



Struck From Behind: Posterior Circulation Strokes

Jeff Myers, DO, EdM, EMT-P, FAEMS

EMS Physician and Educator

Buffalo, NY

<http://www.clinicalparamedicine.com>

Chief Concern

- General Illness
- Dizzy, nausea, vomiting



History



60-year-old female



Sudden onset of dizziness



Nausea and violent vomiting



Mild headache



Off balance and can't walk



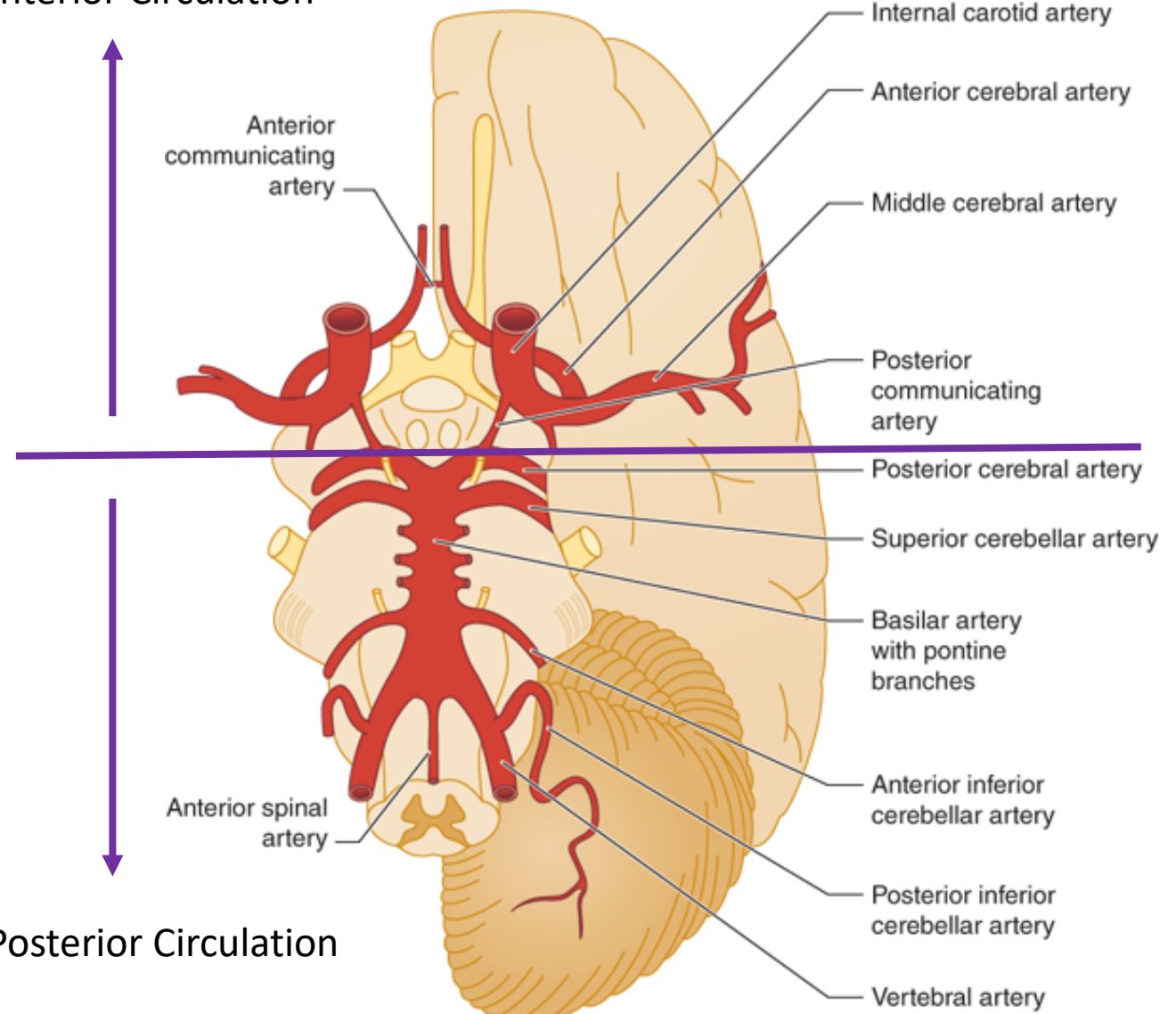
World oscillating when eyes open



Started suddenly 1.5 hrs ago

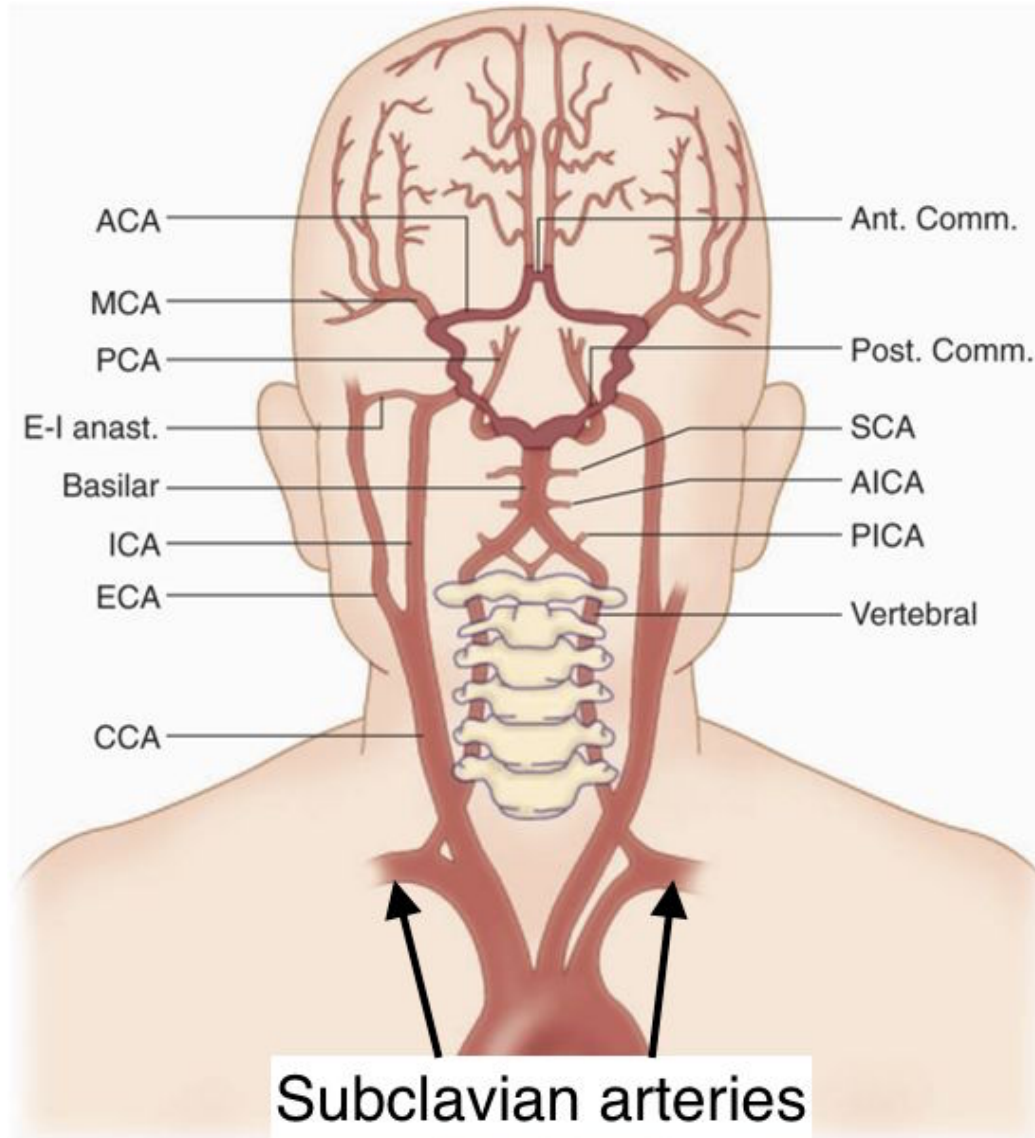
What is Posterior Circulation?

Anterior Circulation

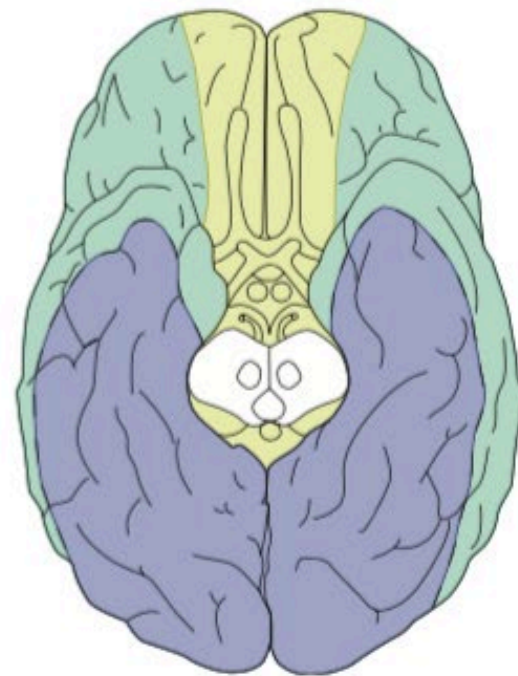
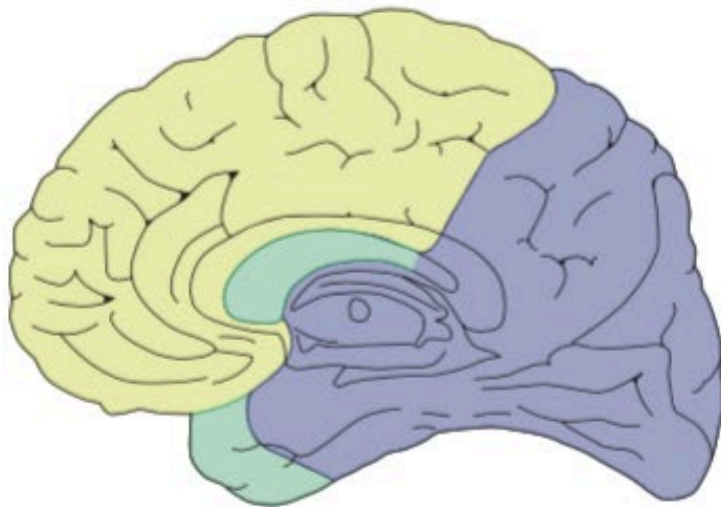
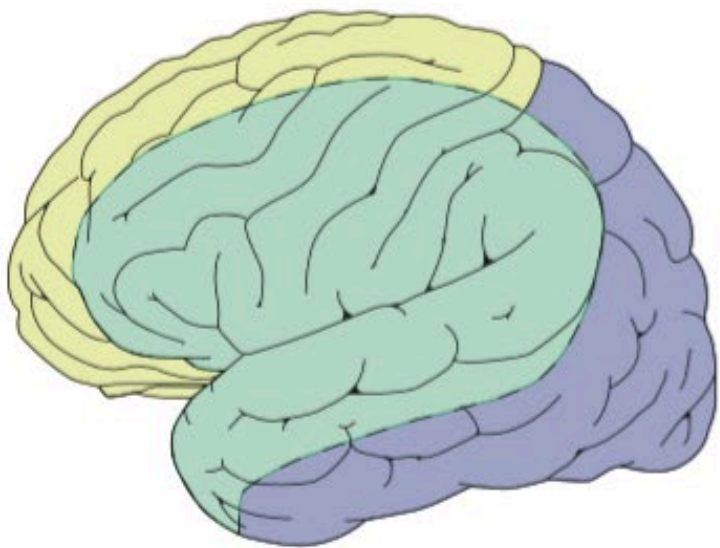


