



KAND-Related Vision Concerns

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KAND-Related Vision Concerns



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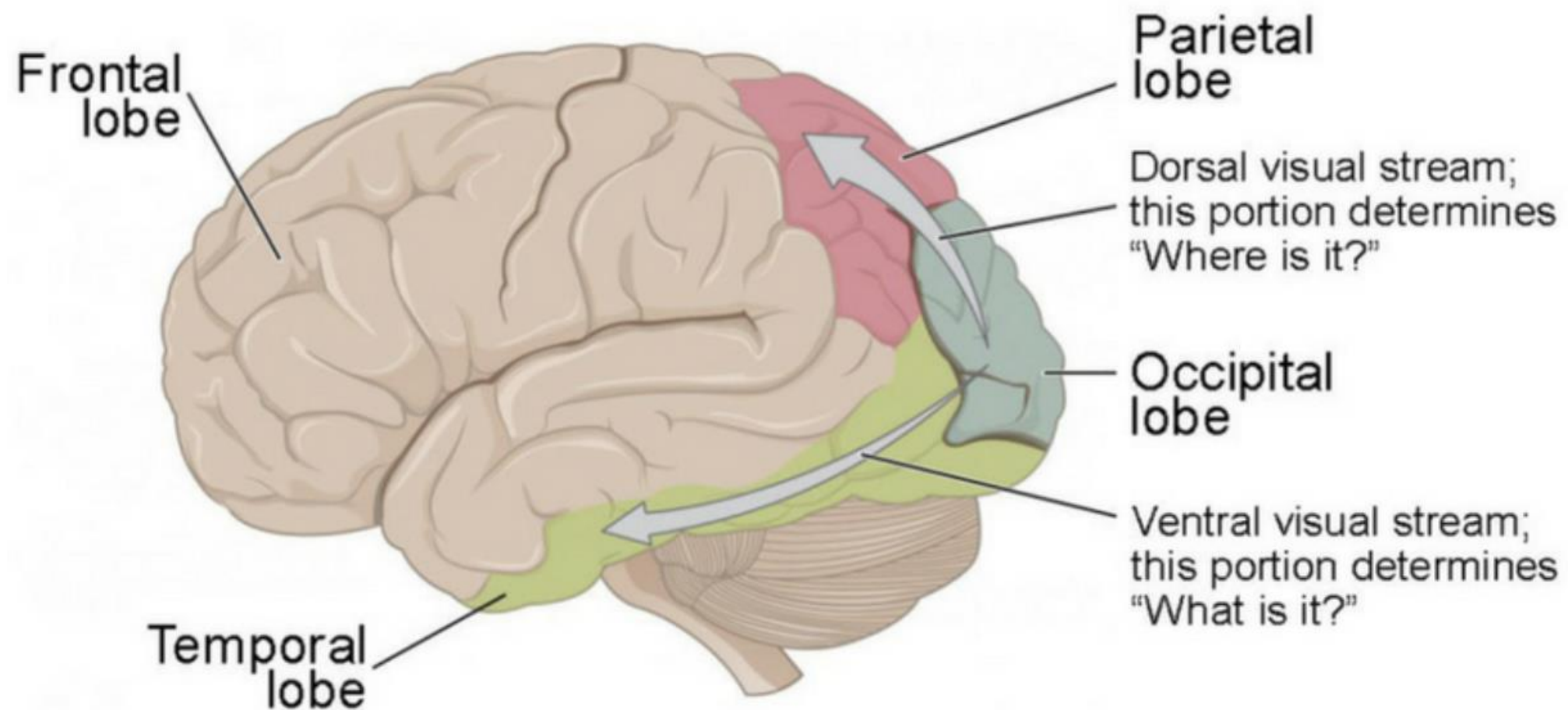
Summary

- KAND diffusely affects the brain
- Many regions of our brains are active during our visual experiences so vision is often affected
- Visual loss is only one symptom of KAND and is not the basis for its other manifestations

