

STROKE

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of Aurora

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Main Campus

- Acute Care hospital and Level II Trauma Center, Outpatient Imaging Centers

North- Behavioral Health

- Behavioral Health Inpatient for Adults, Geriatrics, Adolescents, and Behavioral Health Outpatient Services

Centennial Medical Plaza

- Level IV Free-Standing Emergency Department, Imaging, Outpatient Surgery

Saddle Rock Emergency Room

- Level IV Free-Standing Emergency Department

Spalding Rehabilitation Hospital

- First Licensed Rehabilitation Hospital in CO over 45 years ago



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Stroke Facts

- Every year about 795,000 people in the United States have a stroke
- That's about one person every 40 seconds
- Stroke is the 5th leading cause of death in the United States, but is the leading cause of long-term disability
- In one minute, about 1.9 million brain cells die during a stroke



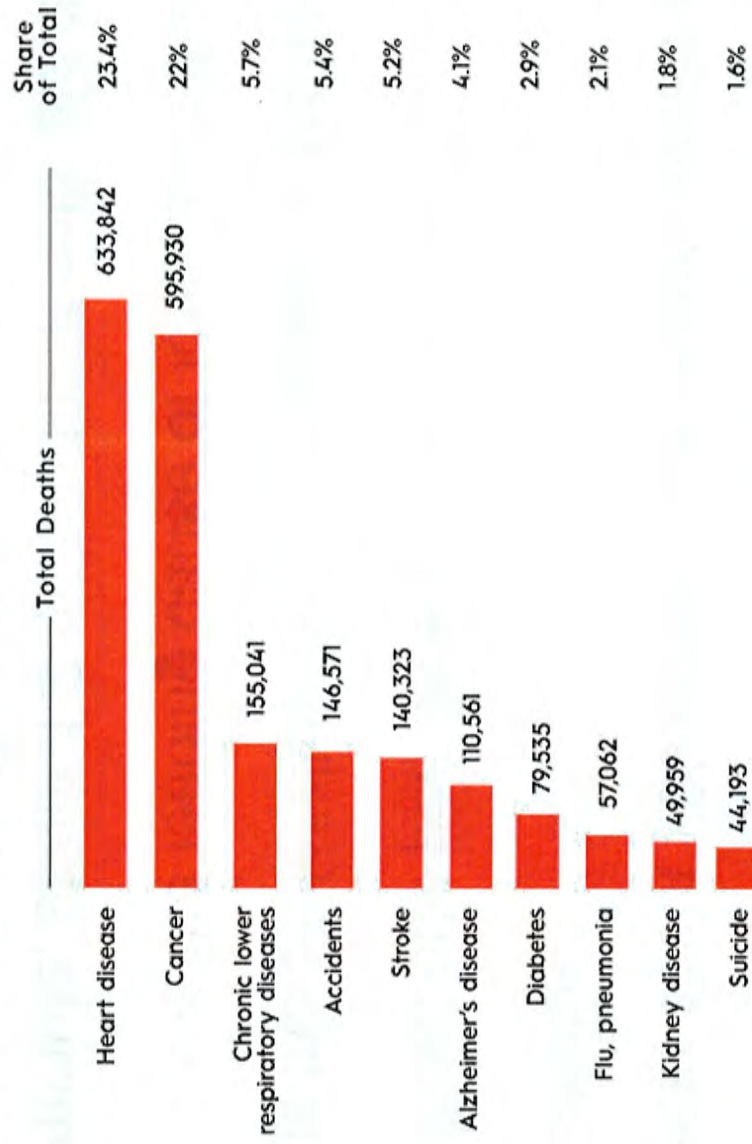
Stroke is the 5th leading cause of death



Leading Causes of Death

By AMERICAN HEART ASSOCIATION NEWS

Heart disease continues to kill more Americans than any other cause, followed by stroke at No. 5, according to 2015 federal data.



