The background features a series of concentric, overlapping circles in light gray, some solid and some dashed, creating a ripple effect. In the center, there is a large orange callout box with a white border and a downward-pointing arrow at the bottom. The text is centered within this box.

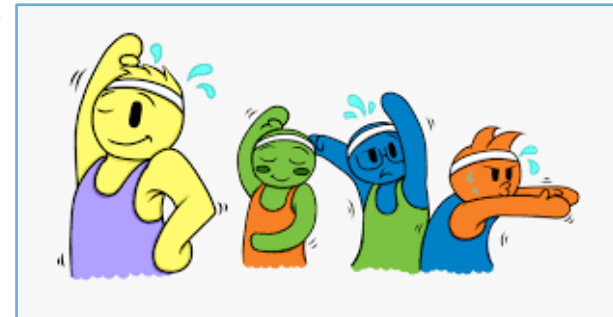
# Types of Stroke:

Ischemic or Hemorrhagic

# The brain has many functions

What does our brain do ?

- Receives messages from the body
- Processes information
- Sends messages to the body



## What is a Stroke?



## A stroke occurs when the blood supply to the brain is interrupted

- When neurons (brain cells) don't receive oxygen, they no longer work
  - Messages aren't received
    - -> Can no longer feel touch, understand speech, see
  - Information isn't processed
    - -> Can't understand or think normally
  - Messages aren't sent
    - -> Can no longer move, speak, swallow, move easily
- Depending on the part of the brain affected, symptoms will differ

How can I  
recognize  
stroke?

<b>B</b>	<b>E</b>	<b>F</b>	<b>A</b>	<b>S</b>	<b>T</b>
SUDDEN BALANCE LOST	SUDDEN EYE(S) BLUR	FACE DROOPING	ARM WEAKNESS	SPEECH DIFFICULTY	TIME TO CALL 9-1-1

Call 9-1-1 Now!

- Strokes happen suddenly !



SUDDEN SIGNS AND SYMPTOMS

- Stroke Symptoms

- B – Balance - is not normal
  - E – Change in eyes / vision – blurred, double, absent
  - F – Face drooping
  - A – Arm (or leg) weakness
  - S – Speech - slurred, can't speak or understand
  - T – Time, call 911
- 
- Also headaches, sensory changes

## Part 1

Types of Stroke:  
Ischemic?  
Hemorrhagic?