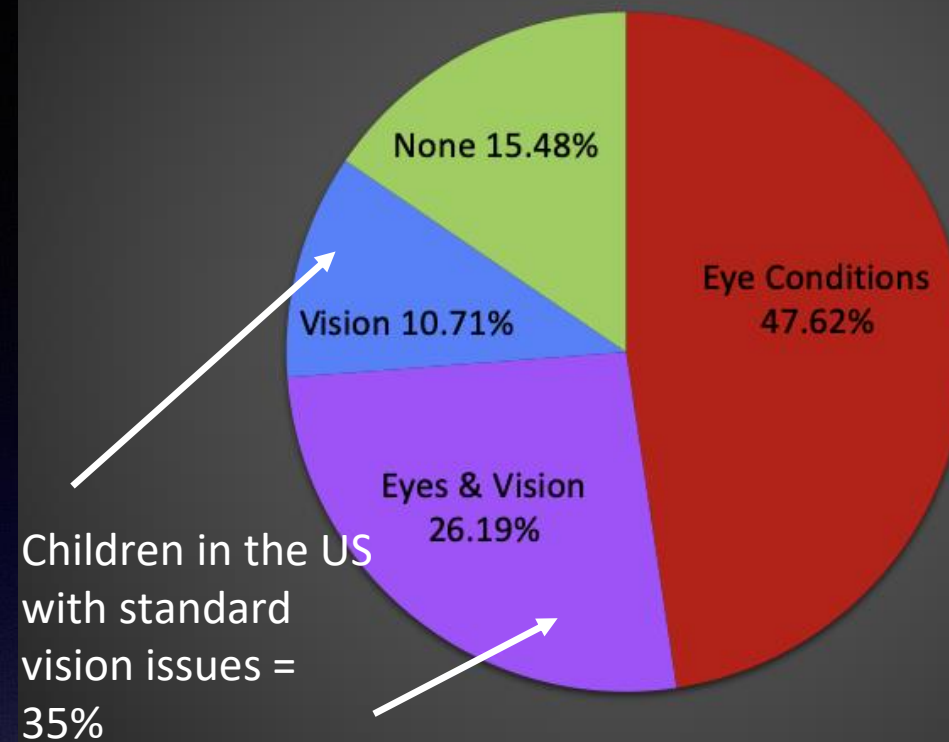
Manifestations of KAND

- Develop. delay
- Clumsiness
- Movement disorder
- General sensory loss
- **Visual loss**
- Limited adaptation
- Impaired cognition
- Ataxia
- Spastic paraparesis
- Peripheral neuropathy
- **Seizures**
- **Optic atrophy**

