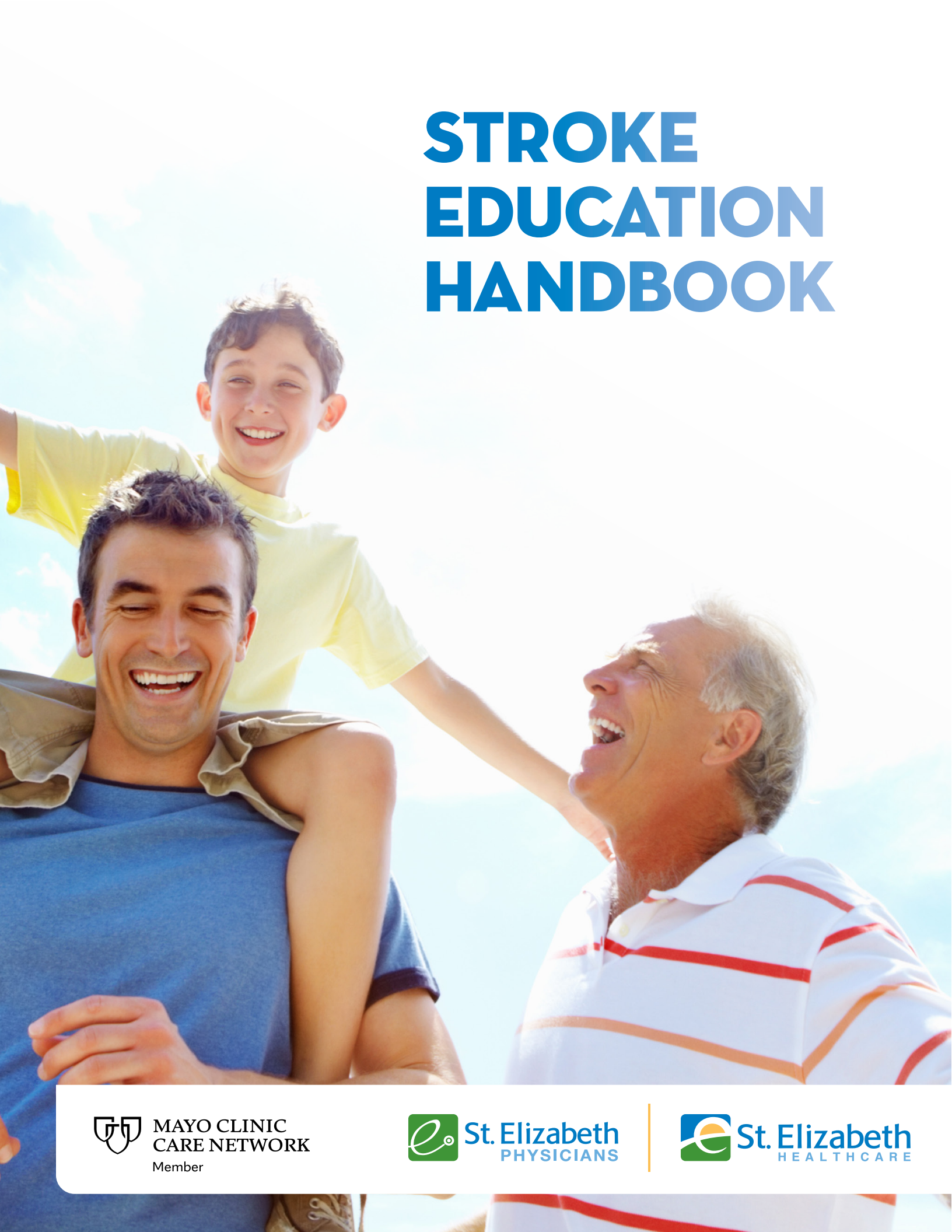
STROKE EDUCATION HANDBOOK



MAYO CLINIC CARE NETWORK
Member

St. Elizabeth PHYSICIANS

St. Elizabeth HEALTHCARE

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St. Elizabeth PHYSICIANS | St. Elizabeth HEALTHCARE

WELCOME TO ST. ELIZABETH

We want to make you as comfortable as possible during your stay. We strive to always provide excellent communication regarding your care. Below are things you can anticipate during your stay.

