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How stroke can affect eyesight

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Mid Yorkshire Hospitals Trust

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Basic anatomy of stroke

- What the parts of the brain do?
- What is their blood supply?
- What is a stroke?
- What causes it?
- How do you diagnose it?
- What can you do about it?

What do they do?

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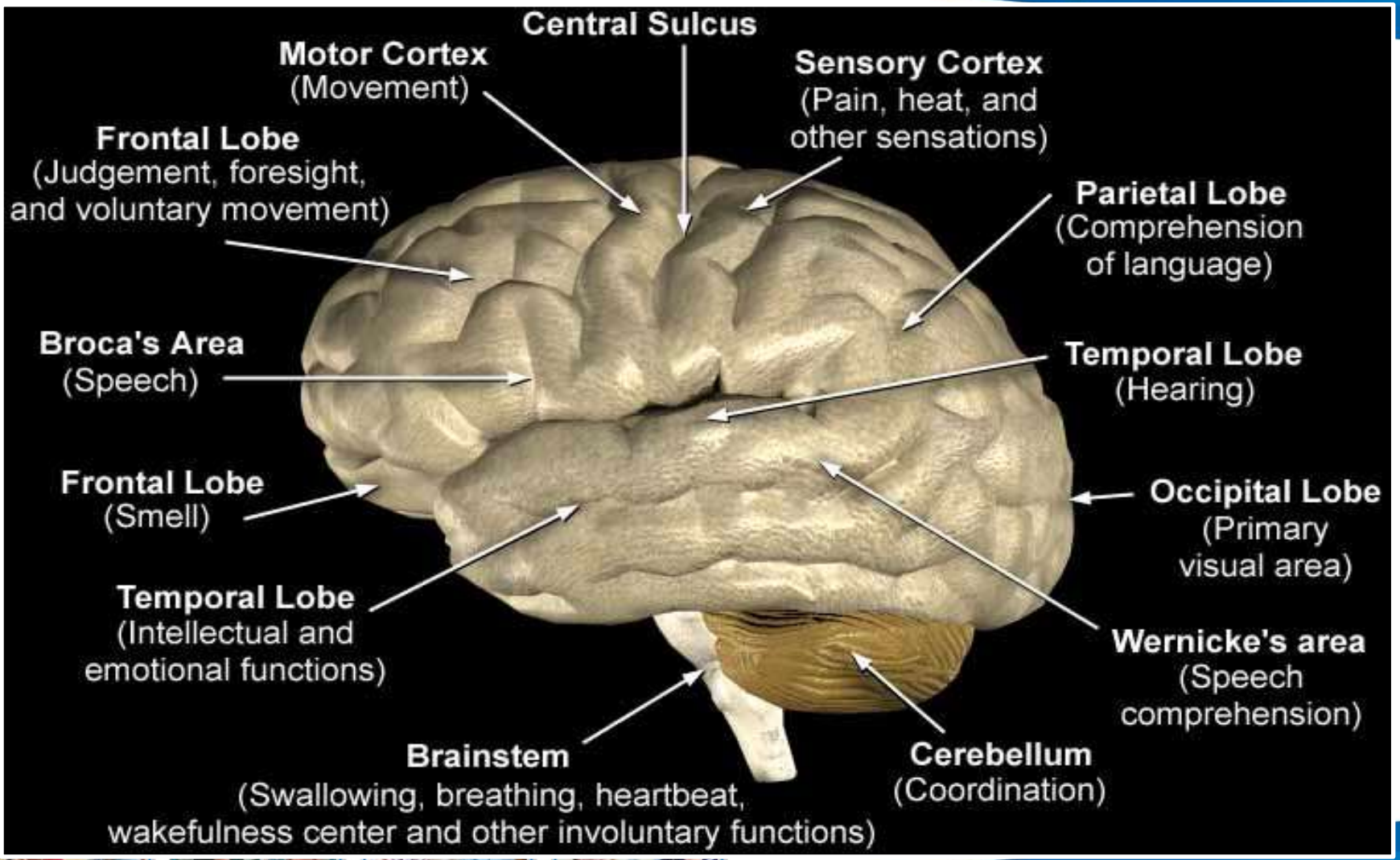