Posterior Circulation

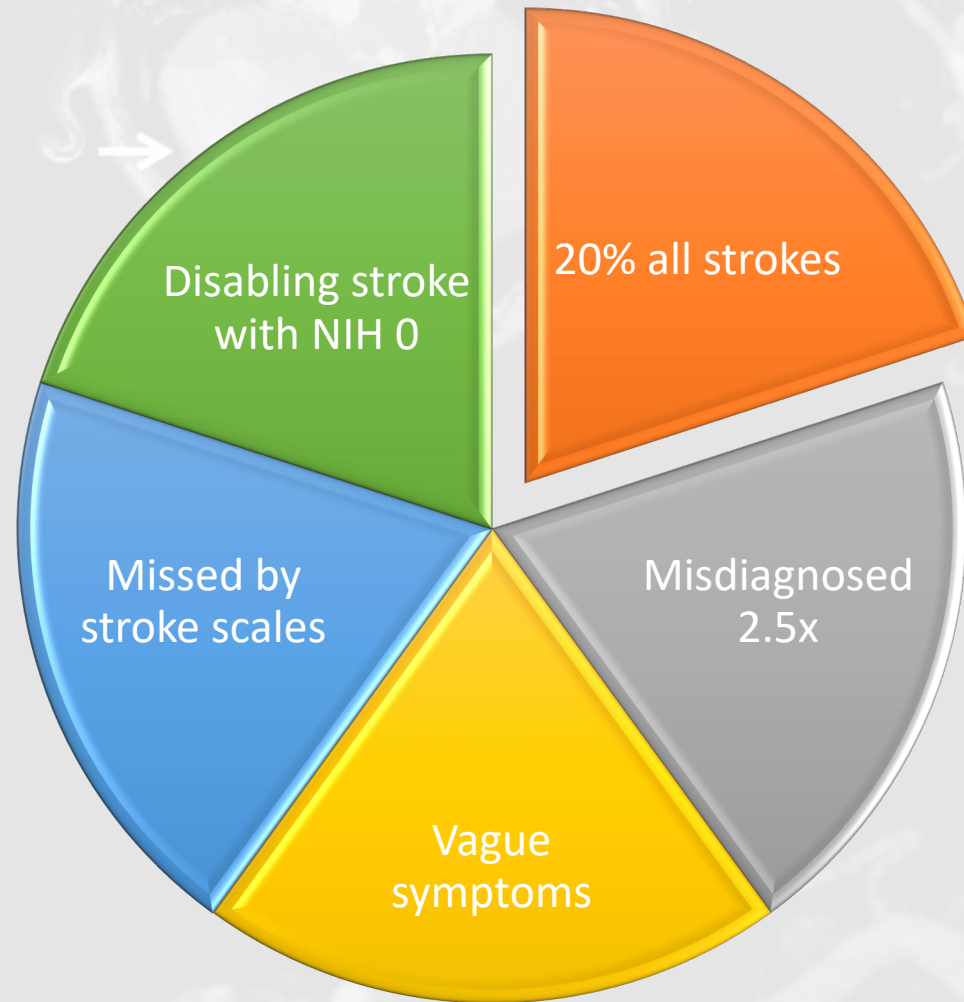
Source: M. J. Aminoff, D. A. Greenberg, R. P. Simon: Clinical Neurology, 9th Edition
www.accessmedicine.com
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- Anterior cerebral artery (supplies anteromedial surface)
- Middle cerebral artery (supplies lateral surface)
- Posterior cerebral artery (supplies posterior and inferior surfaces)



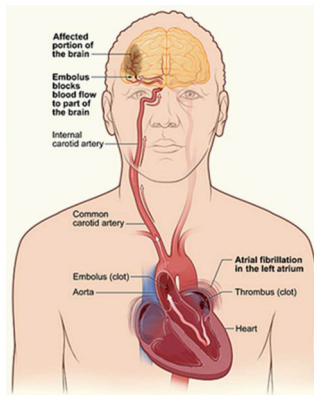
Posterior Strokes: What's the problem?