## Part 2

- **Causes of Stroke**
  - **Relating Causes and Risk Factors**

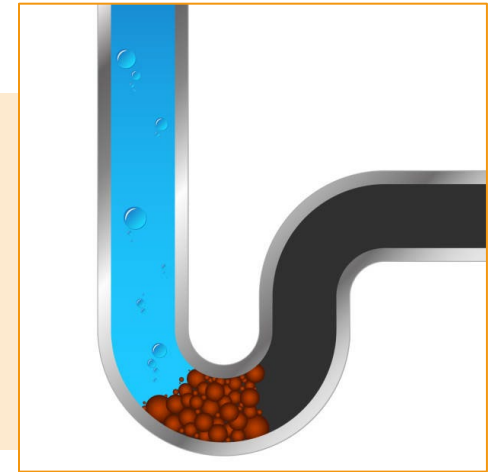
## Part 3

- **Locations of stroke**
  - **Front or Back**
  - **Right or Left**

# Differences

## ISCHEMIC

- Most Common – 87%
- Blood flow to the brain is blocked



## HEMORRHAGIC

- Less Common – 13%
- Blood vessels burst
  - Blood leaks out

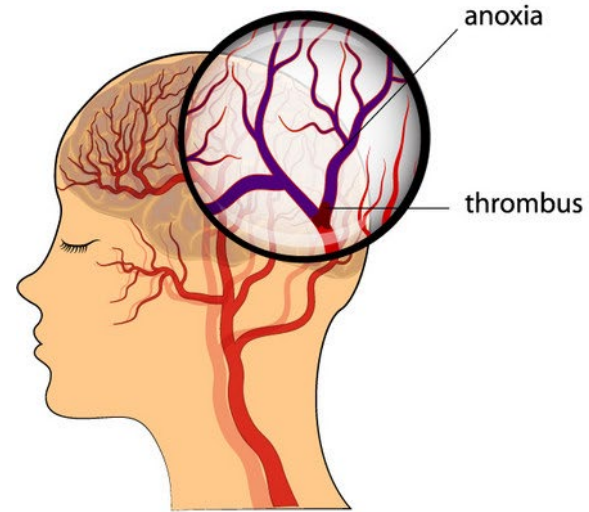


# ISCHEMIC

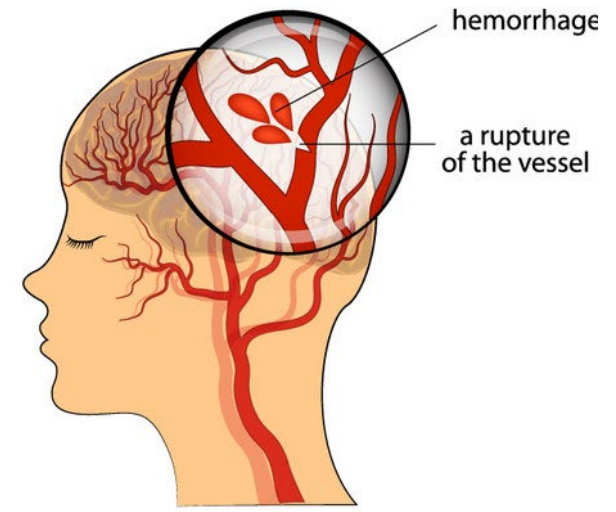
# HEMORRHAGIC

Differences

## ISCHEMIC AND HEMORRHAGIC STROKE



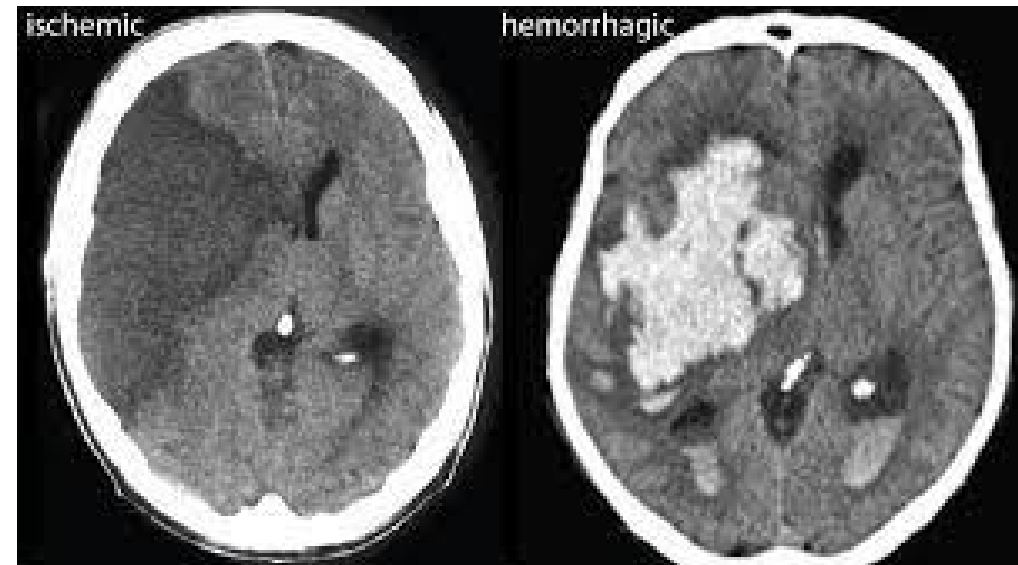
ISCHEMIC STROKE



HEMORRHAGIC STROKE

# Differences

- A CT scan is done right away - to determine which kind of stroke it is
  - Ischemic stroke
    - Initially, looks normal
    - A few days later the area gets darker
  - Hemorrhagic stroke
    - Blood shows up as white right away



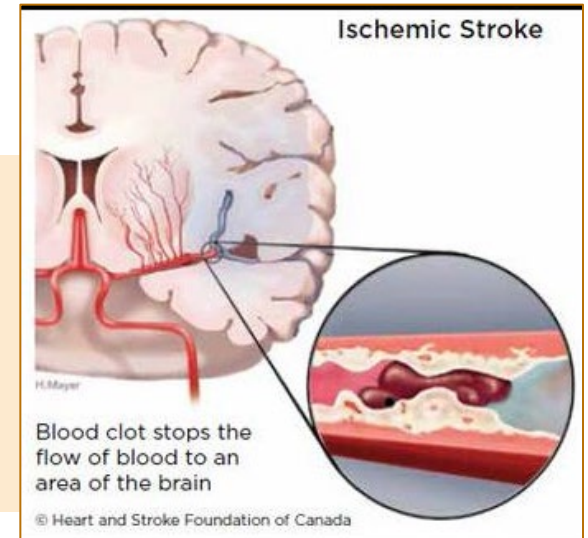
(The strokes in these picture are very big strokes)