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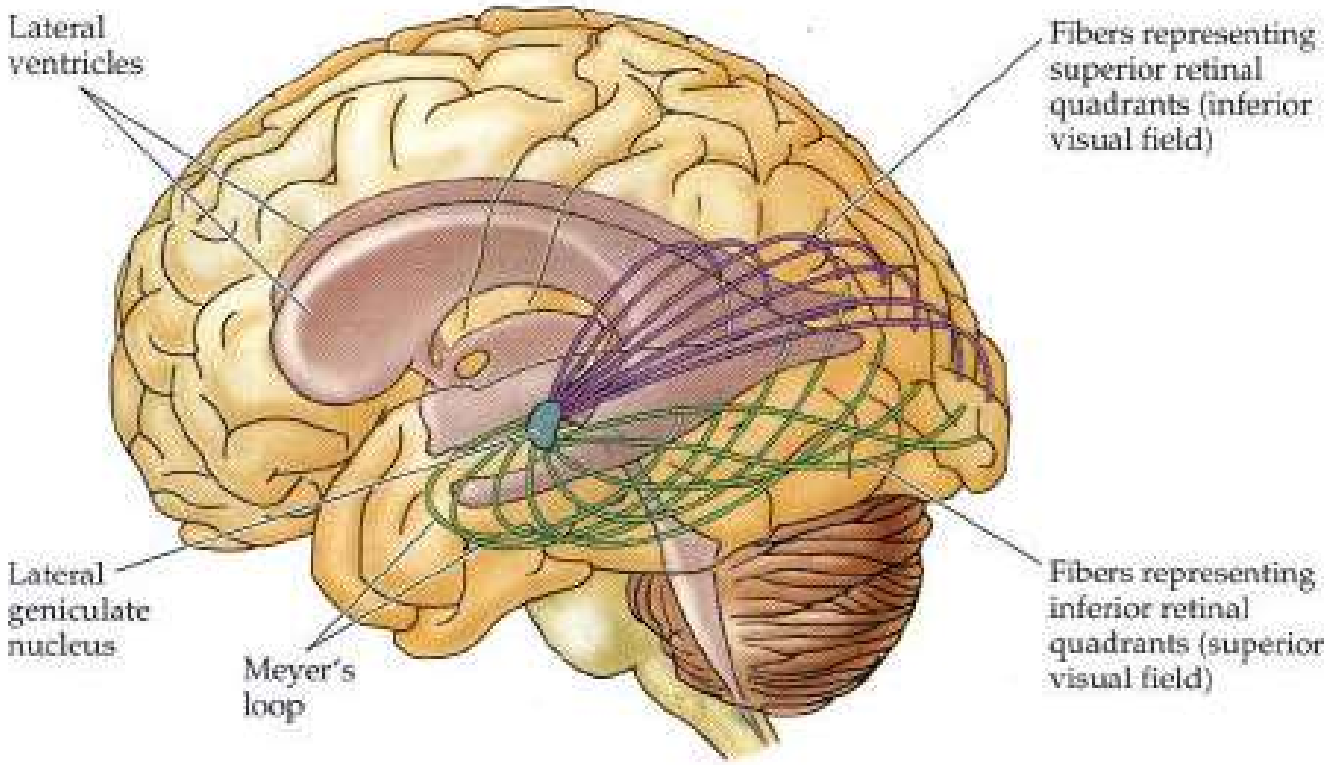

