

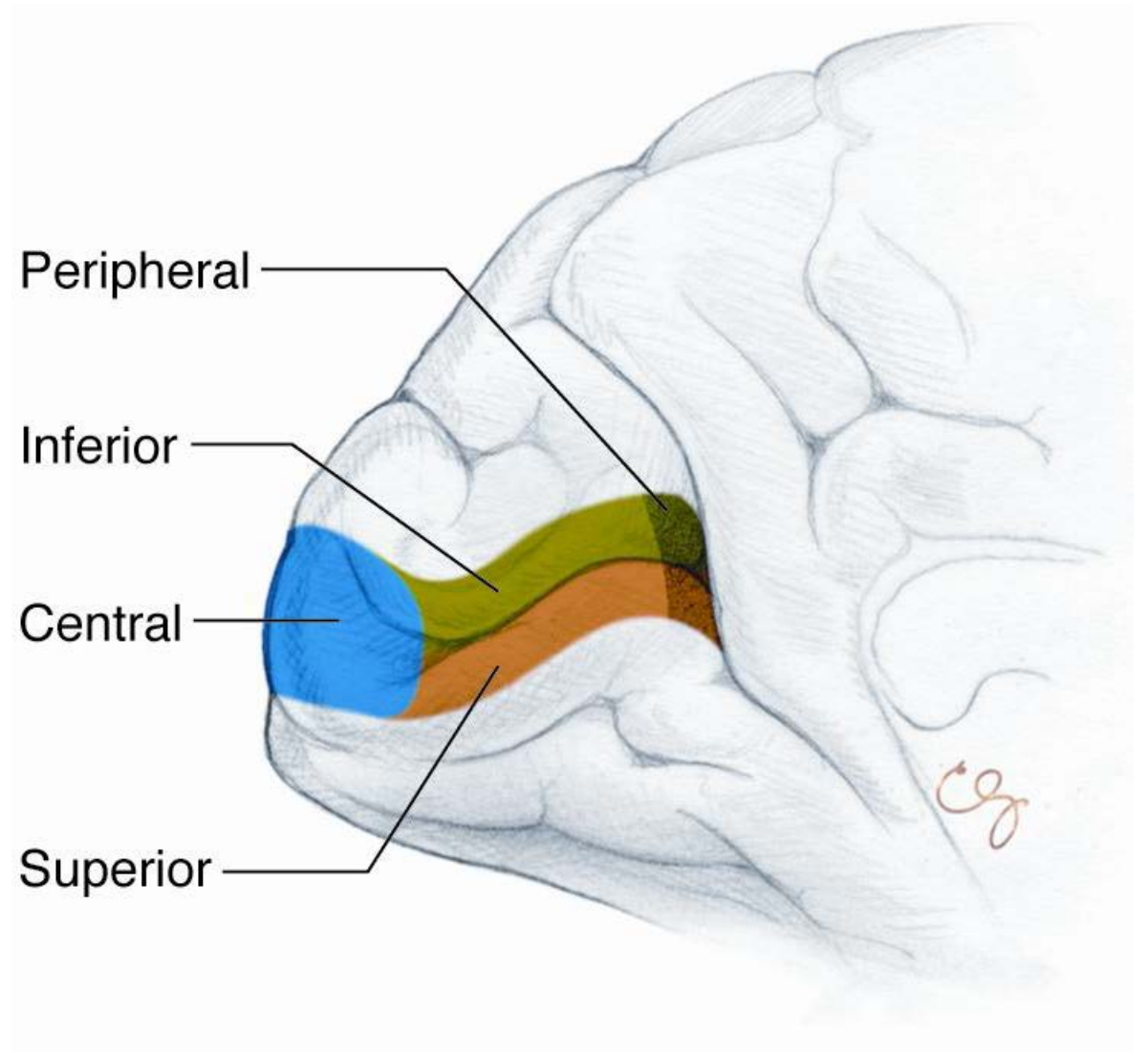
# CENTRAL CAUSES OF SUDDEN VISION LOSS

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## OBJECTIVES

- Understand the blood supply to the eye and brain
- Discover the clinical approach to evaluating central vision loss
- Review critical cases of sudden vision loss due to central origins