WHAT TO EXPECT

- Your primary doctor may consult a **Neurologist** to see you during your stay.
- Your provider will manage your **blood pressure** during your stay. In some cases, he/she might allow it to run higher than normal during the first few days after stroke.
- **Continuous heart monitoring** will be placed to help identify if you have an irregular rhythm.
- A list of your **current medications** will be obtained. Your primary doctor will decide which medications will be continued.
- **Aspirin** may be given to you by the end of the second day, unless you have an allergy to the medication.
- Your nurse will perform a **bedside swallow screen** to determine if it is safe for you to eat or drink. If you fail this test, you will not be allowed to eat or drink until you are evaluated by the Speech Therapist for further testing.
- While you are in bed, **Sequential Compression Devices** might be placed on your legs. SCD's slightly squeeze and release the lower portion of your legs to promote circulation and prevent blood clots.
- Your **safety** is important to us. **A bed reminder** will be set to help remind you to call the nurse before getting up. We want to reduce your risk of falling.
- Your nurse will check your **vital signs** and perform **neurological** assessments.
- **Lab work** can be expected and your blood may be drawn several times. You will be asked not to eat or drink anything after midnight so a **cholesterol test** can be drawn, usually around 6 a.m.
- An **echocardiogram** (a sonogram of your heart) may be ordered to see if your heart may be the cause of your stroke.
- A **carotid ultrasound** may be ordered to see how blood flows through the arteries in your neck.
- A **stroke scale**, which provides us with measurable feedback regarding your neurological condition, will be performed by your nurse on admission to the unit. The stroke scale will be assessed again after 24 hours, with any change in condition, and at discharge.

Other orders your doctor may place depending on your personal plan of care:

- MRI/MRA of the brain
- CT angiogram
- Speech therapy, physical therapy or occupational therapy consults
- Social service consult
- Rehab evaluation
- "Blood thinners" such as Plavix, Aggrenox, warfarin, Eliquis, aspirin, Pradaxa, Xarelto, Dabigatran
- A bladder scan if you are unable to urinate

WHAT IS A STROKE?

Every part of your brain is responsible for a different function, from automatic body functions like sneezing to more complex functions like emotion and memory.

All this is possible because tiny blood vessels deliver oxygen and nutrients to all parts of the brain, giving it energy to do its job.

A stroke occurs when blood flow to the brain is interrupted. Without blood, the brain cannot get the oxygen it needs and brain cells become damaged and begin to die. This causes the affected area of the brain to stop working correctly.

Transient ischemic attack (TIA): A serious warning

A transient ischemic attack (TIA) is also sometimes called a "mini-stroke." This means that blood flow to the brain was disrupted for a short period of time causing you to experience temporary symptoms. Even though the symptoms are only temporary, a TIA is a serious warning that you are at high risk for a stroke.

TYPES OF STROKE

Ischemic stroke

- Most common type - 85 percent of all strokes are ischemic.
- Caused by a blockage that severely reduces or blocks blood flow to the brain.
- Sometimes plaque builds up at the opening of the vessel and clots may form that completely block blood flow.
- A blood clot may form in another part of the body and travel to the brain.

Hemorrhagic

Caused by a blood vessel that breaks and bleeds into or around the brain interrupting the flow of oxygen rich blood to the brain. This type of stroke may cause more damage because of swelling or pressure between the brain and the skull leading to the damage of surrounding areas. There are two types of hemorrhagic strokes:

Subarachnoid hemorrhage (SAH)

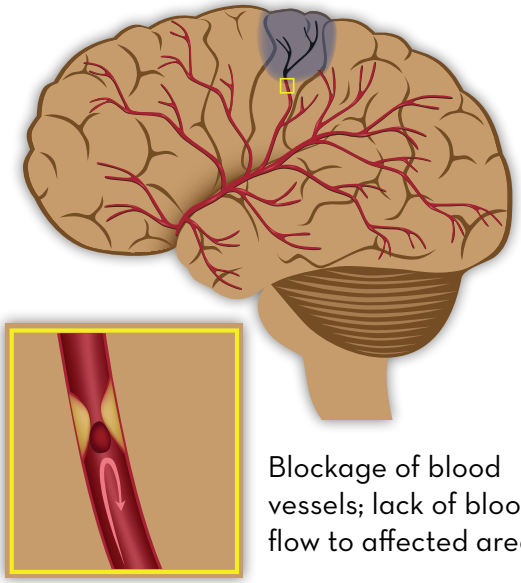
- Blood vessel outside of the brain ruptures.
- Symptoms: sudden onset of intense headache, neck pain, nausea/vomiting

Intracerebral hemorrhage (ICH)

- Bleeding within the brain tissue itself
- Symptoms: headache, nausea, vomiting, confusion, loss of consciousness, seizures, sudden weakness or numbness of face, arm or leg, usually on one side.