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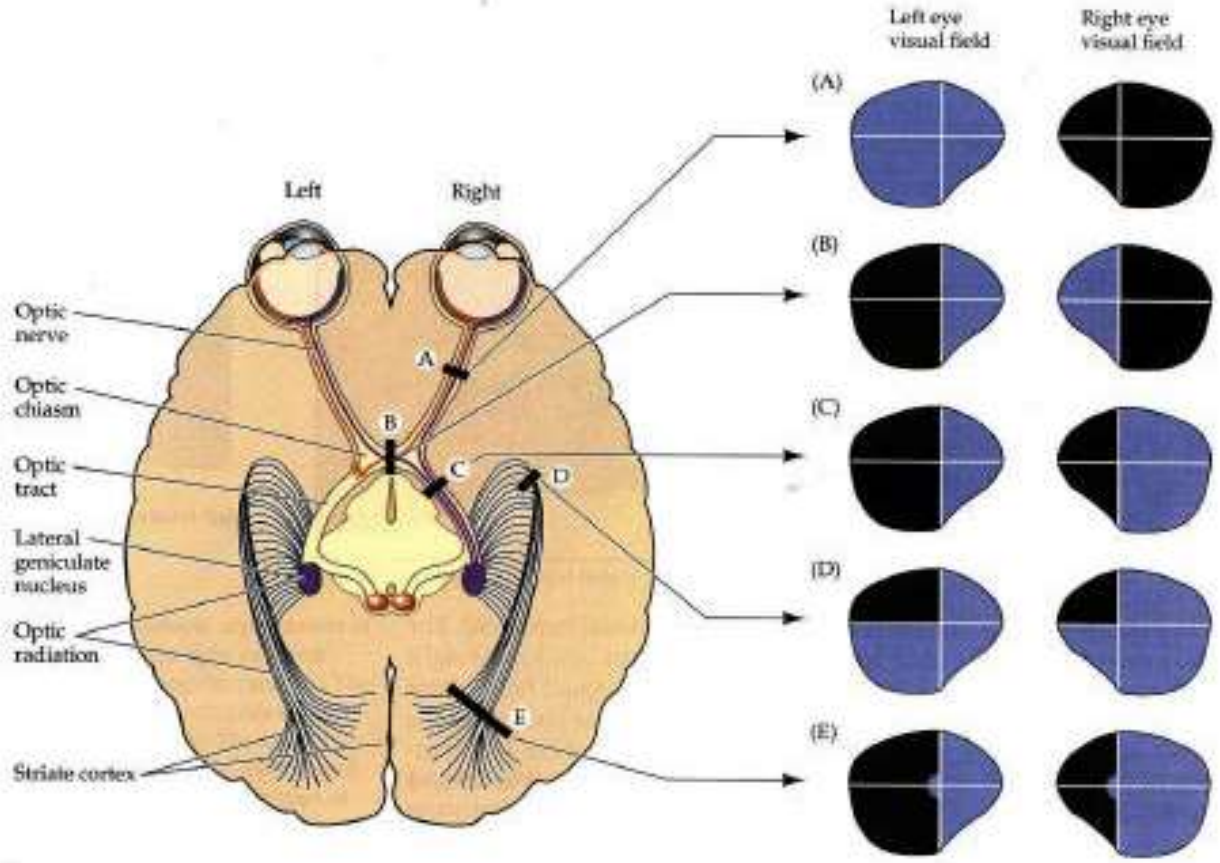

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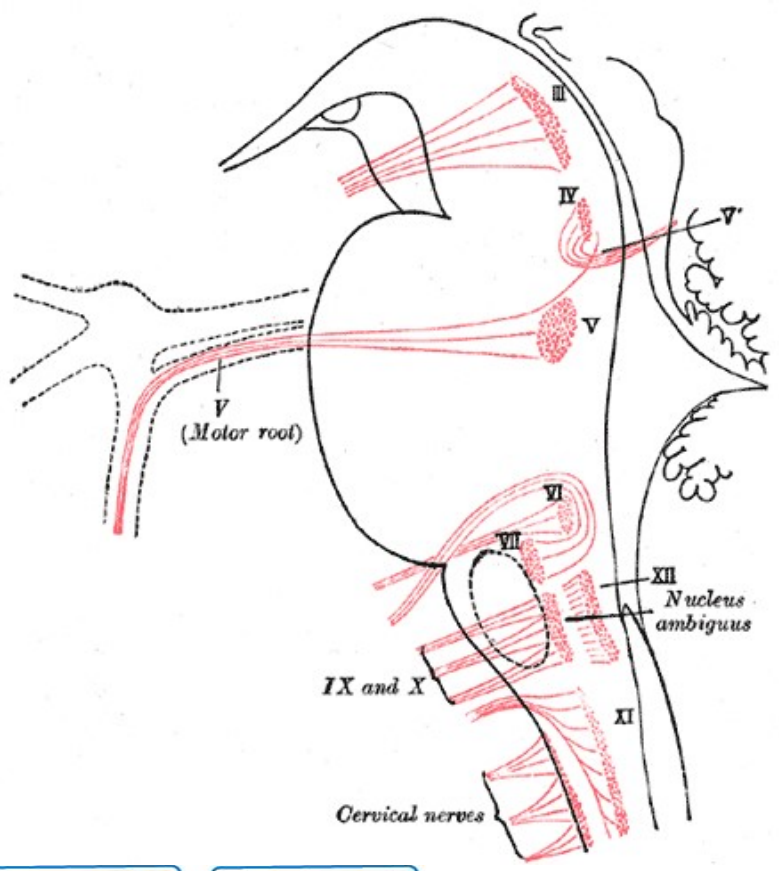

