrated using Calcofluor white stain, which binds to cyst walls and fluoresces under UV light.

Supporting clinical clues:

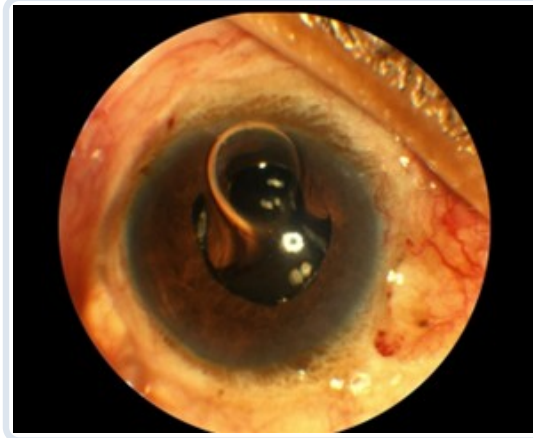
- Severe pain out of proportion to clinical findings
- History of contact lens use / exposure to contaminated water
- Ring-shaped stromal infiltrate (classic but late sign)

Why not others:

- Gram stain: Bacterial keratitis
- Ziehl-Neelsen stain: *Mycobacteria* / *Nocardia*
- Gomori methenamine silver stain: Fungi

QUESTION

A 27-year-old male presents with myopic astigmatism comes with acute onset pain, lowering of visual acuity. He has a history of frequent change of glasses and eye rubbing. An image of the eye just after a procedure is shown below. Which procedure has been done?



A Intracameral C3F8 injection

CORRECT

B DSAEK

C DALK

D Corneal collagen crosslinking with riboflavin

RIGHT ANSWER

OK

A. Intracameral C3F8 injection

WHY THIS IS RIGHT

Acute hydrops in keratoconus (suggested by history of progressive myopic astigmatism, frequent change of glasses, and eye rubbing) results from a tear in Descemet's membrane, leading to stromal edema and sudden vision loss.

Management principle:

Intracameral injection of long-acting gas (e.g., C3F8 or SF6) is used to:

- Tamponade Descemet's membrane tear
- Reduce aqueous influx into stroma
- Accelerate resolution of corneal edema
- Improve visual recovery

Why not other options:

- DSEAK: Endothelial keratoplasty for endothelial failure
- DALK: For stromal diseases, not acute hydrops
- Collagen cross-linking: Used to halt progression, not treat hydrops

QUESTION

A patient presents with a limbal scar, a deep anterior chamber, and absence of the lens on slit-lamp examination. He reports difficulty with both distance and near vision. His vision improves to 6/9 with a +11D lens. Which of the following is the most likely diagnosis?

A Pseudophakia

B Aphakia

CORRECT

C Subluxated lens

D Presbyopia

RIGHT ANSWER

OK

B. Aphakia

WHY THIS IS RIGHT

Aphakia is the absence of the crystalline lens, leading to marked hypermetropia.

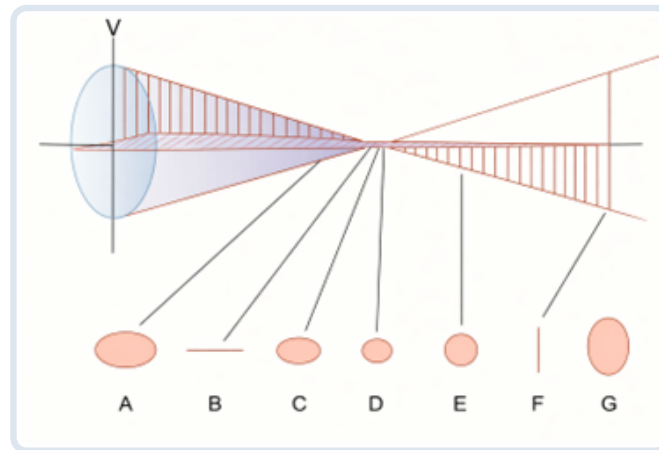
- Deep anterior chamber
- Absence of lens on slit lamp
- Severe blurred vision (distance + near)
- Improved with high plus lens (+10 to +12 D)

Clinical clues in question:

- Limbal scar -> previous surgery/trauma
- +11 D correction -> classic for aphakia
- Why not others:
 - Pseudophakia -> artificial IOL present
 - Subluxation -> lens still visible
 - Presbyopia -> only near vision affected

QUESTION

Which type of refractive error is illustrated in the given image?



A Presbyopia

B Myopia

C Astigmatism

CORRECT

D Hypermetropia

RIGHT ANSWER

OK C. Astigmatism

WHY THIS IS RIGHT

Astigmatism is a refractive error where light rays focus at different planes instead of a single point due to unequal curvature of the cornea or lens.

- Formation of two focal lines (not a point focus)
- Leads to blurred or distorted vision
- Can affect both near and distance vision

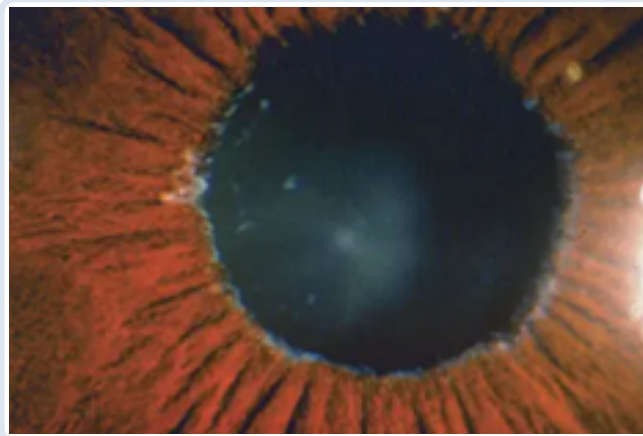
Optical concept: Produces conoid of Sturm with two principal meridians

Correction of astigmatism :

- Cylindrical lenses (aligned along specific meridian)
- Toric contact lenses or refractive surgery

QUESTION

| What is the diagnosis?



- A** Intraocular foreign body
- B** Pseudoexfoliation syndrome

CORRECT

- C** Ocular trauma
- D** Vossius ring

RIGHT ANSWER

- OK** **B. Pseudoexfoliation syndrome**

WHY THIS IS RIGHT

Pseudoexfoliation syndrome is characterized by deposition of whitish, flaky fibrillar material on the anterior lens capsule and pupillary margin, often forming a central disc with peripheral ring and clear intermediate zone (bull's-eye pattern).

- Gray-white deposits on lens capsule (as seen in image)
- Poor pupillary dilatation
- Zonular weakness -> lens subluxation risk
- Associated with secondary open-angle glaucoma

Pathophysiology:

- Abnormal production and accumulation of extracellular fibrillary material in *anterior segment structures*

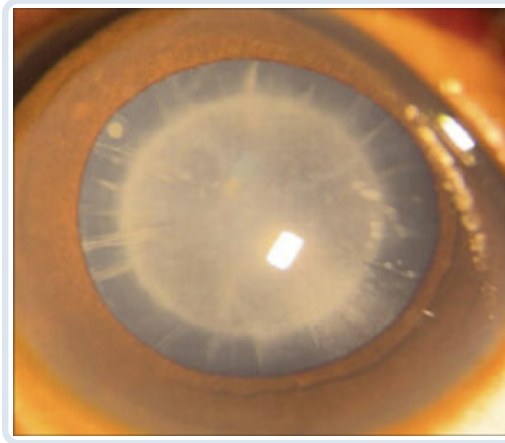
Why not others:

- Vossius ring: Pigment imprint after blunt trauma.
- Intraocular foreign body: Localized lesion, not diffuse deposits.
- Ocular trauma: No characteristic pseudoexfoliative material.

*

QUESTION

A 60-year-old female patient complaints of blurring of vision and gives history of Diabetes for the past 10 years. On examination findings as shown in image were seen. What is the most likely diagnosis and treatment for the same.



- A** Sunflower cataract with Lens extraction
- B** Rosette cataract with control of blood sugar level
- C** Immature cataract with Phacoemulsification + IOL implantation
- D** Zonular Cataract with Lensectomy

CORRECT

RIGHT ANSWER

- OK** **C. Immature cataract with Phacoemulsification + IOL implantation**

WHY THIS IS RIGHT

Senile (age-related) immature cataract presents with progressive blurring of vision and radial spoke-like cortical opacities seen on slit-lamp examination.

- Gradual, painless diminution of vision
- Cortical spokes / lens opacities (as in image)
- Often associated with aging and systemic diseases like diabetes

Management:

- Definitive treatment = Phacoemulsification with intraocular lens (IOL) implantation
- Surgery is indicated when vision is significantly affected

Why not others:

- Sunflower cataract: Seen in Wilson's disease
- Rosette cataract: Typically seen after blunt trauma.
- Zonular cataract: Congenital, involves specific zones

QUESTION

A 10-year-old child presents with developmental delay, recurrent seizures, and history of thromboembolic episodes. On examination, he has marfanoid habitus, osteoporosis, and downward dislocation of the lens. Which of the following vitamin supplementation is most appropriate?

A Vitamin B6

CORRECT

B Vitamin B12

C Thiamine

D Vitamin B2

RIGHT ANSWER

OK

A. Vitamin B6

WHY THIS IS RIGHT

The clinical picture describes homocystinuria (most commonly due to cystathionine β -synthase deficiency), an amino acid metabolism disorder.

- Intellectual disability (mental retardation)
- Seizures
- Thromboembolic tendency
- Osteoporosis / marfanoid habitus
- Ectopia lentis (downward displacement of lens)

Biochemical basis:

- Defect in conversion of homocysteine $\rightarrow$ cystathionine
- Leads to $\uparrow$ homocysteine and $\uparrow$ methionine

Treatment:

- Vitamin B6 (pyridoxine) is a cofactor for cystathionine β -synthase
- Some patients are B6-responsive, leading to $\downarrow$ homocysteine levels

Why not others:

- Vitamin B12: Involved in remethylation of homocysteine $\rightarrow$ methionine (different pathway)
- Thiamine (B1): Carbohydrate metabolism
- Vitamin B2: FAD-dependent reactions

QUESTION

A 2-month-old baby presented with the following symptoms. What is the ideal treatment for the child?



A Immediate surgery

CORRECT

B First try medical management

C Surgery after 2 years

D Surgery after 6 months of age

RIGHT ANSWER

OK

A. Immediate surgery

WHY THIS IS RIGHT

Congenital cataract in infants is a vision-threatening condition requiring urgent surgical intervention *to prevent irreversible amblyopia.*

- Leukocoria (white pupillary reflex) in a 2-month-old
- Bilateral involvement in this image
- Management principle:
 - Immediate cataract extraction (ideally within first few weeks-months of life)
 - Followed by:
 - Optical correction (aphakic glasses/contact lens/IOL later)
 - Amblyopia therapy

Why urgency matters:

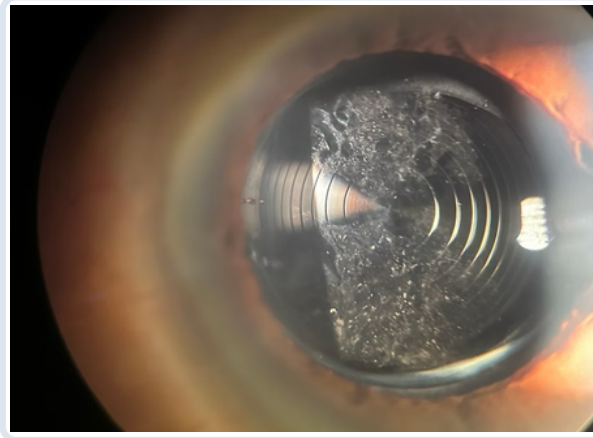
- Visual development is critical in early infancy
- Delay -> permanent visual impairment (deprivation amblyopia)

Why not others:

- Medical management has no role
- Delayed surgery -> poor visual outcome

QUESTION

A patient had a cataract surgery 3 years back, now complains of decrease in vision and presented with the following slit lamp image. What is the diagnosis?