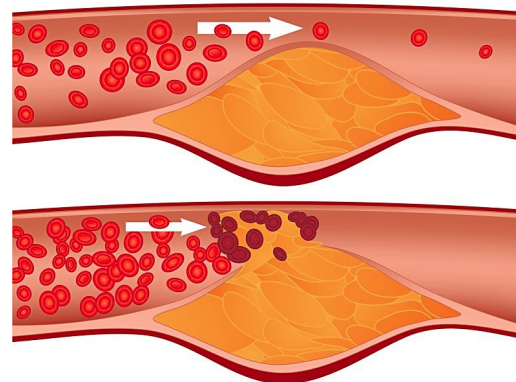
C

Pathophysiology

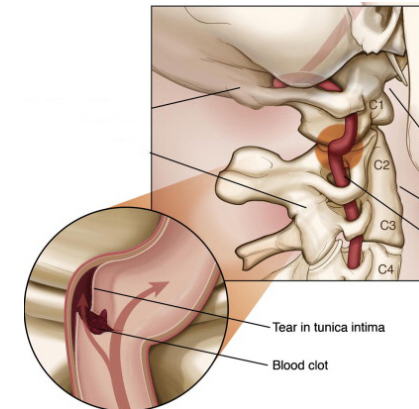
Cardioembolic



Plaque Rupture



Vertebral artery dissection



Symptoms

Dizzy

- Trigger
- Movement

Nausea

- 27% posterior strokes
- Usually with other findings

Sensory

- “negative” symptoms
- “positive” symptoms

AMS

- Involuntary movements
- Gaze limits
- HA / dizzy before

Symptoms

Headache

- Similar or different?
- Neck pain?
- Rotational forces?

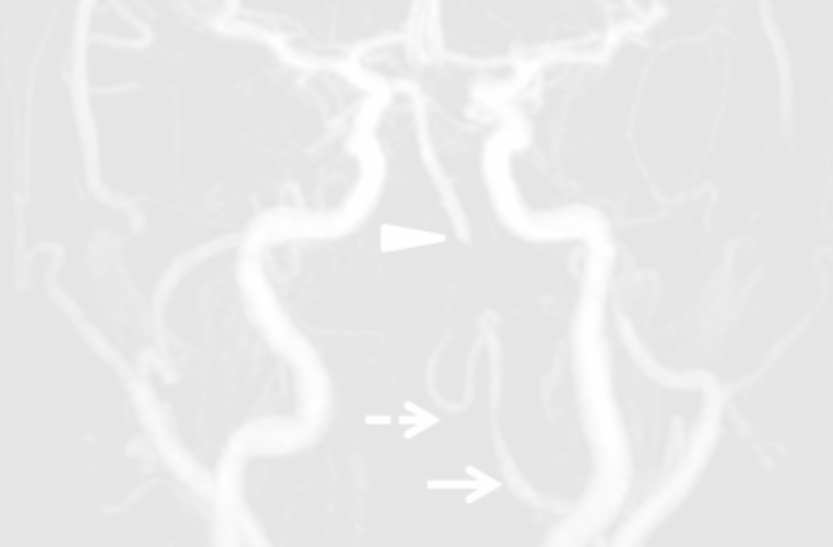
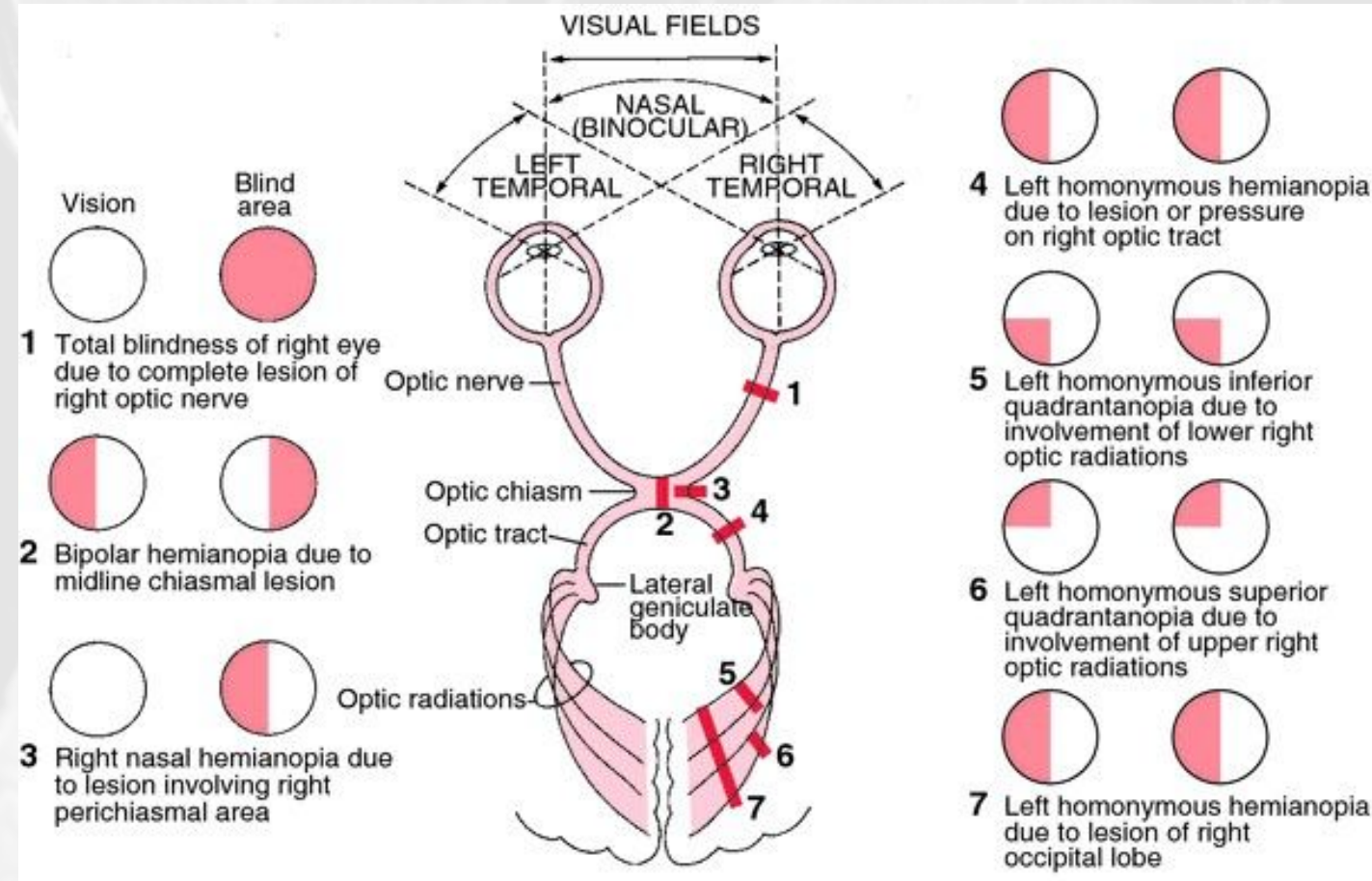
Language