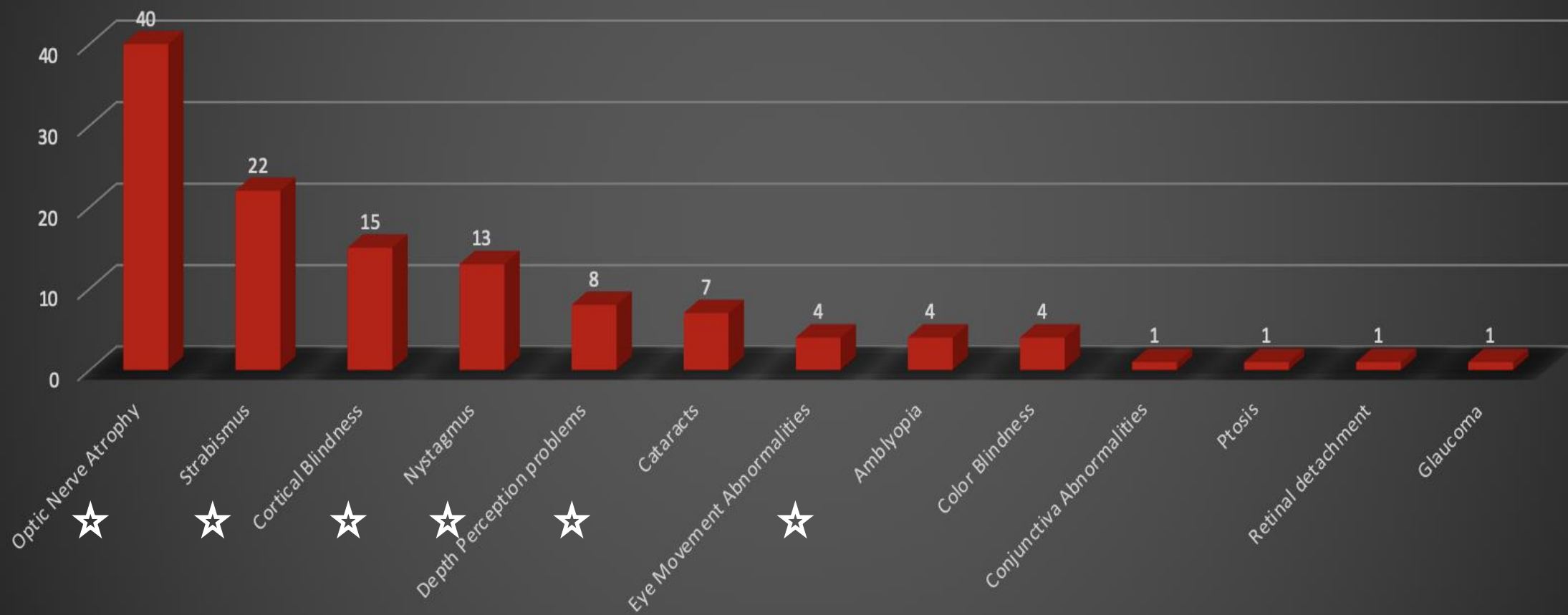
Visual associations



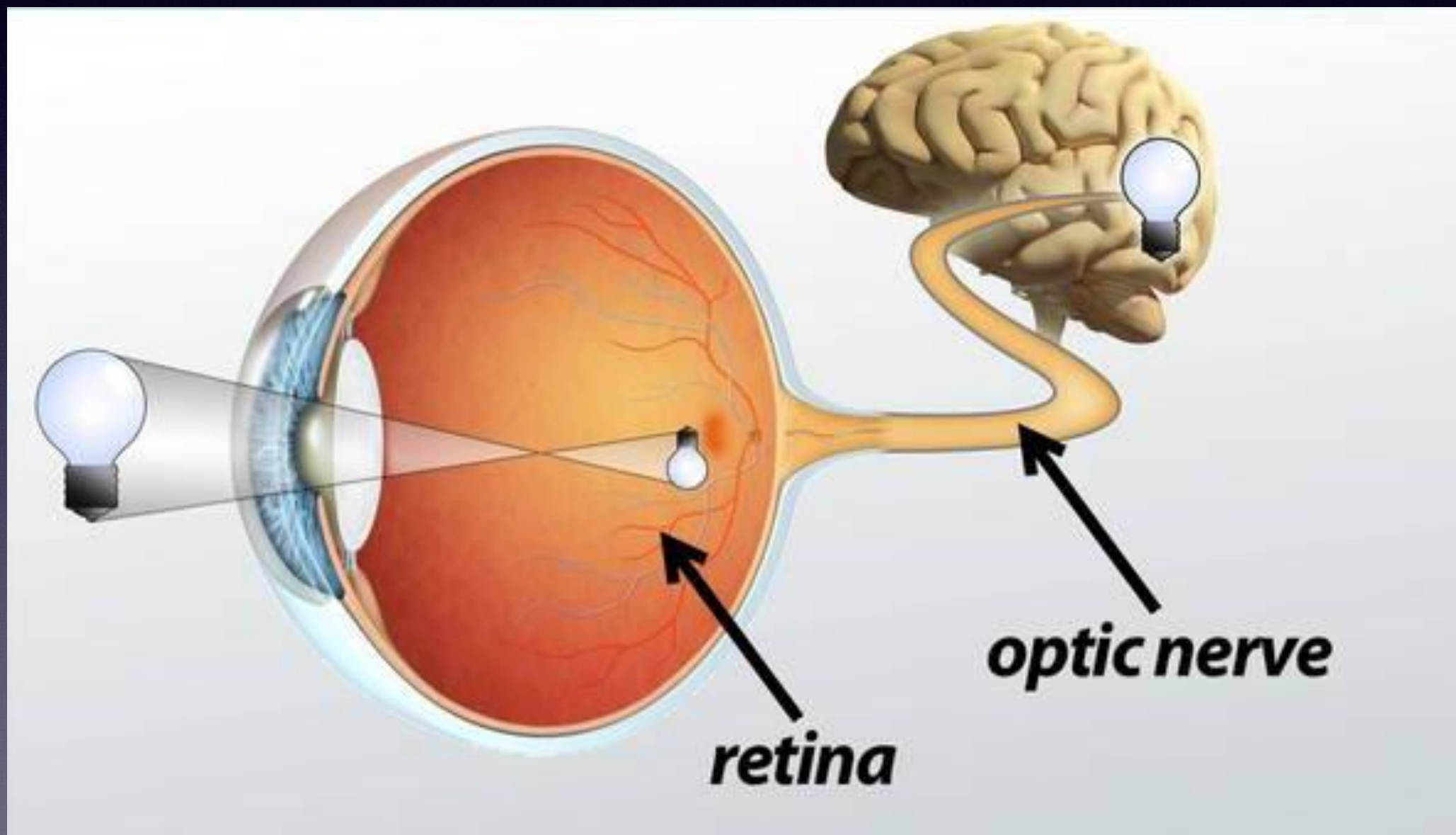