A Posterior capsular opacification

CORRECT

B Pseudophakic Bullous Keratopathy

C Corneal dystrophy

D Posterior Subcapsular Cataract

RIGHT ANSWER

OK

A. Posterior capsular opacification

WHY THIS IS RIGHT

Posterior capsular opacification (PCO) is the most common late complication of cataract surgery, presenting months to years later with gradual, painless decrease in vision.

- Proliferation and migration of residual lens epithelial cells onto the posterior capsule
- Leads to fibrosis or pearl (Elschnig pearls) formation -> opacification

Key clinical features:

- Gradual painless visual decline after initially good post-op vision
- Glare and decreased contrast sensitivity
- Slit lamp: opacified posterior capsule behind IOL

Management: Nd: YAG laser posterior capsulotomy -> creates a central opening in the capsule -> restores vision

Why not others:

- Pseudophakic bullous keratopathy: Corneal edema, painful, epithelial bullae
- Corneal dystrophy: Bilateral, hereditary corneal changes
- Posterior subcapsular cataract: Occurs in natural lens, not after IOL implantation

QUESTION

Which of the following is true regarding viscoelastic substances used in cataract surgery?

- A** It can be left in the eye at the end of surgery.
- B** It damages the corneal epithelium or the endothelium.
- C** SF6 and perfluorocarbon are commonly used viscoelastics.
- D** It is used to maintain the anterior chamber during capsulorhexis and IOL insertion. CORRECT

RIGHT ANSWER

- OK** **D. It is used to maintain the anterior chamber during capsulorhexis and IOL insertion.**

WHY THIS IS RIGHT

Ophthalmic viscoelastic devices (OVDs) are essential in cataract surgery to maintain anterior chamber depth and protect intraocular structures.

Primary function:

- Maintain anterior chamber during critical steps:
- Capsulorhexis
- Phacoemulsification
- Intraocular lens (IOL) implantation
- Provide space and stability inside the eye
- Protect corneal endothelium from surgical trauma

Why other options are incorrect:

- A) Can be left in the eye:
- Incorrect -> must be removed at the end
- Retained OVD can cause postoperative rise in IOP
- B) Damages cornea:
- Incorrect -> actually protects endothelium
- C) SF6 & perfluorocarbon:
- These are intraocular gases/liquids used in vitreoretinal surgery, not viscoelastics

QUESTION

Four weeks after cataract surgery, a patient presents with pain, decreased vision, and redness in the eye. Examination reveals cells in the anterior chamber and vitreous haze. Identify the diagnosis and the associated microorganism:

- A PCO; Propionibacterium acne
- B Toxic Anterior Segment Syndrome; E.coli
- C Endophthalmitis; Staph epidermidis**
- D Sympathetic ophthalmia; Mucormycosis

CORRECT

RIGHT ANSWER

- C. Endophthalmitis; Staph epidermidis**

WHY THIS IS RIGHT

Postoperative endophthalmitis is an acute, sight-threatening intraocular infection occurring after procedures like cataract surgery, presenting with pain, decreased vision, redness, anterior chamber reaction, and vitreous haze.

- *Most common organism for early endophthalmitis* (<6 weeks) : *Staphylococcus epidermidis* (normal conjunctival flora); P.acnes >6 weeks
- Infection involves both anterior chamber and vitreous -> differentiates from sterile inflammation

Clinical differentiation:

- Endophthalmitis:
 - Painful
 - Severe vision loss
 - Vitreous involvement (haze)
- TASS (toxic anterior segment syndrome):
 - Sterile, painless
 - Limited to anterior segment only

Why not other options:

- Posterior capsular opacification: Painless, late complication
- Sympathetic ophthalmia: Bilateral autoimmune condition

QUESTION

A patient develops bilateral ocular inflammation following a penetrating injury to one eye. Examination shows granulomatous keratic precipitates and vitritis. Which type of uveitis is most characteristic?

A Anterior uveitis

B Intermediate uveitis

C Posterior uveitis

D Panuveitis

CORRECT

RIGHT ANSWER

OK

D. Panuveitis

WHY THIS IS RIGHT

Sympathetic ophthalmia is a bilateral granulomatous panuveitis that occurs after penetrating ocular injury or surgery to one eye, leading to an autoimmune reaction against uveal antigens.

- Bilateral involvement (injured eye + sympathizing eye)
- Granulomatous inflammation (mutton-fat keratic precipitates)
- Panuveitis -> involvement of anterior chamber, vitreous, and choroid
- Dalen-Fuchs nodules (yellow-white lesions at RPE)

Pathophysiology:

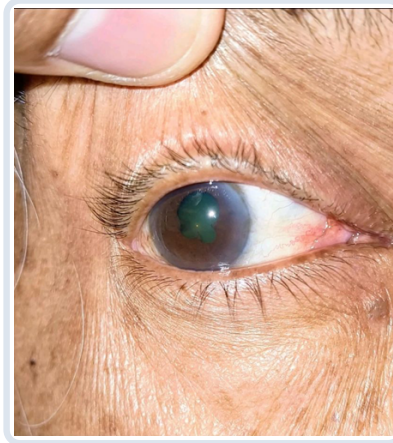
- Exposure of uveal antigens after trauma -> T-cell mediated autoimmune response

Why not others:

- Anterior uveitis (acute/chronic): Only anterior segment involved.
- Pars planitis: Intermediate uveitis (vitreous + pars plana).

QUESTION

A 65 year old male patient presented with sudden, painful diminution of vision, difficulty in vision in light, and circumferential congestion with hypopyon as shown. What is the likely diagnosis?



A Acute Congestive Glaucoma

B Acute Anterior Uveitis

CORRECT

C Acute Conjunctivitis

D Episcleritis

RIGHT ANSWER

OK

B. Acute Anterior Uveitis

WHY THIS IS RIGHT

Acute anterior uveitis (iritis) presents with painful red eye, photophobia, decreased vision, and circumcorneal (ciliary) congestion, often with cells, flare, and hypopyon in the anterior chamber.

- Circumcorneal congestion (ciliary flush)
- Photophobia (difficulty in light)
- Pain + decreased vision
- Small, irregular pupil (due to sphincter spasm/posterior synechiae)
- Hypopyon (in severe inflammation)

Pathophysiology:

- Inflammation of iris and ciliary body
- Breakdown of blood-aqueous barrier -> cells & protein (flare) in AC

Why not others:

- Acute glaucoma: Mid-dilated pupil, steamy cornea, very high IOP
- Conjunctivitis: Diffuse redness, discharge, no photophobia or hypopyon
- Episcleritis: Mild discomfort, localized redness, no AC reaction

QUESTION

An elderly woman presents with a sudden onset of severe ocular pain, redness, and decreased vision. On examination, she has a hazy cornea, a fixed mid-dilated pupil, and a shallow anterior chamber. What is the most likely diagnosis?

A Acute angle closure Glaucoma

CORRECT

B Acute anterior Uveitis

C Acute conjunctivitis

D Open angle Glaucoma

RIGHT ANSWER

OK

A. Acute angle closure Glaucoma

WHY THIS IS RIGHT

Acute angle-closure glaucoma (AACG) is an ophthalmic emergency caused by sudden obstruction of aqueous outflow, leading to a rapid rise in intraocular pressure.

- Severe ocular pain + headache
- Red eye with hazy (edematous) cornea
- Fixed mid-dilated pupil
- Shallow anterior chamber
- Sudden decrease in vision ± halos

Pathophysiology: Closure of anterior chamber angle → blocked trabecular outflow → ↑ IOP

Why not others:

- Uveitis → constricted pupil, not mid-dilated
- Conjunctivitis → no vision loss or high IOP
- Open-angle glaucoma → painless, gradual

*

QUESTION

An infant presents to ophthalmology OPD with lacrimation and photophobia. What is the diagnosis?



A Mucopolysaccharidoses

B Congenital Cataract

C **Congenital Glaucoma**

CORRECT

D Ophthalmia neonatorum

RIGHT ANSWER

OK

C. Congenital Glaucoma

WHY THIS IS RIGHT

Congenital glaucoma (buphthalmos) presents in infants with the classic triad of:

- Epiphora (lacrimation)
- Photophobia
- Blepharospasm

Key clinical features:

- Enlarged eye (buphthalmos) due to raised IOP
- Corneal edema -> hazy/blue cornea (as seen in image)
- Increased corneal diameter (>12 mm)
- Optic disc cupping (late)

Developmental anomaly of trabecular meshwork -> impaired aqueous drainage -> ↑ IOP

Why not others:

- Congenital cataract: White pupillary reflex (leukocoria), no photophobia triad
- Ophthalmia neonatorum: Purulent discharge, not corneal haze
- Mucopolysaccharidosis: Corneal clouding but systemic features present

QUESTION

A 55-year-old woman presents to the emergency department with severe unilateral eye pain, headache, and blurred vision after watching a movie in a dark theatre. On examination, the eye is red, cornea is hazy, and pupil is mid-dilated and non-reactive. What is the first line of management?

A Mannitol + Pilocarpine

CORRECT

B Mannitol + Moxifloxacin

C Mannitol + Atropine

D Mannitol + lubricating eye drops

RIGHT ANSWER

OK

A. Mannitol + Pilocarpine

WHY THIS IS RIGHT

Sudden eye pain and decreased vision after being in a dark environment (movie theater) suggests acute angle-closure glaucoma (AACG).

- Darkness -> pupillary dilation (mid-dilated pupil)
- Leads to pupillary block -> iris bows forward -> angle closure
- Rapid rise in IOP

First-line management:

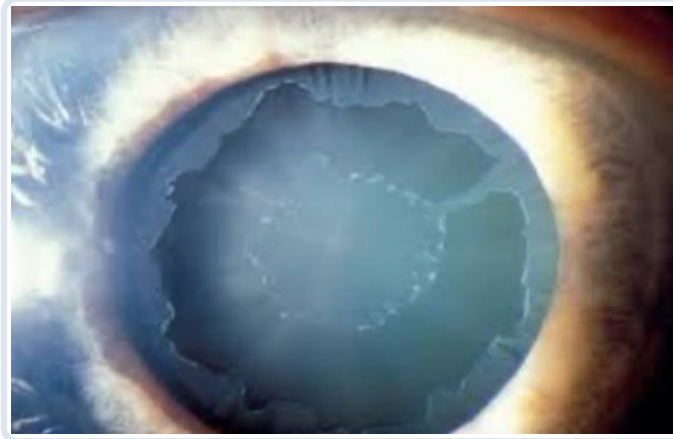
- Mannitol (IV): Rapidly lowers IOP by osmotic dehydration
- Pilocarpine: Causes miosis -> opens angle by pulling iris away from trabecular meshwork

Why not others:

- Moxifloxacin: Antibiotic, no role
- Atropine: Causes mydriasis -> worsens angle closure
- Lubricants: No role in IOP reduction

QUESTION

An elderly patient presents with white, dandruff-like deposits on the anterior surface of the lens, observed during a slit-lamp examination. What is the most likely diagnosis?