Source: Centers for Disease Control and Prevention

Published Dec. 8, 2016



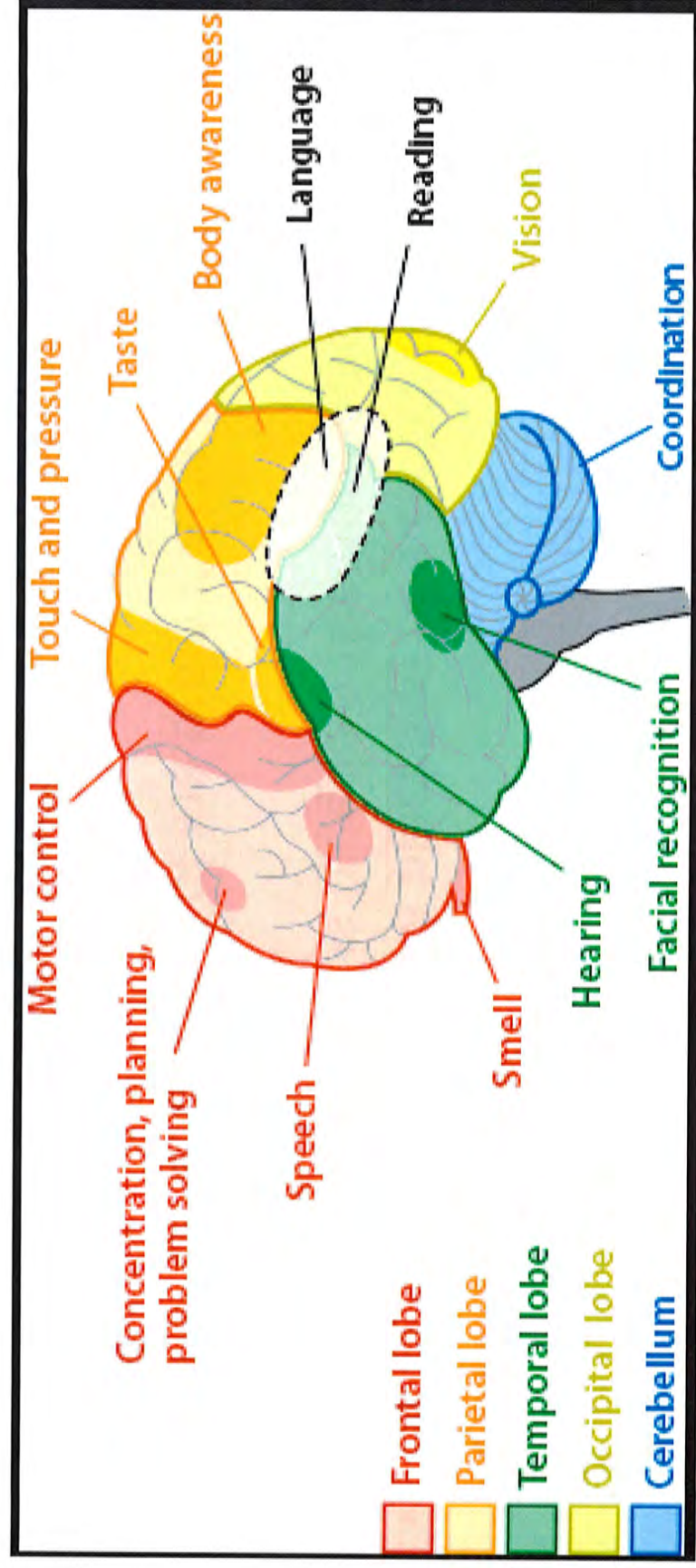
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What is stroke?

- A stroke occurs when there is a lack of blood flow to a portion of the brain
- This occurs if there is a blockage of a blood vessel (ischemic) or if there is bleeding (hemorrhagic) in to a portion of the brain
- In either case, the part of the brain that is effected can die quickly
- Every part of the brain controls a different part of the body, so it depends on where the stroke occurs, what will be affected
- Stroke can impair movement, sensation, speaking, balance, vision etc.