# THE VISUAL PATHWAY

- Pre-chiasmal pathway controls vision from each eye
- Chiasm has visual input from both eyes
- Optic tracts with fibers from each eye travel to the lateral geniculate body in the thalamus
- Optic radiations then carry fibers from both eyes to primary visual cortex in the occipital lobe

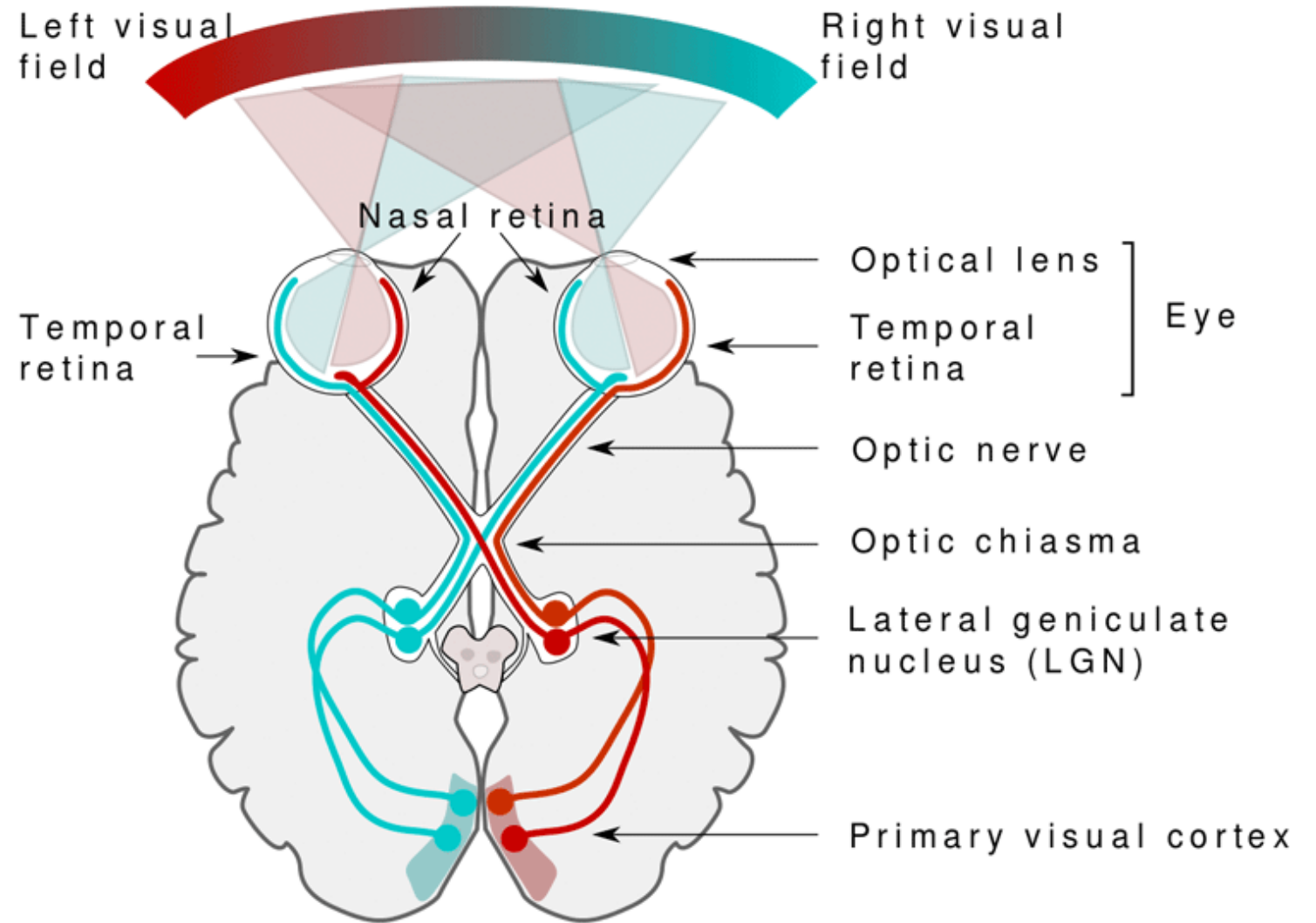
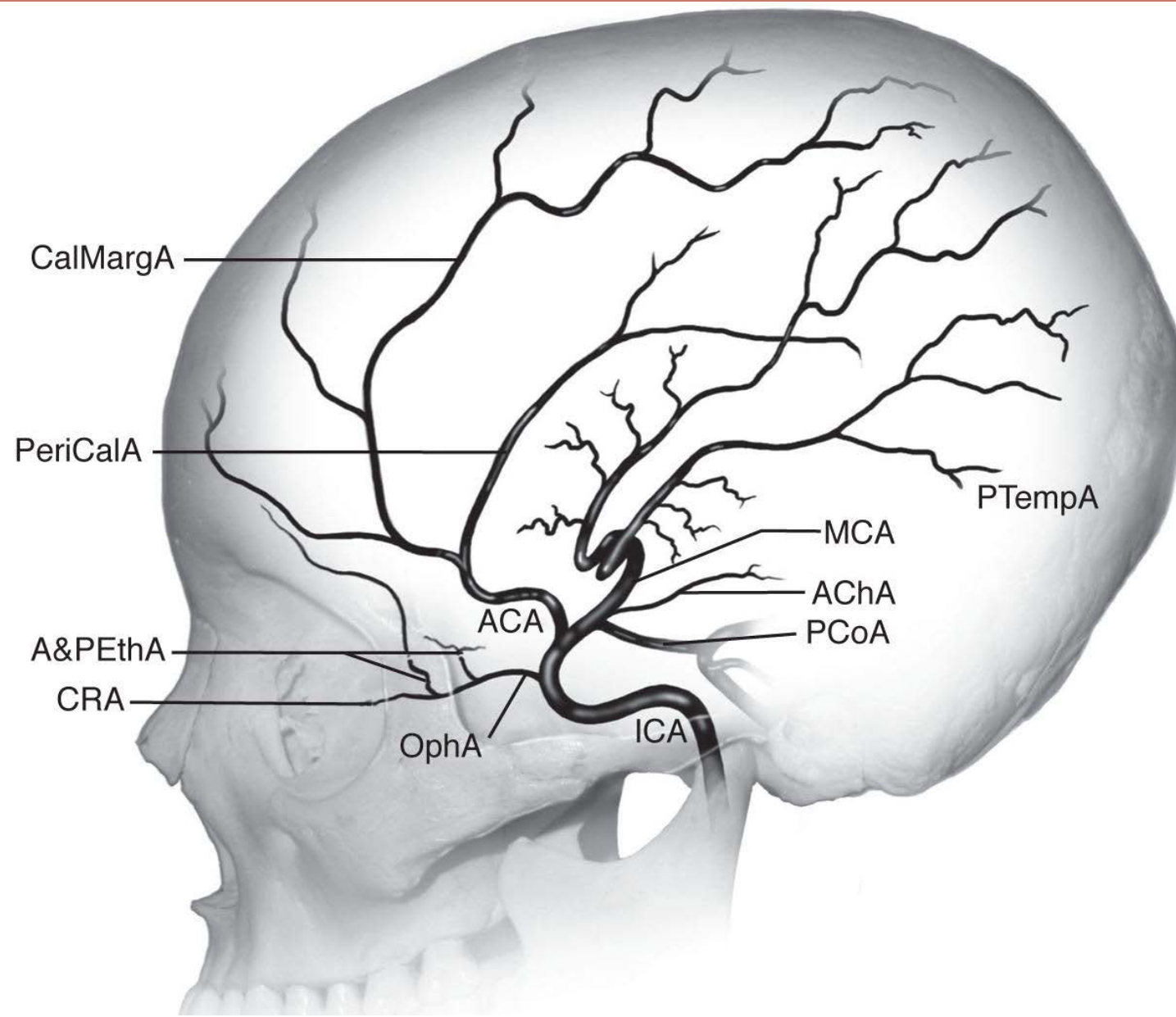