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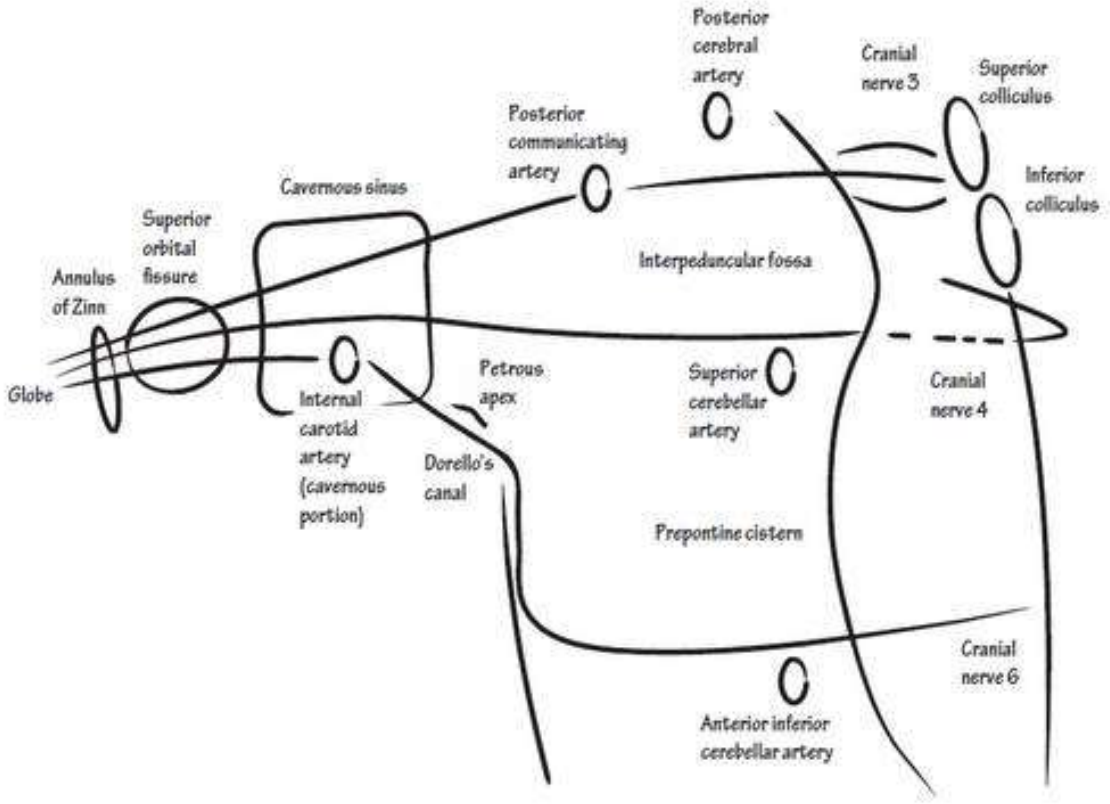

