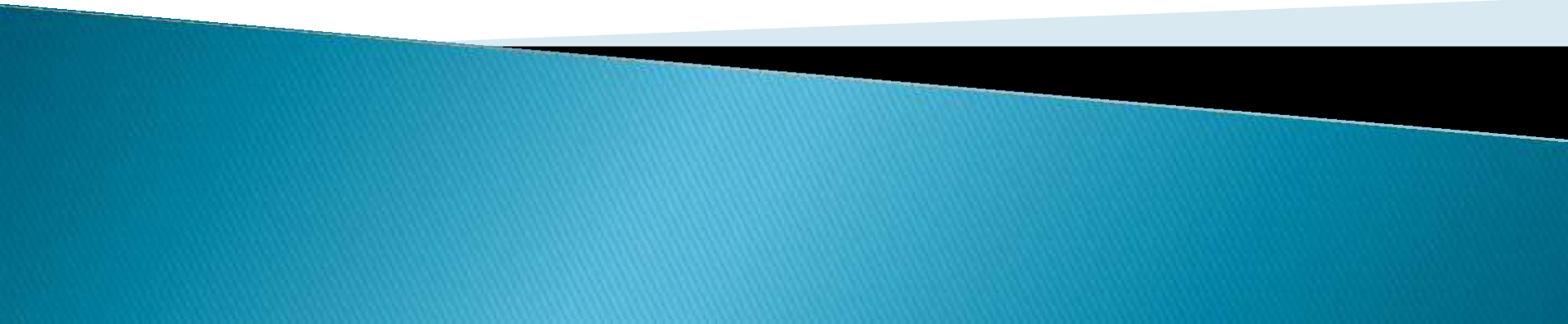




# **STROKE (Cerebro vascular accident)**



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- Types
- Symptoms
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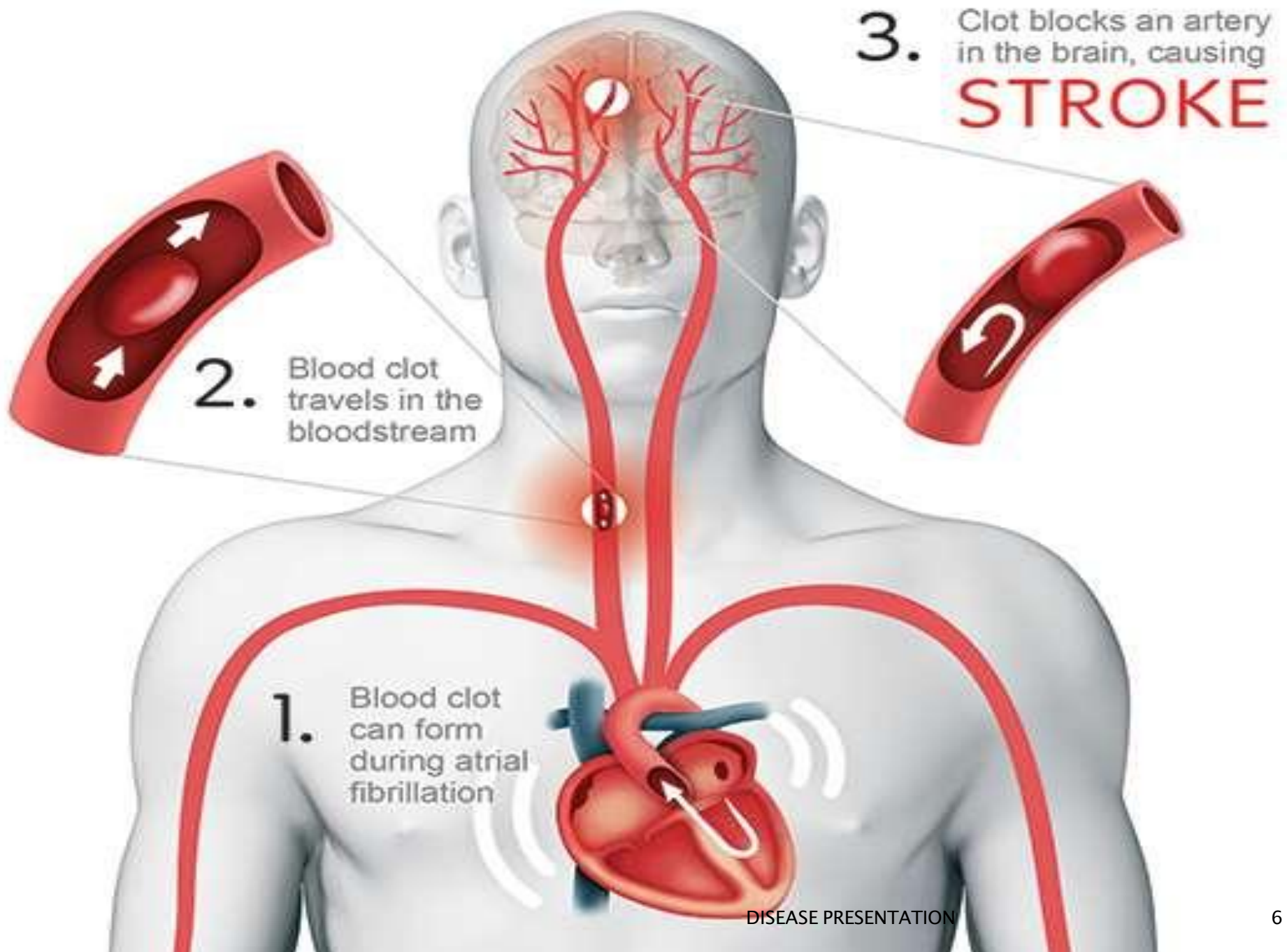
# INTRODUCTION