Cohort Subgroup Breakdown

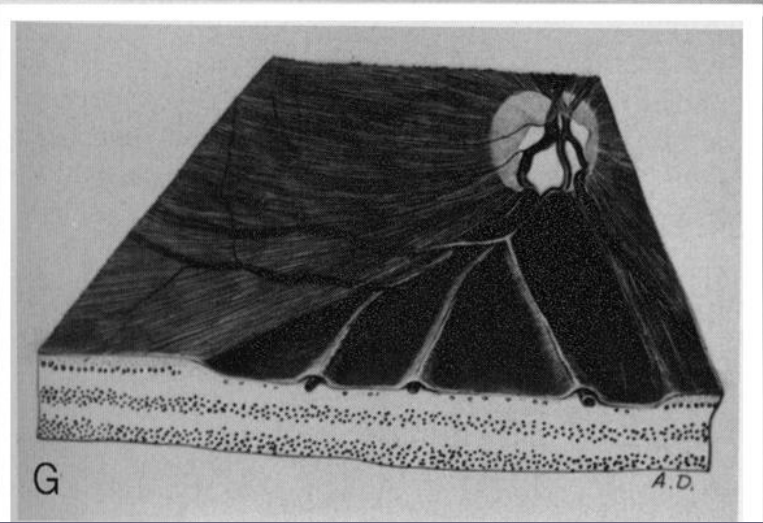
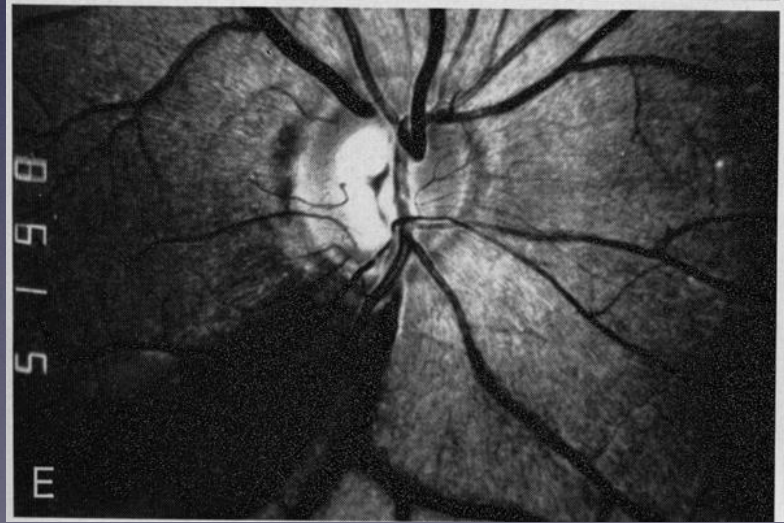