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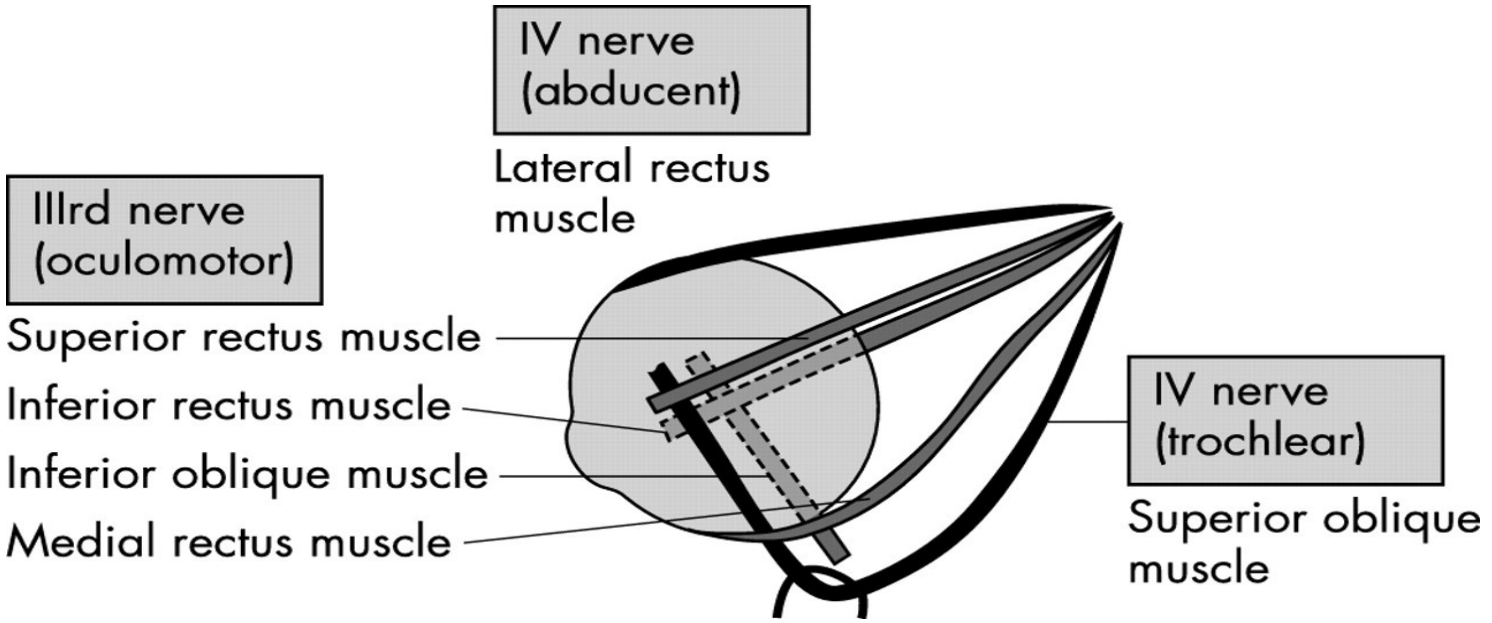

Welsby P D Postgrad Med J 2004;80:602-606

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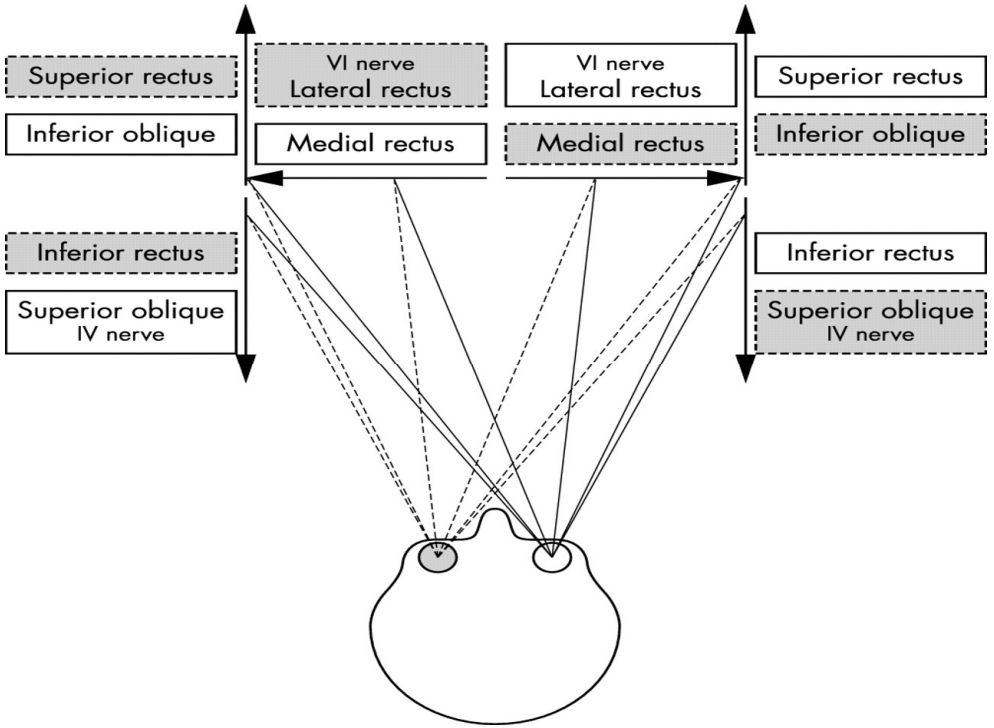

