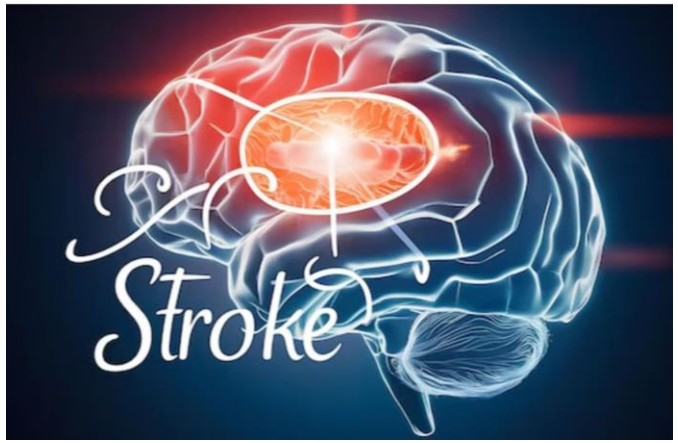
Ashur University
College of Medicine

Grade 1
Cardiovascular Module
Cardiovascular Medicine
TBL 2

Stroke



Ass. Professor Internal Medicine

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19/5/2025



Objectives :

After this presentation,you should be able to:

1-Define stroke.

2-List the types of stroke

3-Know about circle of Willis and its branches

4-Describe the presentation of stroke patient.

5-Enumerate risk factors for stroke.

Stroke

* **Stroke** (sometimes referred to as a **CerebroVascular Accident (CVA)**), is the loss of brain function due to a disturbance in the **blood supply to the brain**.

This disturbance is due to either **ischemia (lack of blood flow)**

or **hemorrhage (rupture of blood vessel).**

***stroke is a medical emergency** and can cause permanent neurological damage or death

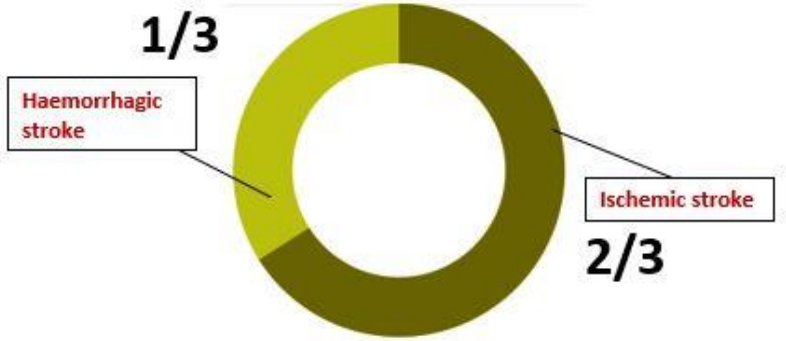
Types of stroke

- **Ischemic stroke** is caused by either

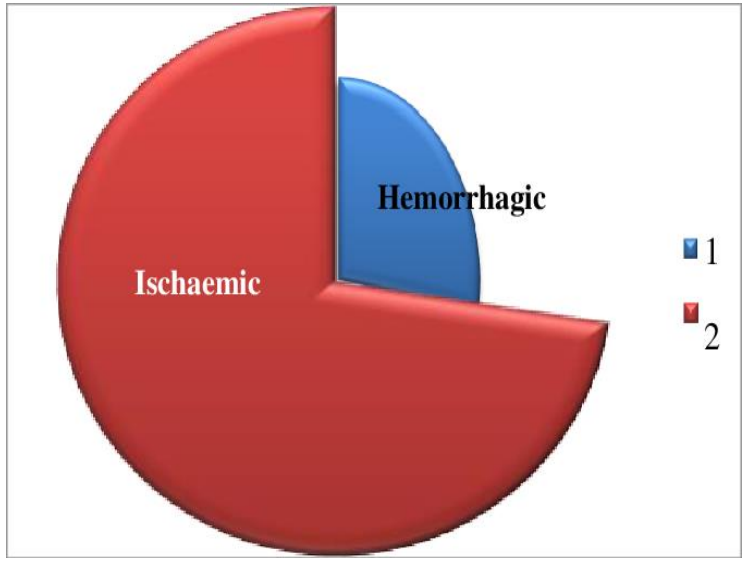
Blockage of a blood vessel via thrombosis or

Arterial embolism, or by

Cerebral hypoperfusion.



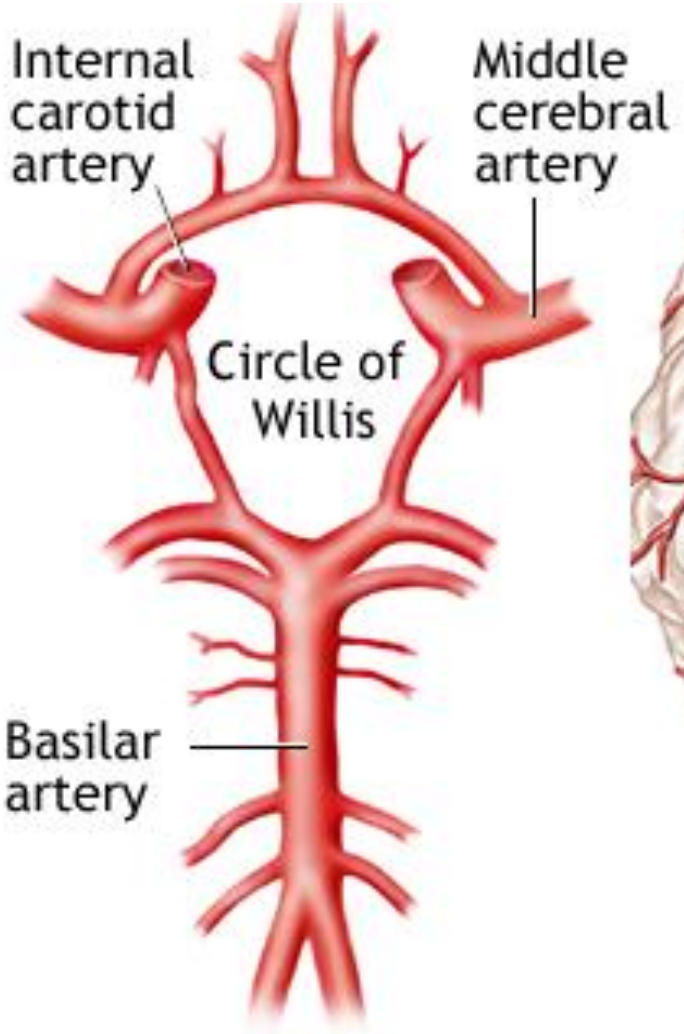
- **Hemorrhagic stroke** is caused by bleeding of blood vessels of the **brain,** either directly into the **brain parenchyma** or into **the subarachnoid space** surrounding brain.