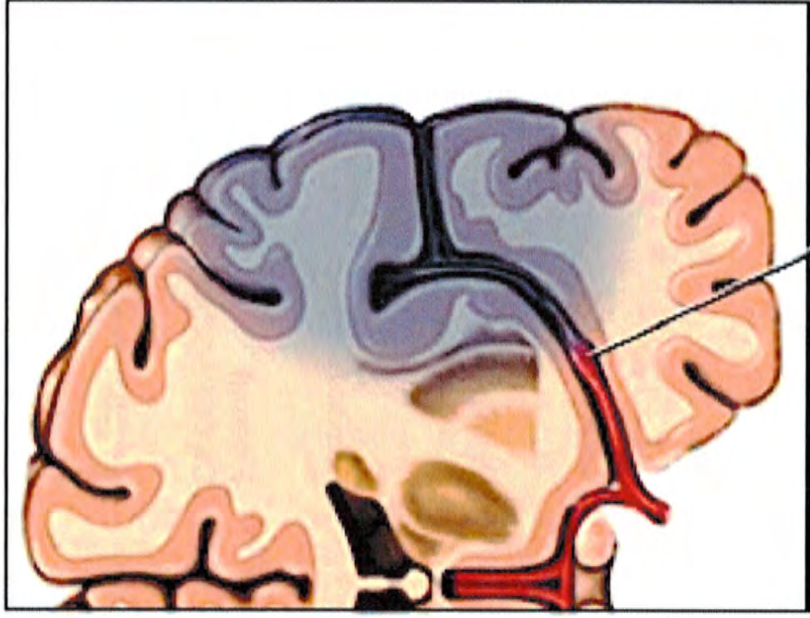
Areas of the brain affected

- The right side of the brain affects the left side of the body and vice versa



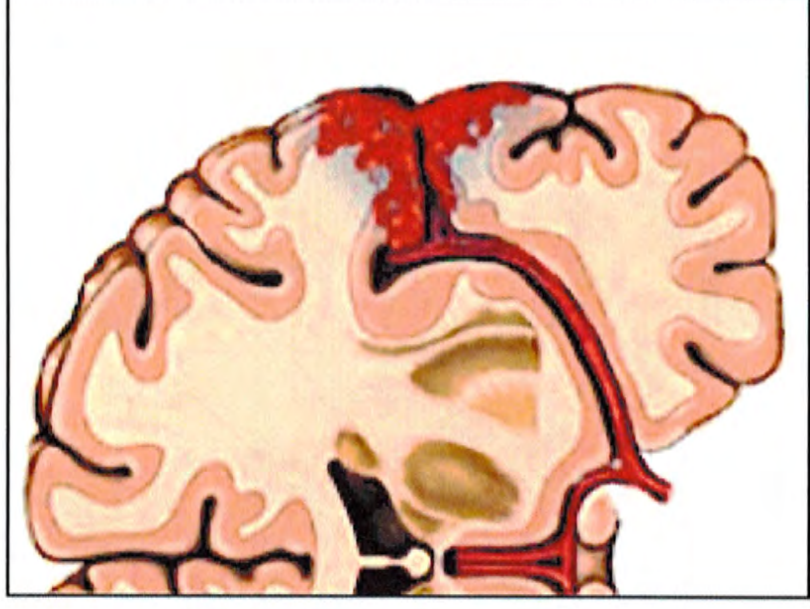
Stroke Types

Ischemic stroke



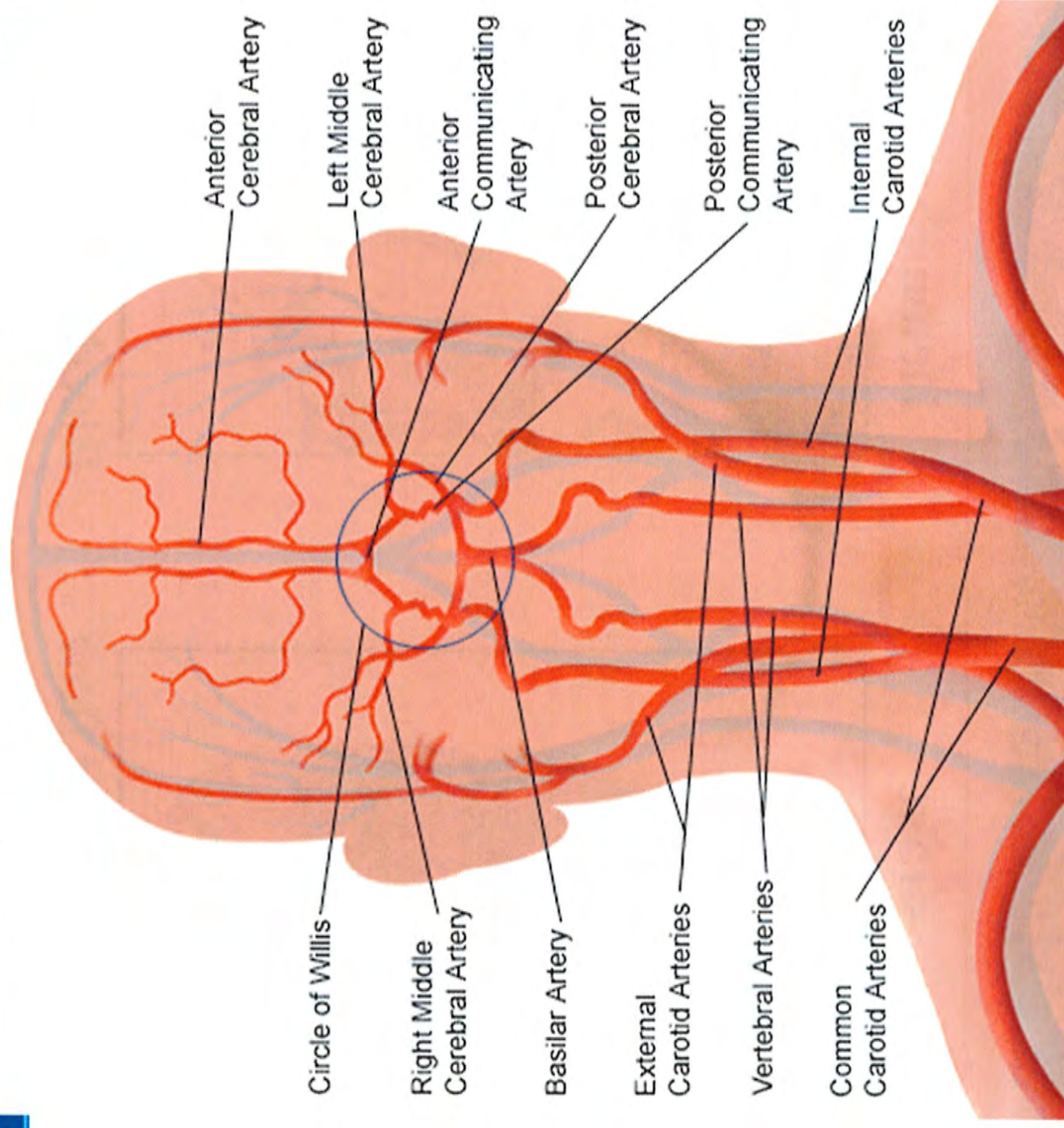
A clot blocks blood flow
to an area of the brain