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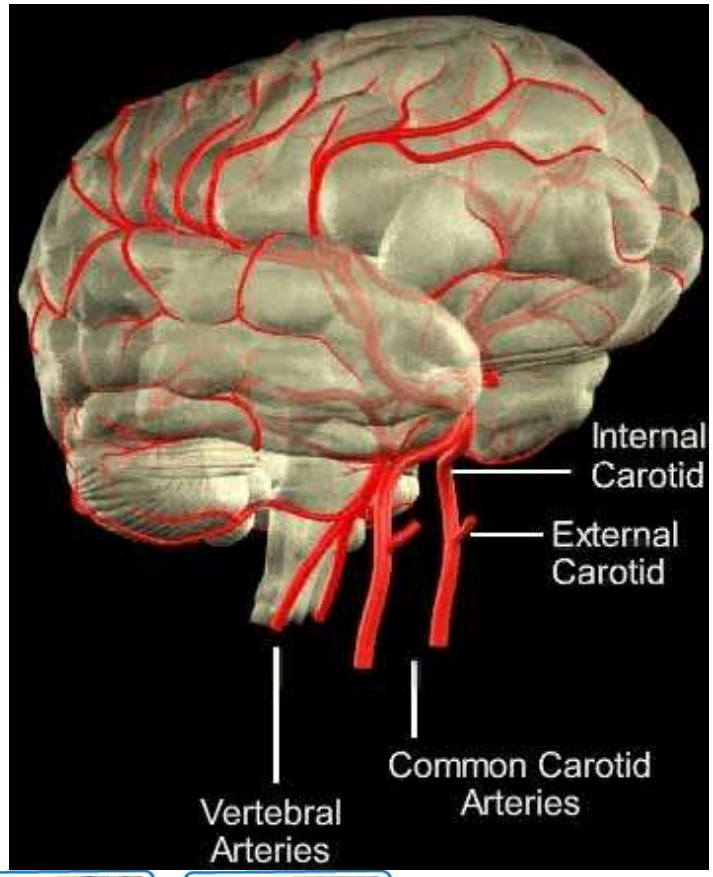
What is their blood supply?