- Stroke is the 5th leading cause of death in the US, with one person dying every 4 minutes . For black people, stroke is the 3rd leading cause of death.It is the second leading cause of death in the world.
- Approximately 800,000 people have a stroke each year; about one every 40 seconds.
- Strokes occur due to problems with the blood supply to the brain: either the blood supply is blocked or a blood vessel within the brain ruptures, causing brain tissue to die.
- A stroke is a medical emergency, and treatment must be sought as quickly as possible.

# DEFINITION

- A stroke is defined as the clinical syndrome of rapid onset of cerebral deficit lasting more than 24 hours or leading to death with no apparent cause other than a vascular one.
- A stroke is a rapid loss of brain function due to the disturbance in the blood supply to brain. A stroke happens when blood flow to a part of the brain stops and it is sometimes called a “brain attack”





## Epidemiology

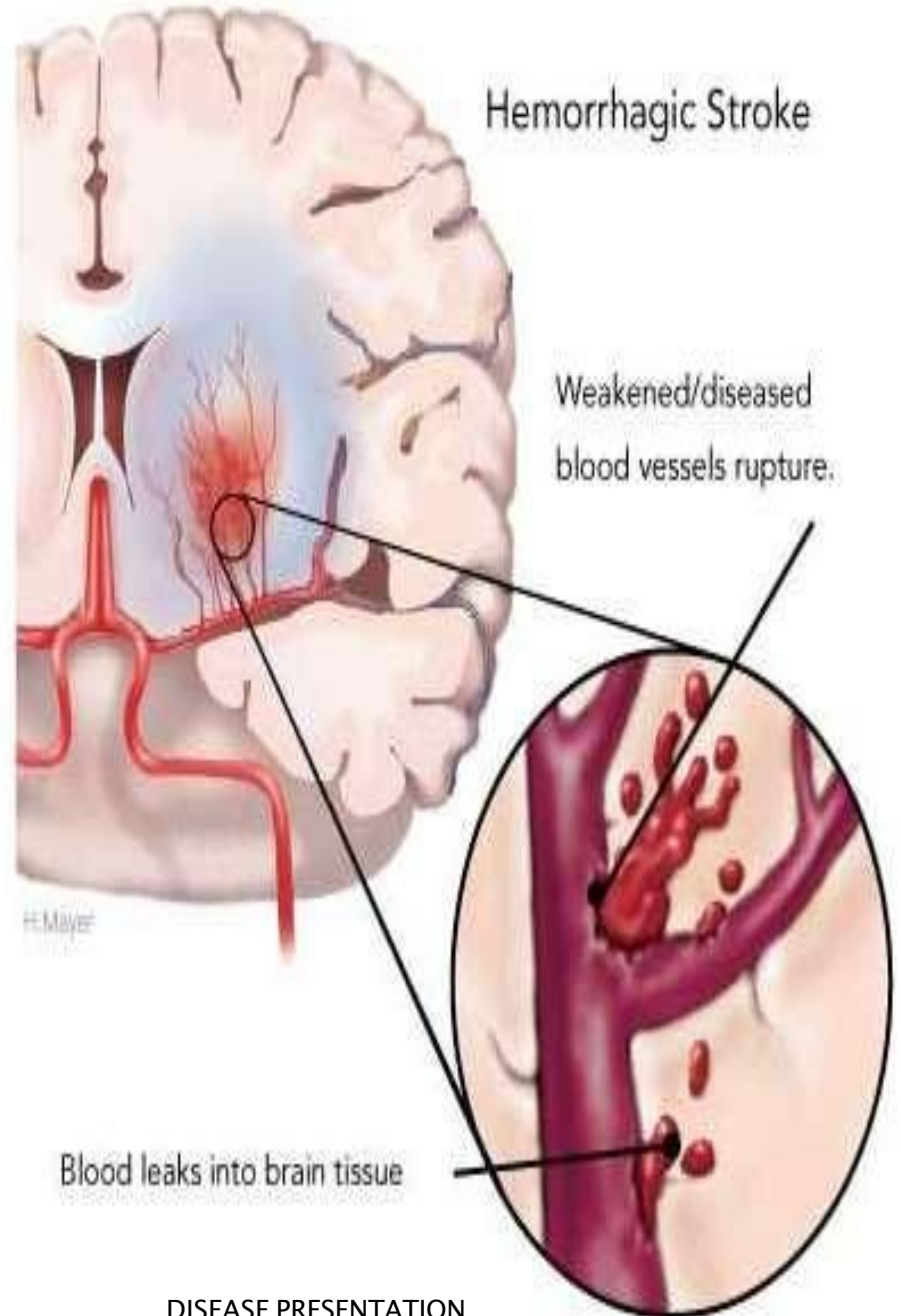
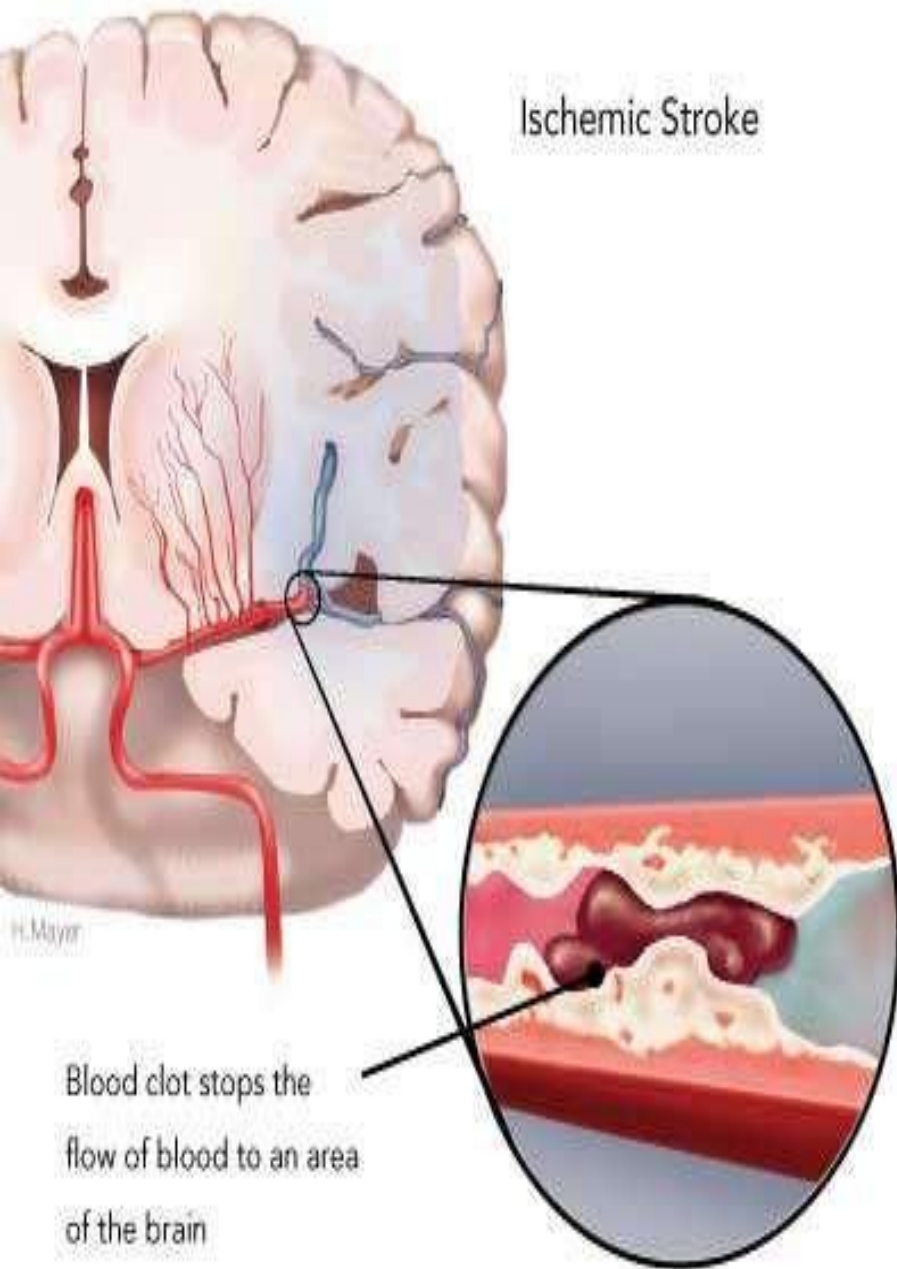
- Third most common cause of death after cancer and ischeamic heart disease
- Most common cause of severe physical disability
- Prevalence of stroke in India is about 1.54 per 1000
- Death rate is about 0.6 per 1000
- Incidence and prevalence of stroke is on the rise due to increasing adoption of unhealthy lifestyle & an increasing life expectancy

# TYPES

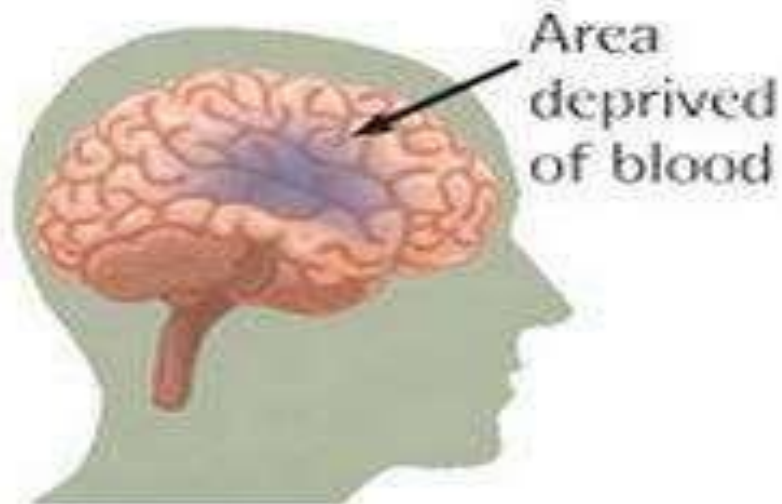
**There are three main kinds of stroke:**