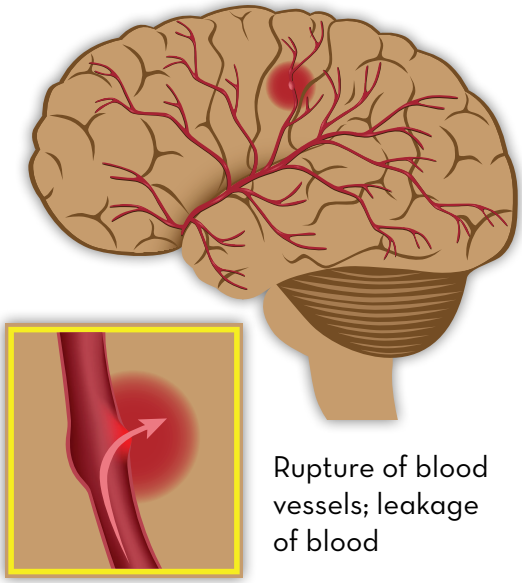
Brain Stroke

Ischemic Stroke



Blockage of blood vessels; lack of blood flow to affected area

Hemorrhagic Stroke



Rupture of blood vessels; leakage of blood

STROKE SYMPTOMS

Stroke occurring on the left side of the brain

- Right-sided weakness or paralysis
- Trouble swallowing (dysphagia)
- Trouble communicating
- Speaking the wrong words
- Trouble understanding what is being said
- Slurred speech
- Changes in behavior; compulsive
- Disorganized
- Poor memory
- Difficulty learning new skill or information
- Easily frustrated
- Depression

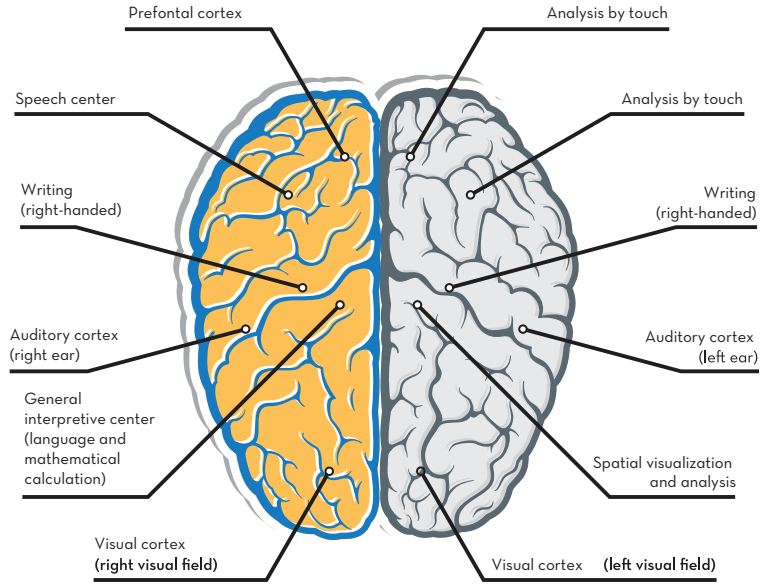
Stroke occurring on the right side of the brain

- Left-sided weakness or paralysis
- Left-sided neglect (ignoring the left side)
- Trouble swallowing (dysphagia)
- Slurred speech
- Changes In behavior, thought and emotions
- Trouble paying attention. Trouble remembering certain things
- Problems judging distance
- Unusual emotions (e.g, laughing or crying inappropriately)
- Depression
- Not realizing your limitations
- Poor judgment
- Unable to do a simple task even though physically able

Strokes that occur in the **brainstem** may affect both sides of the body.

The **left hemisphere** controls writing and movement of the right side of the body. The left hemisphere is usually dominant in language and tasks involving symbolic reasoning.

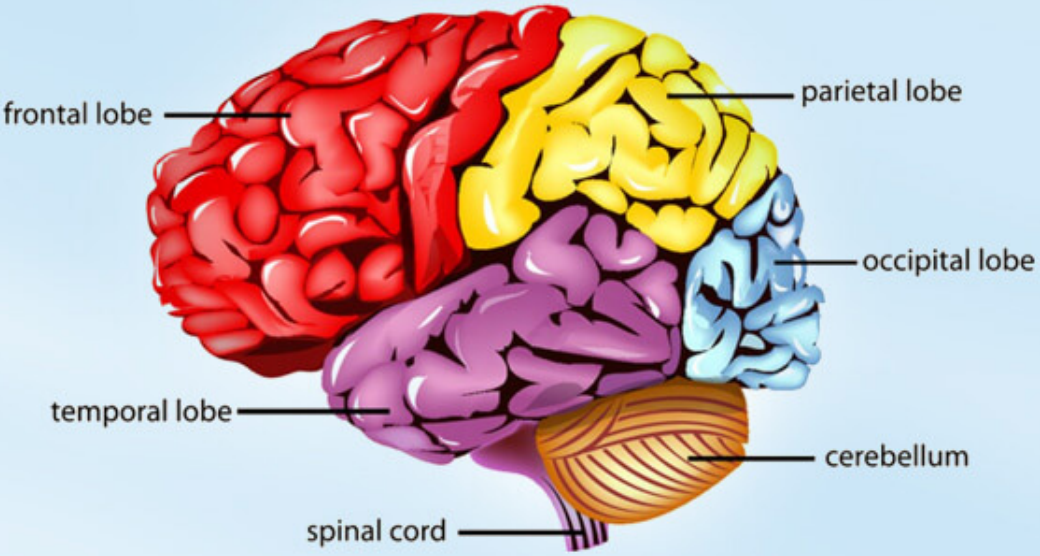
The **right hemisphere** controls touch and movement of the left side of the body and is typically superior at nonverbal, visual and spatial tasks.