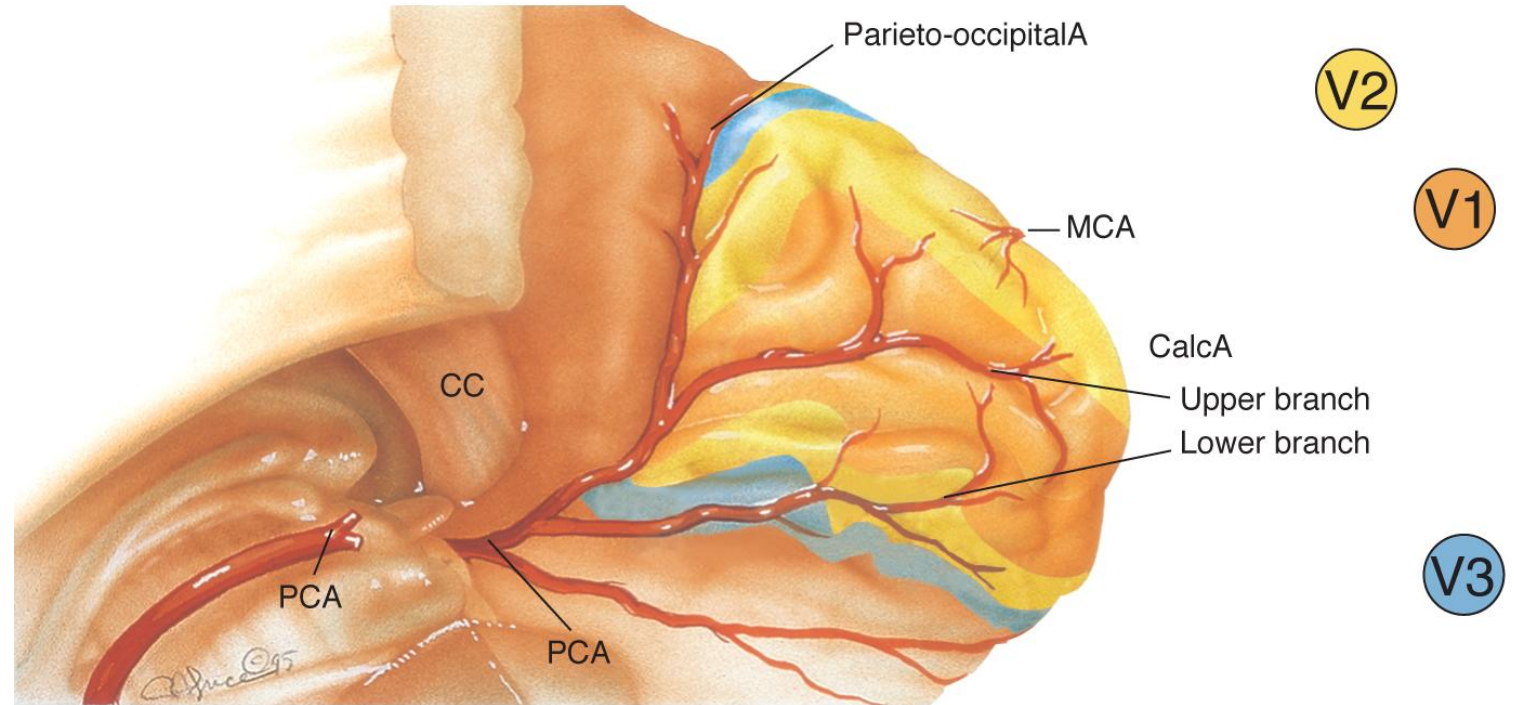
Image courtesy of Allen D. Elster, MRIquestions.com