- Ischemic strokes
- Hemorrhagic strokes
- Transient ischemic attacks (TIAs), also referred to as mini-strokes

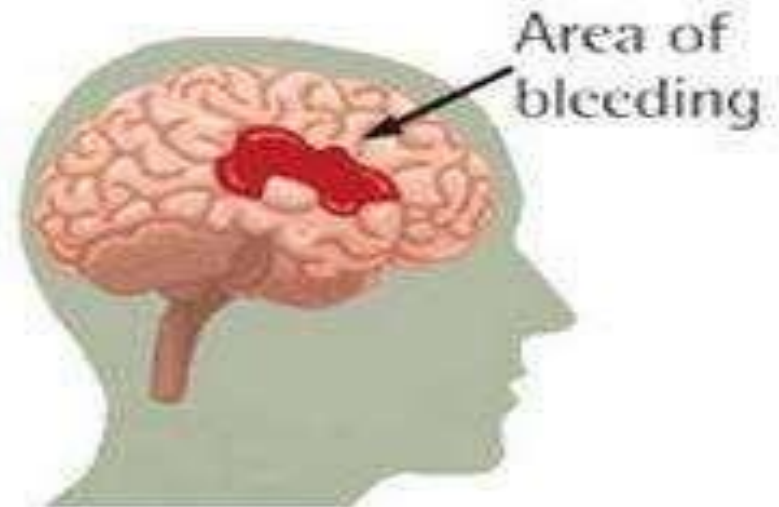




## Ischemic Stroke



## Hemorrhagic Stroke



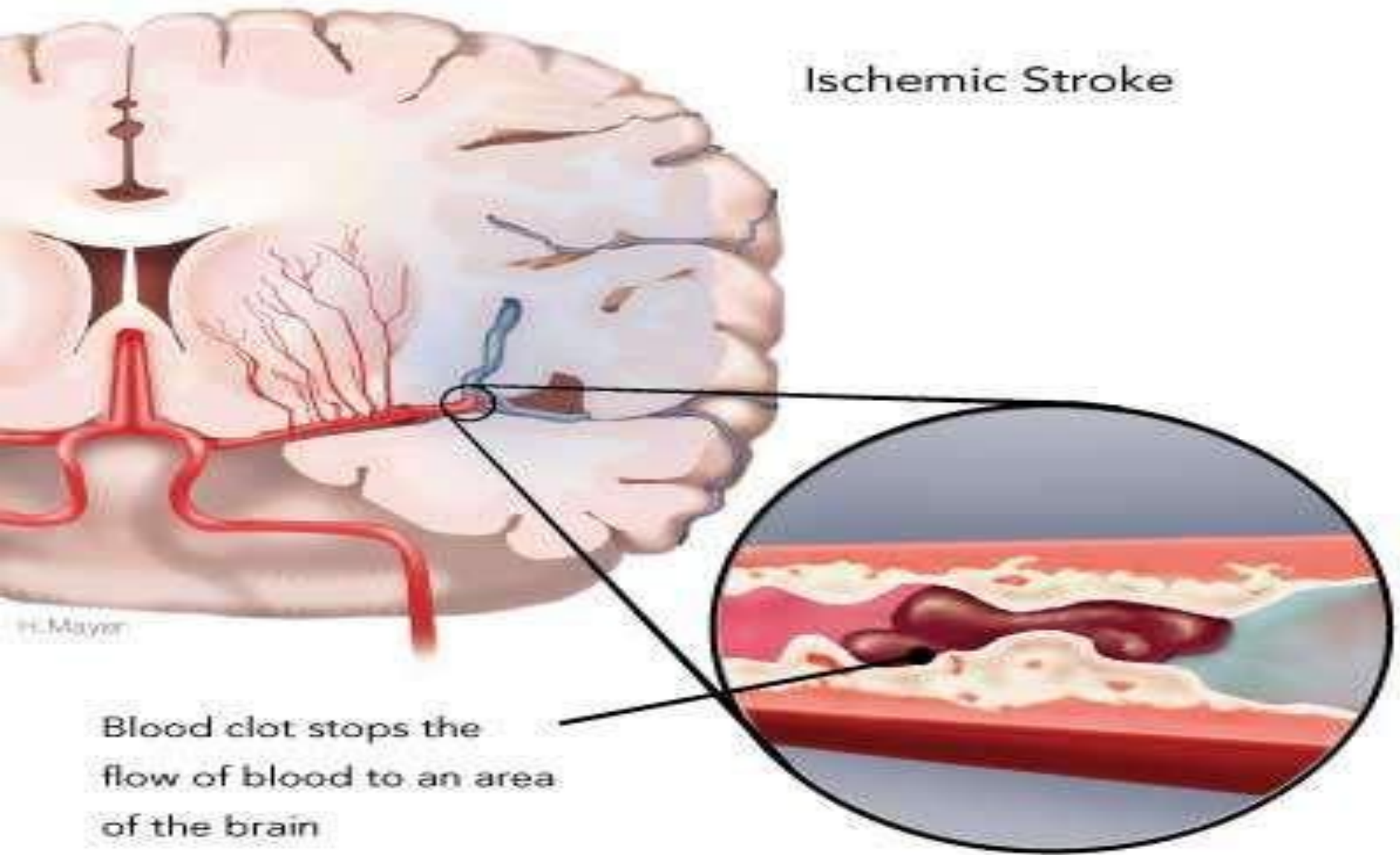
Obstruction blocks blood flow to part of the brain