A Pseudoexfoliation syndrome

CORRECT

B Iris cyst

C Persistent pupillary membrane

D Pigment dispersion syndrome

RIGHT ANSWER

OK

A. Pseudoexfoliation syndrome

WHY THIS IS RIGHT

Pseudoexfoliation syndrome is characterized by deposition of whitish, dandruff-like fibrillar material on the anterior lens capsule, typically seen in elderly patients.

Classic slit-lamp finding: Three-zone pattern on lens:

- Central disc
- Clear intermediate zone
- Associated with secondary open-angle glaucoma (pseudoexfoliative glaucoma)
- Causes zonular weakness -> risk of lens subluxation and complications during cataract surgery

Why not others:

- Iris cyst: Localized cystic lesion, not diffuse deposits
- Persistent pupillary membrane: Congenital strands across pupil
- Pigment dispersion syndrome: Pigment deposition (not white flakes), seen in younger patients

QUESTION

A 80 year old male presented with diminution of vision since 2 years. The right eye was red and painful. On examination, the IOP was 50 mmHg in left eye and 16 mmHg in right eye. The right eye had deep anterior chamber with some cells and flare. What could be the possibility?

A

Phacolytic glaucoma

CORRECT

B

Malignant glaucoma

C

Fuch heterochromic iridocyclitis

D

Phacomorphic glaucoma

RIGHT ANSWER

OK

A. Phacolytic glaucoma

WHY THIS IS RIGHT

Phacolytic glaucoma is a lens-induced secondary open-angle glaucoma seen in elderly patients with long-standing hypermature cataract.

- Elderly patient with gradual visual loss (cataract history)
- Painful red eye
- Very high IOP (e.g., ~50 mmHg)
- Deep anterior chamber (open angle)
- Cells and flare in anterior chamber due to inflammatory response
- Pathophysiology:
 - Leakage of lens proteins from hypermature cataract
 - Macrophages ingest proteins -> block trabecular meshwork
 - Leads to acute rise in IOP
- Why not others:
 - Phacomorphic glaucoma:
 - Due to intumescent lens -> shallow anterior chamber (angle closure)
 - Malignant glaucoma:
 - Shallow/flat anterior chamber, usually post-surgery
 - Fuchs heterochromic iridocyclitis:
 - Chronic, mild uveitis with low-grade inflammation, not markedly raised IOP

*

QUESTION

A patient presents with vision problem in his right eye. On examination IOP of his right eye is 50 mmHg and left eye is 16 mm Hg. Slit lamp examination shows presence of flare cells in anterior chamber and cataractous lens in the right eye. What is the diagnosis of this condition?

A

Phacolytic glaucoma

CORRECT

B

Malignant glaucoma

C

Fuch heterochromic iridocyclitis

D

Phacomorphic glaucoma

RIGHT ANSWER

OK

A. Phacolytic glaucoma

WHY THIS IS RIGHT

Phacolytic glaucoma is a lens-induced secondary open-angle glaucoma caused by leakage of high-molecular-weight lens proteins from a hypermature (cataractous) lens.

- Elderly patient with mature/hypermature cataract
- Very high IOP (e.g., 50 mmHg)
- Open anterior chamber angle
- Flare and cells in anterior chamber (due to macrophages ingesting lens proteins)
- Pain and decreased vision

Pathophysiology:

- Leakage of lens proteins -> macrophage response
- Protein-laden macrophages block trabecular meshwork
- Leads to raised IOP

Why not others:

- Phacomorphic glaucoma:
 - Due to intumescent (swollen) lens causing angle closure
- Malignant glaucoma:
 - Aqueous misdirection, shallow anterior chamber, usually post-surgery
- Fuchs heterochromic iridocyclitis:
 - Chronic mild uveitis, not associated with very high IOP and hypermature lens

QUESTION

A 60-year-old female comes with a sudden onset of pain in the right eye. It is associated with colored halos, decreased visual acuity and a steamy cornea is seen, the pupil is mid-dilated and fixed. IOP is 60 mmHg. What is the diagnosis?

CORRECT

A

Acute angle closure glaucoma

B

Neovascular glaucoma

C

Secondary angle closure glaucoma by uveitis

D

Phacomorphic glaucoma

RIGHT ANSWER

OK

A. Acute angle closure glaucoma

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1a" here and does not include a written explanation for this item.

QUESTION

Krukenberg spindles are seen in:

A Acute angle closure glaucoma

B Open angle glaucoma

C Pigmentary glaucoma

CORRECT

D Juvenile glaucoma

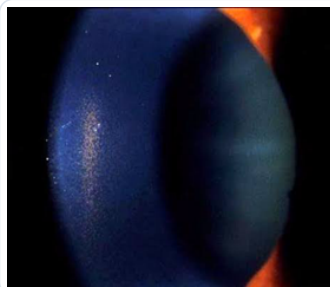
RIGHT ANSWER

OK C. Pigmentary glaucoma

WHY THIS IS RIGHT

Krukenberg spindle is a vertical, spindle-shaped deposition of pigment on the corneal endothelium, classically seen in pigment dispersion syndrome (PDS) and pigmentary glaucoma.

- Posterior bowing of iris -> friction between iris pigment epithelium and zonules
- Release of pigment granules into aqueous humor
- Pigment deposits on:
 - Corneal endothelium -> Krukenberg spindle
 - Trabecular meshwork -> ↑ outflow resistance -> secondary open-angle glaucoma



QUESTION

A patient presents with the eyeball positioned down and out. Which cranial nerve palsy is most likely present?

A Third nerve palsy

CORRECT

B Sixth nerve palsy

C Fourth nerve palsy

D Seventh nerve palsy

RIGHT ANSWER

OK A. Third nerve palsy

WHY THIS IS RIGHT

Third nerve (oculomotor nerve) palsy results in a characteristic “down and out” eye position due to unopposed action of:

- Lateral rectus (CN VI) -> abducts eye
- Superior oblique (CN IV) -> depresses and intorts

Key features:

- Eye deviated down and out
- Ptosis (levator palpebrae paralysis)
- Dilated pupil (parasympathetic involvement)
- Loss of adduction, elevation, and depression

Why not others:

- Sixth nerve -> only abduction defect
- Fourth nerve -> vertical diplopia, head tilt
- Seventh nerve -> facial muscle involvement

*

QUESTION

A patient presents with a pupil that does not react to light but constricts with a near stimulus. Where is the lesion most likely located?

- A Optic nerve
- B Edinger Westphal nucleus
- C Pretectal area of Midbrain**
- D Oculomotor Nerve

CORRECT

RIGHT ANSWER

- C. Pretectal area of Midbrain**

WHY THIS IS RIGHT

Light-near dissociation (pupil does not react to light but constricts to accommodation) indicates a lesion in the pretectal area of the midbrain.

Pathophysiology:

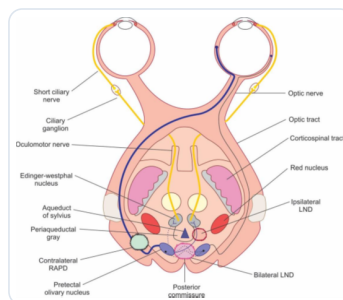
- Light reflex pathway is interrupted at the pretectal nucleus
- Near reflex pathway bypasses pretectal area, so it remains intact

Clinical associations:

- Seen in Argyll Robertson pupil (neurosyphilis)
- Also in dorsal midbrain lesions

Why not others:

- Optic nerve -> both light and near affected
- Edinger-Westphal nucleus -> both reflexes lost
- Oculomotor nerve -> no constriction at all



QUESTION

A patient with a pituitary macroadenoma causing compression of the optic chiasm now develops a characteristic pattern of visual disturbance. What type of visual field defect is expected in this condition?

A Homonymous Hemianopia

B Superior Quadrantanopia

C Bitemporal Hemianopia

CORRECT

D Hemianopia sparing Macular Vision

RIGHT ANSWER

OK

C. Bitemporal Hemianopia

WHY THIS IS RIGHT

Compression of the optic chiasm (classically by a pituitary macroadenoma) leads to bitemporal hemianopia due to involvement of decussating nasal retinal fibers.

- Nasal retinal fibers carry temporal visual field information
- These fibers cross at the optic chiasm
- Chiasmal compression -> loss of both temporal fields

Clinical features:

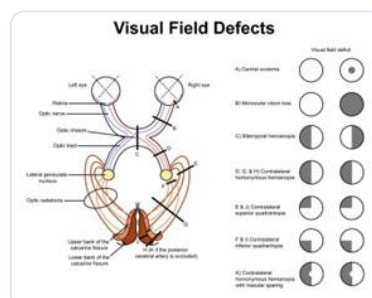
- "Tunnel vision" (loss of peripheral vision)
- Difficulty with side vision (e.g., bumping into objects)

Visual pathway correlation:

- Optic nerve -> monocular loss
- Optic chiasm -> bitemporal hemianopia
- Optic tract -> homonymous hemianopia

Why not others:

- o Homonymous hemianopia -> post-chiasmal lesion (optic tract/radiations)
- o B. Superior quadrantanopia -> temporal lobe (Meyer's loop) lesion
- o D. Macular sparing hemianopia -> occipital cortex lesion



QUESTION

A patient has Bilateral right sided loss of vision. What is the most likely site of lesion?

A Left optic tract

CORRECT

B Right optic tract

C Optic chiasma

D Optic radiation

RIGHT ANSWER

OK A. Left optic tract

WHY THIS IS RIGHT

Bilateral right-sided loss of vision = Right homonymous hemianopia, which indicates a lesion posterior to the optic chiasma on the left side.

Localization logic:

- Right visual field (both eyes) is processed by the left visual pathway
- Lesions after the chiasma cause homonymous hemianopia

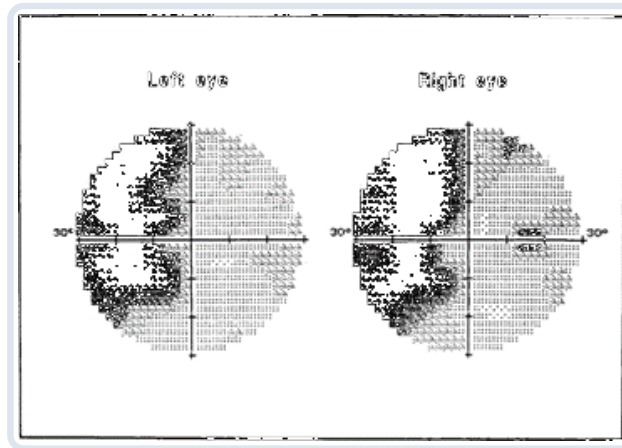
Most likely site: Left optic tract

Why not others:

- Right optic tract: Causes left homonymous hemianopia
- Optic chiasma: Causes bitemporal hemianopia
- Optic radiation: Can cause homonymous hemianopia but often with quadrantic defects depending on location

QUESTION

Which defect is shown below?