Hemorrhagic stroke

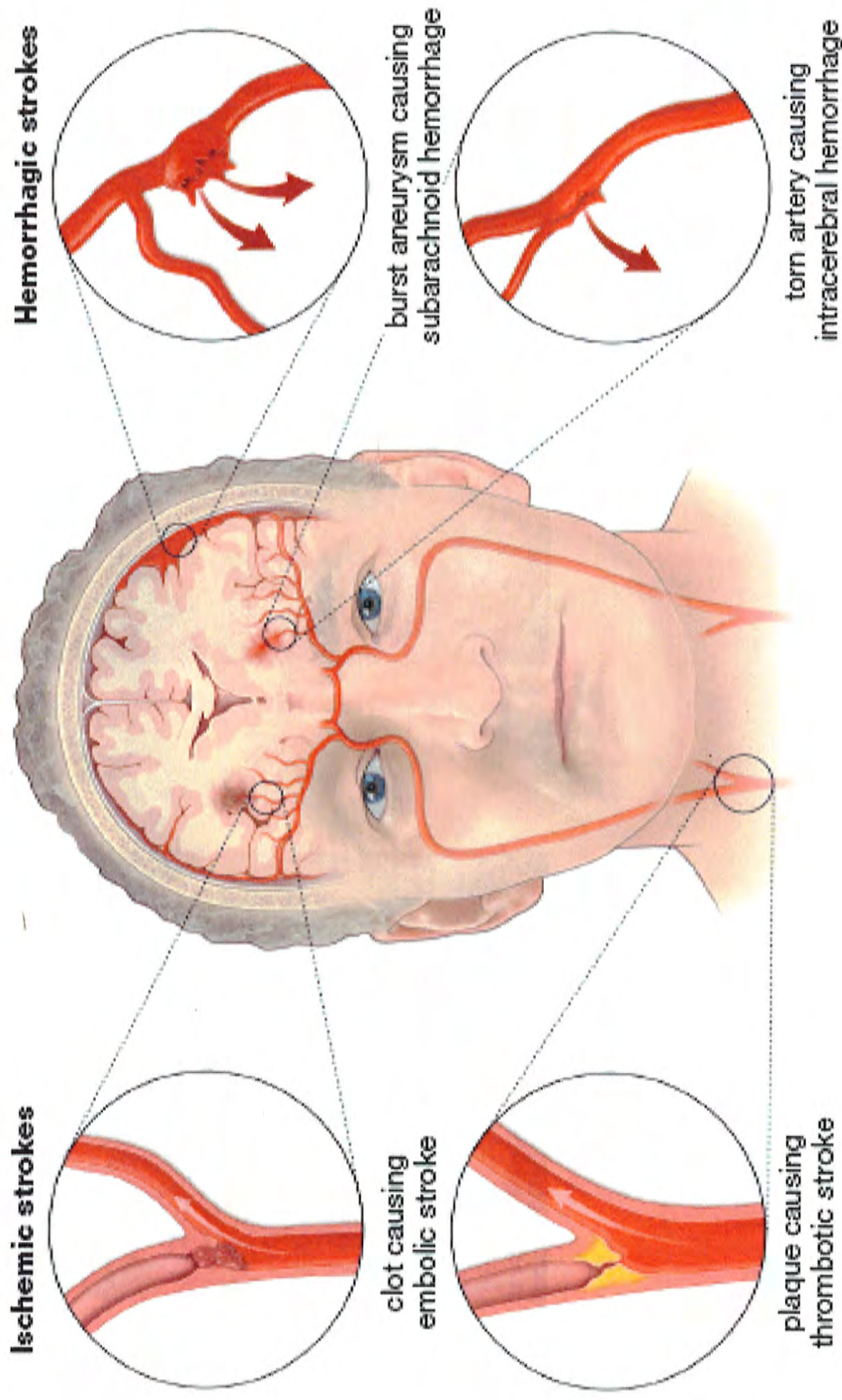


Bleeding occurs inside or
around brain tissue

Arterial Circulation of the Brain, Including Carotid Arteries

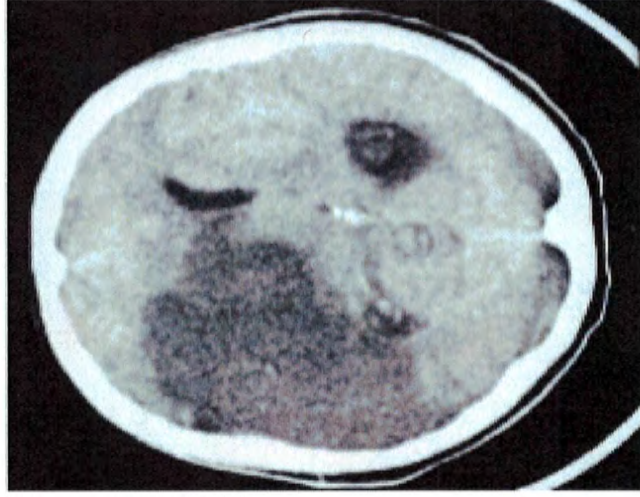


Causes of stroke

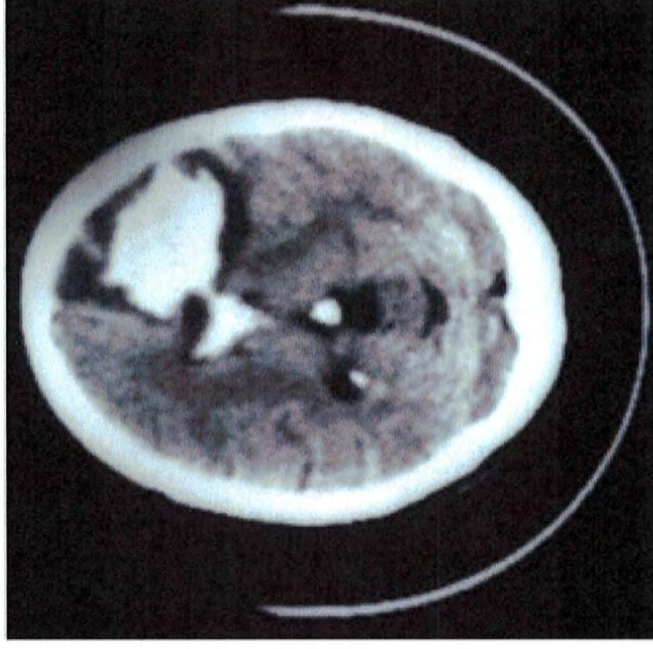


Types of stroke

85%
Ischemic

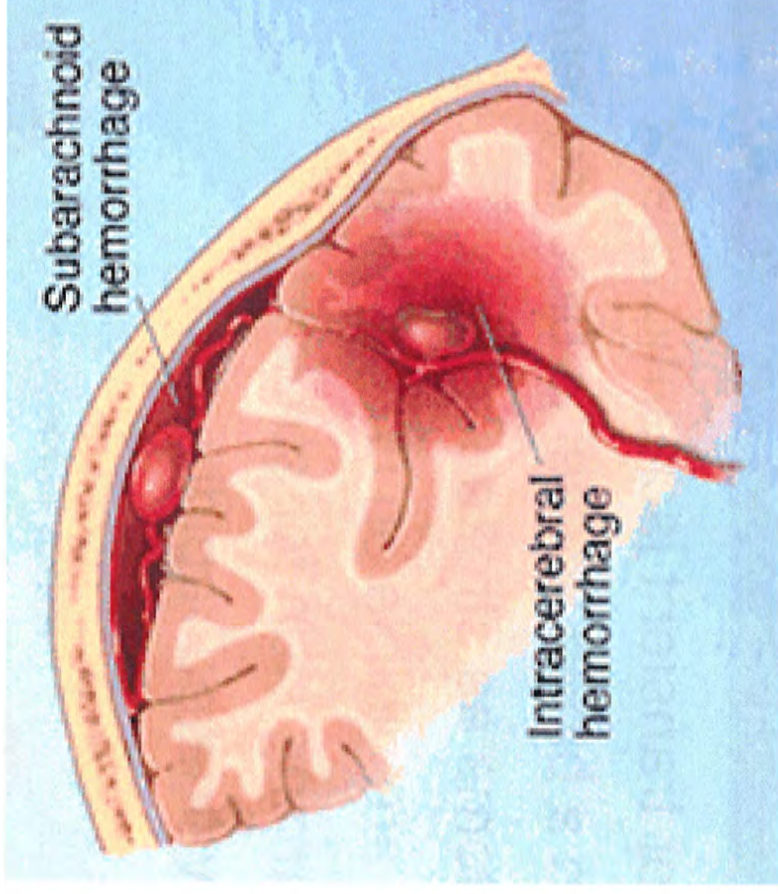


15 %
hemorrhagic



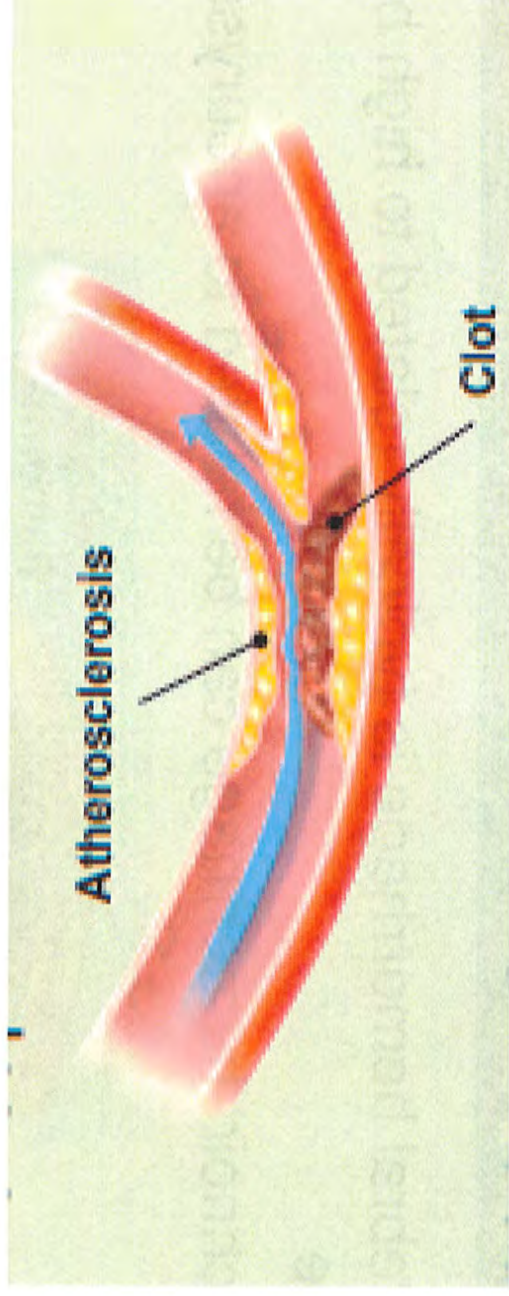
Types of hemorrhage

- Intracerebral hemorrhage is typically related to high blood pressure
- Subarachnoid hemorrhage can be related to aneurysm rupture

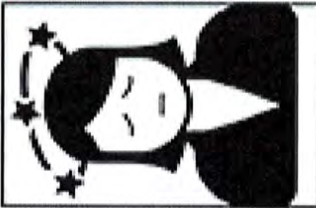
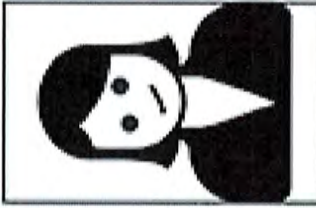


What is a 'TIA' or mini-stroke?

- TIA stands for transient ischemic attack
- Occurs when a blood vessel is blocked temporarily
- Same symptoms as stroke
- No changes are visible on CT or MRI
- Can be a warning sign for stroke
- Should be evaluated rapidly



Signs and symptoms of stroke

BEFAST					
BALANCE	EYES	FACE	ARMS	SPEECH	TIME
					
Sudden loss of balance?	Loss of vision in one or both eyes?	Face looks uneven?	Arm or leg weak/ hanging down?	Speech slurred? Trouble speaking or seem confused?	Call 911 now!

