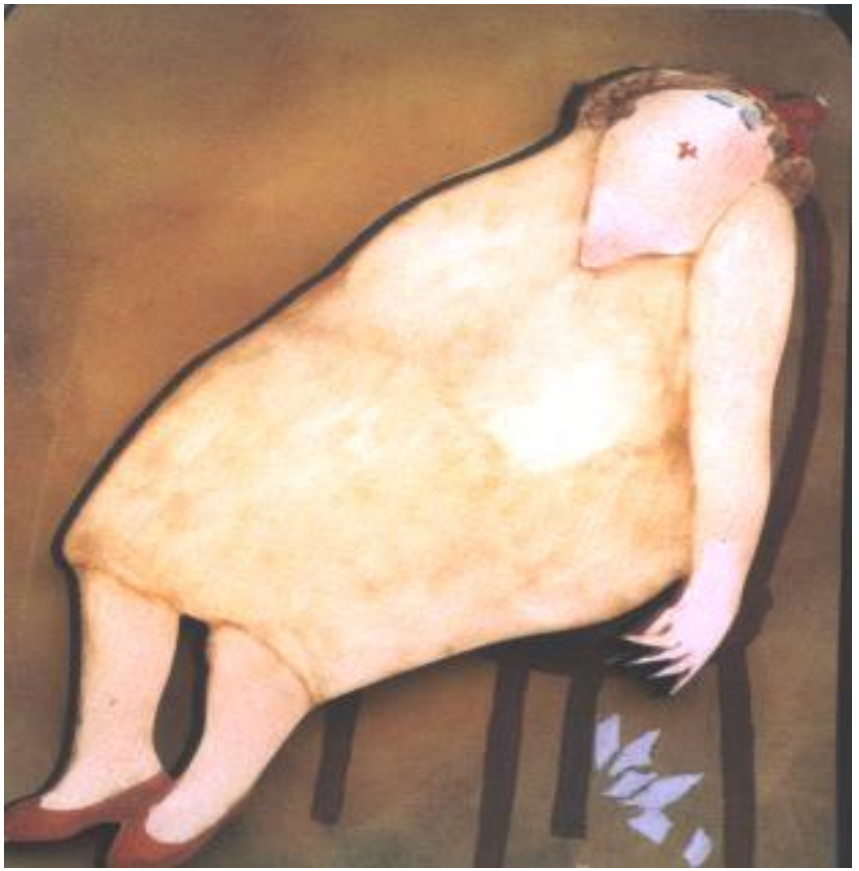
Name that Stroke!

Or is it a Mimic?



I have no conflicts of interest to disclose.
All treatments discussed follow recent AHA & ASA Guidelines.

No one is paying me big money to provide this information either!

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There are 4 major vessels in the brain