- A Bitemporal hemianopia
- B Binasal hemianopia
- C Altitudinal defect
- D Homonymous hemianopia**

CORRECT

RIGHT ANSWER

- OK** D. Homonymous hemianopia

WHY THIS IS RIGHT

Homonymous hemianopia is a visual field defect involving loss of the same half of the visual field in both eyes (e.g., right half in both eyes).

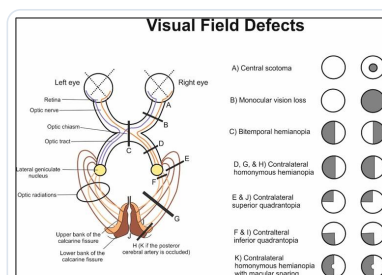
- Occurs due to lesions posterior to the optic chiasm:
 - Optic tract
 - Lateral geniculate body
 - Optic radiations
 - Occipital cortex

Clinical interpretation:

- Right homonymous hemianopia -> lesion in left visual pathway
- Left homonymous hemianopia -> lesion in right visual pathway

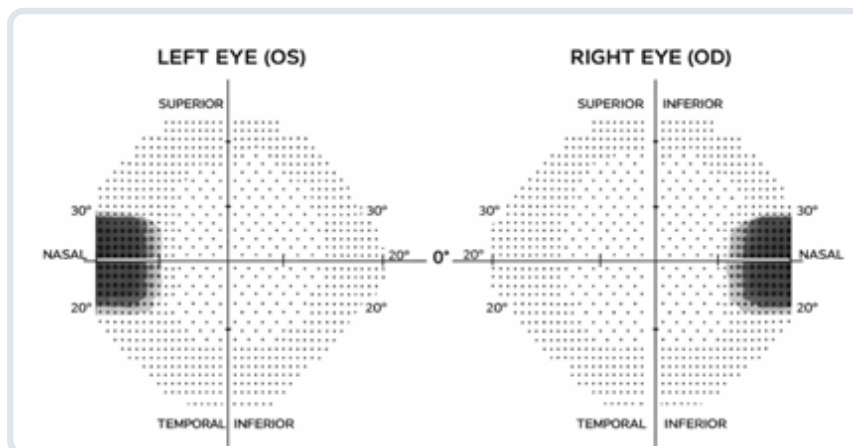
Why not others:

- Bitemporal hemianopia: Chiasmal lesion (e.g., pituitary tumor)
- Binasal hemianopia: Rare, due to bilateral lateral retinal/optic nerve lesions
- Altitudinal defect: Seen in ischemic optic neuropathy



QUESTION

Which visual field defect is shown in the image below?



A Altitudinal field defects

B Enlarged blind spots

CORRECT

C Arcuate field defects

D Roennes nasal step

RIGHT ANSWER

OK

B. Enlarged blind spots

WHY THIS IS RIGHT

Enlarged blind spot-on visual field testing indicates pathology involving the optic nerve head or peripapillary retina.

- Enlargement of the normal physiological blind spot
- Seen temporal to fixation in visual field charts
- Often bilateral if due to raised intracranial pressure

Common causes:

- Papilledema (most important cause)
- Optic disc edema
- Optic neuritis (early)
- Peripapillary lesions

Why not others:

- Altitudinal defect: Seen in ischemic optic neuropathy
- Arcuate scotoma: Seen in glaucoma (follows nerve fiber layer)
- Nasal step (Roenne's): Early glaucomatous defect

QUESTION

| Which is not a feature of 3rd nerve palsy?

A Pupil dilatation

B Ptosis

C Down and out eye

D Abduction limitation

CORRECT

RIGHT ANSWER

OK

D. Abduction limitation

WHY THIS IS RIGHT

Oculomotor nerve (3rd nerve) palsy affects most extraocular muscles except lateral rectus (CN VI) and superior oblique (CN IV).

Typical features of 3rd nerve palsy:

- Ptosis -> paralysis of levator palpebrae superioris
- Pupil dilatation (mydriasis) -> loss of parasympathetic supply
- "Down and out" eye -> unopposed action of lateral rectus and superior oblique
- Loss of adduction, elevation, and depression

Why D is correct (NOT a feature):

- Abduction is preserved because it is controlled by the lateral rectus (CN VI)
- Hence, no abduction limitation in isolated 3rd nerve palsy

QUESTION

| Which cranial nerve provides sensory innervation to the orbit?

A Trigeminal nerve

CORRECT

B Vagus nerve

C Oculomotor nerve

D Facial nerve

RIGHT ANSWER

OK

A. Trigeminal nerve

WHY THIS IS RIGHT

The sensory innervation of the orbit is provided by the ophthalmic division (V1) of the trigeminal nerve (CN V).

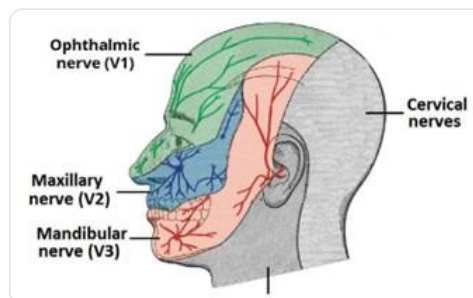
- Trigeminal nerve (CN V) -> main sensory nerve of the face
- Ophthalmic division (V1) supplies:
 - Cornea (highly sensitive)
 - Conjunctiva
 - Eyelids
 - Lacrimal gland
 - Orbit and surrounding structures

Important branches of V1:

- Nasociliary nerve -> corneal sensation (afferent limb of corneal reflex)
- Frontal nerve
- Lacrimal nerve

Why not others:

- Vagus nerve (CN X): Visceral functions, no orbital sensory role
- Oculomotor nerve (CN III): Motor to extraocular muscles + parasympathetic to pupil
- Facial nerve (CN VII): Motor to facial muscles; lacrimation (parasympathetic), but no sensory supply to orbit



QUESTION

A patient presents with difficulty in left gaze; right gaze is normal, but on attempting left gaze, the right eye shows limited movement while the left eye exhibits nystagmus. What is the likely diagnosis?

A Thyroid eye disease

B Right 3rd nerve palsy

C Esotropia

D Right Internuclear Ophthalmoplegia

CORRECT

RIGHT ANSWER

OK

D. Right Internuclear Ophthalmoplegia

WHY THIS IS RIGHT

Internuclear Ophthalmoplegia (INO) results from a lesion in the medial longitudinal fasciculus (MLF), which coordinates conjugate horizontal eye movements between the two eyes.

- On gaze toward the side opposite the lesion:
- Ipsilateral eye (to lesion) -> impaired adduction
- Contralateral eye -> abducting nystagmus
- Convergence is typically preserved (helps differentiate from 3rd nerve palsy)

In this question:

- Difficulty in left gaze
- Right eye fails to adduct + left eye shows nystagmus

-> Indicates right-sided MLF lesion -> Right INO

Why not others:

- Thyroid eye disease: Restrictive myopathy, not abducting nystagmus pattern
- 3rd nerve palsy: Affects multiple movements + ptosis, pupil involvement
- Esotropia: Static deviation, not gaze-specific internuclear defect

QUESTION

Which of the following is/are true about optic neuritis?

- I. Proportionate loss of colour vision and contrast to visual acuity
- II. 70% cases of multiple sclerosis are affected
- III. Treatment is done by oral steroids
- IV. Optic neuritis presents with normal fundus or disc edema

A I and II

B I and III

C I, II and IV

D Only IV

CORRECT

RIGHT ANSWER

OK

D. Only IV

WHY THIS IS RIGHT

I. Proportionate loss of colour vision and contrast to visual acuity : FALSE

- In optic neuritis, colour vision loss is disproportionately severe compared to visual acuity
- Especially red desaturation

II. 70% cases of multiple sclerosis are affected :FALSE

- Optic neuritis is common in MS, but:
- ~20-25% present with optic neuritis as first manifestation
- ~50% of MS patients develop optic neuritis during lifetime

III. Treatment is done by oral steroids :FALSE

- Based on Optic Neuritis Treatment Trial (ONTT):
- IV methylprednisolone -> speeds recovery
- Oral steroids alone are contraindicated (↑ recurrence risk)

IV. Optic neuritis presents with normal fundus or disc edema : TRUE

- Two forms:
- Retrobulbar neuritis -> fundus normal ("**patient sees nothing, doctor sees nothing**")
- Papillitis -> disc edema present

QUESTION

A patient with known myopia presents with complaints of floaters and flashes of light. On examination, the anterior chamber appears deep. What is the most likely diagnosis?

A Exudative retinal detachment

B Tractional retinal detachment

C Central serous retinopathy

D Rhegmatogenous retinal detachment

CORRECT

RIGHT ANSWER

OK

D. Rhegmatogenous retinal detachment

WHY THIS IS RIGHT

Rhegmatogenous retinal detachment (RRD) occurs due to a retinal break/tear, allowing vitreous fluid to accumulate under the retina.

- Flashes (photopsia) + floaters
- Sudden, painless vision loss
- Common in myopia (predisposition to retinal thinning/tears)
- Deep anterior chamber (seen in high myopes)

Pathophysiology:

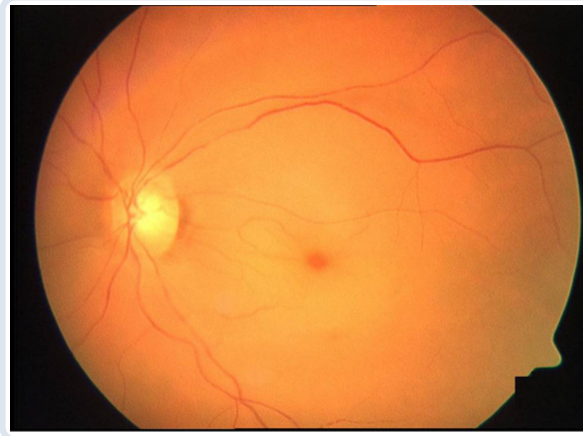
- Vitreous traction -> retinal tear -> fluid enters subretinal space -> detachment

Why not others:

- Exudative RD -> no flashes/floaters (no tear)
- Tractional RD -> seen in diabetes, gradual
- CSR -> central vision distortion, no flashes

QUESTION

A 3-year-old boy presents with mental retardation and an inability to walk. The fundoscopy image is given below. What is the most likely diagnosis?



A Tay-Sachs disease

CORRECT

B Hunter disease

C Hurler syndrome

D Gaucher disease

RIGHT ANSWER

OK

A. Tay-Sachs disease

WHY THIS IS RIGHT

Tay-Sachs disease is a lysosomal storage disorder caused by hexosaminidase A deficiency, leading to accumulation of GM2 ganglioside in neurons.

- Developmental delay / regression
- Hypotonia -> inability to walk
- Exaggerated startle response
- Progressive neurodegeneration

Fundoscopy finding:

- Cherry red spot at macula with surrounding retinal pallor (due to ganglion cell accumulation)

Important distinction:

- Tay-Sachs -> no hepatosplenomegaly
- Gaucher / Niemann-Pick -> organomegaly present

QUESTION

A diabetic patient presented to you with visual acuity of 6/9 in one eye. Further investigations revealed pre-retinal hemorrhages with neovascularization at the optic disc. What is the next step in management?