## BLOOD SUPPLY OF THE POSTERIOR VISUAL PATHWAY

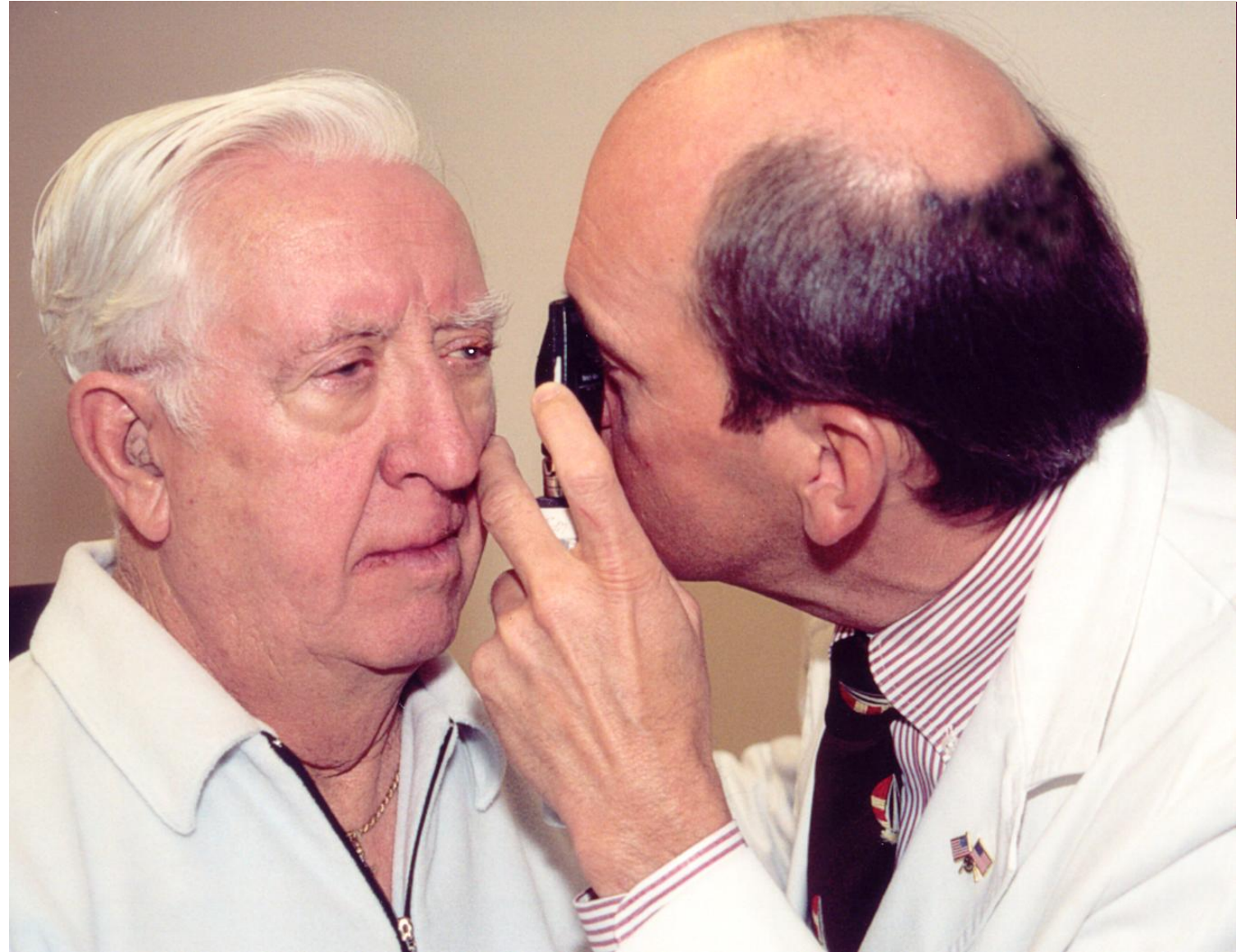
- Understanding anatomy of blood supply is important for analyzing where a potential lesion may be
- Posterior cerebral arteries supply occipital lobes