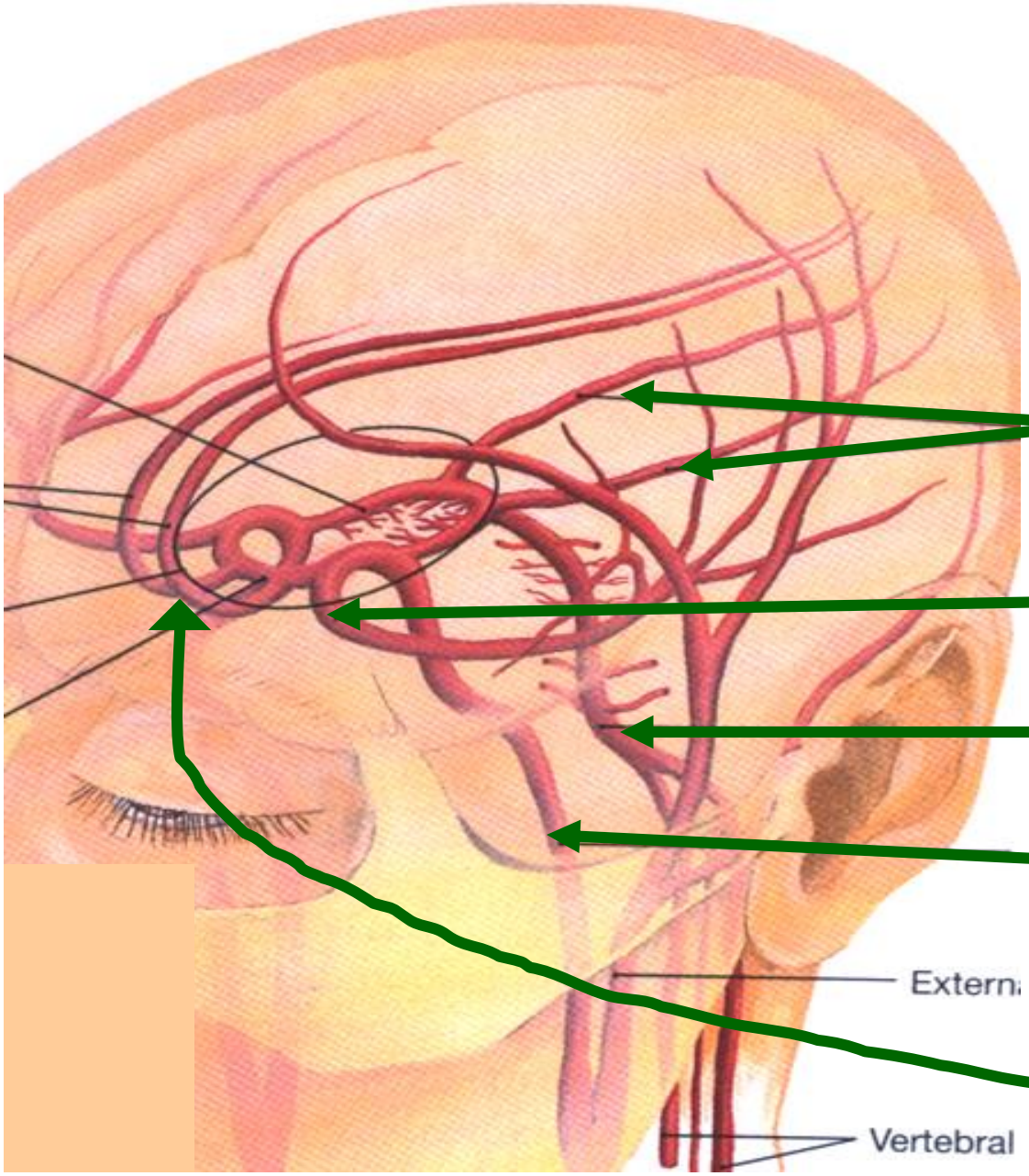
- **Anterior**
- **Middle cerebral**
- **Posterior**
- **Basilar**

& many smaller branches

Blood supply -
Posterior vertebral arteries
Internal carotid arteries

Occlusions in distal smaller branches explain subtle strokes and differing symptoms