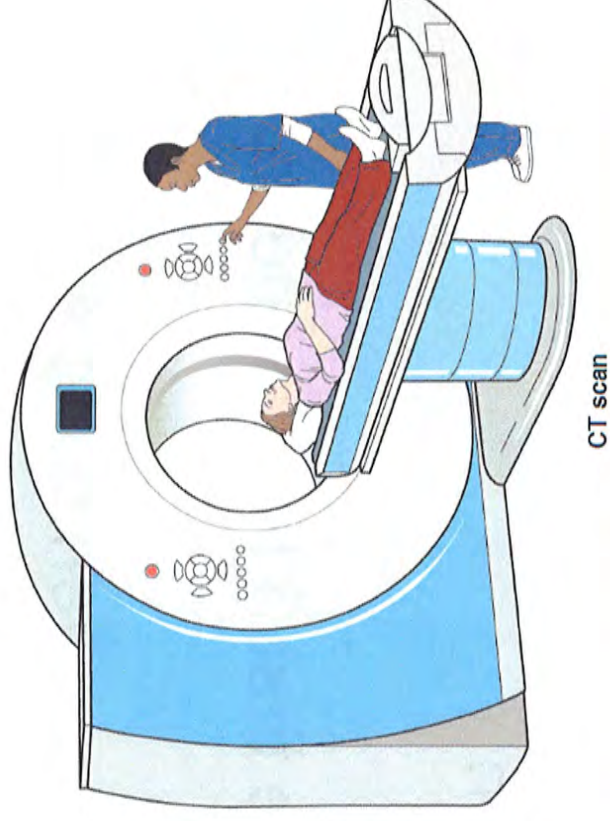
- About 20% of stroke are in the posterior circulation causing symptoms of dizziness, vision changes, or lack of coordination

Don't wait! Call 911!

- Call 911 immediately at onset on stroke symptoms
- Do not wait to see if symptoms resolve
- EMS activates the stroke team at the hospital and starts treatment on the way to the hospital
- Treatment for stroke is time sensitive, and some treatments are only available in the first few hours of symptom onset
- Don't be afraid of over-reacting! Hospital staff will determine what treatments if any are appropriate

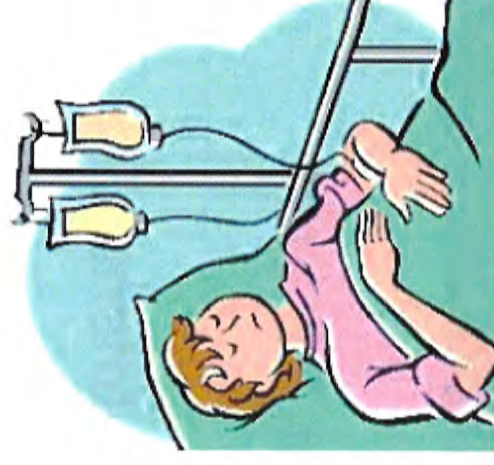
At the hospital

- Ambulance is met by ER doctor, neurologist, ER staff
- Pt is taken immediately to CT (Cat Scan)
- Recommendations are made quickly for treatment