A Focal laser photocoagulation

B Pan-retinal photocoagulation

CORRECT

C Grid laser photocoagulation

D Scleral buckling

RIGHT ANSWER

OK

B. Pan-retinal photocoagulation

WHY THIS IS RIGHT

Neovascularization at the disc (NVD) with preretinal hemorrhage = Proliferative diabetic retinopathy (PDR), which requires urgent treatment.

Management of choice: Pan-retinal photocoagulation (PRP)

- Causes regression of neovascularization
- Reduces risk of vitreous hemorrhage and tractional retinal detachment

Pathophysiology:

- Retinal ischemia -> ↑ VEGF -> abnormal fragile new vessels
- These vessels bleed -> preretinal/vitreous hemorrhage

Why not others:

- Focal laser: For macular edema
- Grid laser: For diffuse macular edema
- Scleral buckling: For rhegmatogenous retinal detachment

QUESTION

A child presented with hydrocephalus, intracranial calcification, and bilateral chorioretinitis. What can be the most probable diagnosis?

A Congenital Toxoplasmosis

CORRECT

B Congenital Syphilis

C Congenital Rubella

D Neisseria gonorrhea

RIGHT ANSWER

OK **A. Congenital Toxoplasmosis**

WHY THIS IS RIGHT

Congenital toxoplasmosis classically presents with the triad of:

- Hydrocephalus
- Intracranial calcifications (diffuse)
- Chorioretinitis

Etiology: Caused by transplacental infection with *Toxoplasma gondii* (often from undercooked meat or cat feces exposure in mother)

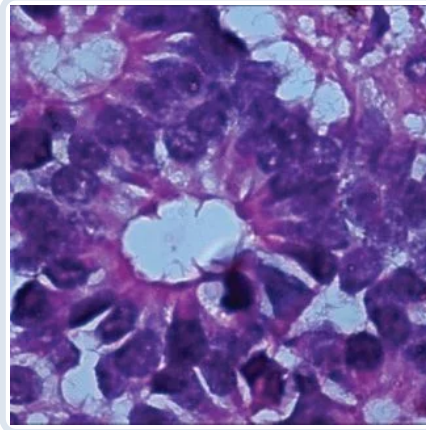
- Diffuse intracranial calcifications (vs periventricular in CMV)
- Severe ocular involvement -> chorioretinitis
- May also have seizures, developmental delay

Why not others:

- Congenital rubella: Cataract, PDA, deafness
- Congenital syphilis: Hutchinson teeth, saddle nose, interstitial keratitis
- Gonorrhea: Neonatal conjunctivitis, not CNS involvement

QUESTION

A child presented with leukocoria and an intraocular mass. On microscopic examination, following appearance was seen. The mass was also positive for synaptophysin. The diagnosis can be:



A Medulloblastoma

B Retinal detachment

C Retinoblastoma

CORRECT

D Pinealoblastoma

RIGHT ANSWER

OK C. Retinoblastoma

WHY THIS IS RIGHT

Retinoblastoma is the most common intraocular malignancy of childhood, classically presenting with leukocoria.

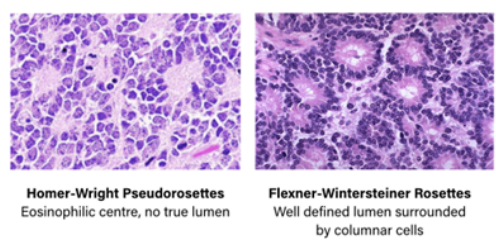
- *Flexner-Wintersteiner rosettes* on histology
- Tumor cells arranged around a central lumen
- Indicative of photoreceptor differentiation
- Scant cytoplasm, hyperchromatic nuclei
- Immunopositivity for synaptophysin -> confirms neuroectodermal origin

Clinical clues:

- Leukocoria
- Strabismus
- Intraocular mass $\pm$ calcification (on imaging)

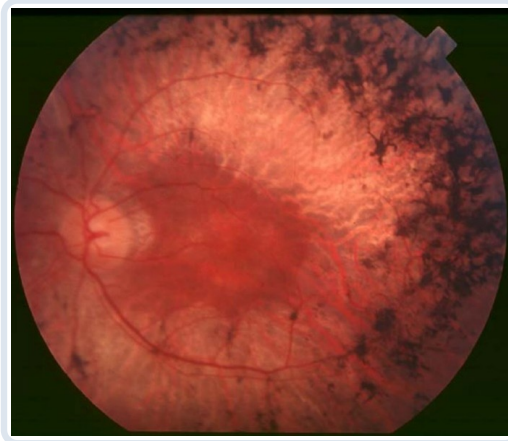
Why not others:

- Medulloblastoma / Pinealoblastoma: CNS tumors (may show rosettes but not intraocular mass)
- Retinal detachment: No tumor cells or rosettes



QUESTION

A patient presents with gradual loss of night vision and peripheral vision. Which of the following conditions is most likely responsible for these symptoms according to the given fundoscopic image?



A Retinitis Pigmentosa

CORRECT

B Fundus flavimaculatus

C Retinal Hemorrhage

D Fundus Albipunctatus

RIGHT ANSWER

OK

A. Retinitis Pigmentosa

WHY THIS IS RIGHT

Retinitis pigmentosa (RP) is a progressive rod-cone dystrophy presenting with:

- Early night blindness (nyctalopia) due to primary degeneration of rod photoreceptors
- Progressive peripheral visual field loss -> tunnel vision due to later involvement of cones

Fundoscopic features (classic triad):

- Bone spicule pigmentation in mid-periphery
- Attenuated (narrow) retinal vessels
- Waxy pallor of optic disc

Why not others:

- Fundus flavimaculatus (Stargardt): Yellow pisciform flecks, central vision loss
- Retinal hemorrhage: Acute condition, not progressive night blindness
- Fundus albipunctatus: White dots but stationary night blindness, not progressive

QUESTION

In evaluating a patient with nonproliferative diabetic retinopathy (NPDR), which of the following findings would be atypical for a classification of 'very severe'?

A Venous bleeding

B Neovascularization of disc

CORRECT

C Retinal hemorrhages

D Microaneurysm

RIGHT ANSWER

OK

B. Neovascularization of disc

WHY THIS IS RIGHT

Very severe nonproliferative diabetic retinopathy (NPDR) is defined by the "4-2-1 rule":

- 4 quadrants of severe retinal hemorrhages/microaneurysms
- 2 quadrants of venous beading
- 1 quadrant of IRMA (intraretinal microvascular abnormalities)

These findings indicate severe ischemia but WITHOUT neovascularization.

| NPDR Severity Level | Findings on Dilated Eye Exam |

| ----- | ----- |

| Mild NPDR | Microaneurysms only |

| Moderate NPDR | Microaneurysms with additional findings (dot & blot hemorrhages, hard exudates, cotton wool spots), but less than severe NPDR |

| Severe NPDR | Any one of the following (4-2-1 rule) and no signs of proliferative DR: • ≥20 intraretinal hemorrhages in all 4 quadrants • Venous beading in ≥2 quadrants • IRMA in ≥1 quadrant |

| Very Severe NPDR | Any two of the 4-2-1 rule features |

QUESTION

A patient of rheumatic heart disease who is noncompliant with treatment presents with complaints of superior field vision loss for the past 1 week. What is the probable cause of the given condition?

A Branched retinal artery occlusion

B Central retinal artery occlusion

C Branched retinal vein occlusion (BRVO)

CORRECT

D Central retinal vein occlusion

RIGHT ANSWER

OK

C. Branched retinal vein occlusion (BRVO)

WHY THIS IS RIGHT

Branch retinal vein occlusion (BRVO) typically presents with sectoral (localized) visual field loss, such as superior field defect, corresponding to the involved retinal quadrant.

In patients with rheumatic heart disease (especially if noncompliant), there is an increased risk of embolism and vascular stasis, predisposing to retinal vein occlusion.

Pathophysiology:

- Venous occlusion (usually at arteriovenous crossing) -> venous congestion
- Leads to retinal hemorrhages, edema, and ischemia
- Causes sectoral visual loss rather than complete vision loss

Why not others:

- Central retinal artery occlusion -> sudden, profound, painless vision loss (entire field)
- Branch retinal artery occlusion -> sectoral loss but typically sudden and arterial ischemic, not linked to venous congestion pattern
- Central retinal vein occlusion -> diffuse retinal involvement ("blood and thunder"), not sectoral

QUESTION

| Which of the following statement is incorrect about Retinitis Pigmentosa?



- A** It primarily affects rod photoreceptors in early stages
- B** Peripheral field loss typically precedes central vision loss
- C** Electroretinography shows reduced a- and b-wave amplitudes
- D** Nyctalopia is a late manifestation of the disease

CORRECT

RIGHT ANSWER

OK

D. Nyctalopia is a late manifestation of the disease

WHY THIS IS RIGHT

Retinitis Pigmentosa (RP) is a progressive rod-cone dystrophy in which rod photoreceptors are affected first, followed later by cones.

- Early feature:
- Night blindness (nyctalopia) due to rod dysfunction
- Progression:
- Peripheral visual field loss -> "tunnel vision"
- Late stage:
- Central vision loss (cone involvement)

Investigations:

- ERG: Shows reduced or extinguished a- and b-wave amplitudes (early diagnostic test)

Why option D is incorrect:

- Night blindness is NOT a late feature
- It is the earliest and most characteristic symptom

QUESTION

Which of the following is not seen in an inner segment of the photoreceptor?

A Golgi apparatus

B ER

C Mitochondria

D Disc

CORRECT

RIGHT ANSWER

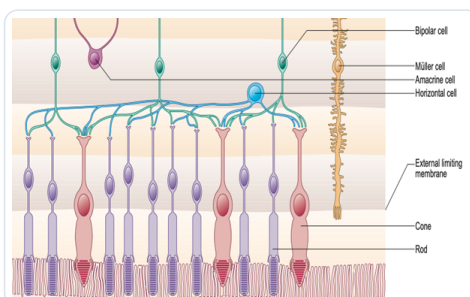
OK D. Disc

WHY THIS IS RIGHT

Disc membranes are specifically located in the outer segment of the photoreceptor, not the inner segment. The inner segment contains most cellular organelles, including:

- Mitochondria
- Endoplasmic reticulum (ER)
- Golgi apparatus
- Nucleus

The outer segment is characterized by the presence of disc membranes, which are crucial for phototransduction.



QUESTION

I In fluorescein angiography, how do microaneurysms typically appear?

A Hypofluorescent spots

B Hyperfluorescent dots

CORRECT

C Fluorescent leakage

D Dark shadows

RIGHT ANSWER

OK

B. Hyperfluorescent dots

WHY THIS IS RIGHT

In fundus fluorescein angiography (FFA), microaneurysms-the earliest clinically visible lesions in diabetic retinopathy-appear as multiple small hyperfluorescent dots.

Why they appear hyperfluorescent:

- Microaneurysms are outpouchings of capillary walls
- They fill with fluorescein dye -> appear as bright pinpoint spots in early phases

Important distinction:

- Microaneurysms:
 - Early hyperfluorescence (dots)
 - May show late leakage
- Leakage (e.g., macular edema, neovascularization):
 - Progressive increase in size and intensity over time
- Hypofluorescence (dark areas):
 - Due to blockage (hemorrhage) or capillary non-perfusion

QUESTION

| Which of the following is typically seen in diabetic retinopathy?