Note how all these vessels lead to, or branch off of the Circle of Willis



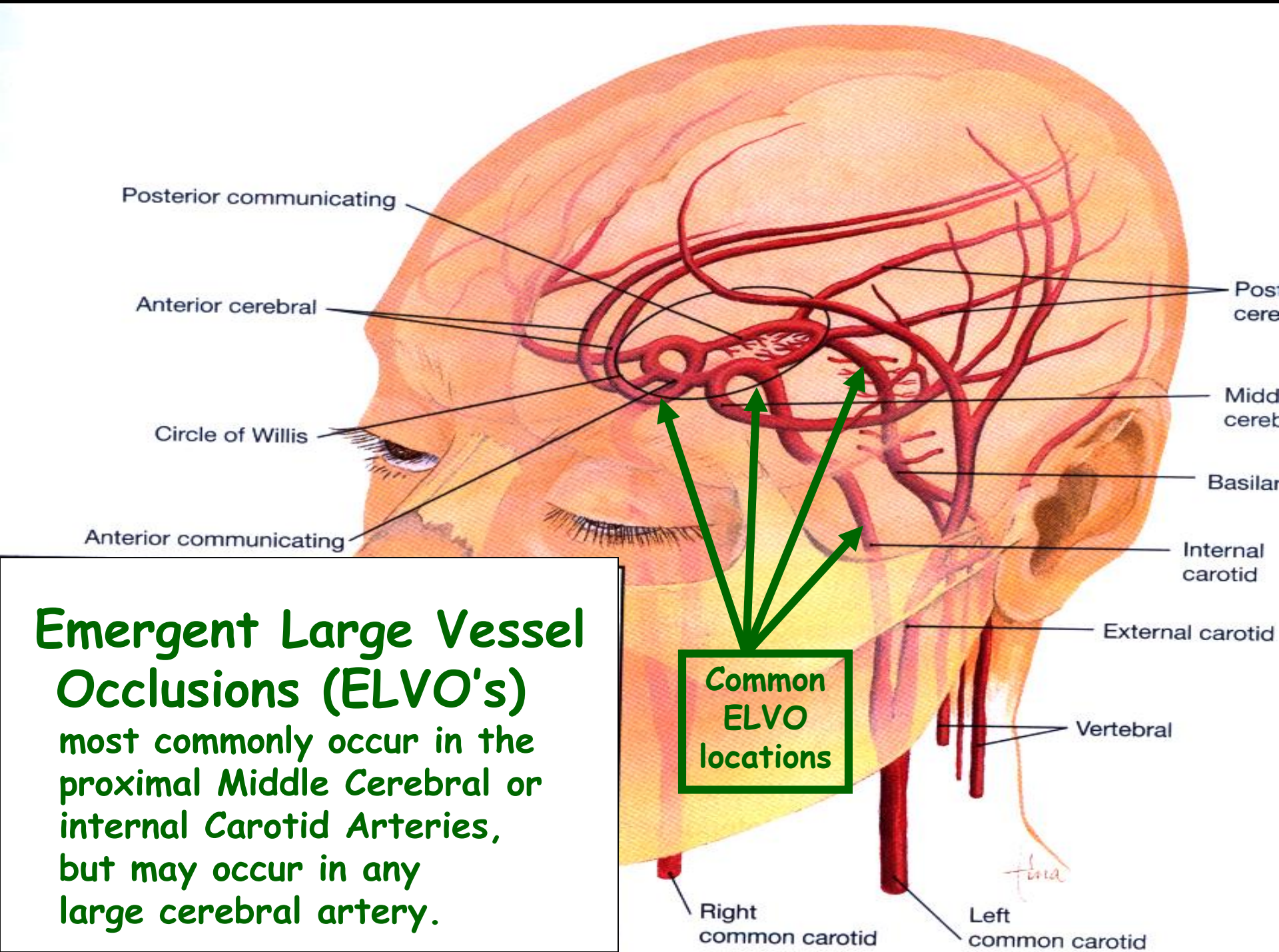
Posterior cerebral

Middle cerebral

Basilar artery

Internal carotid

Anterior cerebral

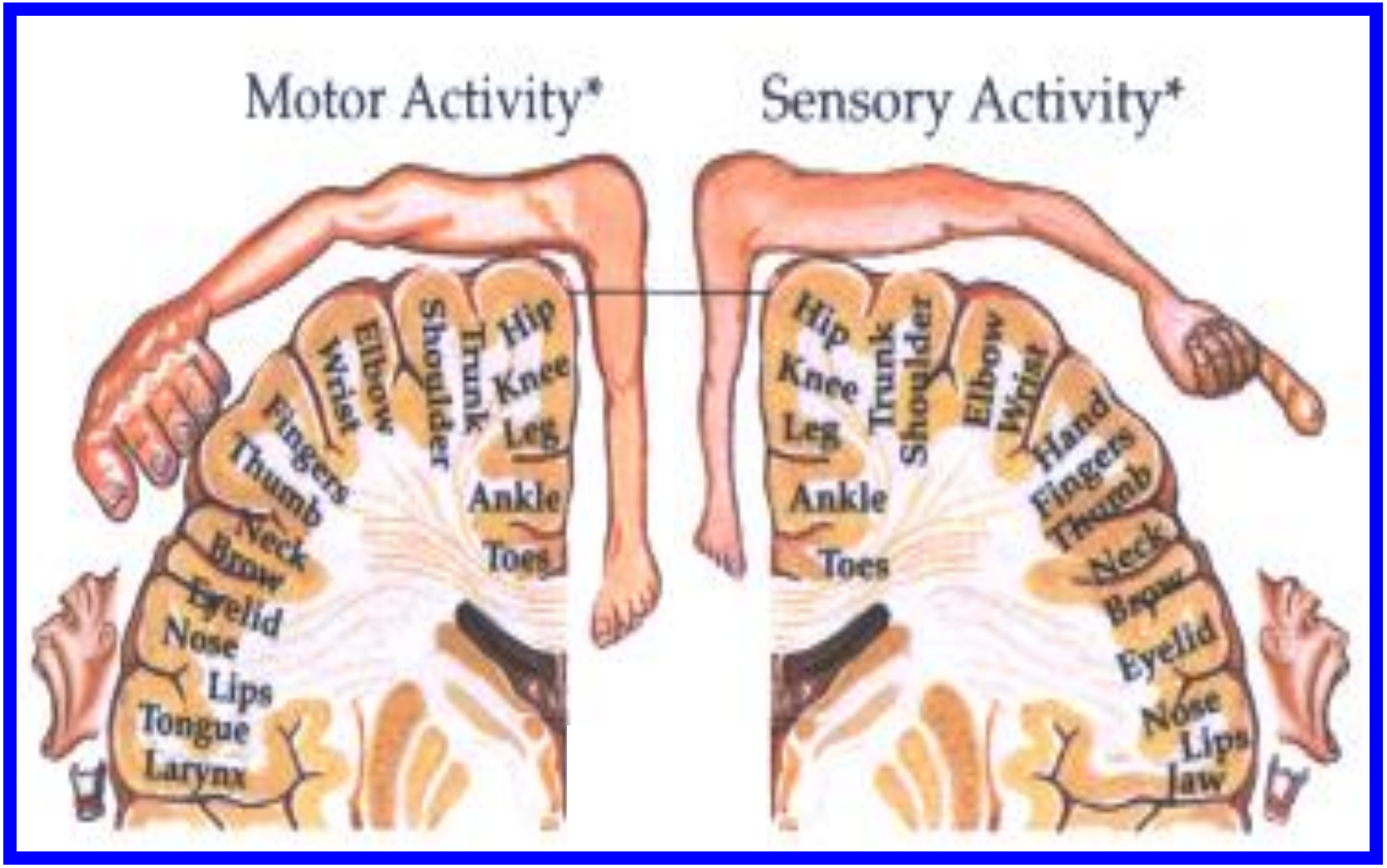


Emergent Large Vessel Occlusions (ELVO's)

most commonly occur in the proximal Middle Cerebral or internal Carotid Arteries, but may occur in any large cerebral artery.

Classic stroke symptoms are generally easy to recognize & most likely an ELVO stroke!

- One sided weakness
- One sided numbness
- Facial droop
- Aphasia/slurred speech
  or "neglect"
- Visual changes/loss
- Sudden confusion, or altered mental status