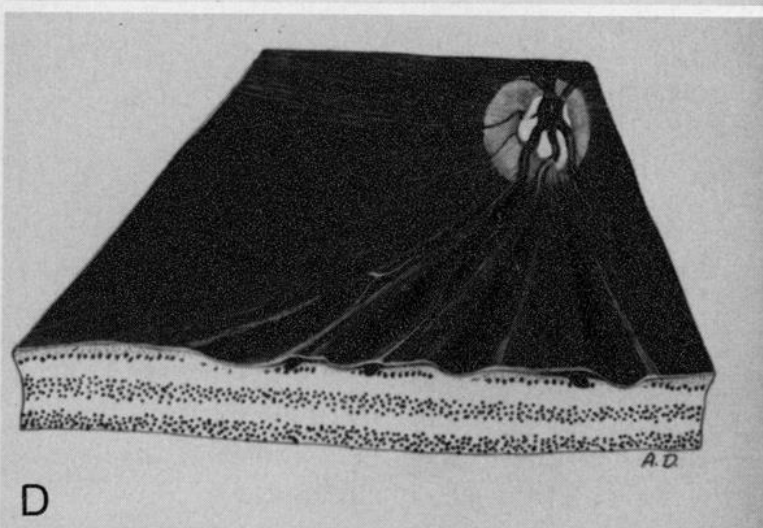
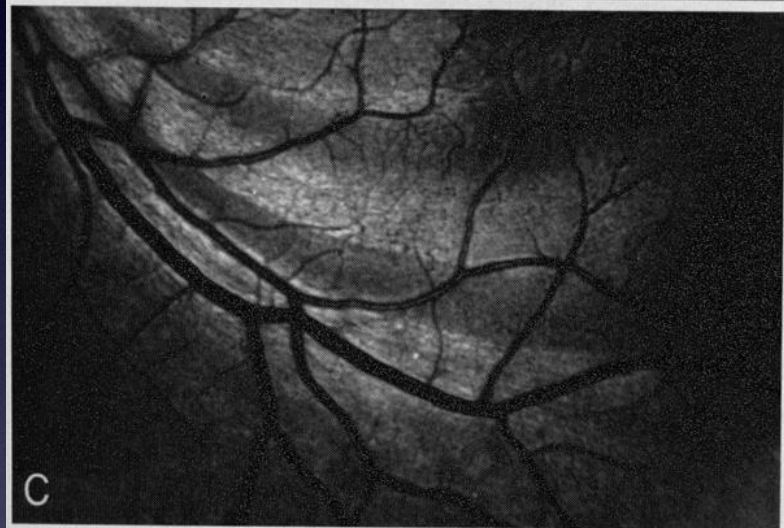
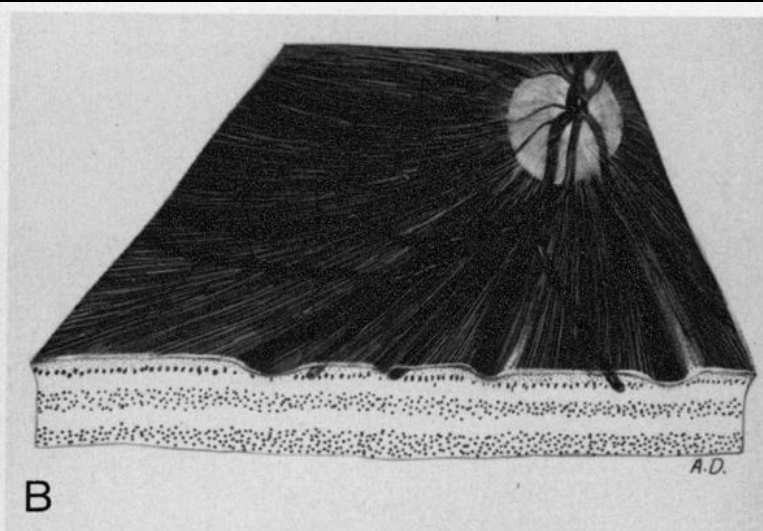