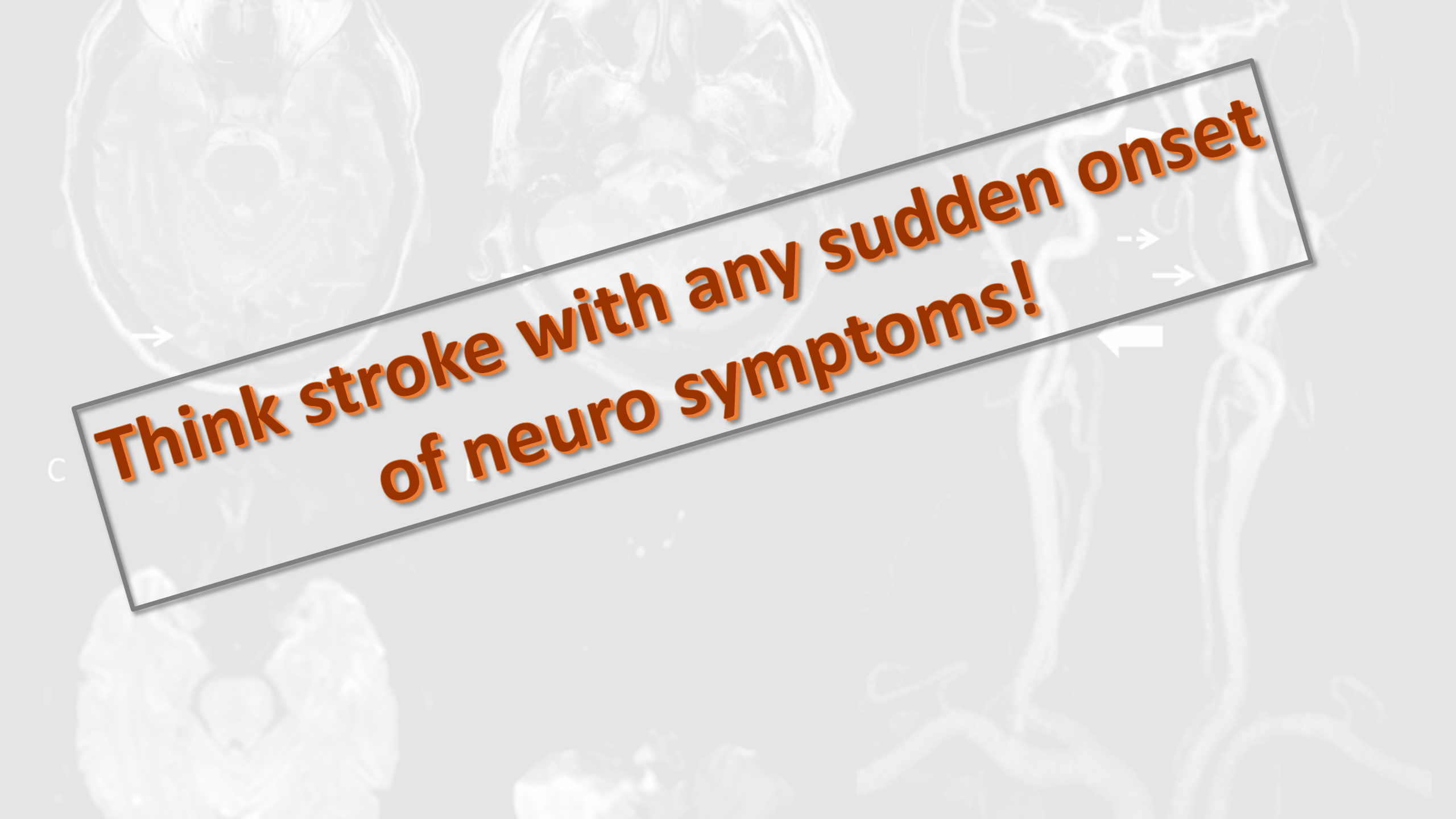
- “Thick”
- “Heavy”

Visual

- Double vision
- World oscillating
- Field cut

Visual Field Deficits





**Think stroke with any sudden onset
of neuro symptoms!**

Crucial Information: Time Last Known Well

tPa Window



Intervention Window



Crucial
Information:
Anticoagulants

Warfarin
(coumadin)

Apixaban
(eliquis)

Clopidogrel
(plavix)

Rivaroxaban
(xarelto)

Ticagrelor
(brilinta)

Dabigatran
(pradaxa)