A Tractional retinal detachment

CORRECT

B Myopic refractive error

C Posterior staphyloma

D Retinoschisis

RIGHT ANSWER

OK

A. Tractional retinal detachment

WHY THIS IS RIGHT

Diabetic retinopathy, especially in its advanced stage (proliferative diabetic retinopathy, PDR), is characterized by neovascularization and fibrovascular proliferation, which can lead to tractional retinal detachment (TRD).

- Chronic hyperglycemia -> retinal ischemia
- ↑ VEGF -> new fragile vessels form
- Associated fibrous tissue contracts -> pulls retina away -> TRD

Why not others:

- Myopic refractive error: Related to axial elongation, not diabetes
- Posterior staphyloma: Seen in pathological myopia
- Retinoschisis: Splitting of retinal layers, unrelated to diabetic changes

*

QUESTION

| Which is the investigation of choice for Best disease?

CORRECT

A Electrooculogram (EOG)

B Electroretinogram (ERG)

C Visual Evoked potential

D Multifocal electro retinogram

RIGHT ANSWER

OK

A. Electrooculogram (EOG)

WHY THIS IS RIGHT

Best disease (Vitelliform macular dystrophy) is characterized by dysfunction of the retinal pigment epithelium (RPE), and the investigation of choice is Electrooculogram (EOG).

- Measures RPE function
- Shows reduced Arden ratio (↓ light peak to dark trough ratio)
- Abnormal even in early disease, before fundus changes are obvious

Why not others:

- ERG (Electroretinogram):
 - Assesses photoreceptor function
 - Usually normal in Best disease
- VEP (Visual Evoked Potential):
 - Evaluates visual pathway beyond retina
 - Not specific for macular dystrophies
- Multifocal ERG:
 - Can detect macular dysfunction but not the primary diagnostic test

QUESTION

Arrange the following layers of the retina in the correct order from the outermost to the innermost layer.

A 1 - Retinal Pigment Epithelium, 2 - Outer Nuclear Layer, 3 - Inner Plexiform Layer, 4 - Ganglion Cell Layer CORRECT

B 1 - Outer Nuclear Layer, 2 - Retinal Pigment Epithelium, 3 - Ganglion Cell Layer, 4 - Inner Plexiform Layer

C 1 - Ganglion Cell Layer, 2 - Inner Plexiform Layer, 3 - Retinal Pigment Epithelium, 4 - Outer Nuclear Layer

D 1 - Retinal Pigment Epithelium, 2 - Inner Plexiform Layer, 3 - Outer Nuclear Layer, 4 - Ganglion Cell Layer

RIGHT ANSWER

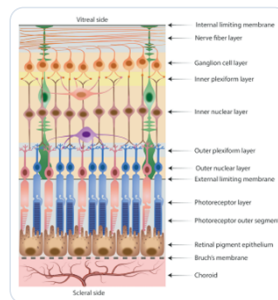
OK A. 1 - Retinal Pigment Epithelium, 2 - Outer Nuclear Layer, 3 - Inner Plexiform Layer, 4 - Ganglion Cell Layer

WHY THIS IS RIGHT

The retina is organized from outer (choroid side) to inner (vitreous side) in a highly structured manner that reflects the flow of visual information.

Correct order (outer -> inner):

1. Retinal Pigment Epithelium (RPE)
2. Outer Nuclear Layer (photoreceptor cell bodies)
3. Inner Plexiform Layer (synapses between bipolar & ganglion cells)
4. Ganglion Cell Layer



QUESTION

A patient presents with bilateral sudden onset painless vision loss. What is the most likely diagnosis?

A Diabetic retinopathy

CORRECT

B Iridocyclitis

C Acute congestive glaucoma

D Keratoconus

RIGHT ANSWER

OK A. Diabetic retinopathy

WHY THIS IS RIGHT

Sudden, painless, bilateral vision loss is most commonly due to vitreous hemorrhage secondary to proliferative diabetic retinopathy (PDR).

- Chronic hyperglycemia -> retinal ischemia
- ↑ VEGF -> neovascularization
- Fragile new vessels rupture -> vitreous hemorrhage -> sudden vision loss

Painless + sudden + bilateral -> think vascular cause, especially diabetes

Why not others:

- Iridocyclitis (anterior uveitis): Painful, photophobia, redness
- Acute congestive glaucoma: Severe pain, halos, red eye, high IOP
- Keratoconus: Gradual, progressive visual decline (not sudden)

QUESTION

A 1-year-old child who was born premature at 34 weeks POG weighing 1400 gms presents with leukocoria. On CT, intraocular calcification is seen. What is the most probable diagnosis?

- A R.O.P
- B Congenital Cataract
- C Retinoblastoma**
- D Coat's Disease

CORRECT

RIGHT ANSWER

- OK
- C. Retinoblastoma**

WHY THIS IS RIGHT

Leukocoria (white pupillary reflex) + intraocular calcification on CT is highly suggestive of retinoblastoma, the most common intraocular malignancy in children.

- Intraocular calcification -> hallmark of retinoblastoma
- Best detected on CT scan

Clinical features of retinoblastoma:

- Leukocoria (most common presenting sign)
- Strabismus
- Decreased vision
- May be unilateral or bilateral (bilateral often hereditary)

Why not others:

- ROP (Retinopathy of Prematurity):
- Occurs in premature infants but shows fibrovascular proliferation/retinal detachment, no calcification
- Congenital cataract:
- Leukocoria present, but no calcification
- Coats disease:
- Retinal telangiectasia with exudation
- Can mimic leukocoria but no calcification



QUESTION

| What is the normal arteriovenous ratio at the optic disc?

A 2:5

B 2:3

CORRECT

C 1:5

D 1:3

RIGHT ANSWER

OK B. 2:3

WHY THIS IS RIGHT

The normal arteriovenous (A:V) ratio at the optic disc is 2:3, meaning:

- Retinal arteries are narrower
- Retinal veins are wider

Clinical significance:

- This ratio is an important indicator of retinal vascular health
- Arteriolar narrowing ($\downarrow$ A:V ratio) is seen in:
 - Hypertensive retinopathy
 - Chronic vascular diseases
- Associated signs:
 - AV nicking
 - Copper/silver wiring of arteries

QUESTION

Which type of complication is most commonly associated with advanced diabetic retinopathy?

A Rhegmatogenous retinal detachment

B Exudative retinal detachment

C **Tractional retinal detachment**

CORRECT

D No retinal detachment

RIGHT ANSWER

OK C. **Tractional retinal detachment**

WHY THIS IS RIGHT

In advanced diabetic retinopathy (proliferative diabetic retinopathy, PDR), the most common complication is tractional retinal detachment (TRD).

- Chronic retinal ischemia -> VEGF release
- Formation of neovascularization (on disc and elsewhere)
- These vessels are associated with fibrovascular proliferation
- Contraction of these membranes -> pulls the retina -> tractional detachment

Why not others:

- Rhegmatogenous RD:
 - Caused by retinal tear + vitreous fluid entry
 - Not the primary mechanism in diabetic retinopathy
- Exudative RD:
 - Due to fluid accumulation without traction/tear (e.g., tumors, inflammation)
 - Not typical of diabetes
- No retinal detachment:
 - Incorrect, as TRD is a well-known late complication

QUESTION

| Which investigation is best used to visualize the inner layers of the retina in vivo?

A Fundus Fluorescein Angiography

B USG B scan

C Ophthalmoscope

D Optical Coherence Tomography

CORRECT

RIGHT ANSWER

OK D. Optical Coherence Tomography

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$19" here and does not include a written explanation for this item.

QUESTION

A patient presents with painful swelling on the eyelid and a lesion with pus at the base of the eyelash. Which of the following glands is involved in this case?

A Meibomian gland

B Lacrimal gland

C Tarsal gland

D Zeis gland

CORRECT

RIGHT ANSWER

OK D. Zeis gland

WHY THIS IS RIGHT

External hordeolum (stye) is an acute, painful infection of the glands of Zeis (sebaceous glands of eyelash follicles).

- Painful, tender swelling at eyelid margin
- Pus point at base of eyelash
- Usually caused by *Staphylococcus aureus*

Differentiation:

- Meibomian (tarsal) gland -> internal hordeolum/chalazion (deeper, less pointed)
- Lacrimal gland -> superolateral swelling, not at lash base

QUESTION

A patient with a history of blunt ocular trauma undergoes CT imaging as shown in the image. What is the most likely diagnosis?



A Lateral orbital wall fracture

B Mandibular fracture

C **Blowout fracture**

CORRECT

D Medial wall fracture

RIGHT ANSWER

OK

C. Blowout fracture

WHY THIS IS RIGHT

Blowout fracture is a fracture of the orbital floor (most common) or medial wall due to blunt trauma, causing herniation of orbital contents into the maxillary sinus.

- Diplopia (especially on upward gaze)
- Enophthalmos (sunken eye)
- Infraorbital nerve anesthesia (cheek, upper lip numbness)

CT findings:

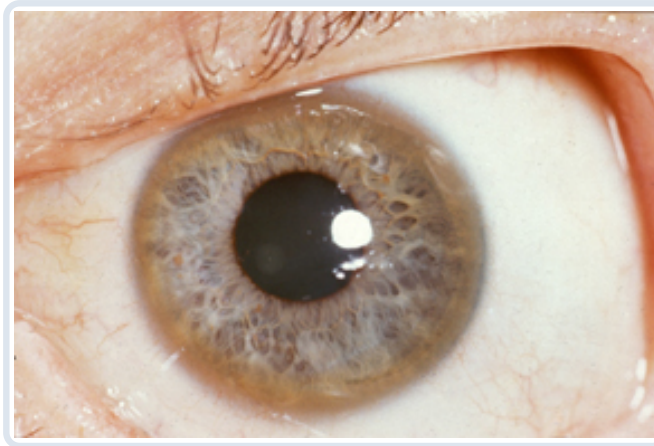
- Discontinuity of orbital floor
- Herniation of fat/inferior rectus into maxillary sinus ("teardrop sign")

Pathophysiology:

- Sudden increase in orbital pressure -> weakest wall (floor) fractures

QUESTION

The pathological finding shown in the image is typically associated with which of the following diseases?



A Wilson's disease

CORRECT

B Siderosis

C Primary Biliary Cirrhosis

D Chalcosis

RIGHT ANSWER

OK

A. Wilson's disease

WHY THIS IS RIGHT

Kayser-Fleischer ring is a golden-brown ring at the corneal periphery due to copper deposition in Descemet's membrane, classically seen in Wilson's disease.

- Seen on slit lamp examination
- Begins superiorly and inferiorly -> becomes circumferential
- Associated with hepatic + neurological symptoms

Pathophysiology:

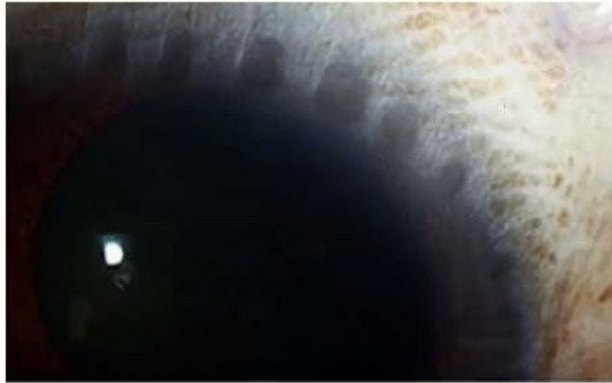
- Defect in copper metabolism (ATP7B mutation) -> copper accumulation

Differentiation:

- Siderosis -> iron deposition (rusty discoloration)
- Chalcosis -> sunflower cataract
- Primary biliary cirrhosis -> no KF ring typically

QUESTION

Examine the image provided. The ocular finding demonstrated is characteristic of which of the following conditions?