## EVALUATING PATIENTS WITH SUDDEN VISION LOSS

- Eye Examination Including Fundus Exam
- Visual Field Testing
- Neurological Exam
- Brain Imaging

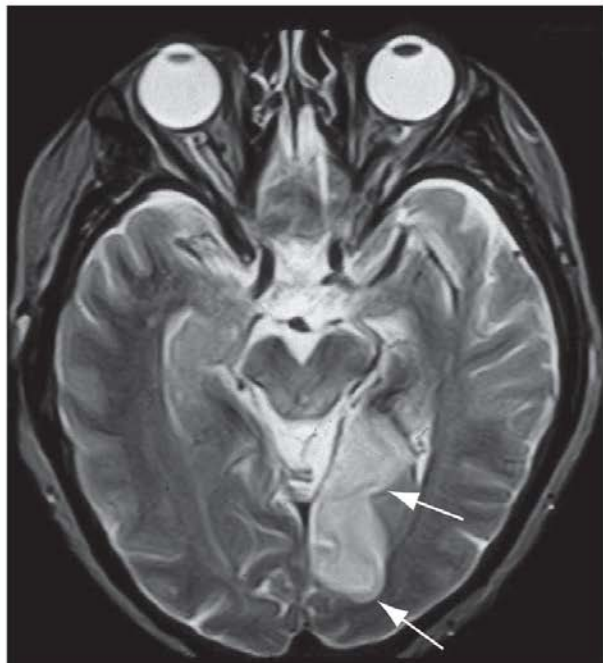
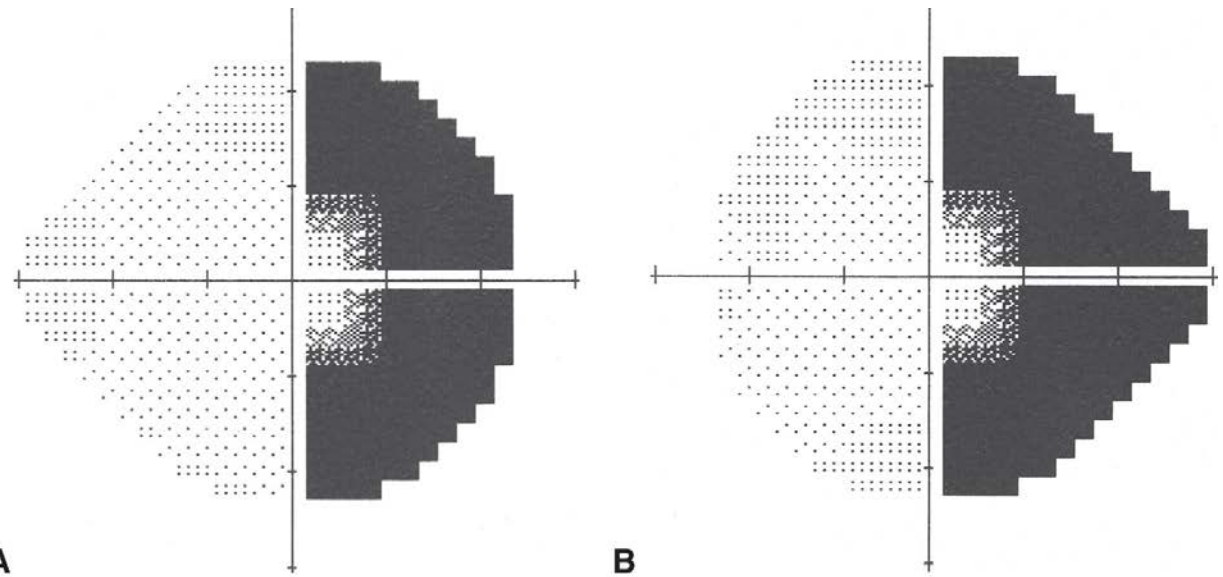




## CASE #1

- A 67-year-old man is brought to the emergency department by his daughter. He was bumping into the cabinets in his kitchen, noted that the room was spinning, and could not locate the car in the driveway despite it being to the right of the front door.
- The triage nurse noticed that he skipped questions on the intake forms. You note that these questions are primarily on right side of the page. His visual acuity measures 20/20 in each eye.