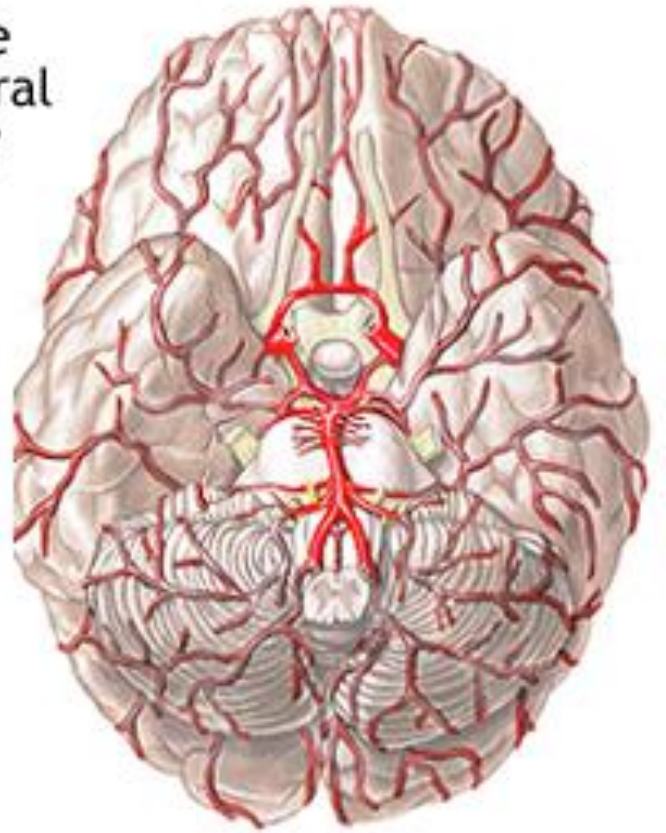


- **Brain tissue ceases to function if is deprived of oxygen for more than 60 to 90 seconds**, and after approximately **three hours will suffer irreversible injury** possibly leading to death of the tissue.

- A **transient ischemic attack (TIA)** is a short period of symptoms similar to those of a **stroke**. It's caused by a brief blockage of blood flow to the brain. Most symptoms of a TIA disappear within an hour, although they may persist for up to 24 hours.