The **corpus callosum** permits the exchange of information between the two hemispheres.

Important note: Not all patients will experience the same symptoms. Your doctor will go over your particular area of damage and discuss your symptoms on an individual basis.

POSTERIOR STROKE



Posterior circulation strokes (a stroke that occurs in the back part of the brain) may display different symptoms than anterior circulation strokes (a stroke occurring in the front part of the brain).

Symptoms in nearly half of cases include sudden onset of dizziness often associated with one or more additional symptoms of:

- imbalance
- leaning towards one side while sitting or walking
- double vision or sudden loss of vision in one or both eyes
- headache
- nausea and/or vomiting.

RISK FACTORS FOR STROKE

Risk factors that you **CAN** change

High blood pressure (hypertension): This is the No.1 preventable risk factor for stroke. Lowering blood pressure by lifestyle or medication reduces the risk of stroke.

Tobacco and e-cigarette use: Smoking damages the heart and blood vessels; nicotine raises blood pressure. Exposure to secondhand smoke can also increase the stroke risk for non-smokers.

High cholesterol: A build up of this substance in the blood can narrow the arteries in the brain.

Obesity: This can lead to heart disease, high blood pressure and diabetes.

Physical inactivity: This increases the chances of having heart disease, obesity and high blood pressure.

Heart Disease: Many heart disorders increase the risk for stroke.

Sleep Apnea: Occurs when someone stops breathing for brief moments during sleep. This may happen multiple times per hour.

Risk factors that you **CANNOT** change

Diabetes: Keeping blood sugars under control may reduce the risk of stroke.

Age: The older you are, the more likely you are to have a stroke.

Gender: Stroke is more common in men than in women, but women are more likely to die from a stroke than men.

Race or ethnicity: African Americans, Hispanics, Native American and Alaska Natives have a greater stroke risk than do whites or Asians. The risk of stroke is twice as high for African Americans than for whites and death is more likely.

Family history

Sickle-cell disease

Atrial fibrillation: While having this heart irregularity is not controllable, treatments are available that may reduce stroke risk.

My stroke risk factors are:

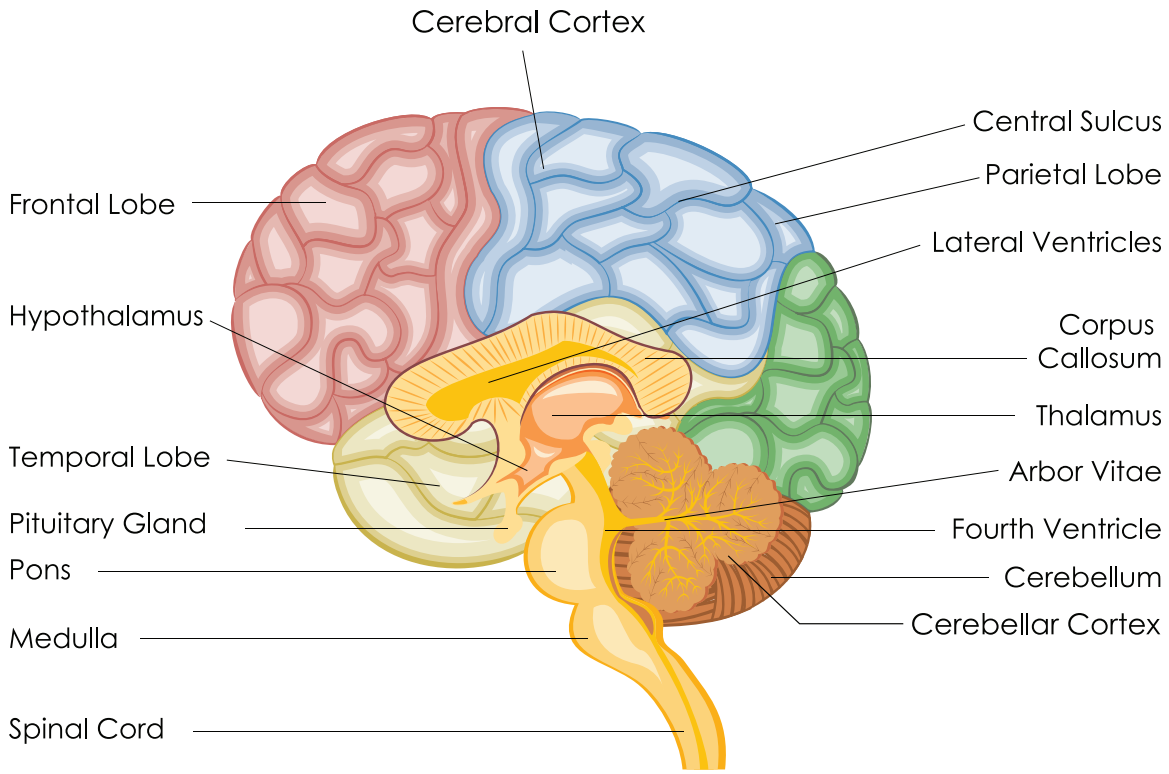
- ☐ High blood pressure (hypertension) – page 10
- ☐ High cholesterol – page 11
- ☐ Obesity – page 12
- ☐ Tobacco and e-cigarette use – page 14
- ☐ Diabetes – page 15
- ☐ Lack of physical activity – page 15
- ☐ Atrial fibrillation (a-fib) – page 16
- ☐ Sleep apnea (associated with stroke) – page 17