Breakdown of Other Eye Manifestations



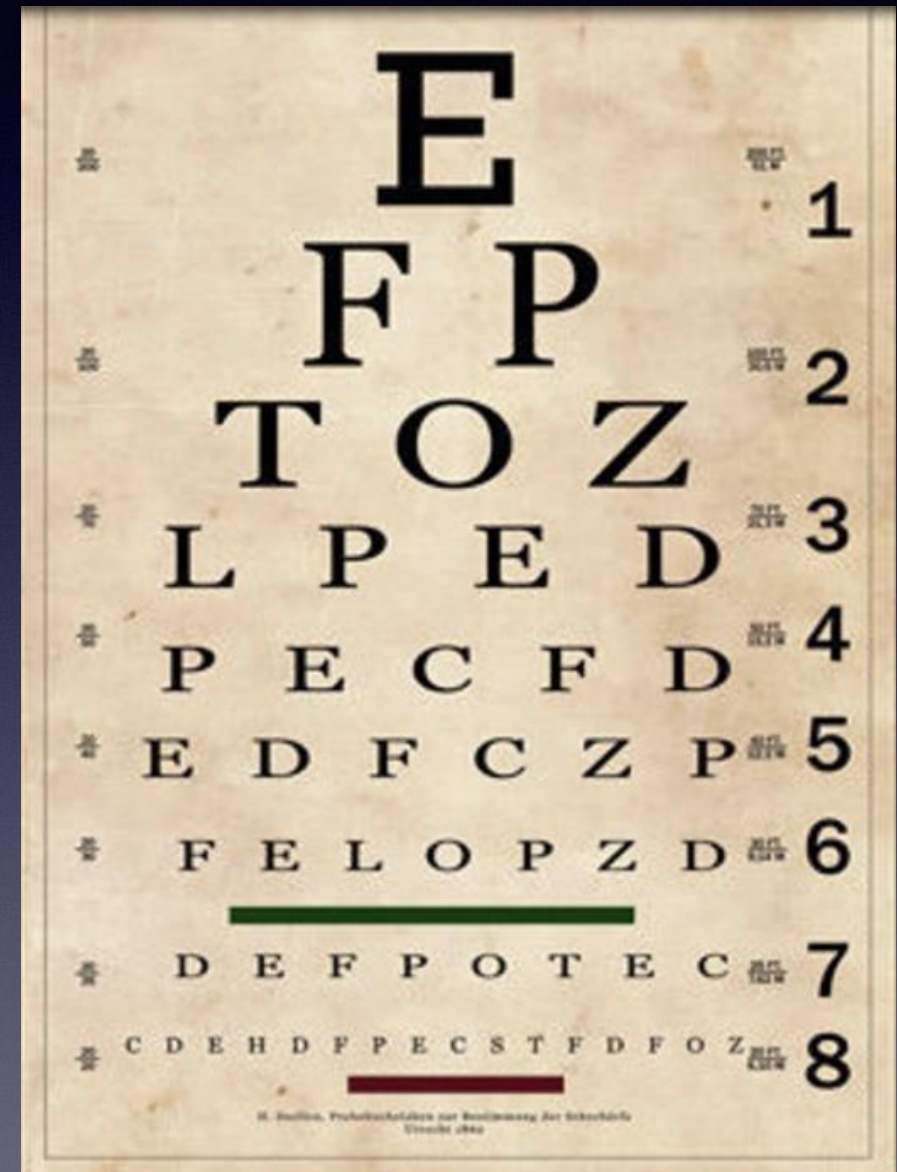
Sensory visual system





Effects of optic atrophy

- **Decreased acuity**
- Impaired peripheral vision
- Loss of color vision and contrast sensitivity
- Associations



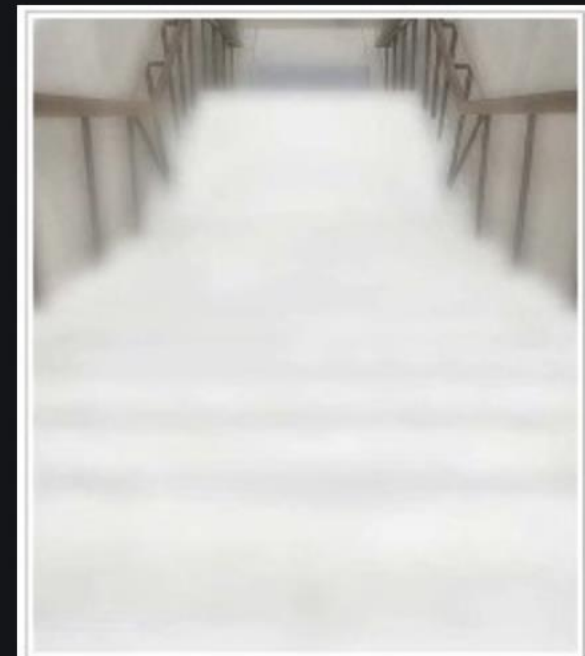
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Effects of optic atrophy