Circle of Willis





Bottom view of brain

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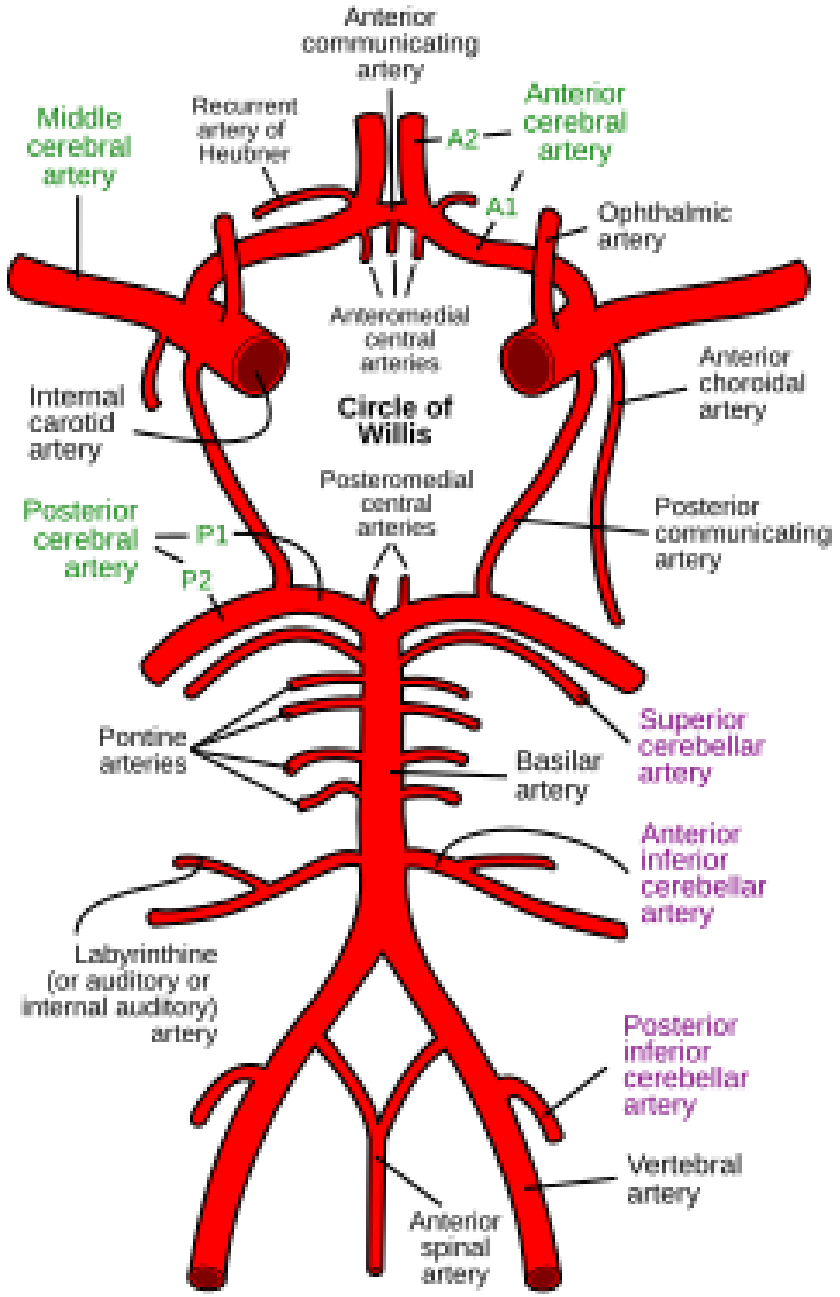