You experienced a (check one)

- ☐ Transient Ischemic Attack (TIA) – page 4
- ☐ Ischemic stroke – page 5
- ☐ Hemorrhagic stroke – page 5

Your stroke is located:

Please indicate on the line below where your stroke was located based off of the diagram below.



LOWERING YOUR BLOOD PRESSURE (Hypertension)

Your heart pushes the blood throughout your body. This pressure is pushed against the walls of the blood vessels. Too much pressure damages the artery lining. High blood pressure not only damages your arteries, but it damages your heart, kidneys, and increases your risk for heart attack and stroke.

What can I do to lower my blood pressure?

- Lose weight if you are overweight
- Become more active
- Decrease your salt intake
- Eat heart-healthy foods low in fat and cholesterol
- Take your medication every day if prescribed to lower your blood pressure

Blood Pressure	Systolic Pressure (top #)	Diastolic Pressure (bottom #)
Normal	Less than 120	And less than 80
Prehypertension	120-139	Or 80-89
Stage 1 Hypertension	140-159	Or 90-99
Stage 2 Hypertension	160 or higher	Or 100 or higher

What is my blood pressure?		
Date	/	/
Date	/	/
Date	/	/
Date	/	/

LOWERING YOUR CHOLESTEROL

Cholesterol comes from the food you eat. Your body needs cholesterol because it helps to build cells, make hormones and helps in digestion of food. Too much cholesterol is harmful to your health. The 'bad' cholesterol is LDL and the physician would like that level to be less than 70. The 'good' cholesterol which is the HDL should be at least 40 for men and 50 for women (the higher the better). The HDL pulls the 'bad' cholesterol off the vessel walls.

What can I do to make a change?

- Healthy low-fat diet (limit cholesterol intake to 200 mg per day)
- Limit added sugars
- Eat lean meats, poultry or seafood
- Be physically active most days of the week
- Know your numbers

Good Lipid Levels	
Total Cholesterol	Less than 200 mg/dL
Total Triglycerides	Less than 150 mg/dL
HDL Cholesterol (good)	Greater than 60 mg/dl
LDL Cholesterol (bad)	Less than 70 mg/dL