# STROKE



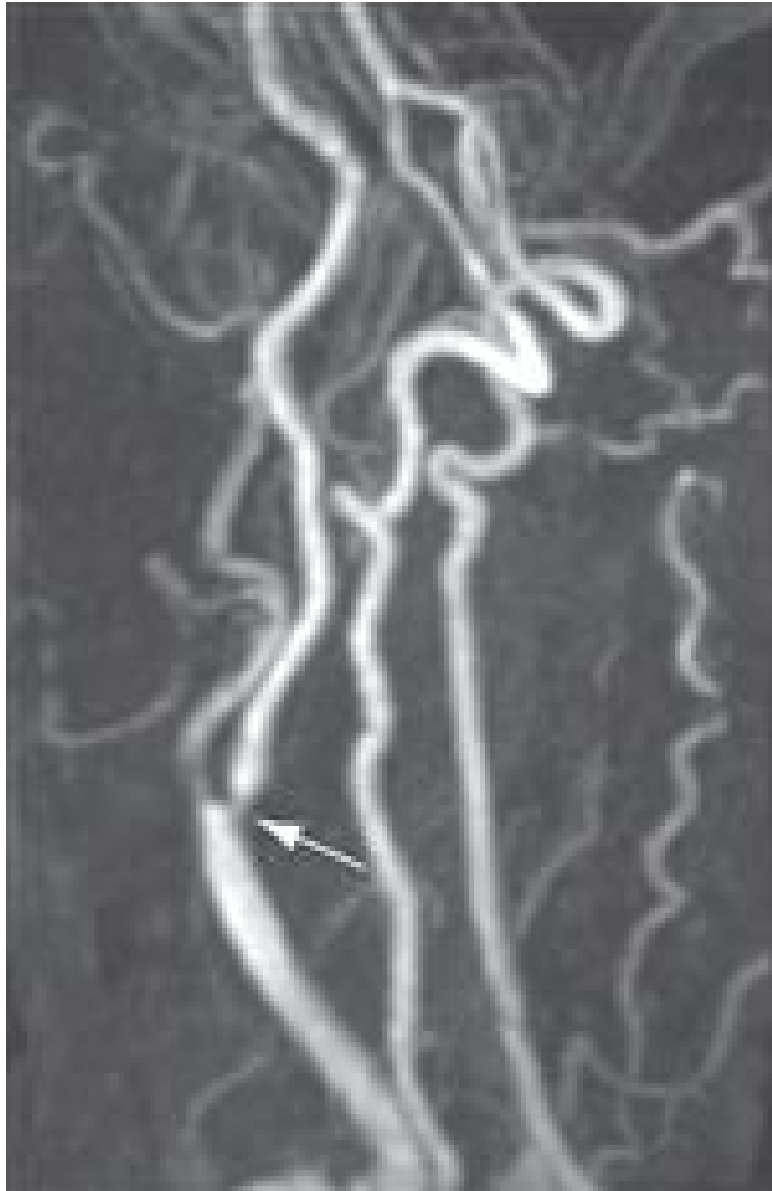




## CASE #2

- A 76-year-old man presents to the emergency department after experiencing a sudden blackening of vision in his left eye. It lasted 5 minutes and resolved. He did not cover one eye or the other to see if this was truly unilateral but is “pretty sure.”
- His examination is unremarkable with visual acuity appropriate for age of 20/25 in each eye. He has a history of hypertension (controlled on medication) and dyslipidemia.





# TRANSIENT ISCHEMIC ATTACK DUE TO CAROTID STENOSIS



## CASE #3

- An 81-year-old man presents with sudden, painless vision loss in the left eye that spread over his complete left visual field over a 15-minute time frame.
- Vision examination documented visual acuities of 20/40 in the right eye and hand motions vision in the left eye
- Pupillary examination showed an afferent pupillary defect of the left eye.