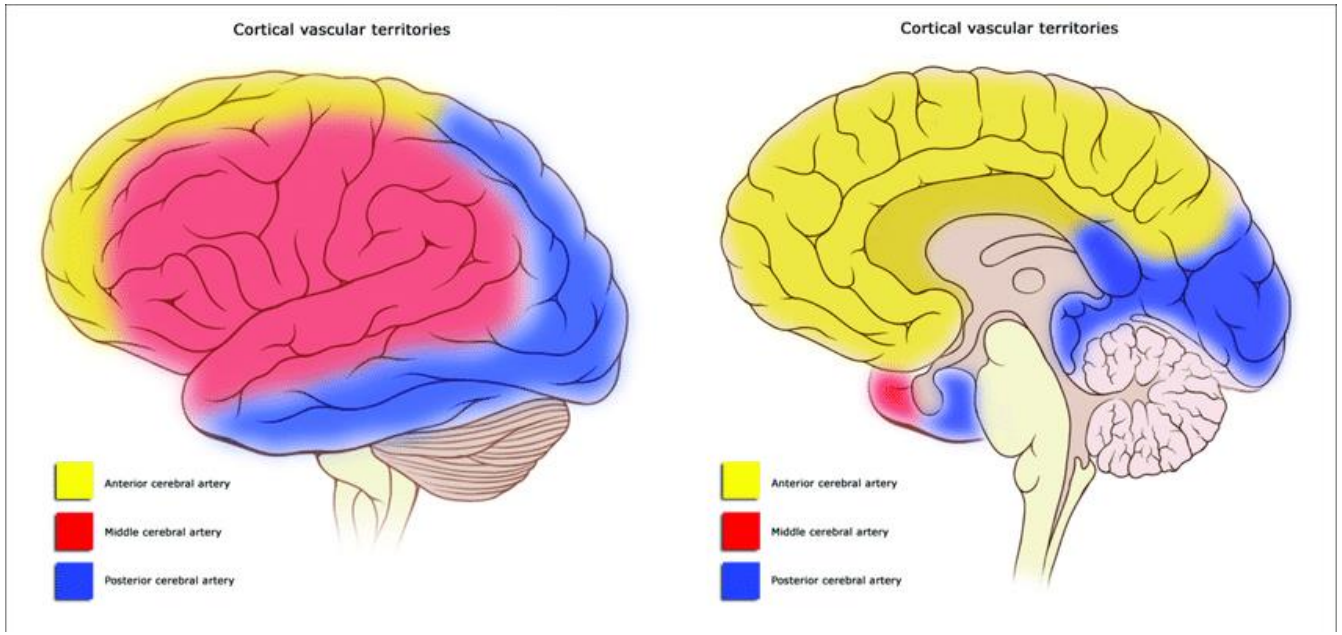
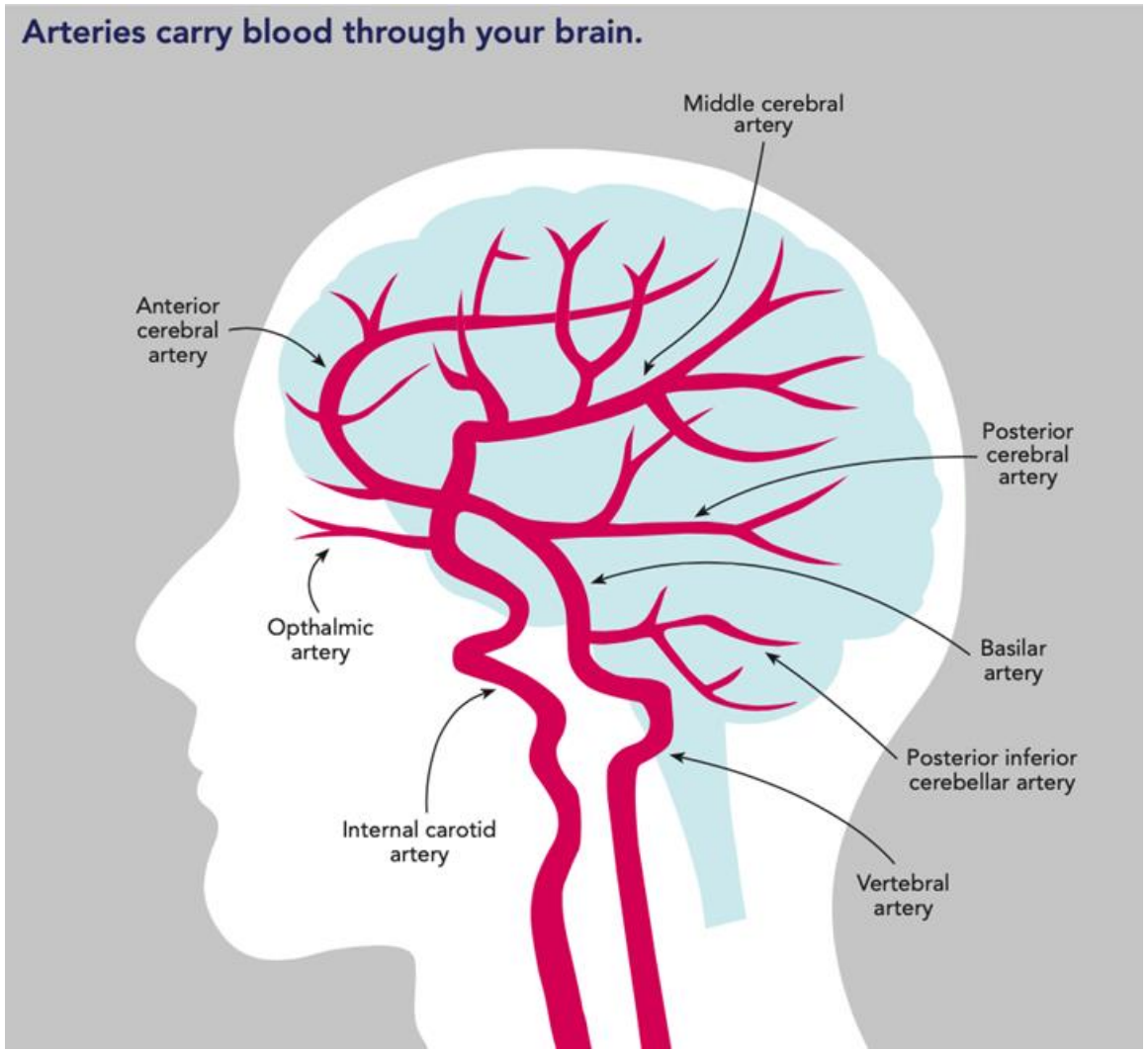
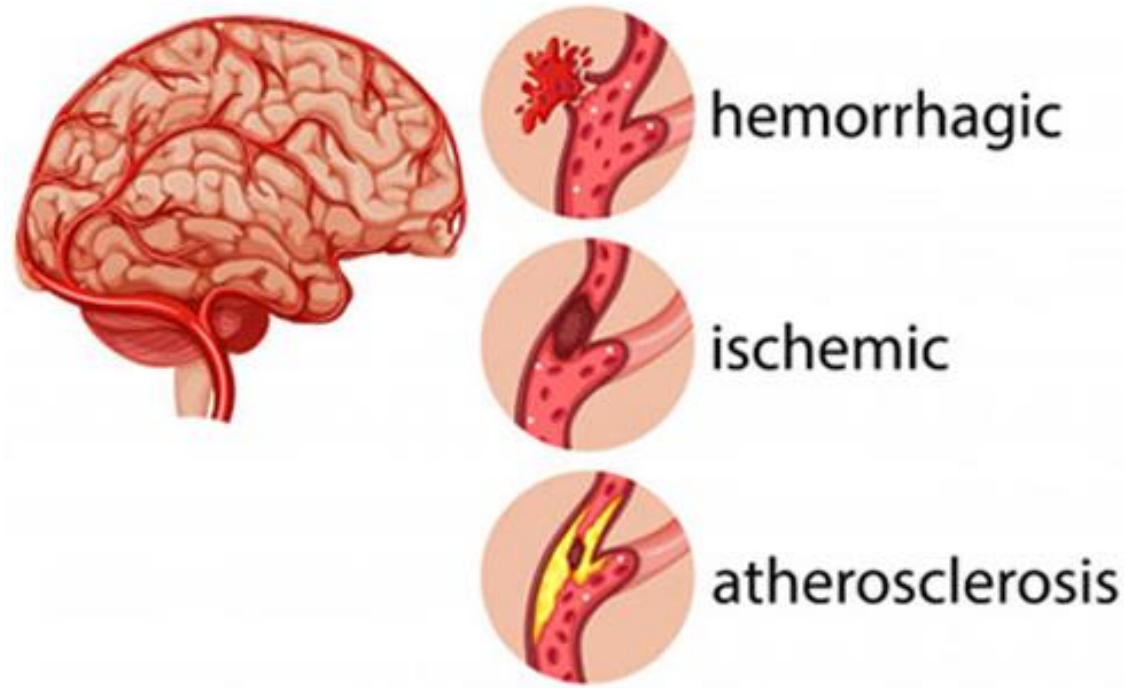