Weakened vessel wall ruptures, causing bleeding in the brain

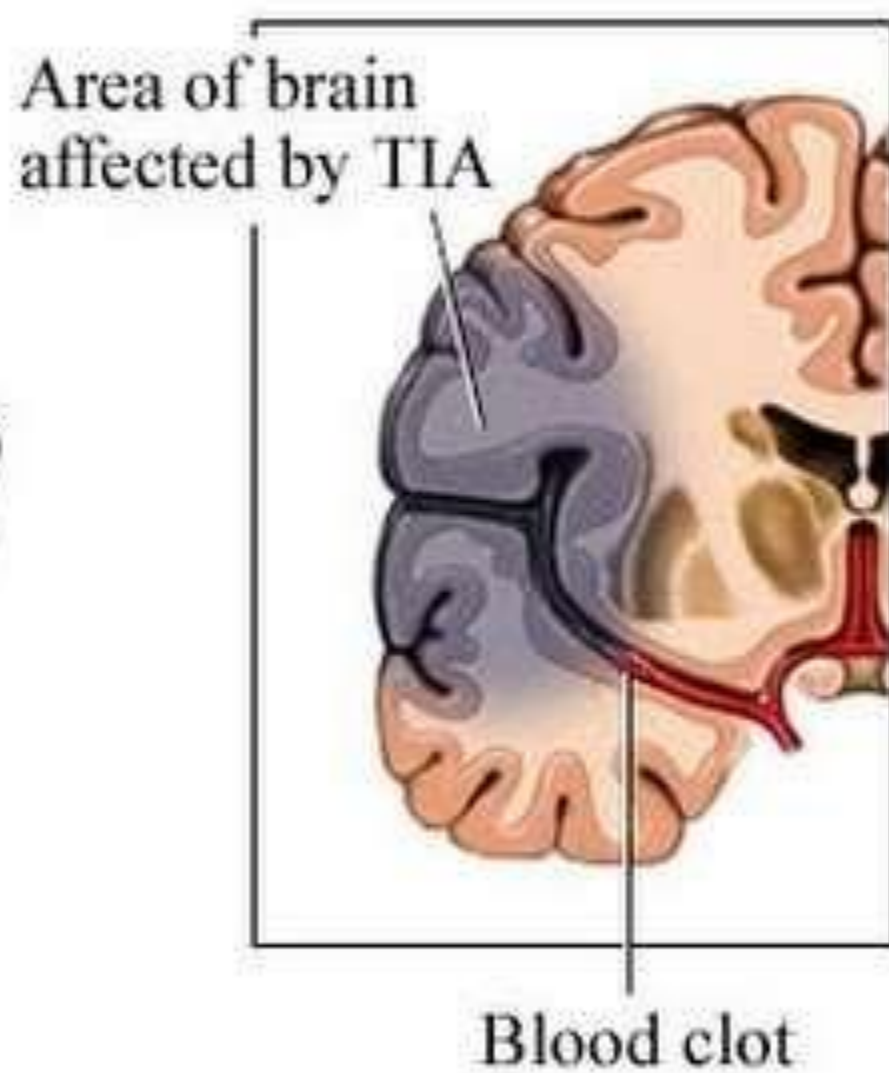
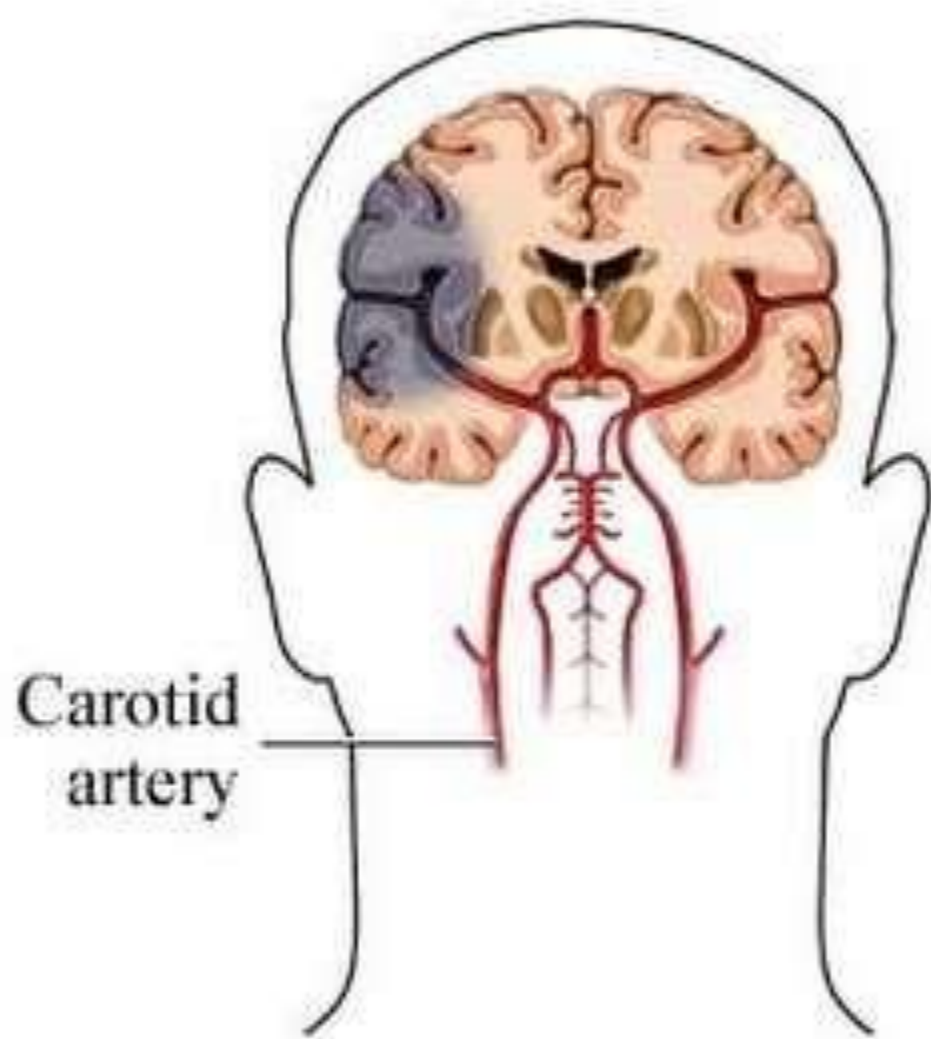