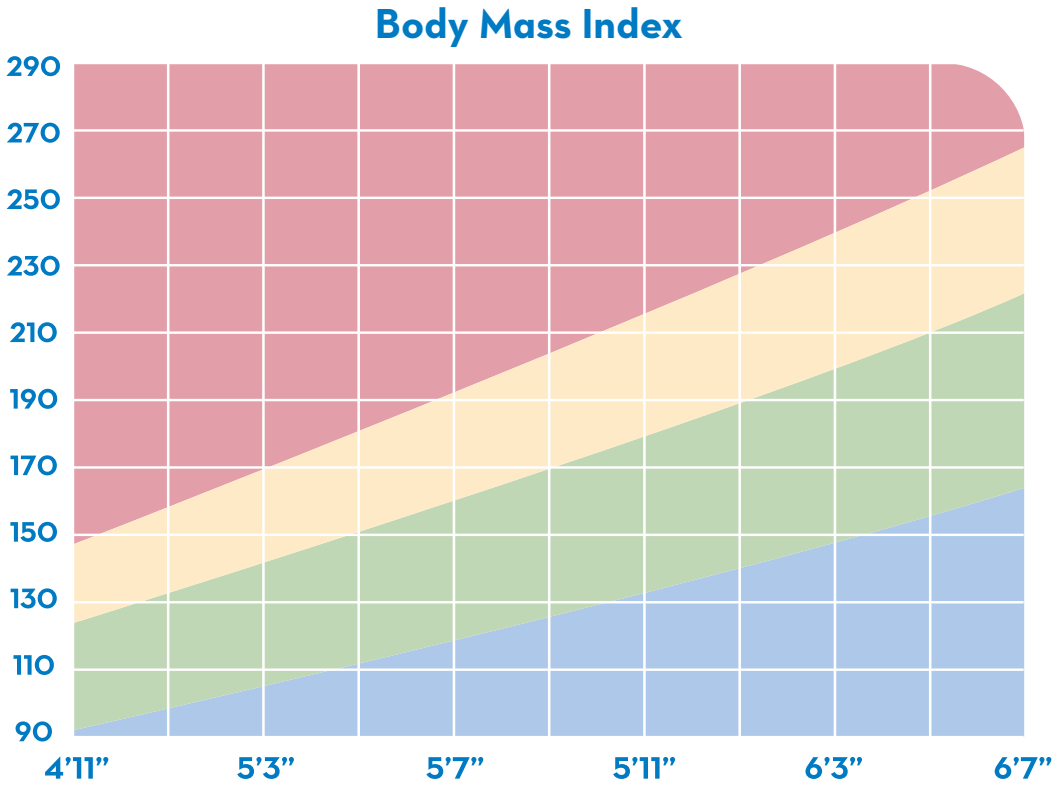
What are my numbers?	
Total Cholesterol	
Total Triglycerides	
HDL Cholesterol (good)	
LDL Cholesterol (bad)	

There are different targets for different people.

Your healthcare provider will decide what goals are best for you.

LOSING WEIGHT/BMI

Being overweight puts you at higher risk for heart disease. This will also increase your risk of developing diabetes. When you take in more calories than you burn off, you gain weight. How you eat, how active you are and other things affect how your body uses calories and whether you gain weight.



BMI TABLE *(Body Mass Index)*
Underweight < 18.5
Normal 18.5–24.9
Overweight 25–29.9
Obese ≥ 30 Extreme Obesity ≥ 40

What is my BMI?	
Date	
BMI	

HEALTHY EATING HELPS

Some risk factors come from what you eat and how much. Healthy eating can improve several of your risks at once. Cholesterol and blood pressure levels get better with eating healthier.

If you have diabetes, healthy eating can help you manage your blood sugars. To get started, talk to your health care provider or dietitian.

Tips to help you get started eating well:

- Talk to your health care provider or dietitian about healthy eating.
- Choose a variety of food to help you keep on track. Eat basic foods, like vegetables and fruits. Decrease the amount of processed foods you eat.
- Decrease the amount of salt (sodium) you take in. A healthy diet has 2,000 mg or less of sodium per day.
- Eat more foods rich in fiber, such as vegetables, fruits, nuts and whole grains.
- Keep your portion sizes reasonable. Serve meals on smaller plates and eat only half your meal at the restaurant. Take the other half home for another meal.
- Manage calories. A food diary can help you keep track of calories you eat at each meal/snack.
- Eat only a small amount of saturated fats each day. Stay away from trans fats completely if possible. Saturated fats are found in fatty meats, cheese and whole milk. Trans fats are found in processed foods.
- Create a healthy eating plan you can stay with for the rest of your life.

STOPPING TOBACCO USE

Make a plan. Set a date and choose a time to quit when there is a little less stress in your life.

Remove every cigarette, lighter, match, and ashtray from the house and the cars. Don't let anyone smoke in the house or car.

Change your routine. Choose a healthy alternative to smoking such as walking after a meal instead of smoking. Start walking before you stop smoking, it will help you get into the routine before you even stop.

Stock up on fresh fruits and vegetables, hard candies or chewing gum.

Reward yourself each day that you do not smoke such as watch a movie, visit friends, take a walk or do a hobby.

Sometimes it may be necessary to use medication. Never smoke when using nicotine replacements such as patches or gum.