# Differences in Ischemic Strokes

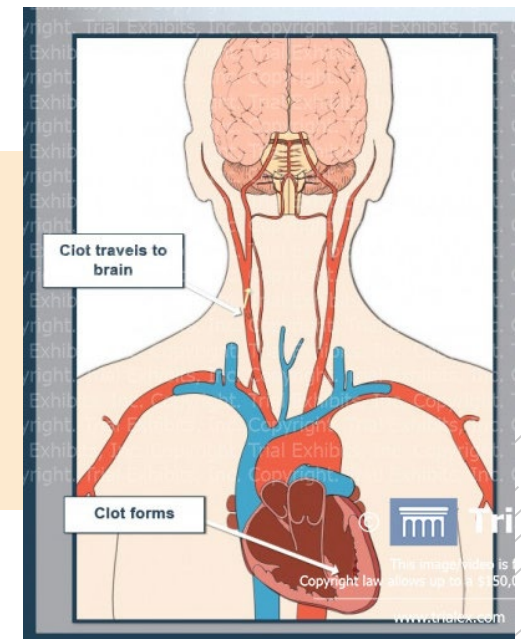
## THROMBOTIC

- Plaque build-up narrows the vessels
  - Clot forms more easily over plaque



## CARDIOEMBOLIC

- Clots travel to the brain from the heart or other vessels by the heart
  - “A-fib”



# What's a TIA ?

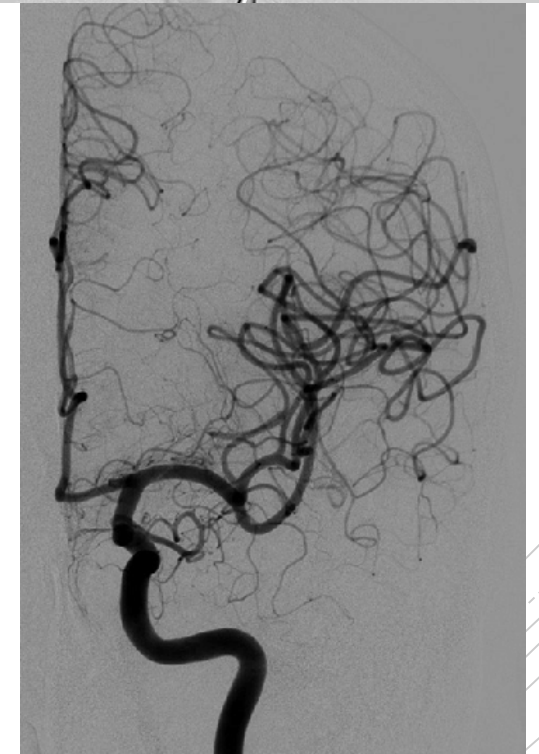
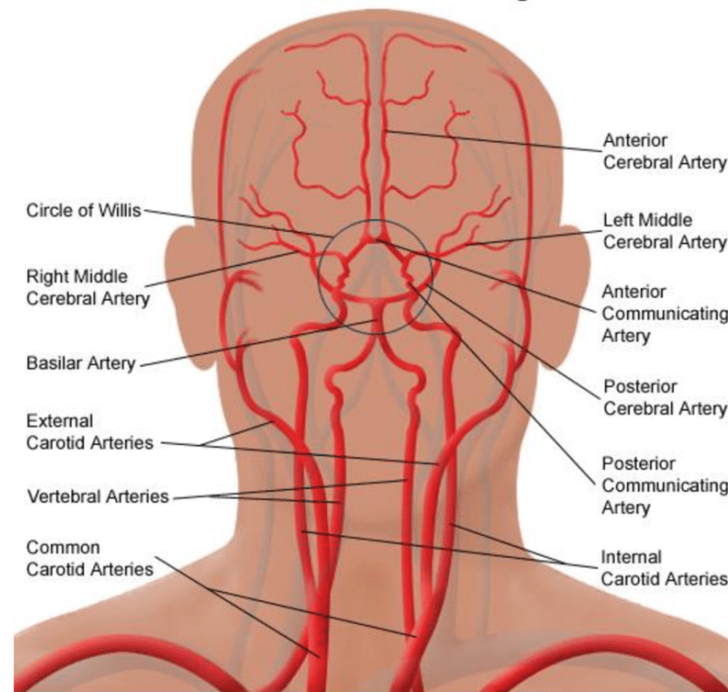
## TRANS ISCHEMIC ATTACK