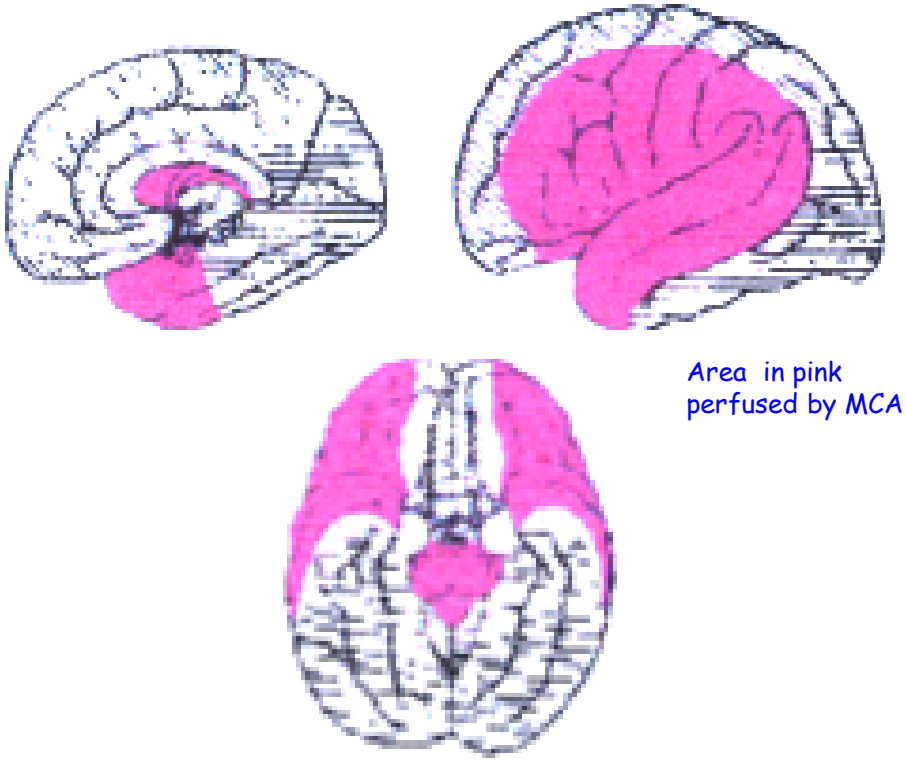


Looking at the brain from the front we see a figure called a "homunculus" which identifies the part of the brain where motor and sensory activities originate, A.K.A. motor and sensory strips.

Typical symptoms seen if there is an occlusion in the **middle cerebral artery**:

- **Opposite sided weakness** (greater in face & arm)
- **Opposite sided Sensory loss** (greater in face & arm)
- **Homonymous hemianopia (loss of visual field – either right or left)**
- **Left MCA can't talk**
- **Right MCA neglect, poor motivation**

The more distal the clot, the less obvious the symptoms



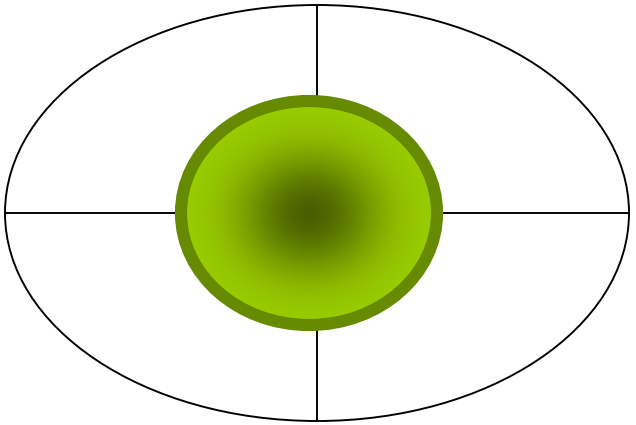
Area in pink perfused by MCA

To test the MCA have the patient do the following:

- Hold their arms out for a slow count of 10
- Check for equality of grasp
- Check ability to feel touch equally
- Smile – looking for facial droop
- Have them talk – do they make sense? Is the speech clear?

To check for visual changes

Visual fields upper and lower quadrants are tested by using finger counting, confrontation, or visual threat as appropriate



0 = no visual loss
1 = partial hemianopia
2 = complete hemianopia
3 = bilateral hemianopia
(blind, including cortical blindness)

If you are unsure – poke your finger at the patient's eye – They should blink if vision is intact

Anterior Cerebral Artery Occlusion

Normal blood flow is in area shaded blue

Weakness & sensory loss opposite leg Clumsy

(more in foot, thigh, shoulder)

Slow to initiate response Apathy Mute

Short term memory loss

Impulsivity Lack of concentration

Incontinence

Tricks to check for this

- Watch them walk – are they dragging a leg or clumsy
- Can they hold each leg up for count of 5
- Compare sensation in legs/ feet – is one numb or tingling?
- Do they respond to you, or just sit there staring?
- Are they having "impulse"/ behavioral issues?
- Is their concentration or ability to remember "off"?