A Horner Trantas spots

B Pannus

C Arlt's line

D Herbert's pits

CORRECT

RIGHT ANSWER

OK

D. Herbert's pits

WHY THIS IS RIGHT

Herbert's pits are small, shallow depressions at the limbus, seen as healed lesions of trachoma.

- Result from healing of limbal follicles
- Indicative of chronic trachoma (*Chlamydia trachomatis*)
- Often associated with other signs like pannus and Arlt's line

Differentiation:

- Horner-Trantas spots -> allergic (VKC), limbal white dots
- Pannus -> superficial corneal vascularization
- Arlt's line -> conjunctival scarring

QUESTION

| What is the most likely diagnosis in the image given below?



A Pterygium

B Pinguecula

C **Dermoid**

CORRECT

D Dermolipoma

RIGHT ANSWER

OK C. **Dermoid**

WHY THIS IS RIGHT

Limbal dermoid is a congenital choristoma presenting as a well-circumscribed, whitish/yellowish mass at the limbus, often seen in childhood.

- Present since birth or early childhood
- Firm, elevated lesion at inferotemporal limbus
- May contain hair follicles, sebaceous glands
- Can induce astigmatism -> amblyopia

Associations: Goldenhar syndrome (oculoauriculovertebral dysplasia)

Differentiation:

- Pterygium: Triangular fibrovascular growth encroaching onto cornea (acquired)
- Pinguecula: Yellow conjunctival degeneration, does not involve cornea
- Dermolipoma: Soft, yellow mass in superotemporal conjunctiva

QUESTION

A 20-year-old male presents with golden-brown ring over iris on examination. What next is done to diagnose the condition?



A Serum ceruloplasmin

CORRECT

B Serum iron level

C Alpha 1 antitrypsin

D Alpha fetoprotein

RIGHT ANSWER

OK

A. Serum ceruloplasmin

WHY THIS IS RIGHT

A golden-brown ring at the corneal periphery (Kayser-Fleischer ring) is characteristic of Wilson's disease due to copper deposition in Descemet's membrane.

Next best diagnostic step: Serum ceruloplasmin ↓ (initial screening test)

Supporting investigations:

- ↑ 24-hour urinary copper excretion
- ↑ hepatic copper (gold standard confirmation)
- Slit-lamp exam for KF ring

Why not others:

- Serum iron: Hemochromatosis
- Alpha-1 antitrypsin: AAT deficiency (liver/lung disease)
- Alpha-fetoprotein: Hepatocellular carcinoma marker

QUESTION

| What is the best step to establish a diagnosis in this patient?



- A Urine copper
- B Serum ceruloplasmin
- C Serum copper
- D Hepatic copper estimation**

CORRECT

RIGHT ANSWER

OK

D. Hepatic copper estimation

WHY THIS IS RIGHT

Wilson's disease is a disorder of copper metabolism characterized by impaired biliary excretion of copper -> accumulation in liver, brain, and cornea (Kayser-Fleischer ring).

- > Best diagnostic test: Hepatic copper estimation (liver biopsy) = gold standard
- >
- > * Shows markedly increased hepatic copper ($>250 \mu\text{g/g}$ dry weight)

Supporting findings:

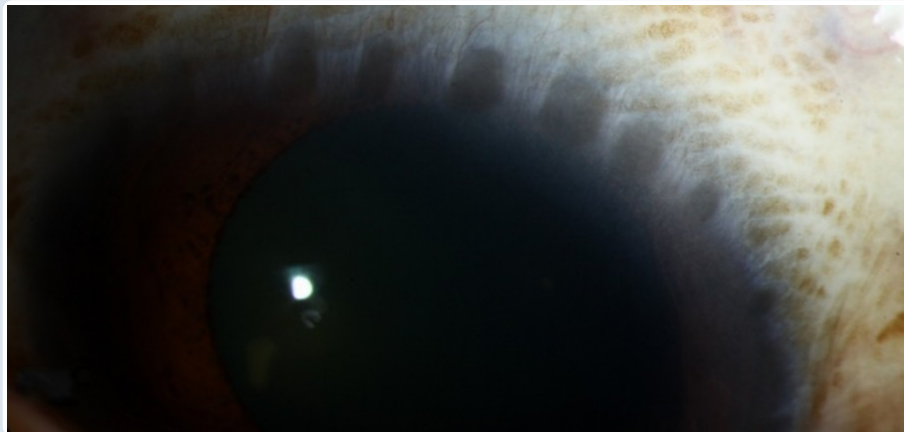
- ↓ Serum ceruloplasmin
- ↑ 24-hour urinary copper excretion
- Kayser-Fleischer ring on slit-lamp (as shown)

Why not others:

- Serum ceruloplasmin: Low but not specific (can be low in other conditions)
- Urinary copper: Sensitive but not definitive
- Serum copper: Variable and unreliable

QUESTION

| Diagnose the image seen in a 10-year-old child.



A Horner Trantas spots

B Herbert pits

CORRECT

C Pannus

D Corneal dystrophy

RIGHT ANSWER

OK

B. Herbert pits

WHY THIS IS RIGHT

Herbert pits are depressed scars at the limbus resulting from healed follicles in trachoma.

- Seen in chronic trachoma (Chlamydia trachomatis infection)
- Represent healed limbal follicles
- Typically located at the superior limbus
- Associated with other sequelae:
 - Pannus formation (superior corneal vascularization)
 - Trichiasis
 - Entropion

Why not others:

- Horner-Trantas spots: White limbal dots in vernal keratoconjunctivitis
- Pannus: Superficial vascularization, not pits
- Corneal dystrophy: Bilateral, hereditary, non-inflammatory

QUESTION

| Which of the following statements is NOT true about the given image?



A Improves on treatment of thyroid status

CORRECT

B Vision loss may be seen in some cases

C 10% may be euthyroid at presentation

D NOSPECS classification is used

RIGHT ANSWER

OK **A. Improves on treatment of thyroid status**

WHY THIS IS RIGHT

The image depicts thyroid eye disease (Graves' orbitopathy) characterized by proptosis, lid retraction, and conjunctival congestion.

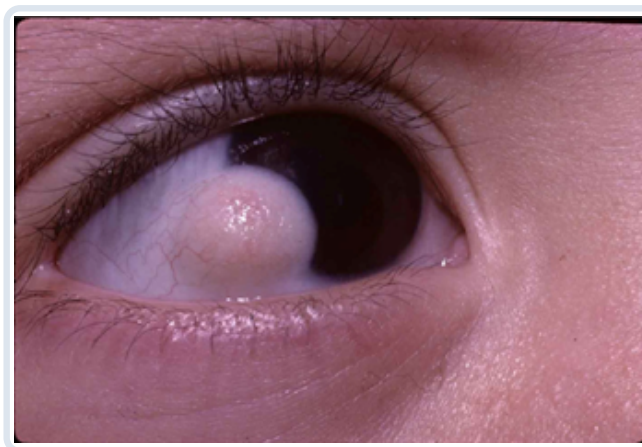
Ophthalmopathy does NOT reliably improve with correction of thyroid status -> It follows an independent autoimmune course

Important facts:

- Can occur in hyperthyroid, hypothyroid, or euthyroid patients (~10% euthyroid)
- May cause vision loss due to:
 - Optic nerve compression
- Severity is graded using NOSPECS classification
- Treating thyroid dysfunction does not necessarily reverse eye disease

QUESTION

A 10-year-old male child presented with the following finding. What's your diagnosis?



- A Papilloma
- B Limbal dermoid**
- C Pyogenic granuloma
- D Pinguecula

CORRECT

RIGHT ANSWER

OK **B. Limbal dermoid**

WHY THIS IS RIGHT

Limbal dermoid is a congenital choristoma (normal tissue in an abnormal location) typically seen at the inferotemporal limbus.

- Present since childhood
- Painless, well-defined, whitish/yellow mass at the limbus
- May contain hair follicles, sebaceous glands
- Can cause astigmatism or amblyopia if large

Pathogenesis:

- Developmental anomaly with ectodermal tissue (skin-like elements) in the cornea/conjunctiva

Why not others:

- Papilloma: Pedunculated, vascular lesion (HPV-related)
- Pyogenic granuloma: Red, vascular, rapidly growing lesion
- Pinguecula: Degenerative yellow lesion in adults, not congenital

QUESTION

A 45-year-old male presents with drooping of the right upper eyelid and constricted pupil following a neck injury. On examination, there is mild ptosis with preserved ocular movements. Which muscle is primarily responsible for the ptosis in this condition?

A Levator palpebrae superioris

B Orbicularis oculi

C Muller's muscle

CORRECT

D Horner muscle

RIGHT ANSWER

OK C. Muller's muscle

WHY THIS IS RIGHT

In Horner syndrome, ptosis occurs due to paralysis of Müller's muscle (superior tarsal muscle), which is supplied by the sympathetic nervous system.

- Müller's muscle provides minor eyelid elevation (~1-2 mm)
- Loss of sympathetic supply -> mild ptosis

Associated features of Horner syndrome:

- Ptosis (mild)
- Miosis (constricted pupil)
- Anhidrosis (loss of sweating)
- ± Apparent enophthalmos

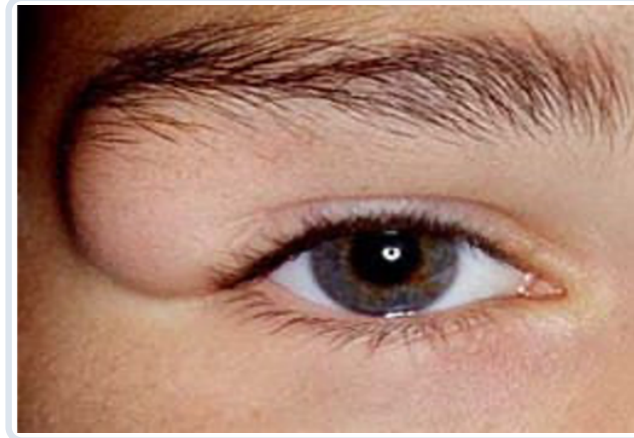
Why not others:

- Levator palpebrae superioris (LPS):
 - Supplied by oculomotor nerve (CN III)
 - Causes severe ptosis in 3rd nerve palsy
- Orbicularis oculi:
 - Closes eyelids (CN VII), not involved in ptosis
- "Horner muscle": Not a standard anatomical term



QUESTION

A 15-year-old girl presents with a painless, slowly enlarging mass situated lateral to the lateral canthus, which has been present for the past 10 years. On examination, the swelling is non-tender and gradually progressive. What is the most likely diagnosis?