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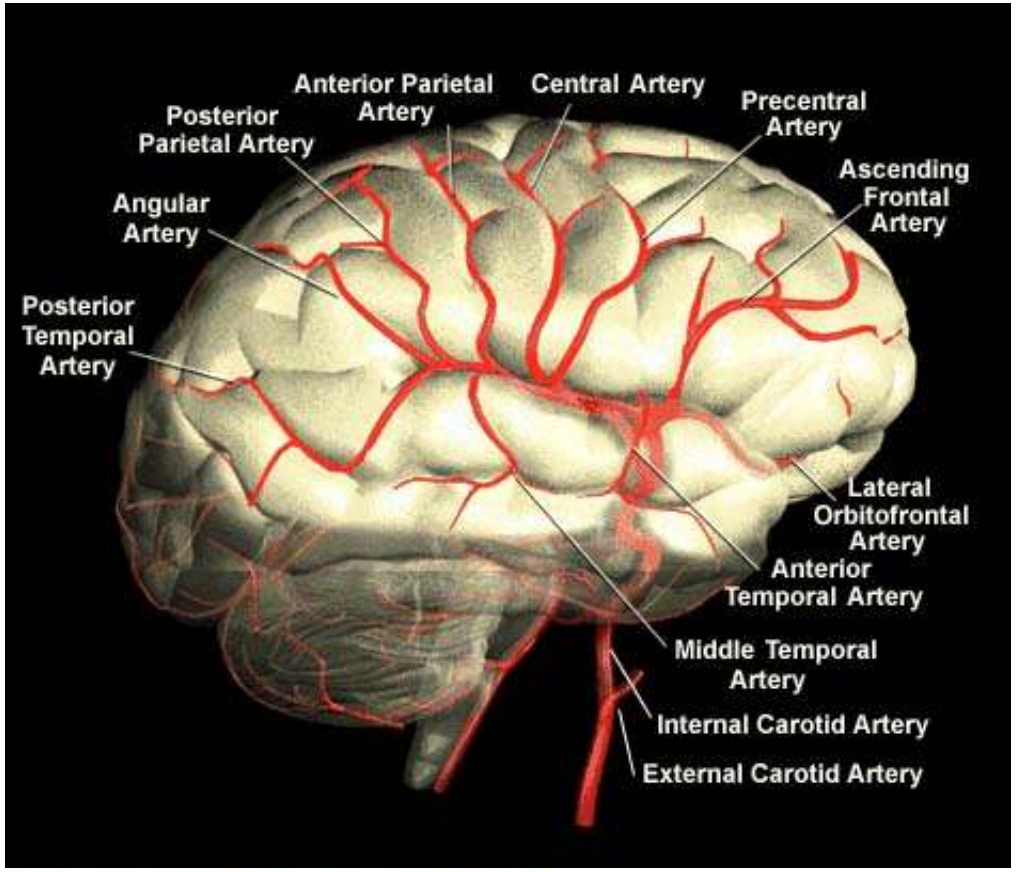
Anterior circulation



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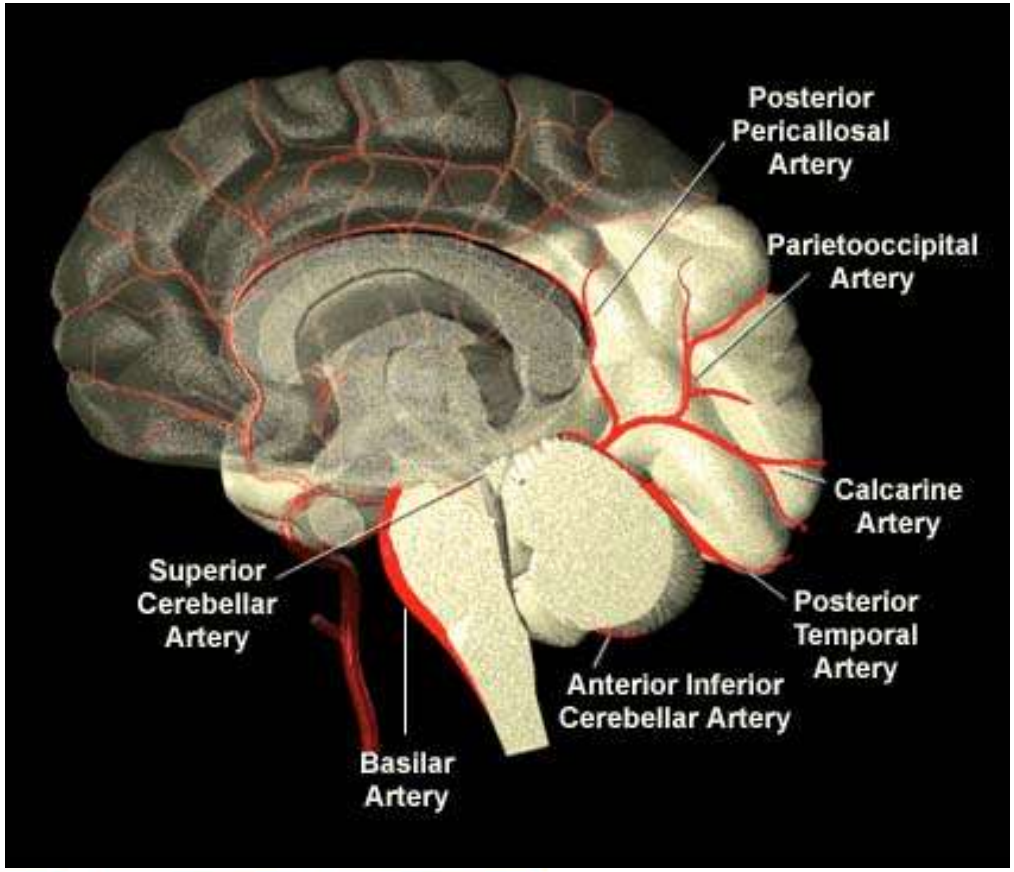
Posterior circulation