Examination



Laying on couch vomiting



Motor and sensory in extremities/face normal



Truncal ataxia



Rotatory nystagmus



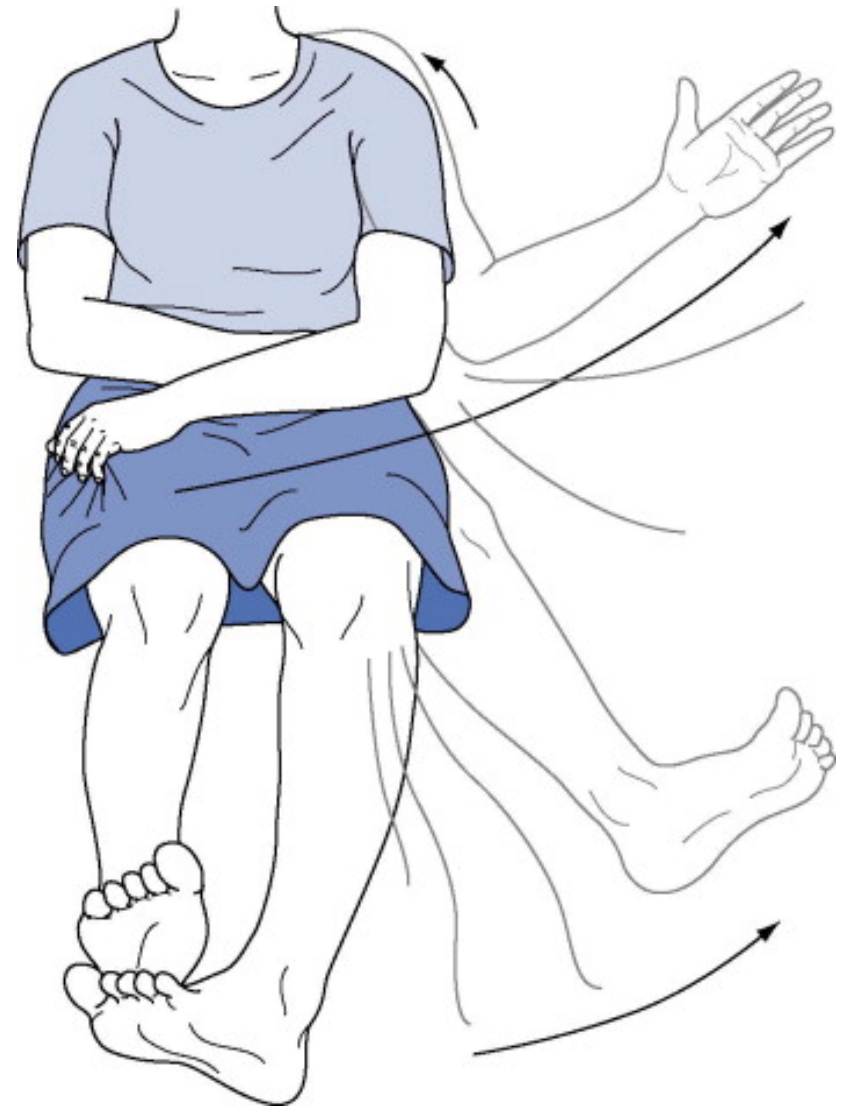
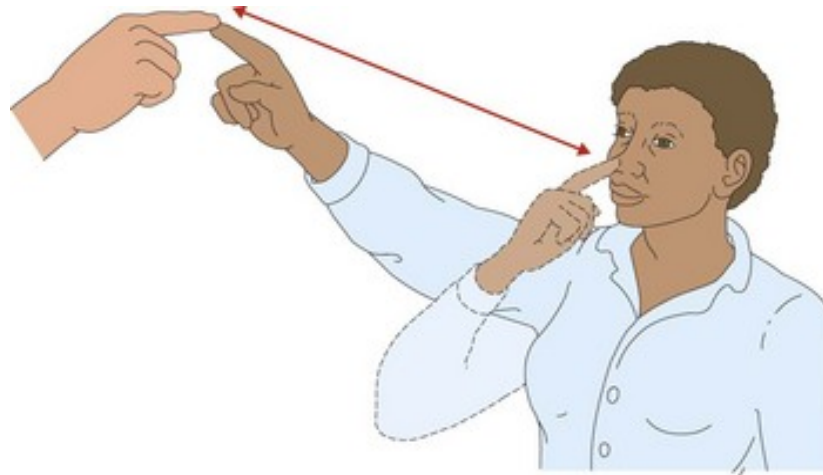
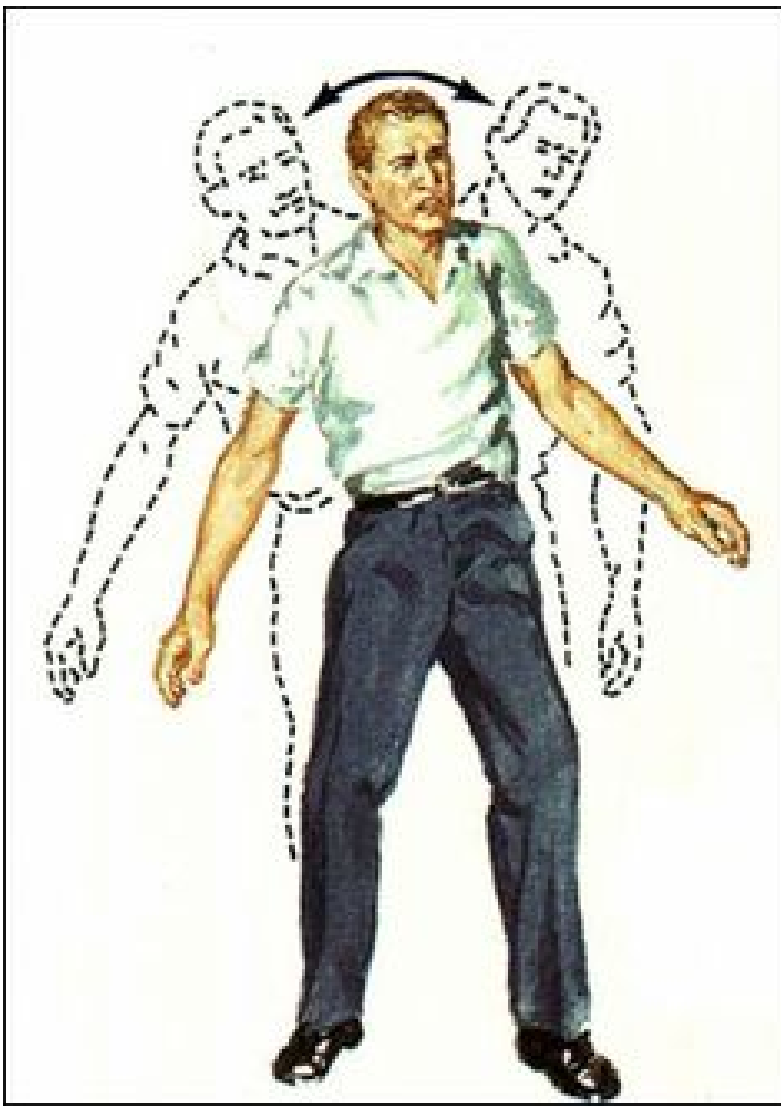
No speech deficits