- A person experiences stroke symptoms and then the symptoms go away
- These are ischemic strokes, but the clot dissolves or breaks up on its own

## WHY IS IT IMPORTANT TO SEEK HELP?

- **CONCERN: High risk of stroke!!!**
  - Up to 15% of people who have a TIA go on to have a stroke within 3 months
  - Up to 40% of people who have a stroke admit to having a TIA before
- Treatment and prevention strategies need to be started to prevent a stroke !

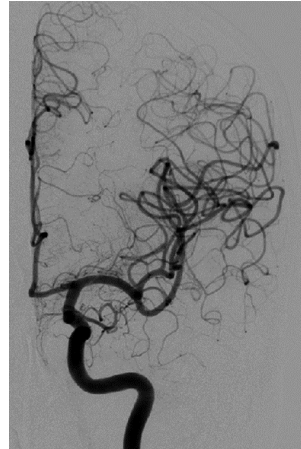
# Blood Vessels in the Brain



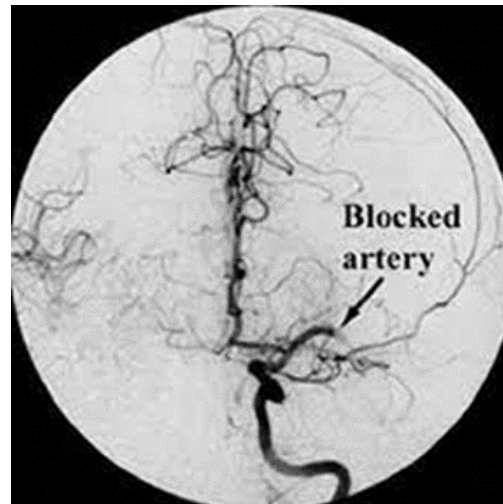
Analogy:

# Blood Vessels & Tree Branches

- Normal, healthy



- Abnormal, not healthy

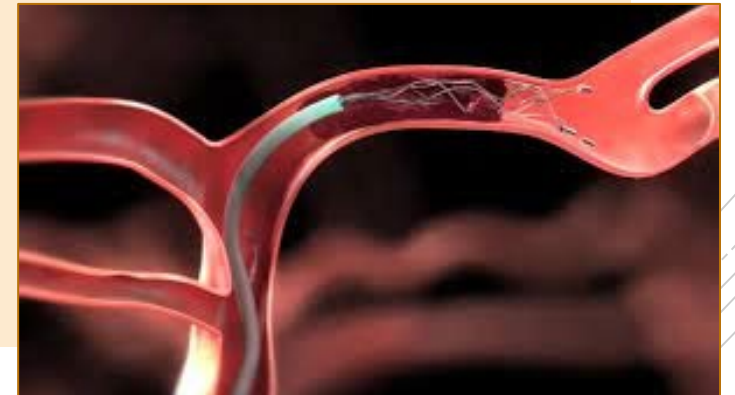


# Treatments for Ischemic Strokes

- Clot busting drug “alteplase”
  - Breaks down the clot
  - 1 dose, within 4.5 hours of last known well



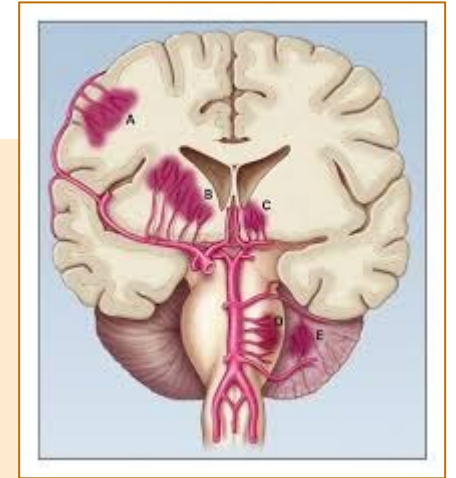
- Remove the clot “Thrombectomy”
  - Catheter goes up to large vessels in the brain and clot is pulled out