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What is a stroke?

- A stroke is *sudden loss* of focal or global *neurological function* of presumed *vascular origin* lasting more than 24hrs…

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What is a stroke?

- A stroke is sudden damage to the brain *or its related structures* due to damage to its blood supply

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What is a stroke?

- A stroke is sudden damage to the brain *and related structures* due to damage to it's blood supply
  - The retina is part of the brain!

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What is a stroke?

- A stroke is sudden damage to the brain *and related structures* due to damage to it's blood supply
- A TIA is a stroke that fully recovers in less than 24hrs

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What is a stroke?

- Why sudden?
  - Stopping blood supply to nerves cells renders them useless within seconds
  - The onset is within minutes
    - Brain cells start dying within 3 minutes
  - Once a brain cell dies, it cannot be replaced
    - Unless stem cell therapy really works…

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What is a stroke?

- Cerebral infarction takes 8-16hrs to evolve
- 7140 km nerve fibres die
  - About the diameter of the Earth's core
- 1.9 million neurons die every minute
  - Equivalent to 22 days normal ageing
- Preservation of brain therefore requires urgent treatment

Saver, JL. Stroke. 2006;37:263-266

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What causes it?

- Damage to blood supply
  - Blockage
    - Thrombosis
    - Embolism
    - Dissection
    - Inflammation (arteritis, infection)
  - Haemorrhage
    - Aneurysm
    - Medial degeneration/amyloid angiopathy
    - Venous thrombosis

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Suspect a stroke? Act FAST. Call 999.

F **acial weakness**
Can the person smile?
Has their mouth or eye drooped?

A **rm weakness**
Can the person raise both arms?

S **peech problems**
Can the person speak clearly
and understand what you say?

T **ime to call 999**
Stroke is a medical emergency.

By calling 999 early treatment can be given which can prevent further brain damage.
Stroke Helpline 0845 3033 100 www.stroke.org.uk

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RecOgnise Stroke In the Emergency Room

Positive Indicators		**Negative Indicators**	
Face Weakness		Seizure	
Arm Weakness		Loss of consciousness	
Leg Weakness			
Visual Field Deficit			
Speech Disturbance			
A		B	
Difference (A-B)		***>0 = 92% likelihood of stroke***	

Nor et al Lancet Neurology 2005; 4: 727-734

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Why FAST?

- In the first few hours we can unblock the artery
  - Brain is saved, outcome is better
  - Thrombolysis is risky and the risks increase with time
- The highest risk of another stroke is in the first 48 hours
  - Early aspirin improves outcomes

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What can you do about it?

- Recognise stroke and the warning signs
- Stroke happens suddenly, so Act FAST
  - If it happened in the last few hours call 999
  - If it happened in the last few days call the SAN (01924 543017)
  - If longer than a week, send them to their GP urgently; or phone the SAN for advice

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What can you do about it?

GP/ED referral pathway

Suspected TIA

Complete TIA Clinic referral form (ICE)

Call Stroke Assessment Nurse 01924 543017

Give Patient Information Leaflet to patient (See Intranet)

Advise patient not to drive until seen

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Act FAST, Save Brain