## Ischemic Stroke

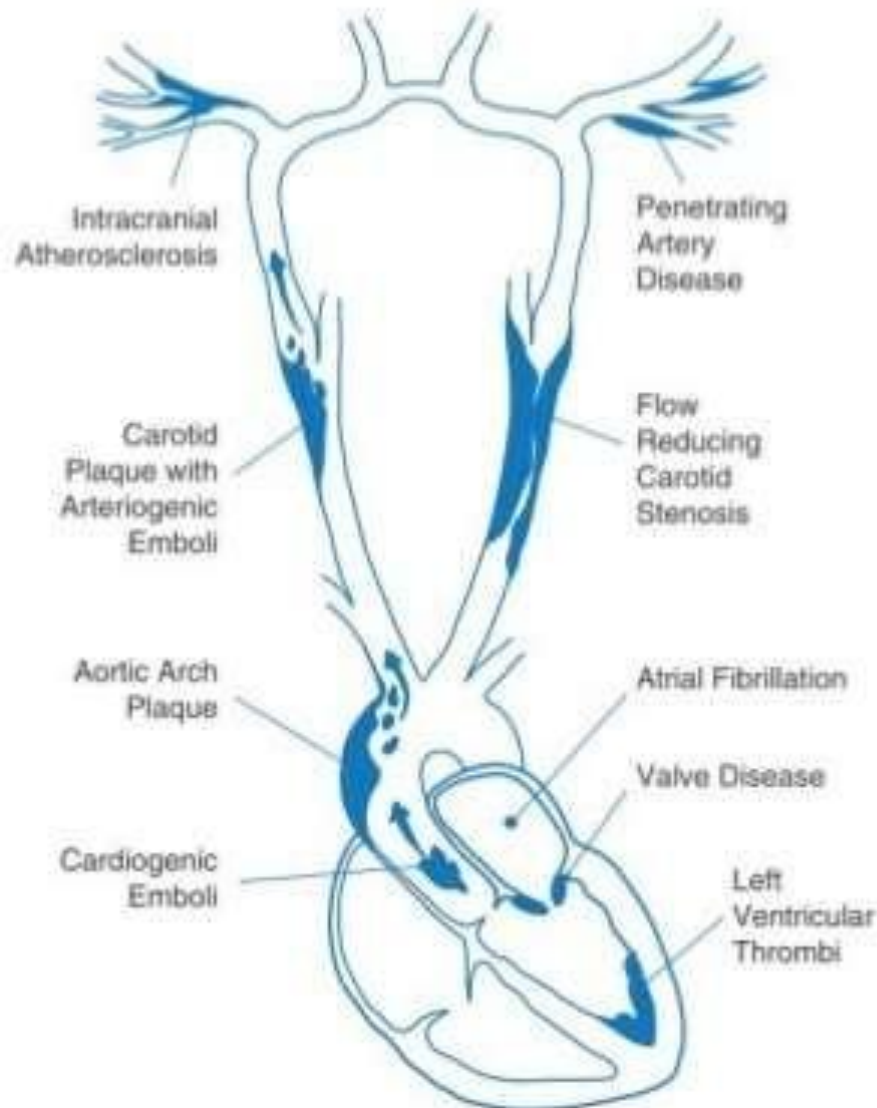


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# What are the causes of TIA?