A Dermoid cyst

CORRECT

B Capillary hemangioma

C Lacrimal gland tumor

D Epidermoid cyst

RIGHT ANSWER

OK A. Dermoid cyst

WHY THIS IS RIGHT

A dermoid cyst is the most common congenital orbital tumor in children, typically presenting as a painless, slow-growing mass near the lateral canthus (superotemporal orbit).

Key clinical features:

- Present since childhood
- Gradually enlarging, non-tender swelling
- Commonly located at zygomaticofrontal suture (lateral eyebrow region)
- Firm, well-defined, mobile mass

Developmental inclusion cyst containing ectodermal elements (hair follicles, sebaceous glands).

Why not others:

- Capillary hemangioma: Appears in infancy, rapidly grows, may regress
- Lacrimal gland tumor: Usually presents later, may cause globe displacement
- Epidermoid cyst: Similar but deeper, less common in this location

QUESTION

| Which of the following statement is true about orbital cellulitis?

- A** It is present anterior to the orbital septum
- B** Treated effectively with topical antibiotic
- C** Presents with proptosis, orbital swelling, normal pupil, and extraocular movements
- D** Ethmoid sinusitis is the most common etiology CORRECT

RIGHT ANSWER

OK

D. Ethmoid sinusitis is the most common etiology

WHY THIS IS RIGHT

Orbital cellulitis is a postseptal infection of the orbit, most commonly arising from ethmoid sinusitis due to the thin lamina papyracea.

Key clinical features:

- Proptosis
- Painful and restricted extraocular movements
- Decreased vision $\pm$ afferent pupillary defect
- Eyelid edema, fever

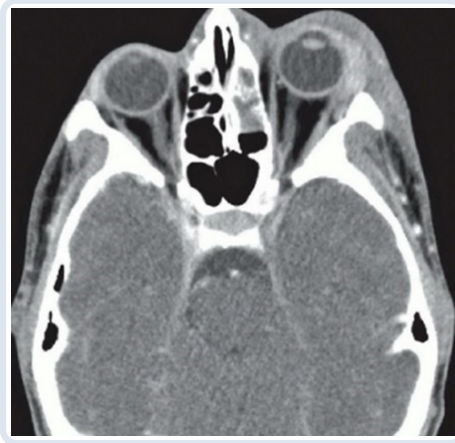
Ethmoid sinusitis is the most common source of orbital cellulitis spread.

Why other options are incorrect:

- A) Anterior to septum = preseptal cellulitis, not orbital
- B) Requires IV antibiotics, not just topical
- C) EOM are restricted and painful, not normal

QUESTION

A 35-year-old male with a history of recurrent sinusitis presents with decreased vision, eye protrusion, and fever. A computed tomography (CT) scan was done. What is the most likely diagnosis?



A. Preseptal cellulitis with sinusitis

B. Orbital cellulitis with sinusitis

CORRECT

C. Sub periosteal abscess

D. Cellulitis

RIGHT ANSWER

OK

B. B. Orbital cellulitis with sinusitis

WHY THIS IS RIGHT

Orbital cellulitis is a postseptal orbital infection, most commonly due to spread from paranasal sinusitis (especially ethmoid sinus). Key distinguishing features (vs preseptal cellulitis):

- Proptosis
- Painful/restricted eye movements
- Decreased vision
- Fever and systemic toxicity

Imaging (CT scan):

- Orbital soft tissue inflammation behind the orbital septum
- Associated sinus opacification
- Helps detect complications (abscess, intracranial spread)

Why not others:

- Preseptal cellulitis: No proptosis, no vision loss, no ophthalmoplegia
- Subperiosteal abscess: Localized collection; would show a well-defined lenticular collection on CT
- Cellulitis (nonspecific): Does not localize to orbit

QUESTION

Following instrument is used to measure:



A Proptosis

CORRECT

B Squint

C Ptosis

D Diplopia

RIGHT ANSWER

OK A. Proptosis

WHY THIS IS RIGHT

The instrument shown is a Hertel exophthalmometer, used to measure proptosis (forward protrusion of the eyeball).

- Measures the distance between the lateral orbital rim and the corneal apex
- Allows quantification and comparison between both eyes

Detects and monitors proptosis in conditions such as:

- Thyroid eye disease
- Orbital tumors
- Orbital cellulitis

Why not others:

- Squint: Assessed by cover test, prism bar
- Ptosis: Measured by MRD (margin reflex distance)
- Diplopia: Evaluated by Hess chart, diplopia charting

QUESTION

| What is the most common cause of proptosis in a middle-aged person?

- A** Orbital varix
- B** **Thyroid eye disease**
- C** Retinoblastoma
- D** Cavernous hemangioma

CORRECT

RIGHT ANSWER

- OK** **B. Thyroid eye disease**

WHY THIS IS RIGHT

The source quiz contains the placeholder "\$1a" here and does not include a written explanation for this item.

QUESTION

| All the following are functions of the superior oblique muscle except?

A Adduction

CORRECT

B Abduction

C Depression

D Intorsion

RIGHT ANSWER

OK

A. Adduction

WHY THIS IS RIGHT

The superior oblique muscle has three primary actions:

- Intorsion (primary action)
- Depression (especially in adducted eye)
- Abduction

Why A is correct (NOT a function):

- Adduction is NOT a function of the superior oblique
- Adduction is mainly performed by the medial rectus

Superior oblique passes through the trochlea, giving it a unique action:

- Pulls the eye downward and outward
- Rotates the top of the eye inward (intorsion)

QUESTION

A patient presents with a foreign body (chuna) in his eyes and complains of irritability and lacrimation. What is the first step of management in this patient?

- A Antibiotics drops in eye
- B Temporary tarsorrhaphy
- C Irrigation of eye with normal saline**
- D Complete Scraping

CORRECT

RIGHT ANSWER

- OK** C. Irrigation of eye with normal saline

WHY THIS IS RIGHT

Chemical injury to the eye (e.g., chuna/lime = alkali burn) is an ocular emergency, and the first and most important step is immediate copious irrigation.

- Alkali substances penetrate rapidly and cause liquefactive necrosis
- Immediate dilution/removal of the chemical limits depth of damage and improves prognosis

Management priority:

- Start irrigation immediately (do not wait for history or examination)
- Use normal saline, Ringer lactate, or even clean water if saline unavailable
- Continue until ocular pH normalizes ($\sim 7-7.4$)
- Evert eyelids to remove retained particles

Why not others:

- Antibiotic drops: Given later to prevent infection
- Tarsorrhaphy: For healing in severe cases, not initial step
- Scraping: Not indicated initially and may worsen injury

QUESTION

A 3-month-old child presents with photophobia and watering. Which of the following cannot be the cause?

A Congenital nasolacrimal duct obstruction

CORRECT

B Congenital entropion

C Congenital glaucoma

D Congenital distichiasis

RIGHT ANSWER

OK A. Congenital nasolacrimal duct obstruction

WHY THIS IS RIGHT

In infants, photophobia + watering (epiphora) suggests corneal irritation or raised intraocular pressure, not just a drainage problem.

- Congenital nasolacrimal duct obstruction (CNLDO) causes:
 - Watering and discharge
 - NO photophobia
 - Cornea remains clear -> hence not a cause here

Conditions that DO cause photophobia + watering:

- Congenital glaucoma:
 - Triad: Epiphora + Photophobia + Blepharospasm
 - Due to corneal edema and raised IOP
- Congenital entropion / distichiasis:
 - Misdirected lashes rub cornea -> corneal irritation
 - Leads to photophobia and tearing

QUESTION

A 6-year-old child is brought with complaints of poor vision in one eye. On examination, there is no obvious squint. Visual acuity is 6/6 in the right eye and 6/24 in the left eye. Cycloplegic refraction reveals +1.00 D in the right eye and +5.50 D in the left eye. Fundus examination is normal. What is the most likely diagnosis?

A Isoametropic amblyopia

B Strabismic amblyopia

C Anisometropic amblyopia

CORRECT

D Deprivation amblyopia

RIGHT ANSWER

OK

C. Anisometropic amblyopia

WHY THIS IS RIGHT

Anisometropia is defined as a difference in refractive error between the two eyes, leading to unequal image clarity.

Difference in myopia, hypermetropia, or astigmatism between eyes.

Clinical significance:

- Can cause anisometropic amblyopia (lazy eye) in children
- Due to unequal image size/clarity (aniseikonia) -> brain suppresses one eye
- Important cause of unilateral amblyopia

Why other options are incorrect:

- Difference in iris color: Heterochromia
- Difference in axial length: May cause anisometropia but is not the definition
- Difference in visual acuity: Could be a consequence, not the definition

| Term | Description |

| ---- | ----- |

| Anisometropia | Difference in refractive error between two eyes |

| Aniseikonia | Difference in image size perceived by two eyes |

| Anisocoria | Difference in pupil size between two eyes |

| Anisopia | Difference in vision between two eyes |

QUESTION

In case of a chemical injury to the eye, what is the immediate first step in the management?

- A** Check visual acuity
- B** Take history
- C** Intraocular pressure measurement

D Copious irrigation with saline

CORRECT

RIGHT ANSWER

OK D. Copious irrigation with saline

WHY THIS IS RIGHT

Chemical injury to the eye is an absolute ocular emergency, and the immediate first step is copious irrigation with saline (or any clean fluid available).

- Chemicals (especially alkali) penetrate rapidly and cause ongoing tissue damage
- Immediate dilution and removal of the chemical limits severity of injury and improves prognosis

Key management principles:

- Start irrigation immediately (do NOT delay for history or examination)
- Use normal saline, Ringer lactate, or even clean water if nothing else is available
- Continue until ocular surface pH normalizes ($\approx 7-7.4$)
- Evert eyelids to remove retained particles

Why not others:

- Visual acuity, history, IOP measurement -> important but only after irrigation
- Any delay worsens corneal and limbal damage

QUESTION

Which of the following organisms are associated with acute haemorrhagic conjunctivitis?

- I. Coxsackie B
- II. Coxsackie A
- III. Enterovirus 70
- IV. Polio virus

A I and II

B I and III

C III and IV

D I, II and III

CORRECT

RIGHT ANSWER

OK

D. I, II and III

WHY THIS IS RIGHT

Acute hemorrhagic conjunctivitis is a contagious viral conjunctivitis characterized by sudden onset redness, subconjunctival hemorrhage, pain, and watering.

Causative organisms:

- Enterovirus 70 -> classic and most common cause in epidemics
- Coxsackie A (especially A24 variant)
- Coxsackie B (less common but associated)

Why not Poliovirus:

- Poliovirus primarily affects the central nervous system -> causes poliomyelitis
- Not associated with hemorrhagic conjunctivitis

*

QUESTION

A patient presents with the ocular deviation as shown in the image. What is the degree of deviation?



A 90 PD Esotropia

B 90 PD Exotropia

CORRECT

C 90 degree Esotropia

D 90 degree Exotropia

RIGHT ANSWER

OK

B. 90 PD Exotropia

WHY THIS IS RIGHT

Ocular deviation is quantified in prism diopters (PD), not degrees.

- Exotropia = outward deviation of the eye
- Esotropia = inward deviation

A deviation of 90 PD exotropia represents a large-angle outward squint, commonly seen in conditions like long-standing sensory strabismus or third nerve palsy.

Key concept:

- 1 PD = deviation of 1 cm at 1 meter
- Clinical measurement of strabismus is always expressed in prism diopters, not degrees