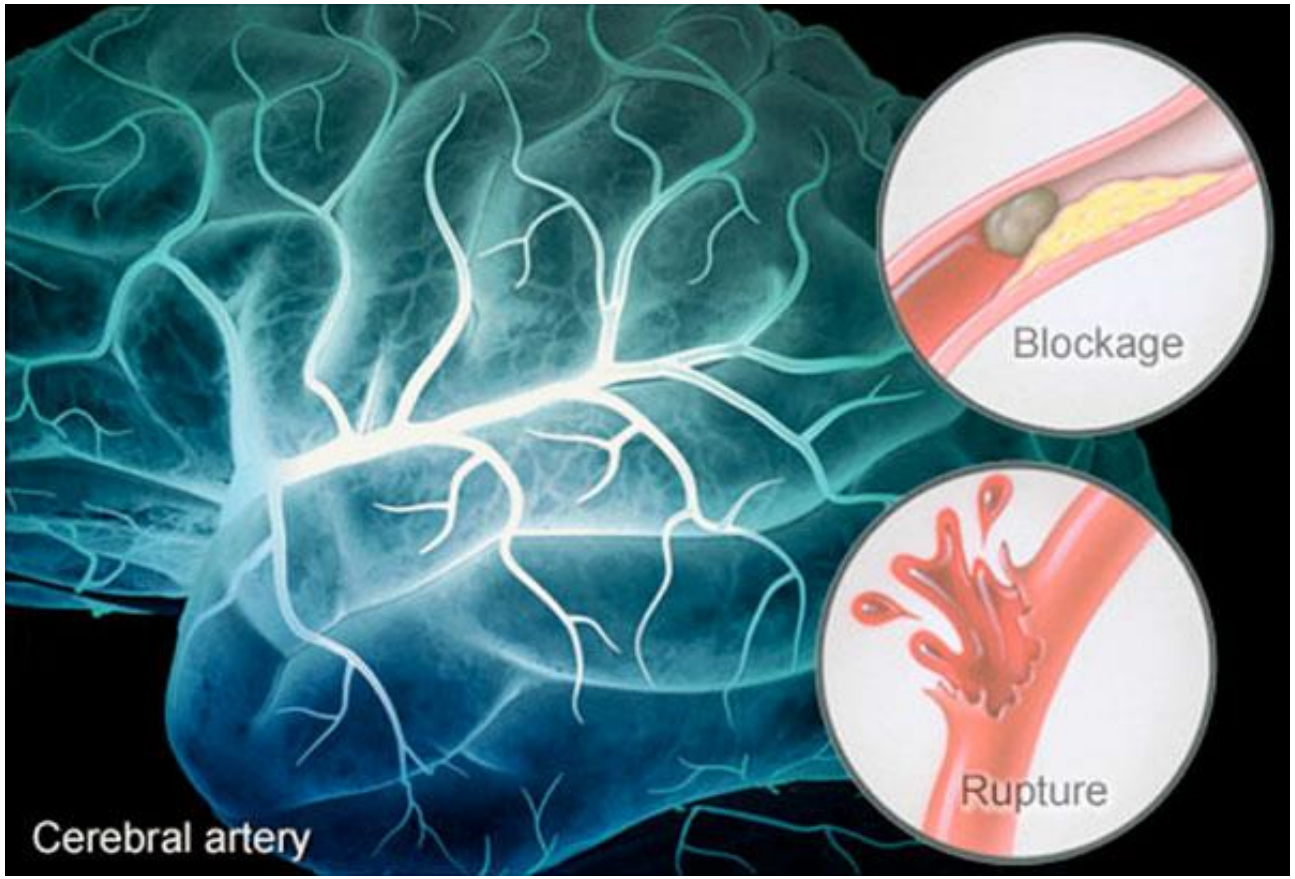
Brain arterial blood supply



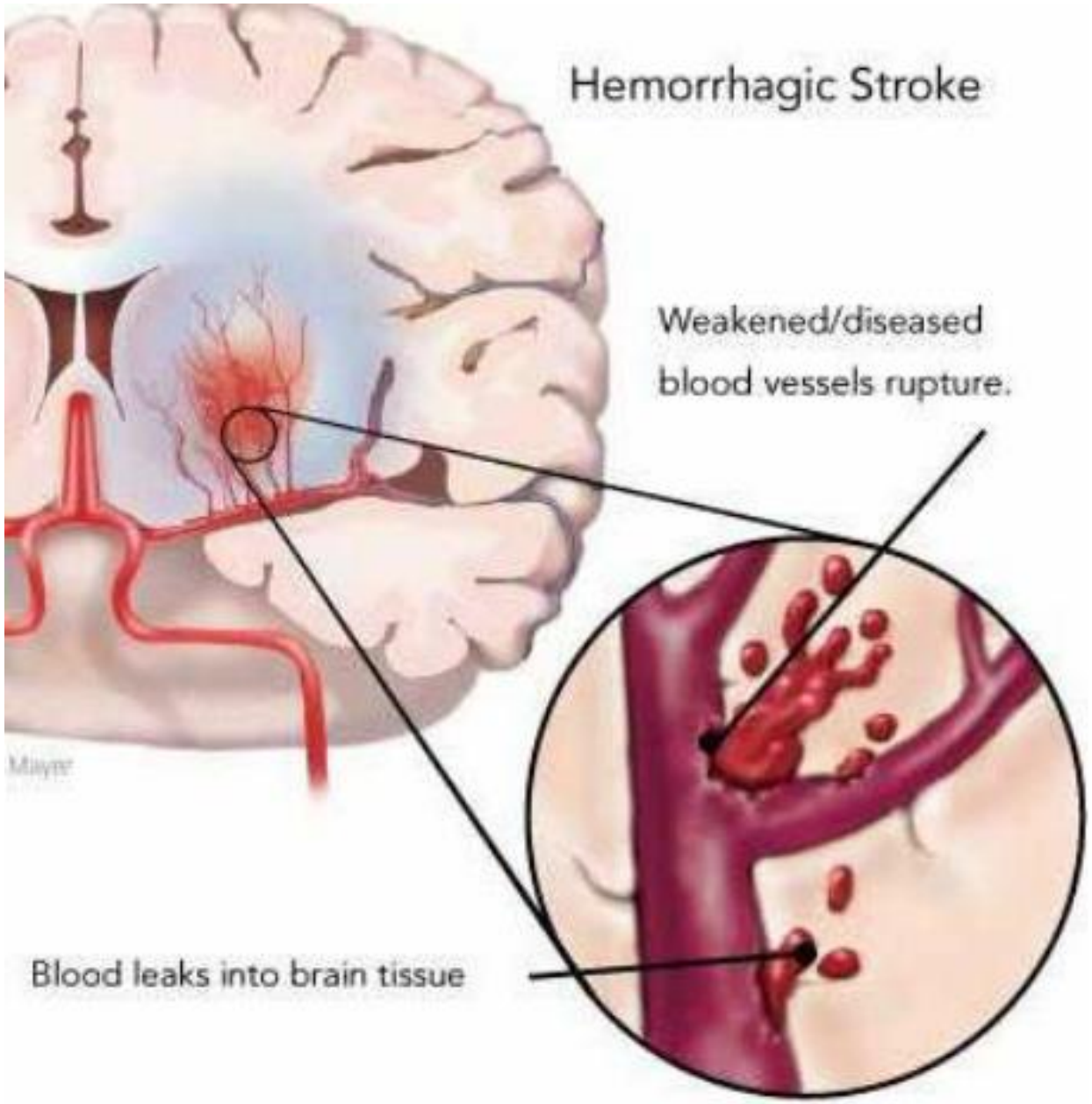




Types of Brain Stroke



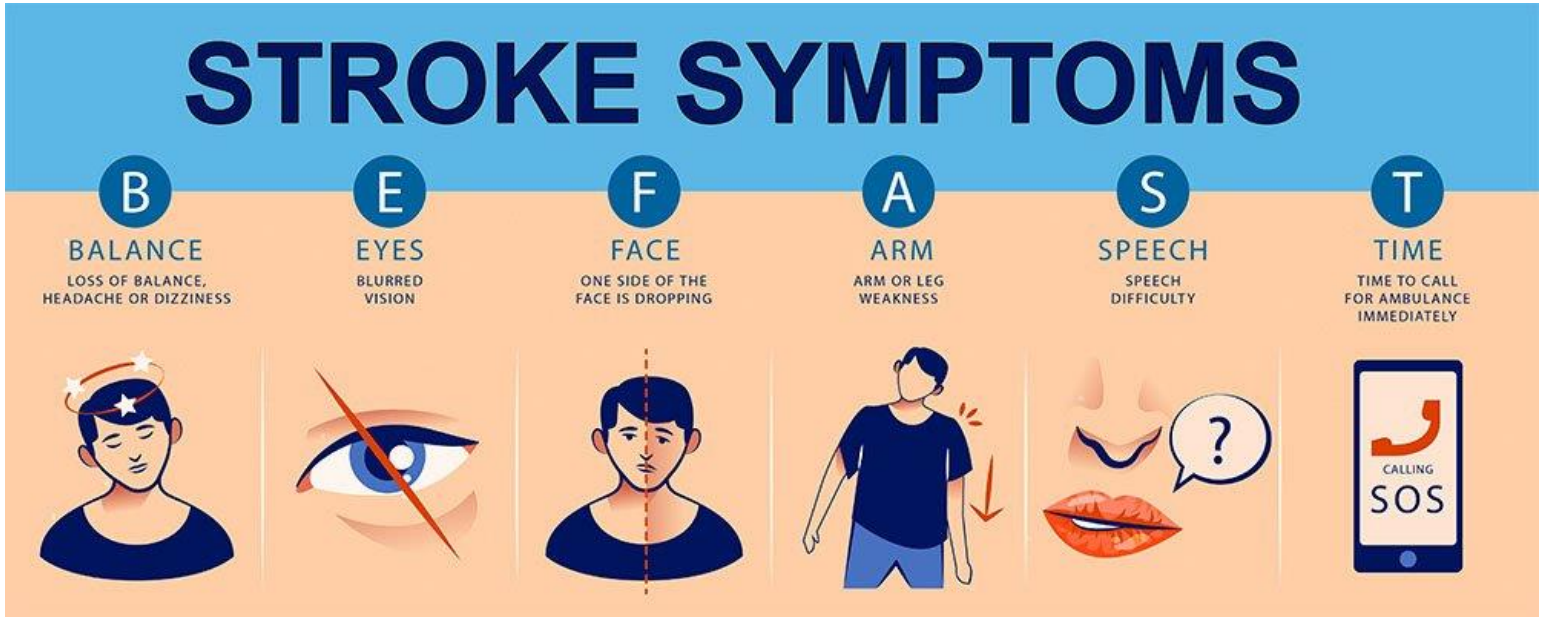
Hemorrhagic stroke





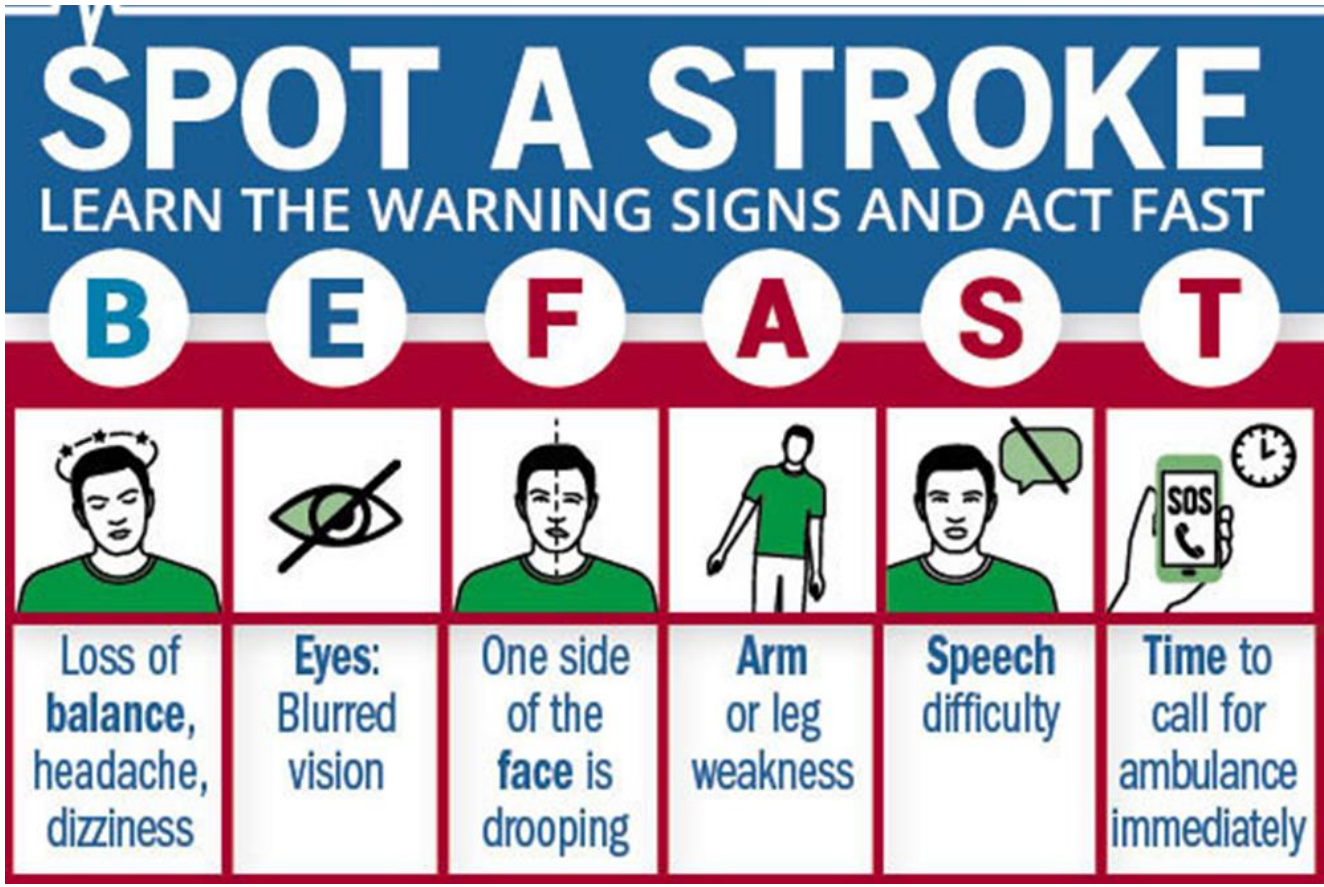
Stroke Symptoms and Signs

- **Stroke symptoms** typically start suddenly, over seconds to minutes The symptoms depend on the area of the brain affected. The more extensive the area of brain affected, the more functions that are likely to be lost.
- As a result of stroke, **the affected area of the brain cannot function normally**, which might result in:





- an **inability to move** one or more limbs on one side of the body,
- **failure to understand or forming speech**,
- a **vision impairment** of one side of the visual field.
- **Numbness or anesthesia** of one side of the body