Physical Exam

Including:

- Complete cardio and neuro exam
- ECG
- Blood glucose

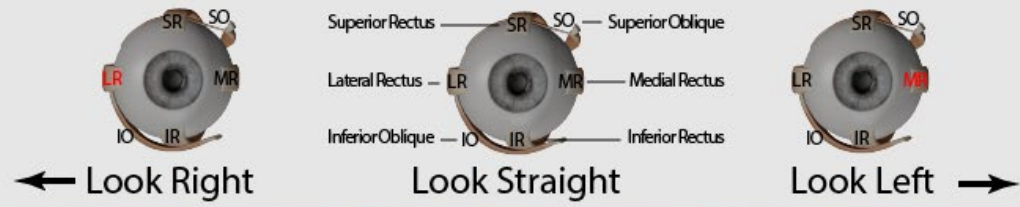




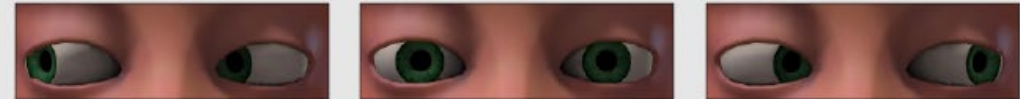
Ataxia / Movement

Visual

Extraocular Movement



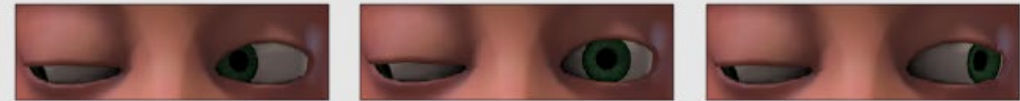
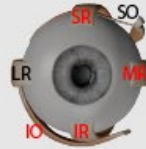
Normal



For deficit affecting the RIGHT eye:

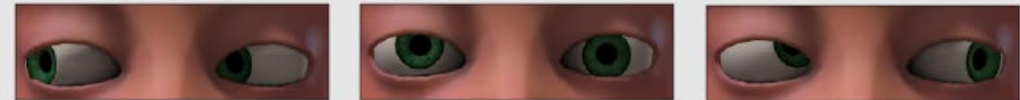
CN III Palsy

Lateral deviation
Downward deviation
Ptosis



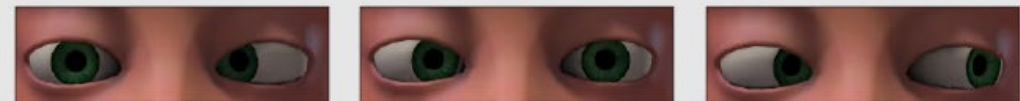
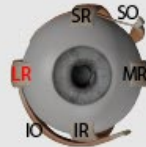
CN IV Palsy

