

2 Module Decrease vision

Five main categories of causes

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1. visual focus abnormalities
2. Media /Visual axis opacities
3. Macula/ Retina
4. Optic nerve
5. Functional (Malingering/ Hysteria)

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How to diagnose: 7 steps

| | |
|-------------------------------|--|
| 1- Check vision | 6/6, 6/24, CF, HM, PL |
| 2- Pinhole | Improvement means can be corrected |
| 3- Refraction | If corrects refractive error |
| 4- Pupil | Reacting (nerve OK) Fixed oval, fixed irregular |
| 5- Media opacity | Can see pathology |
| 6- Macula | Can see pathology |
| 7- Optic nerve function tests | Reacting pupil PLUS Color & contrast vision |

7 step diagnosis plan

Five main categories of causes

For normal vision we need to have light focused on macula, clear media so light can reach macula, functional macula and functional optic nerve. Causes of decrease vision are numerous but to make it easy for you I have divided causes in five main categories.

1- Visual axis abnormalities

This means that there is clear media, normal macula and normal optic nerve but light is not focused on macula.

2- Media opacities

This means light can focus but there is obstruction in light pathway.

3- Macula / Retina

Light can focus on macula but macula not working properly to send picture to optic nerve.

4- Optic nerve

Light is focused and macula is making picture but optic nerve can not pass message to brain.

5- Functional

Everything is fine but patient claims decrease vision. This can be either deliberately or because of hysteria.

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1. Visual focus abnormalities
 1. ref errors: vision improves with pin hole & refraction
 2. Ectasia: vision improves with pin hole BUT not with refraction
 3. Amblyopia: vision improves partially with PH & refraction
2. Media / visual axis opacities
 1. Corneal opacity: keratitis scar, degenerations
 2. AC: Glaucoma, uveitis, hyphema (trauma)
 3. Lens: cataract, PCO (posterior capsular opacity)
 4. Vitreous: hemorrhage
3. Macula
 1. Hemorrhage: Diabetic retinopathy, CRVO,
 2. Scar: Exudates (diabetes), ARMD, scar from edema
 3. Macula: Retinal detachment hole, CSCR
4. Optic nerve
 1. Optic neuropathies leading to optic atrophy
 2. Glaucoma
5. Functional (Malingering/ Hysteria)
 1. Patient can't see anything; doctor can't see signs

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How to diagnose: Seven step plan

| Seven key examinations plus others like IOP | | |
|--|--|---|
| Test | Result | Meaning |
| 1- Vision | 6/6, 6/9, 6/12, 6/24, 6/36, 6/60, CF, HM, PL+, PL- | 6/6 full vision 6/60 top line CF counting fingers HM Hand movement PL can see light |
| 2- Pinhole | Improvement means can be corrected | Refractive error OR keratoconus |
| 3- Refraction | If corrects | Refractive error |
| | Partially corrects | Keratoconus |
| 4- Pupil | Reacting | Optic nerve OK |
| | Fixed oval | Angle closure glaucoma |
| | Fixed irregular | Uveitis |
| 5- Media opacity Check media with ophthalmoscope or slit lamp and media opacity will be visible | Corneal opacity | Corneal ulcer or corneal scar from ulcer or trauma |
| | Anterior chamber (AC) | Hypopyon, Hyphema, Glaucoma (IOP) |
| | Lens opacity | Cataract |
| | Vitreous opacity | Vitreous haemorrhage |
| 6- Macula/Retina If you can see macula/retina, it means media is clear So look for macular pathology | Macular pathology | Haemorrhage: Diabetic retinopathy, CRVO Scar: exudate (diabetes) ARMD, scar from oedema Macula: Retinal detachment, Macular hole, Epiretinal membrane |
| | Retinal pathology | Vascular: Vein occlusion Detachment: Retinal detachment Degeneration: Retinal degenerations |
| 7- Optic nerve functions 1- Decrease vision & 2- pupil already checked. Check 3- visual fields 4- colour vision and 5- contrast sensitivity | Optic nerve pathology | Disc swelling: optic neuritis, papilledema, AION Primary optic atrophy: with clear disc margins Secondary optic atrophy: with irregular & blurred disc margins Consecutive optic atrophy: clear disc margins with retinal lesions Glaucomatous optic atrophy: clear margins with enlarged cup Optic neuritis or atrophy |