- Decreased acuity
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- **Loss of color vision and contrast sensitivity**
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Poor Contrast on Steps

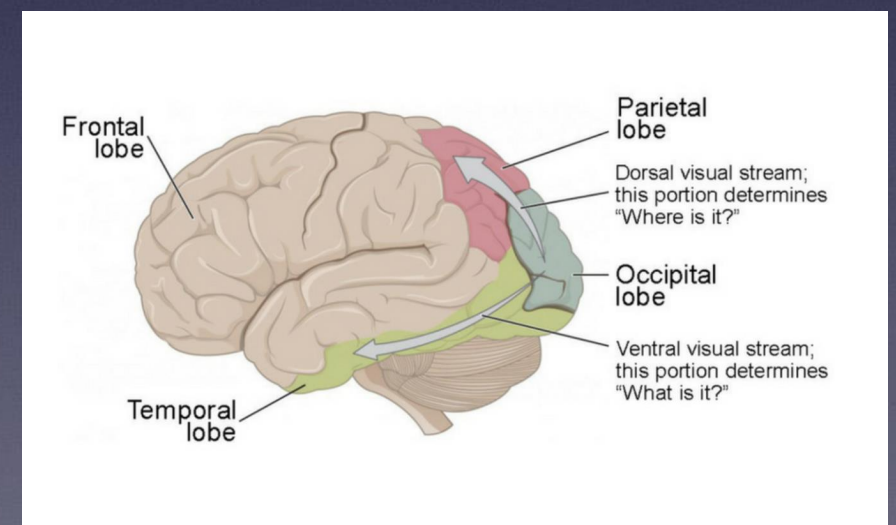
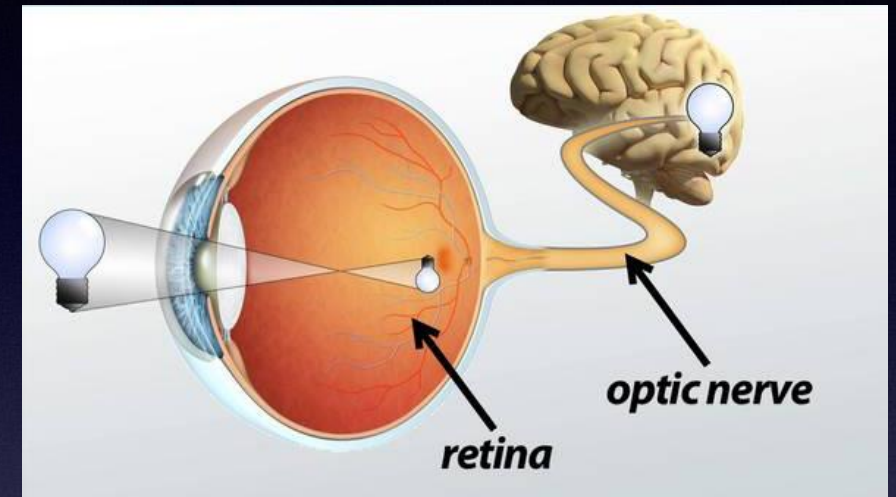
Adaptation to optic atrophy

- Larger print, phones, tablets
- Reading strategies
- Assistance with ambulation
- High contrast stimuli, modification of steps



Cortical visual impairment

- Brain doesn't seem to listen to eye
- Brain doesn't respond
- Seizures can cause intermittently disorganized brain activity and CVI