# Differences in Hemorrhagic Strokes

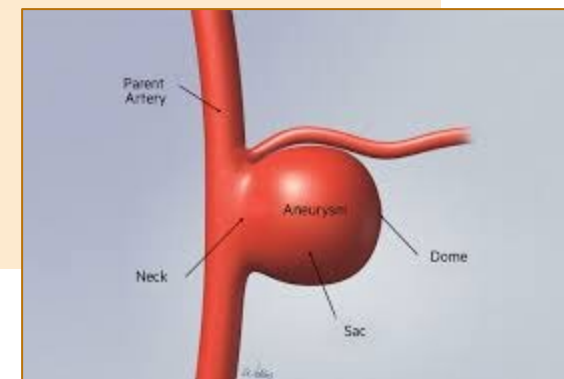
## INTRACEREBRAL HEMORRHAGE (ICH)

- Diseased vessels can rupture
  - Most often due to high blood pressure
  - Symptoms may be like ischemic strokes, can worsen and can have headache



## SUBARACHNOID HEMORRHAGE (SAH)

- Blood vessel weakens
  - Can balloon out
- When ruptures
  - “Worse headache of my life”



# Treatments for Hemorrhagic Strokes

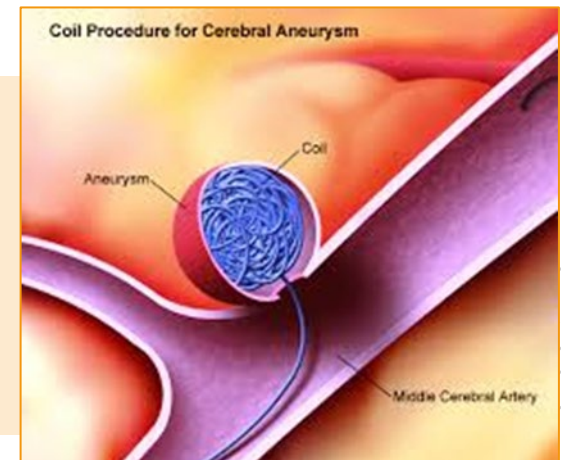
## SUPPORTIVE CARE

- Manage high blood pressure
- Re-evaluate need for blood thinners



## IF ANEURYSM...

- Aneurysm is secured to prevent another rupture



Take-Away...

All Strokes need  
Emergent  
Treatment!





Take-Away...

Know what to do  
when you see  
stroke  
symptoms!

## RECOGNIZE STROKE

- Know BEFAST
- Teach BEFAST to others 😊

## CALL 911

- Best to call an ambulance
  - They will notify the hospital and doctor prior to arrival
  - Then the stroke team can be prepared and respond promptly

## SPOT A STROKE



High Blood Pressure Symptoms  
Sudden Death Unhealthy Brain  
**STROKE**  
Medical Cause Headache  
Prevent Blood Flow  
Ischemic Dangerous  
Clogged CVA Quickly Clot  
Hemorrhagic Early Warning Sudden

Clot Prevention  
Cerebrovascular  
Healthcare  
Diagnosis Artery  
Disability

# Advanced Comprehensive Stroke Center

## CERTIFICATE OF DISTINCTION

*has been awarded to*

Sanford Medical Center Fargo

Fargo, ND

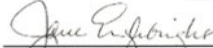
*for Advanced Certification in*  
Comprehensive Stroke Center  
*by*



The Joint Commission  
*based on a review of compliance with national standards,  
clinical guidelines and outcomes of care.*

March 11, 2021

*Certification is customarily valid for up to 24 months.*

  
Jane Englebright, PhD, RN, CENR, FAAN  
Chair, Board of Commissioners

ID #8430  
Print/Reprint Date: 05/20/2021

  
Mark R. Chassin, MD, FACP, MPP, MPH  
President

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- Sanford provides stroke care to all types of strokes
  - Initial recognition and treatment of stroke
  - Full therapy and rehabilitation services when needed
  - Stroke Team is comprised of providers, nurses, therapists and more!