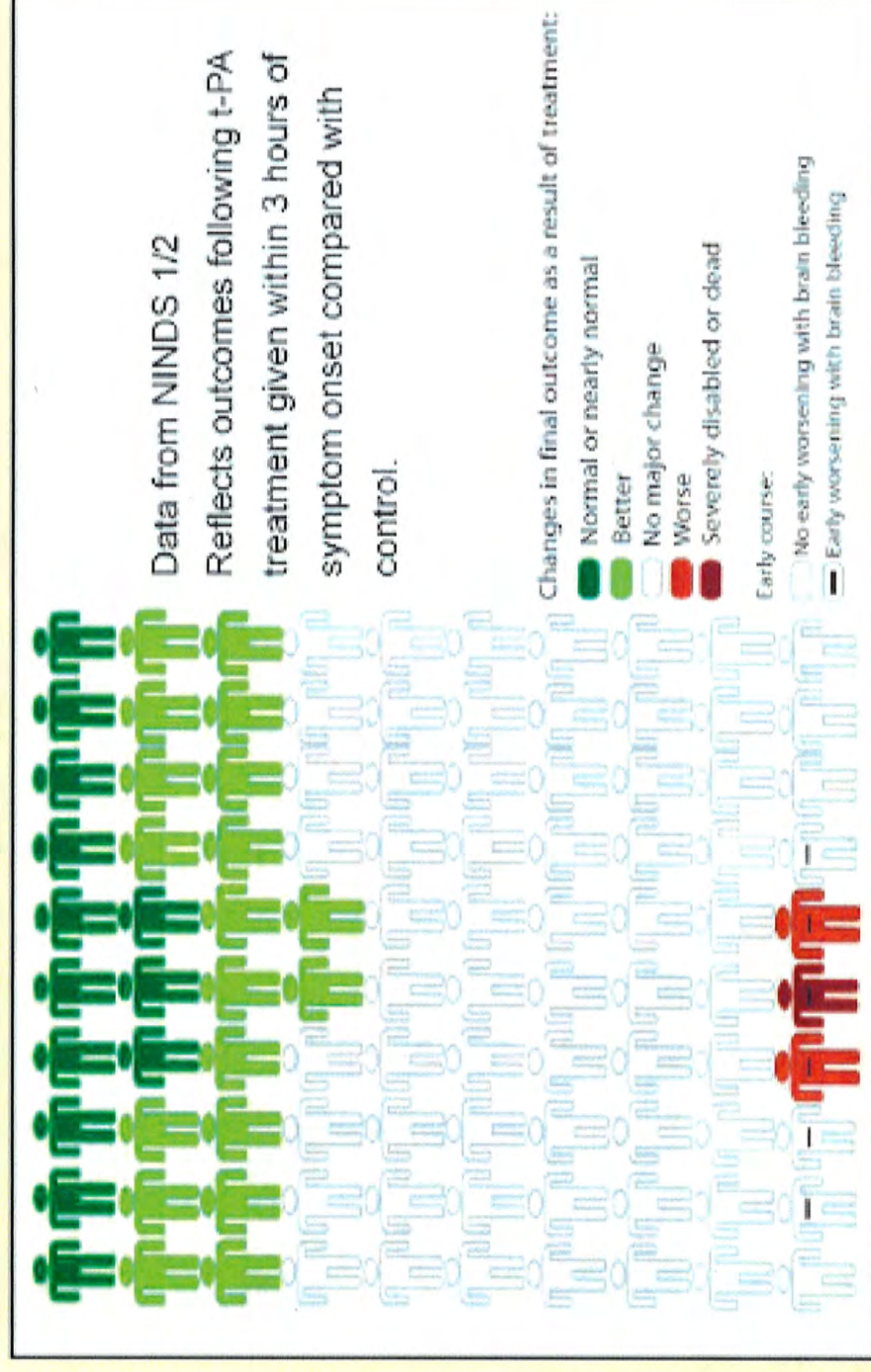
Treatment of stroke

- “Clot-busting” medication
 - IV Alteplase (tPA)
- Can only be given in the first 3 hours after a stroke has started
- In some patients it can be given up to 4.5 hours



IV Alteplase (tPA)

Figure. Change in Stroke Outcomes with t-PA

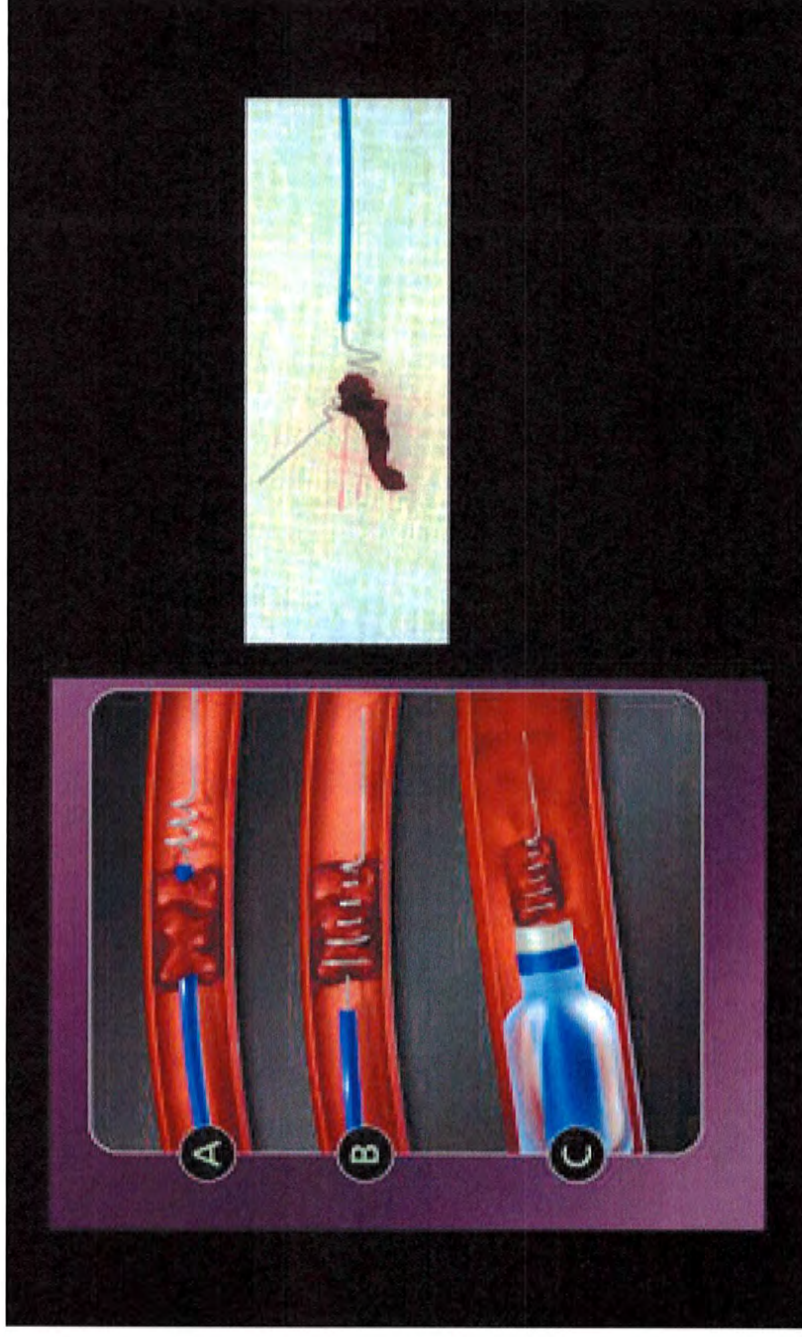


Outcomes reflected following t-PA treatment given within 3 hours of symptom onset.

SOURCE: UCLA Resource: <http://stroke.ucla.edu/workfiles/VDA-for-tPA.pdf>

Intra-arterial therapies

- For some patients, a clot can be removed from the brain using a long catheter inserted through the vessels in the groin.