Need help quitting?
St. Elizabeth Tobacco Cessation Program
(859) 301-5570

stelizabeth.com/freedomfromsmoking

Quit Now Kentucky
(KY Residents only)

800-QUITNOW
QuitNowKentucky.org

Quit Now Indiana
(IN Residents only)

800-QUITNOW
QuitNowIndiana.com

DIABETES AND STROKE

The connection between diabetes and stroke has to do with the way your body uses glucose for energy. The foods you eat are digested and broken down into glucose to be used by your body for energy. Glucose enters the bloodstream and travels to cells throughout your body. For glucose to enter your cells, a hormone called insulin is needed.

Your pancreas has the job of producing the correct amount of insulin needed for this to happen. For people with Type 1 diabetes, the pancreas does not make insulin. For those with Type 2 diabetes, it makes too little insulin or the cells in your liver, fat and muscles do not use insulin correctly.

- Those with diabetes are at twice the risk for having a stroke.
- For those with Type 2 diabetes, the risk goes up 3 percent every year, and for those who have had Type 2 for more than ten years, the risk is three times what it is for those who do not have diabetes.
- Maintaining a healthy diet and exercising regularly are powerful ways to prevent stroke.

Those with diabetes have too much glucose in their blood, while the cells in their bodies do not get enough energy. This excess glucose can lead to fatty deposits on the insides of your blood vessel walls. These vessels can narrow and block the blood flow in the neck or brain — cutting off the blood supply, which causes a stroke.

PHYSICAL ACTIVITY

Research has shown that those who self-reported low physical activity levels are at a higher risk for having a stroke.

Research has also attributed a lower stroke risk for those who exercise five or more times a week. Making physical activity part of your life can benefit your health significantly.

Talk with your health care provider about what kinds of physical activity or exercise you can do and setting up an exercise plan.

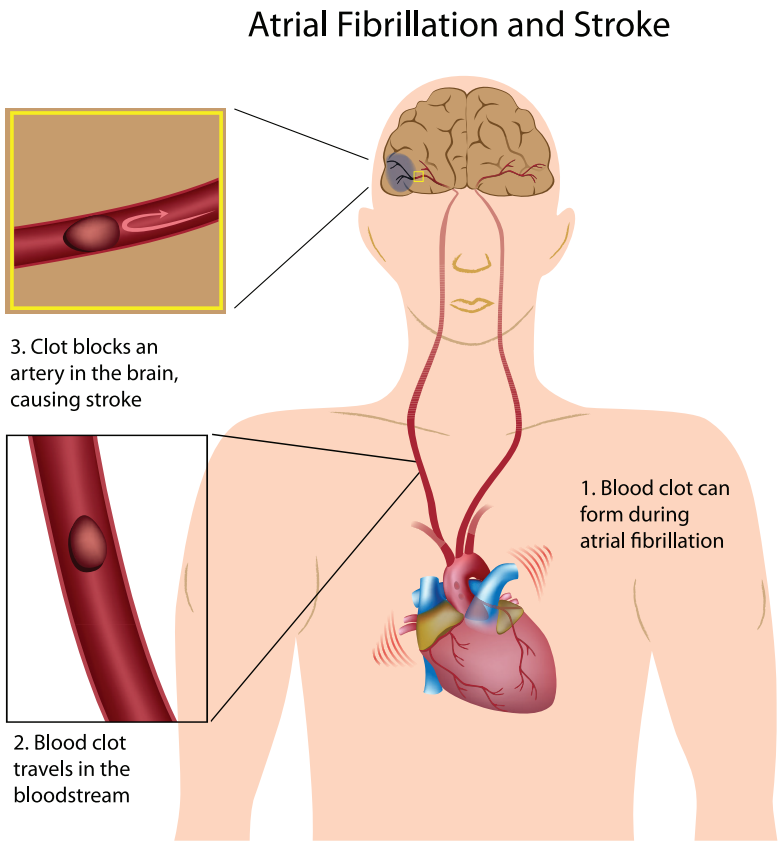
- Physical activity includes anything that gets your body moving.
- Regular physical activity helps prevent and control other stroke risk factors: high blood pressure, high cholesterol, Type 2 diabetes and obesity.
- The Centers for Disease Control (CDC) recommends 150 minutes of moderate intensity activity (brisk walking, bicycling, water aerobics) and two or more days of weight training per week.
- You can break activity up into smaller segments (10, 15 or 20 minutes at a time).
- Remember that ALL physical activity counts!
- Making physical activity fun—such as walking with a friend or taking a dance class—increases your exercise success rate.

ATRIAL FIBRILLATION AND STROKE

With atrial fibrillation (a-fib), the electrical signals in the heart are not normal. The top (atrium) and bottom (ventricle) parts of the heart do not work together as they should. This causes your heart to beat irregularly and can cause your heart to beat very fast. When this happens, blood is not pumped correctly to your body.