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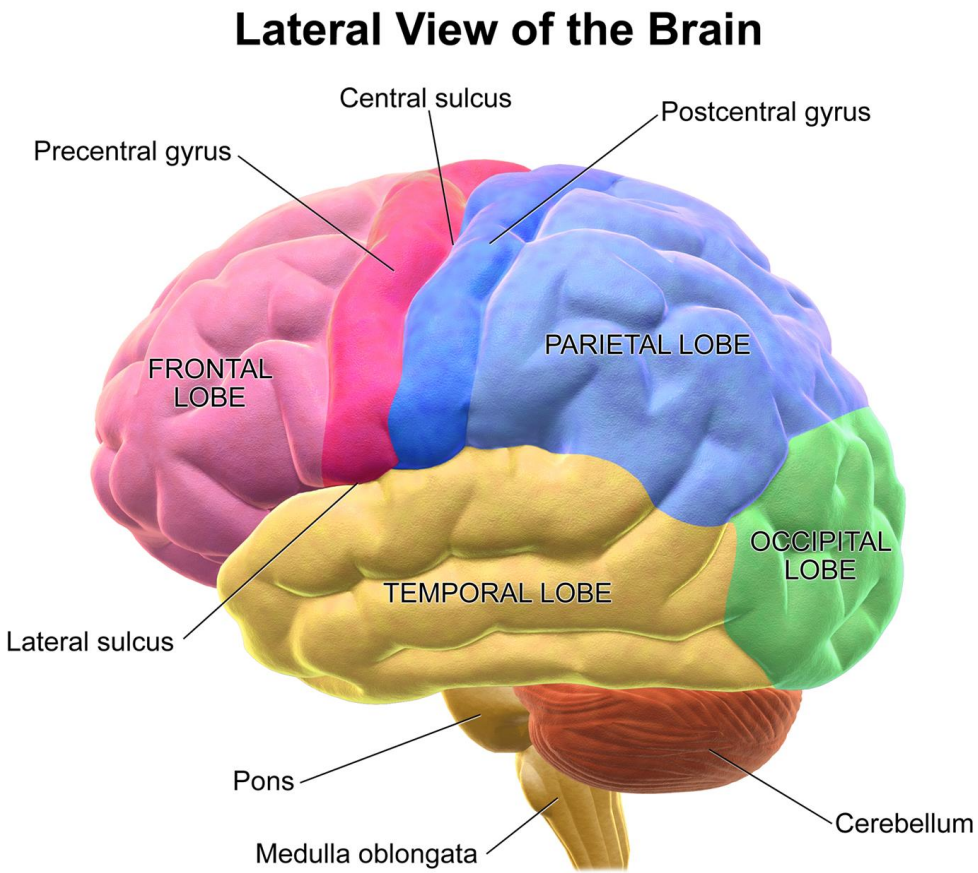
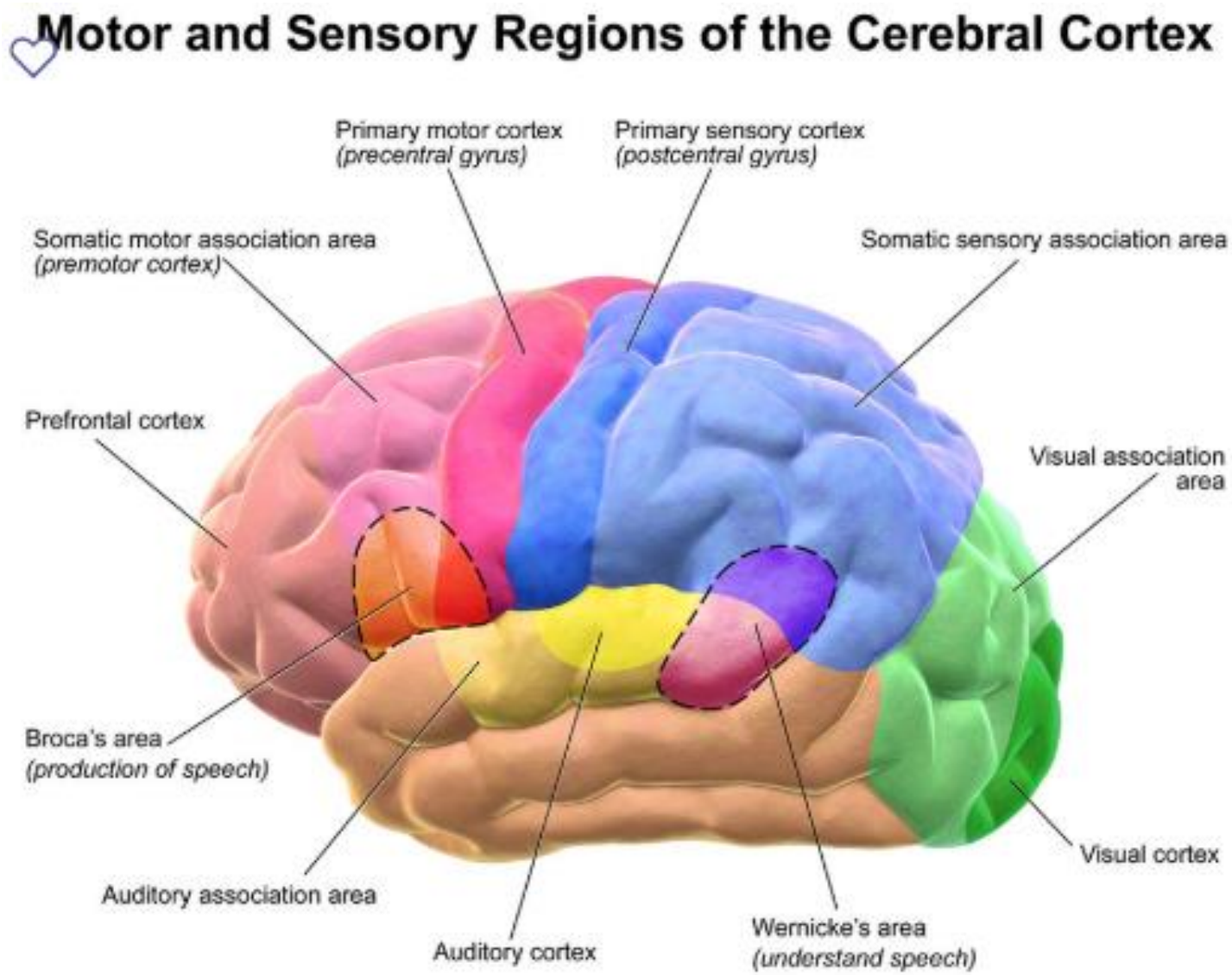
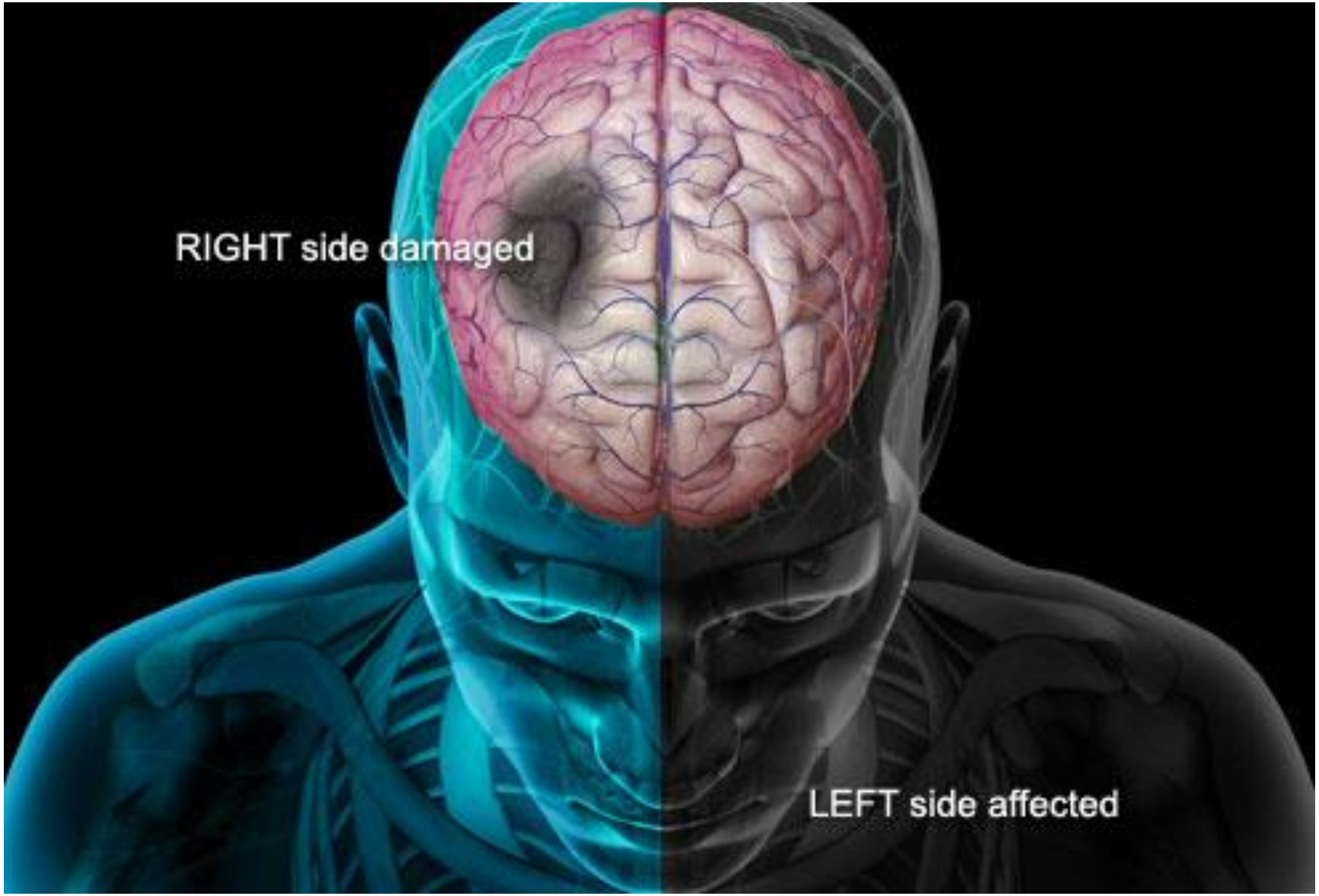
Stroke and areas of the brain affected