Risk factors for stroke

Modifiable Risks	Non-modifiable Risks
High blood pressure	Age
Smoking	Race
High Cholesterol	Family History
Diabetes	Previous stroke or TIA
Atrial Fibrillation	
Heart Disease	
Coronary artery disease	
Heavy alcohol use	
Sedentary Lifestyle	
Obesity	
Unhealthy diet	

High blood pressure

- For most people, 130/80 is a reasonable blood pressure goal
- High blood pressure damages the insides of blood vessels, especially small vessels
- Elevated blood pressure can lead to stroke, heart attack, heart failure, or kidney disease



Smoking Tobacco

- Risk of stroke 2-4x that of non-smokers
- This includes second hand smoke
- Causes hardening of the arteries
- Causes blood to clot more easily
- 5 years after quitting, stroke risk is approximately that of non-smokers



High cholesterol

- Different types of cholesterol in the body
- LDL = bad cholesterol
- Medications to lower LDL = “statins”
- Statins reduce the risk of future stroke, help to reduce inflammation, help stabilize plaque
- Goal LDL after stroke: <70

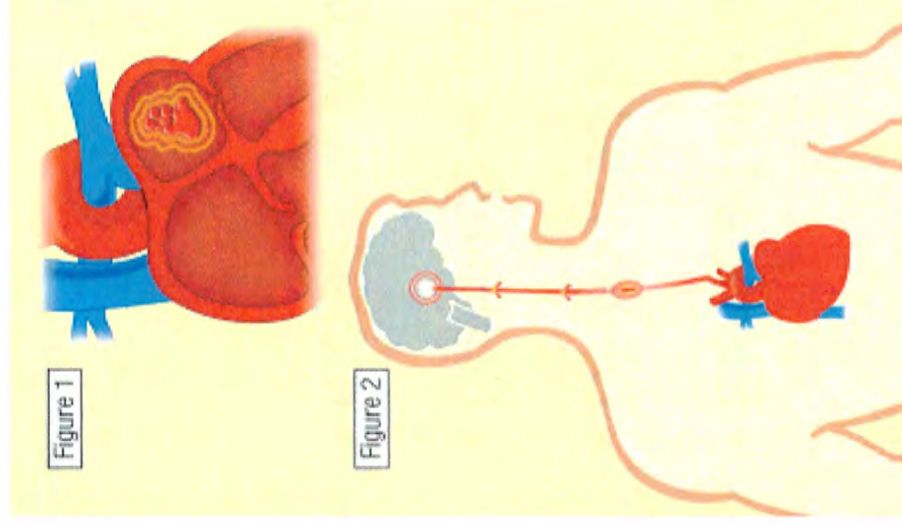
Diabetes

- Elevated blood glucose (sugar) levels
- Diagnosed by A1c (>6.5)
- Diabetes is controlled with diet, exercise, and medications
- Increases stroke risk by 1.5 times

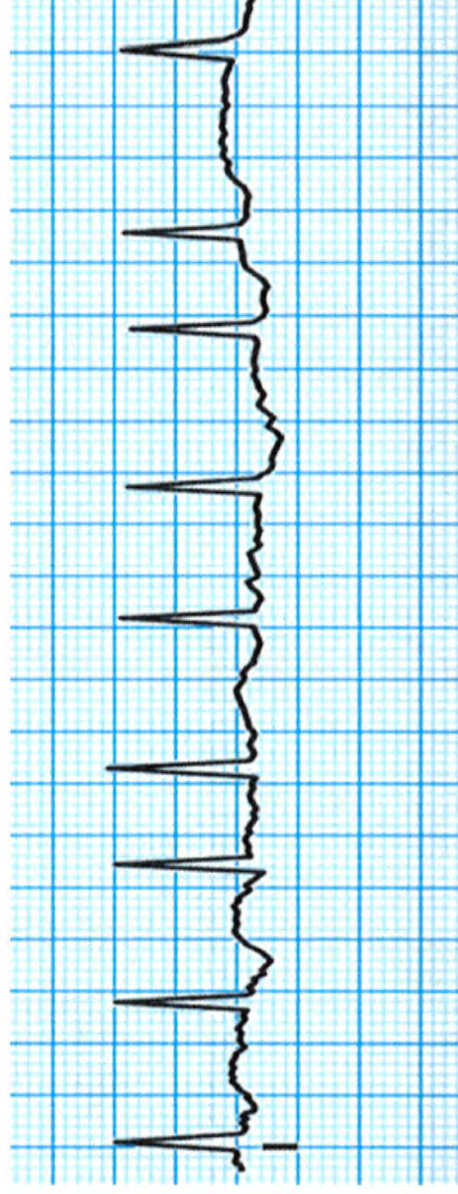


Atrial Fibrillation

- Irregular heart rhythm that has a high risk of stroke



Clots can form in the top portion of the heart (atria) and can move to the brain causing stroke



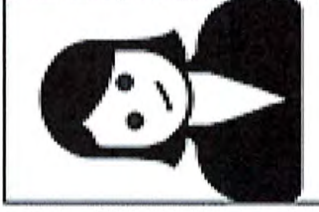
Atrial Fibrillation

- Can come and go, making detection difficult
 - A stroke is often the first indicator that a person may have this
- Increasing prevalence as we age
- Most effective prevention of stroke is blood thinning medication
 - Not medications like aspirin or Plavix
 - May increase stroke risk 5 times

Stroke Prevention

- Close follow up with primary health care provider to monitor blood pressure, diabetes, cholesterol etc.
- Take medications as prescribed, and talk with providers about any unwanted side-effects before stopping medications
- No smoking, alcohol in moderation
- Exercise daily- even a daily walk can reduce your risk
- Low fat, low sodium diet
- Know your risk factors
- Know the signs and symptoms of stroke, and seek immediate medical attention for any new symptoms

Questions??

BEFAST					
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