Posterior Cerebral Artery Occlusion

Normal blood flow in area shaded yellow

Visual disturbances

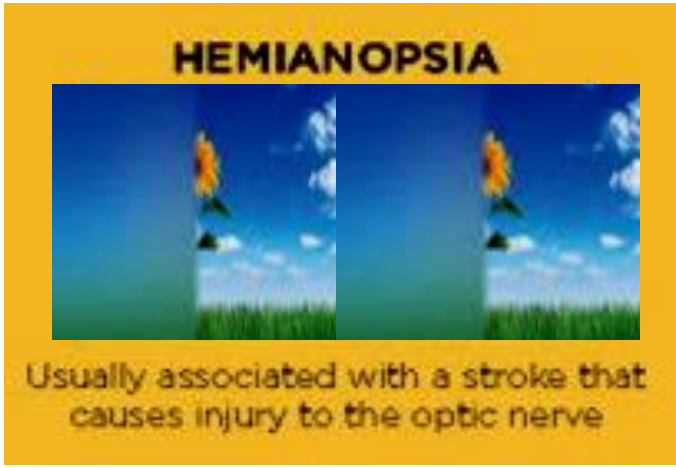
Dysconjugate eye movements

Nystagmus

Less frequently: Loss of opposite side sensation/opposite side paralysis

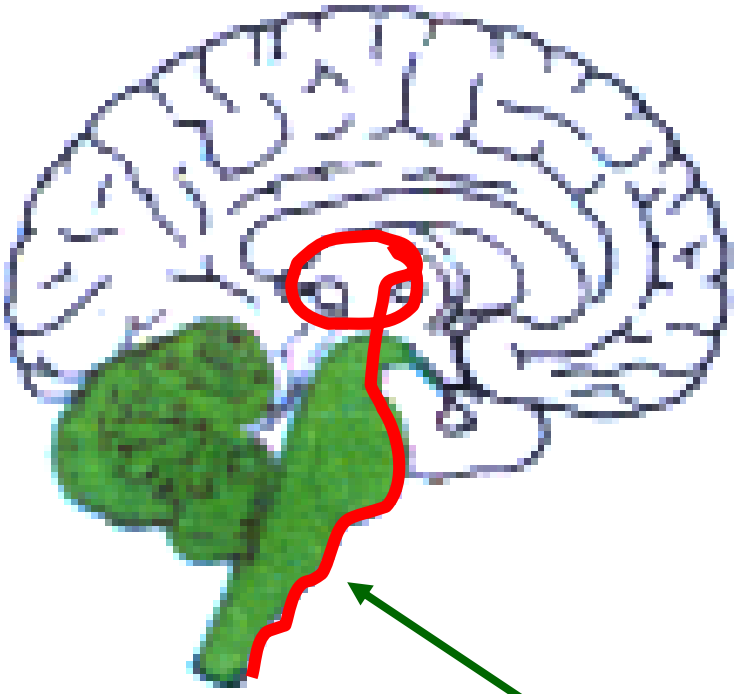
Visual disturbances patient may experience

- Homonymous hemianopia
- Color perception issues
- Inability to interpret a picture, recognize faces
- Unable to name object they see
- Unable to read words
- Loss of hand-eye coordination
- Walk around things they deny seeing



Basilar Artery Occlusion

Normal blood flow to green shaded area



Balance

Basic body function

Bilateral Sensory Loss

Bilateral paralysis

Coma

Changes in muscle tone

Cranial nerve involvement

(next slide)

Signs of this could include:

Sudden onset:

- Unable to sit/stand, without tipping over
- Horrible dizziness & vomiting due to the dizziness
- Unable to swallow, stick out tongue equally, follow with eyes, hear
- Walk in a straight line
- Unable to touch finger to nose
- Sudden unresponsiveness for no good reason

Dysdiadochokinesis

caused by cerebellar issues

- Difficulty doing alternating movement with extremities
- Tapping feet/fingers
- Texting
- Ataxic movements
- Repeating syllables

But we are often afraid to "*pull the trigger*" in case it is actually not a stroke

- Blood sugar
- Metabolic disturbances
- Migraine
- Seizure
- Hypotension/hypoxia
- Peripheral nerve disorders
- Intracranial hemorrhage, tumor, abscess
- Psychogenic episodes

Institute for Clinical Systems Improvement Diagnosis and Treatment of Ischemic Stroke. Eighth Edition, June 2009 http://www.icsi.org/stroke/diagnosis_and_initial_treatment_of_ischemic_stroke___pdf_.html