# CENTRAL RETINAL ARTERY OCCLUSION

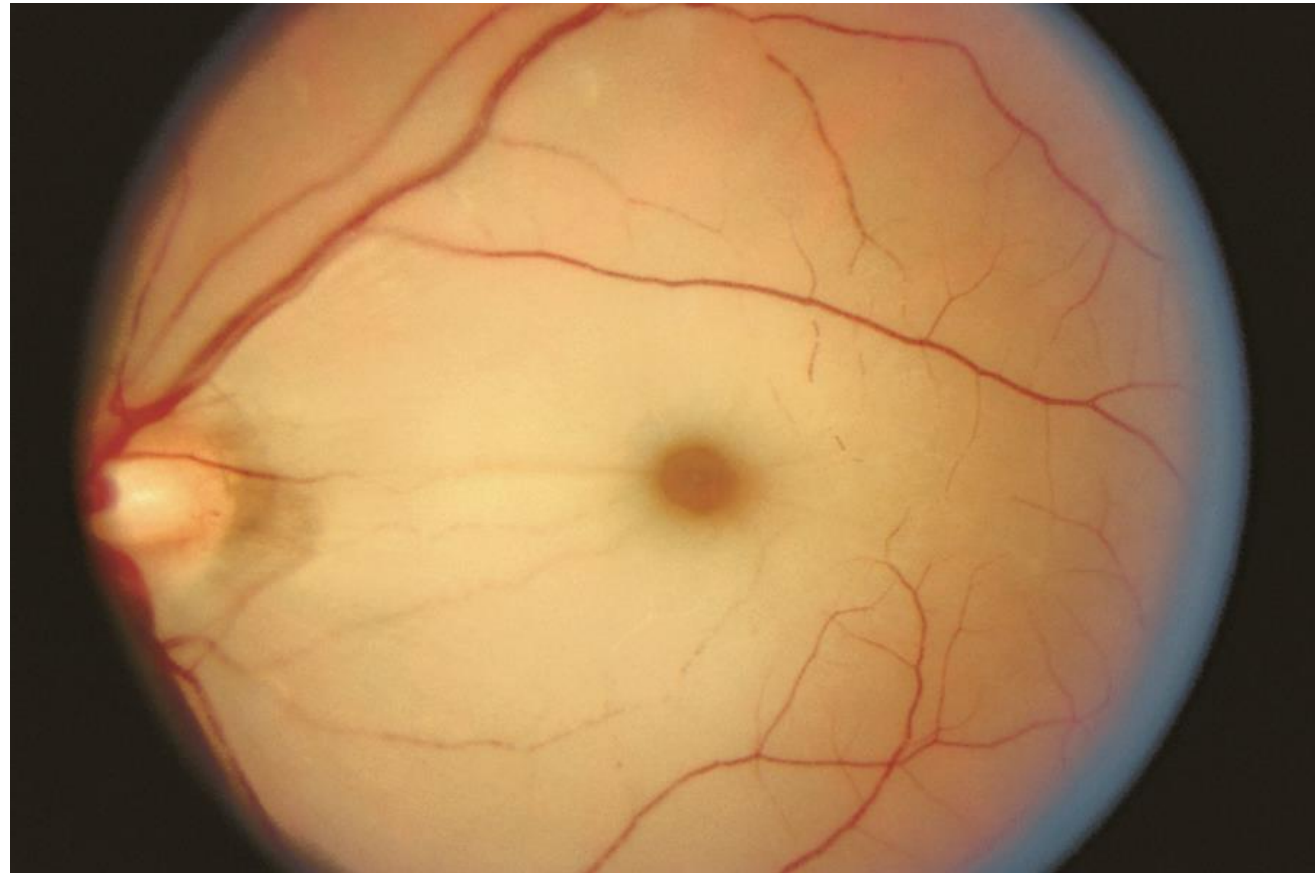


Image credit: <https://www.aaopt.org/image/central-retinal-artery-occlusion-5>