Upward deviation



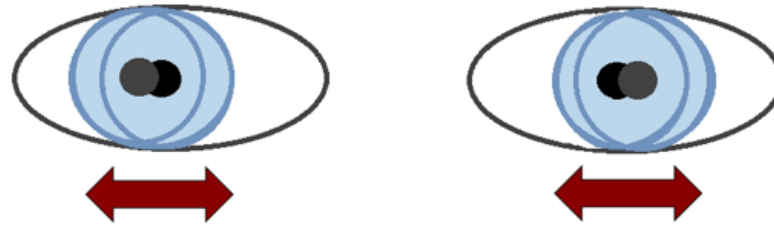
CN VI Palsy

Medial deviation

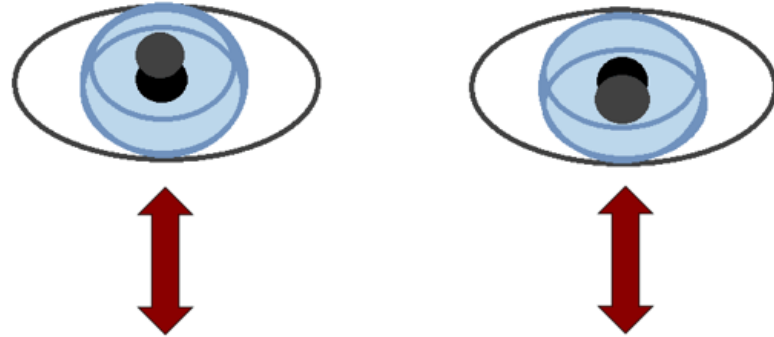


Nystagmus

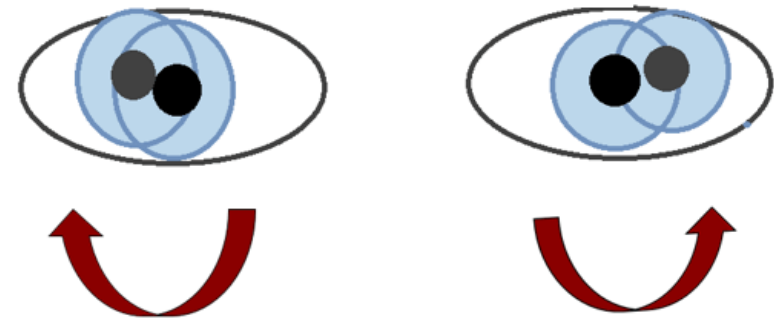
HORIZONTAL NYSTAGMUS



VERTICAL NYSTAGMUS

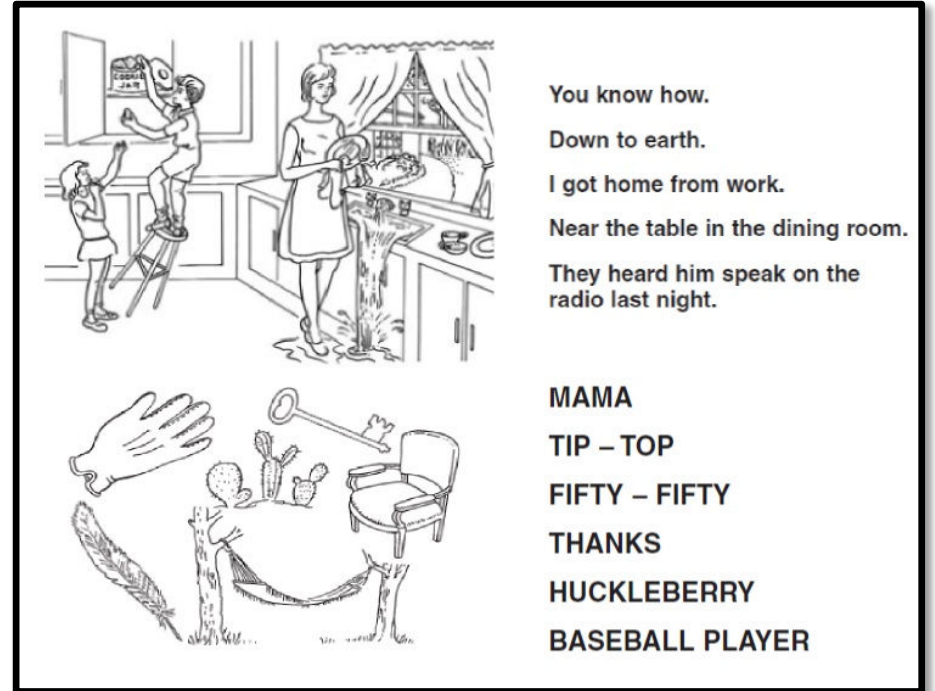


ROTARY NYSTAGMUS



Exam: Speech

- Cincinatti:
 - “You can’t teach an old dog new tricks”
- NIH
- “Pawtucket”



Assessment

- Concern for posterior circulation stroke



Treatment



EMS Stroke Assessment

Patient Name _____
DOB _____

Last Known Well (LKW) Time: _____
Witness to LKW / Ph # _____
HR/Rhythm _____ BP _____ Gluc _____ Seizure at stroke onset? _____
Pt on Anticoagulant? Coumadin Eliquis Pradaxa Xarelto Other _____

Choose one of the following for integration into report sheet.
Fill out checklist—verbally share during pre-arrival report to hospital

Cincinnati Stroke Scale
Los Angeles Prehospital Stroke Screen
Miami Emergency Neurological Deficit Scale

Fibrinolytic Therapy Exclusion Checklist for Ischemic Stroke
Verbally share during pre-arrival report to hospital

POSSIBLE INCLUSION CRITERIA

- 18 years of age or older
- S/S of stroke with neurologic deficit (abnormal Stroke Scale score (as above))
- Patient can be transported to a Stroke Center to receive tPA within 3-4.5 hours

POSSIBLE EXCLUSION CRITERIA

- Active internal bleeding: GI or urinary bleeding within last 21 days, or known bleeding risk
- Known bleeding disorder
- Within 14 days of major surgery or serious trauma
- Within 3 months of stroke, serious head trauma, or intracranial surgery
- History of intracranial hemorrhage or brain cancer
- Observed seizure at stroke onset

Evaluation

Continue to monitor for deterioration



Disposition:
Stroke Center

Primary

Comprehensive

**STROKE
ALERT**



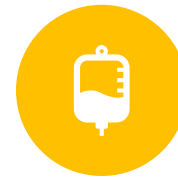
Case Resolution



Arrived at hospital
2 hours after
symptoms



Immediate CT –
negative for
bleeding



Patient received
tPa



Additional imaging
no LVO



Admitted for
further testing



Contact Information

Jeff Myers, DO, EdM, EMT-P, FAEMS, HMFIC

EMS Physician and Educator

4408 Milestrip Rd #191

Blasdell, NY 14219

716.984.0470

<http://www.clinicalparamedicine.com>

drj@clinicalparamedicine.com

[@drjdoems](#)  

Jeff Myers 

