What Is Stroke ?

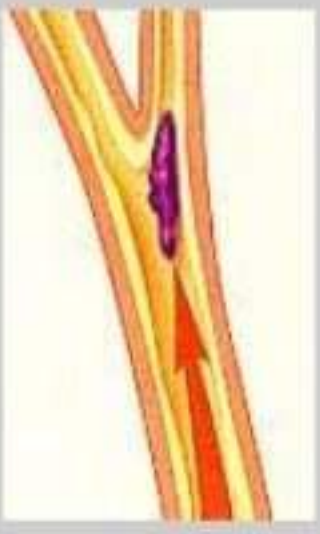
A stroke occurs when blood flow to the brain is interrupted by a blocked or a burst blood vessel.

What Are the Types of Stroke ?

- **Ischemic Stroke (Blockage)**
- Caused by a blockage in blood vessels in brain
- **Hemorrhagic Stroke (Bleeding)**
- Caused by burst or leaking blood vessels in brain

What Are the Causes of Ischemic Stroke?

- Begins with the development of fatty deposits lining the blood vessel wall
- Thrombus: Development of blood clot at the fatty deposit
- Embolus: Traveling particle too large to pass through a small vessel



Embolic Stroke

Blood clot travels to the brain

Thrombotic Stroke

Blood flow is blocked to the brain

What Are the Causes of Hemorrhagic Stroke?

- Occurs when a weakened blood vessel ruptures
- Aneurysms: Ballooning of a weakened region of a blood vessel
- Arteriovenous Malformations (AVMs): abnormal blood vessels

Stroke Risk Factors That Cannot Be Treated

- Age
- Sex
- Race
- Prior stroke
- Family history

Stroke Risk Factors That Can Be Treated

- Hypertension/High Blood Pressure
- Heart Disease
- Cigarette Smoking
- Transient Ischemic Attacks
- Diabetes
- Elevated Blood Cholesterol/Lipids

Stroke Risk Factors Less Well-Documented

- Geographical Location
- Socioeconomic Factors
- Excessive Alcohol Intake
- Certain Kinds of Drug Abuse

Stroke Warning Signs

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

ACAS

- Contralateral hemiparesis (LE more than UE)
- Contralateral hemi sensory loss (LE more than UE)
- Incontinence
- Apraxia

MCAS

Contralateral hemiparesis (UE & face more than LE)

Contralateral Hemi sensory loss (UE & face more than LE)

Aphasia

Perceptual deficits

PCAS

- Contralateral homonymous hemianopsia

- Memory defect
- Hemiplegia
- Eye movements

Transient Ischemic Attacks (TIAs)

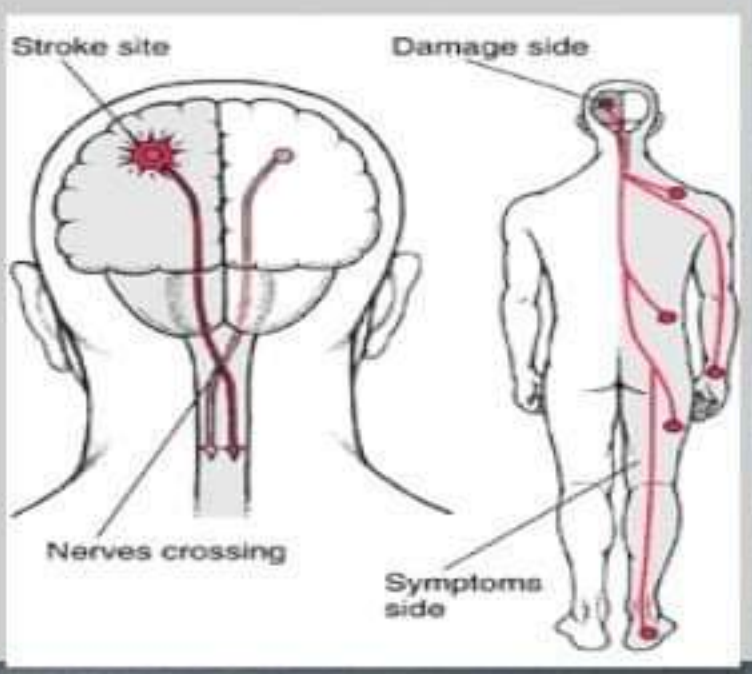
- "Warning strokes" that can happen before a major stroke
- Occur when blood flow through a brain artery is blocked or reduced for a short time
- Symptoms are temporary but similar to those of a full fledged stroke
- A person who has a TIA is 9.5 times more likely to have a stroke

What Parts of the Brain Are Affected by Stroke?

- LEG
- ARM
- BODY
- HAND
- FACE
- SPEECH
- READING
- SIGHT
- HEARING

What Are the Effects of Stroke?

- Paralyzed left sight
- Spatial perceptual defects
- Quick impulsive behavioral style
- Memory deficits
- Right Brain



What Are the Effects of Stroke?

- Paralyzed right side
- speech-language deficits
- Slow cautious behavioral style
- Memory deficits
- Left Brain

Motor deficits

- Early stages flaccidity, no voluntry movement and no reflexes
- Cerebral shock lasts from 72 hours to 2 weeks (can be longer)
- This is replaced by spasticity, hyperreflexia and mass pattern (**synergies**)
- **Bobath divided stroke into 3 stages**
- 1-The initial flaccid stages
- 2-The stage of spasticity
- 3-The stage of relative recovery

How Are Strokes Treated?

- Ischemic Stroke
- • Clot-busters e.g., t-PA
- • Anticoagulants – warfarin
- • Carotid Endarterectomy
- • Angioplasty/Stents
- Hemorrhagic Stroke
- • Surgical Intervention
- • Endovascular Procedures, e.g., coils

Prevention of Stroke

- Control high blood pressure
- Prevent heart disease
- Stop cigarette smoking
- Recognize signs of TIA and tell physician
- Reduce blood cholesterol levels

Twitchell and Brunstrom

divided into 6 stages

Stage 1 periods of flaccidity , no movements

Stage 2 limb synergy ,minimal voluntary movement, spasticity starts

Stage 3 control of synergy movement, spasticity becomes severe

Stage 4 some movements without synergy happens, spasticity decline

Stage 5 difficult movement pattern develops, spasticity decreases

Stage 6 disappearance of spasticity, individual joint movement possible, coordination, normal motor function restored.

this stage is not for all patients

Rehabilitation

- After suffering a stroke, it's important to begin a rehabilitation program as soon as possible

Types of Rehabilitation Programs

- Hospital programs
- Nursing facilities
- Outpatient programs
- Home-based programs

Rehabilitation Specialists

- Physician
- Rehabilitation nurse
- Physical therapist
- Speech therapist
- Occupational therapist
- Psychiatrist

Learn to recognize a stroke.
Time lost is brain lost.

Stroke is a medical emergency!

If you notice one or more stroke warning signs,

GET HELP IMMEDIATELY