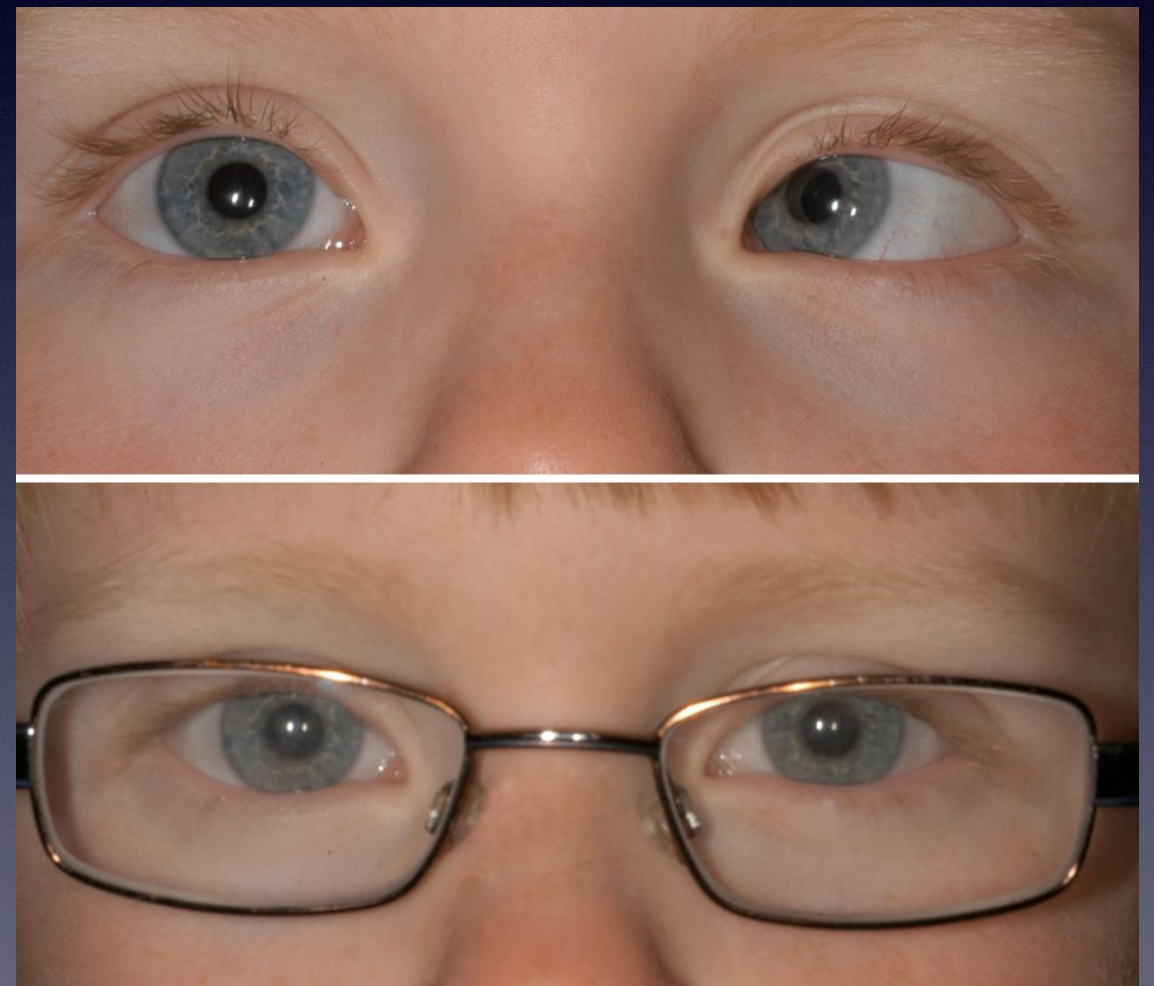


Adaptation to CVI

- Severity can range from subtle to severe, from normal behaviors to apparent blindness
- Treat seizures
- Christine Roman-Lantzy's work
 - CVI assessment
 - Guide for educators

Strabismus, nystagmus, abnormal eye movements

- Typically due to a diffuse cerebral or brainstem process like KAND
- Early strabismus does not cause double vision
- Depth perception is over-rated
- Head posturing may result



Adaptation to eye movement anomalies

- Don't try to therapy away a child's compensation and control of a problem
- Spectacles, almost never with prisms, can be helpful
- Strabismus surgery
 - Improve binocularity
 - Reduce head posturing

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