Large artery atherosclerosis

Cardio-aortic embolism

Small artery occlusion

Other causes

Undetermined causes

unknown – cryptogenic embolism

unknown – other cryptogenic

unknown – incomplete evaluation

unclassified

## ❑ ISCHEMIC STROKE

- Ischemic stroke is the most common form of stroke, accounting for around 85% of strokes.
- This type of stroke is caused by blockages or narrowing of the arteries that provide blood to the brain, resulting in ischemia - severely reduced blood flow.
- These blockages are often caused by blood clots. Clots can be caused by fatty deposits within the arteries called plaque.



## ❑ **HEMORRHAGIC STROKE:**

- Hemorrhagic stroke are caused by arteries in the brain either leaking blood or bursting open.
- The ruptures can be caused by conditions such as hypertension, trauma, blood-thinning medications and aneurysms (weaknesses in blood vessel walls).

- Intra cerebral hemorrhage is the most common type of hemorrhagic stroke and occurs when brain tissue is flooded with blood after an artery in the brain bursts.
- Subarachnoid hemorrhage is the second type of hemorrhagic stroke and is less common. In this type of stroke, bleeding occurs in the subarachnoid space - the area between the brain and the thin tissues that cover it.

## ❑ TRANSCIENT ISCHEMIC ATTACK (TIA)

- TIAs are different from the mentioned kinds of stroke because the flow of blood to the brain is only briefly interrupted. TIAs are similar to ischemic strokes in that they are often caused by blood clots or other debris.
- TIAs should be regarded as medical emergencies.

- They serve as warning signs for future strokes and indicate that there is a partially blocked artery or clot source in the heart.
- According to the Centers for Disease Control and Prevention (CDC), over a third of people who experience a TIA go on to have a major stroke within a year if they have not received any treatment. Between 10-15% will have a major stroke within 3 months of a TIA.

# What are the signs of Stroke?



# STROKE

## KNOW THE WARNING SIGNS

*If you experience any of these symptoms, CALL 9-1-1 or your local emergency number immediately.*



### **Weakness**

Sudden loss of strength or sudden numbness in the face, arm or leg, even if temporary.



### **Trouble speaking**

Sudden difficulty speaking or understanding or sudden confusion, even if temporary.



### **Vision problems**

Sudden trouble with vision, even if temporary.



### **Headache**

Sudden severe and unusual headache.



### **Dizziness**

Sudden loss of balance, especially with any of the above signs.

SEE WHAT HAPPENS WHEN  
YOU PUT YOUR HEART INTO IT.™



**HEART &  
STROKE  
FOUNDATION**

*Finding answers. For life.*



# □ SYMPTOMS

Strokes occur quickly and, as such, symptoms of stroke often appear suddenly without warning.

**The main symptoms of stroke are as follows:**

- Confusion, including trouble with speaking and understanding
- Headache, possibly with altered consciousness or vomiting

- Numbness of the face, arm or leg, particularly on one side of the body
- Trouble with seeing, in one or both eyes
- Trouble with walking, including dizziness and lack of co-ordination.

In addition to the persistence of the problems listed previously, patients may also experience the following:

- Bladder or bowel control problems
- Depression
- Pain in the hands and feet that gets worse with movement and temperature changes
- Paralysis or weakness on one or both sides of the body
- Trouble controlling or expressing emotions.

# □DIAGNOSIS

- Strokes happen fast and will often occur before an individual can be seen by a doctor for a proper diagnosis.
- The acronym **F.A.S.T.** is a way to remember the signs of stroke, and can help identify the onset of stroke more quickly:

# LEARN THE SIGNS OF STROKE

YOU COULD SAVE A LIFE OR HELP  
PREVENT DISABILITY

## FACE

Does the face  
look uneven?



ask the person to smile.

## ARM

Does one arm  
drift down?



ask the person to raise  
both of their arms.

## SPEECH

Does their  
speech sound  
strange?

THE RING  
A PHONE



ask the person to repeat  
a simple phrase, such as,  
"The ring a phone."

## TIME

If you notice  
any of these  
signs, it's time  
to call 9-1-1!



call 9-1-1 if any of these  
signs are observed.

- **Face drooping:** if the person tries to smile does one side of the face droop?
- **Arm weakness:** if the person tries to raise both their arms does one arm drift downward?
- **Speech difficulty:** if the person tries to repeat a simple phrase is their speech slurred or strange?
- **Time to call 911( In USA) and 108 ( In India):** if any of these signs are observed, contact the emergency services.



# Stroke Recognition:

## 3 Steps to Stroke Recognition



Ask the person to smile  
and stick out tongue



Ask the person to make  
a complete sentence



I can't fall  
tell side  
which one.



EJ MILLER



Ask the person to  
raise both arms.