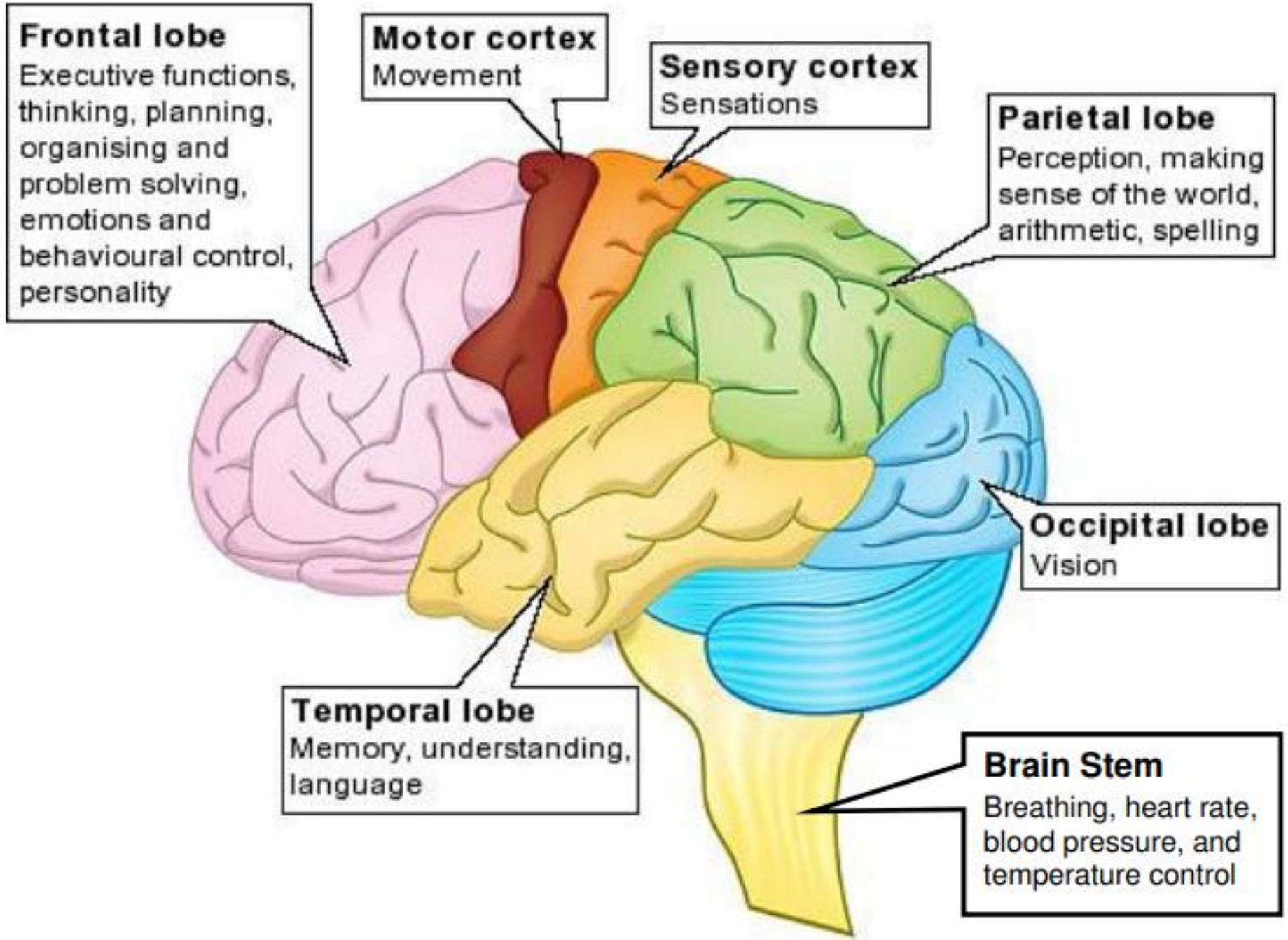




The brain is divided into two halves (hemispheres). The left half controls movement and sensation in the right side of the body, and the right half controls movement and sensation in the left side.

Damage to the right side of the brain may cause movement problems or weakness on the body's left side.




Frontal lobe
Executive functions, thinking, planning, organising and problem solving, emotions and behavioural control, personality
Motor cortex
Movement
Sensory cortex
Sensations
Parietal lobe
Perception, making sense of the world, arithmetic, spelling
Occipital lobe
Vision
Temporal lobe
Memory, understanding, language
Brain Stem
Breathing, heart rate, blood pressure, and temperature control

Symptoms of stroke are:

- **Sudden numbness** or **weakness** of the face, arm or leg (especially on one side of the body)
- **Sudden confusion**, trouble speaking or understanding speech
- **Sudden trouble seeing** in one or both eyes.
- **Sudden trouble walking**, dizziness, loss of balance or coordination.
- **Sudden severe headache** with no known cause

American Stroke Association
A division of the American Heart Association.
Together to End Stroke®

SPOT A STROKE™

F.A.S.T.

FACE Drooping

ARM Weakness

SPEECH Difficulty

TIME to Call 911



Learn more at **stroke.org**

Risk factors for stroke

- Hypertension
- Cardiac Disease
- Diabetes
- Hypercholesterolemia
- Smoking
- Alcohol
- Lifestyle Factors (Obesity, Physical Activity, Diet)

SUMMARY

1-Stroke: is the loss of brain function due to a disturbance in the blood supply to the brain. This disturbance is due to either ischemia (lack of blood flow) or hemorrhage rupture of blood vessel

2-Ischemic stroke is caused by either blockage of a blood vessel via thrombosis or arterial embolism, or by cerebral hypoperfusion

3-Hemorrhagic stroke is caused by bleeding from blood vessels of the brain.

4-Stroke presentation : weaknees ,loss of speech understanding or expression ,numbness ,loss of sensation and visiual disturbance.

5-Stroke risk factors: hypertension .cardiac disease ,diabetes ,smoking,life style ..etc.




Thank You