Contact someone if the person cannot  
perform these 3 steps

There are several different types of diagnostic tests that doctors can use in order to determine which type of stroke has occurred:

- *CT scans of the brain are one of few ways to determine which type of stroke a person has had.*
- Physical examination: a doctor will ask about the patient's symptoms and medical history. They may check blood pressure, listen to the carotid arteries in the neck and examine the blood vessels at the back of the eyes, all to check for indications of clotting

- Blood tests: a doctor may perform blood tests in order to find out how quickly the patient's blood clots, the levels of particular substances (including clotting factors) in the blood, and whether or not the patient has an infection
- CT scan: a series of X-rays that can show hemorrhages, strokes, tumors and other conditions within the brain
- MRI scan: radio waves and magnets create an image of the brain to detect damaged brain tissue

- Carotid ultrasound: an ultrasound scan to check the blood flow of the carotid arteries and to see if there is any plaque present
- Cerebral angiogram: dyes are injected into the brain's blood vessels to make them visible under X-ray, in order to give a detailed view of the brain and neck arteries
- Echocardiogram: a detailed image of the heart is created to check for any sources of clots that could have traveled to the brain to cause a stroke.

# TREATMENT OF STROKE

## ❑ ISCHEMIC STROKES

- Aspirin can be given, as can an injection of a tissue plasminogen activator (TPA).
- A carotid endarterectomy
- Angioplasty

## ❑ HEMMORHAGIC STROKE

- Treatment can begin with drugs being given to reduce the pressure in the brain, overall blood pressure, prevent seizures and prevent sudden constrictions of blood vessels. If the patient is taking anti-coagulant or anti-platelet medication like Warfarin or Clopidogrel, they can be given drugs or blood transfusions to counter the medication's effects.

- Surgery can be used to repair any problems with blood vessels that have led or could lead to hemorrhagic strokes. Surgeons can place small clamps at the base of aneurysms or fill them with detachable coils to stop blood flow to them and prevent rupture.
- Surgery can also be used to remove small arteriovenous malformations (AVMs) if they are not too big and not too deep within the brain. AVMs are tangled connections between arteries and veins that are weaker and burst more easily than other normal blood vessels



## ❑ REHABILITATION

- Strokes are life-changing events that can affect a person both physically and emotionally, temporarily or permanently. After a stroke, successful recovery will often involve specific rehabilitative activities such as:
- Speech therapy - to help with problems producing or understanding speech. Practice, relaxation and changing communication style, using gestures or different tones for example, all help
- Physical therapy - to help a person relearn movement and co-ordination. It is important to get out and about, even if it is difficult at first

- Occupational therapy - to help a person to improve their ability to carry out routine daily activities, such as bathing, cooking, dressing, eating, reading and writing
- Joining a support group - to help with common mental health problems such as depression that can occur after a stroke. Many find it useful to share common experiences and exchange information
- Support from friends and family - to provide practical support and comfort. Letting friends and family know what can be done to help is very important.

## ❑ **PREVENTION**

The best way to prevent a stroke is to address the underlying causes. This is best done by living healthily, which means:

- Eating a healthy diet
- Maintaining a healthy weight
- Exercise regularly
- Not smoking
- Avoiding alcohol or moderating consumption.

Other measures taken to help reduce the risk of stroke include:

- Keeping blood pressure under control
- Managing diabetes well
- Treating obstructive sleep apnea (if present).
- As well as these lifestyle changes, a health care provider can help to reduce the risk of future strokes through prescribing anti-coagulant and anti-platelet medication. In addition to this, the arterial surgery previously mentioned can also be used to lower the risk of repeat strokes.





# STROKE

A stroke aka. cerebrovascular attack is the loss of brain function due to a disturbance in the blood supply to the brain.

! Stroke is the fourth leading cause of death in the United States. !



On average, one American dies from stroke every 4 minutes.



In 2009, 34% of people hospitalized for stroke were younger than 65 years.



Stroke is a leading cause of serious long-term disability.



Stroke kills almost 130,000 Americans each year (1 out of every 19 deaths)

## Ischemic stroke

— blood supply to part of the brain is decreased, leading to dysfunction of the brain tissue in that area. There are four reasons why this might happen:

1. Thrombosis (obstruction of a blood vessel by a blood clot forming locally)
2. Embolism (obstruction due to an embolus from elsewhere in the body, see below).
3. Systemic hypoperfusion (general decrease in blood supply, e.g., in shock)
4. Venous thrombosis.

! About 87% of all strokes are ischemic strokes.

## Hemorrhagic stroke

Intracranial hemorrhage is the accumulation of blood anywhere within the skull vault. A distinction is made between intra-axial hemorrhage (blood inside the brain) and extra-axial hemorrhage (blood inside the skull but outside the brain).

## Risk Reduction Tips:

- \*Eating a healthy diet.
- \*Maintaining a healthy weight.
- \*Getting enough exercise.
- \*Not smoking.
- \*Limiting alcohol use.
- \*Check Cholesterol
- \*Control Blood Pressure
- \*Manage Diabetes
- \*Manage Heart Disease
- \*Take Your Medicine
- \*Talk with Your Health Care Team

## Major Risk Factors:

- \*high blood pressure
- \*smoking
- \*high cholesterol

## Top Foods Thought To Help Prevent Stroke



Oats



Almonds



Soy



Strawberry



Low Fat Milk



Blackberries



Banana



Barley



Cornmeal



Salmon

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