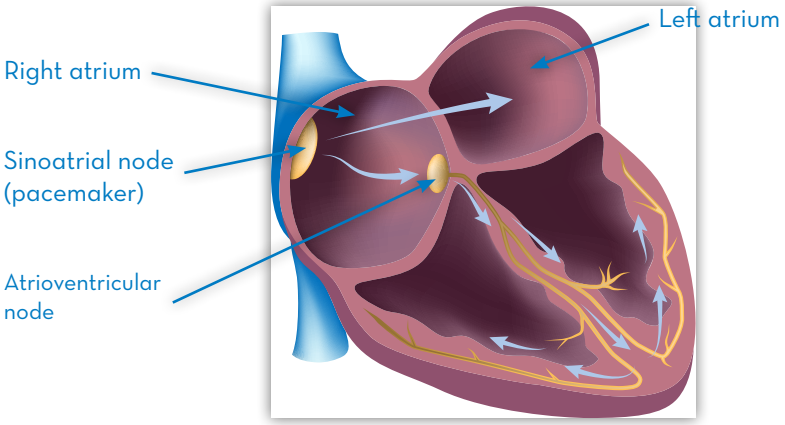
A-fib can cause blood to collect in the left atrium. This pooled blood can clot and enter the bloodstream. This clot can travel to the brain and block blood flow. The part of the brain affected is starved of oxygen and a stroke occurs.

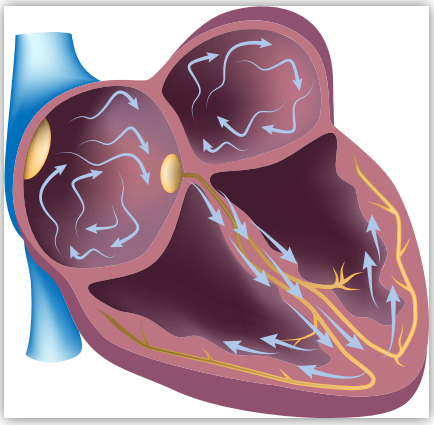
- Those with a-fib are at five times the risk for having a stroke.
- Women with a-fib are at an even higher risk for having a severe stroke.
- There are many treatments for a-fib, including medications and heart procedures. Your cardiologist will discuss options with you.
- Symptoms of a-fib:
  - Skipping, fluttering or quivering of your heartbeat
  - Dizziness or light-headedness
  - Heart beating too hard or too fast
  - Shortness of breath
  - Chest pain or pressure
  - Tiredness
  - Swelling of feet, ankles and legs



NORMAL

ATRIAL FIBRILLATION





SLEEP APNEA (associated with stroke)

Sleep apnea occurs when someone stops breathing for brief moments during sleep. This may happen multiple times per hour. The apneic periods interrupt sleep and may cause the person to experience fatigue and/or frequent awakenings. These episodes have been associated with stroke and stroke risk factors such as hypertension and irregular heartbeats.

There are three types of sleep apnea:

- **Obstructive:** caused by a collapsed or blocked airway, usually with snoring.
- **Central:** happens when a part of the brain does not send correct signals to the muscles that control breathing.
- **Mixed:** a combination of obstructive and central apnea.

Risk factors for this condition include:

- Gender (3 times more likely in men)
- Obesity (risk increases with rising body weight)
- Upper airway abnormalities (muscle weakness, structural narrowing or blocking)
- Smoking
- Alcohol consumption
- Certain Medications (sedatives, narcotics, androgens)

With sleep apnea, you may see:

- Difficulty staying asleep (waking up gasping or choking)
- Daytime sleepiness and tiredness
- Irritability
- Excessive snoring
- Morning headaches
- Trouble concentrating
- Forgetfulness
- Decreased interest in sex
- Mood swings or personality changes (Depression)
- Dry mouth
- Sore throat
- Witnessed periods of apnea

Treatment and Testing

A sleep study can accurately diagnose sleep apnea. Treatment may include CPAP (continuous positive airway pressure). It involves wearing a mask while sleeping.

Talk to your health care provider if you experience symptoms of sleep apnea. A sleep study might be considered for those at **risk for stroke** or if you have been **diagnosed with a stroke or TIA**. Treatment of sleep apnea may have multiple benefits.

MEDICATIONS AND SIDE EFFECTS

There are many medications that are used to treat or help prevent stroke. Your doctor may choose to use one particular medication or a few different medications. It is common to have a different medication for each of the different categories that may be putting you at risk for a stroke.

Type of Medication	Purpose	Side Effects	Names of Medications
Antiplatelet	Interfere with blood's ability to clot and plays an important role in preventing strokes.	Bruising, bleeding, dry mouth, heart-burn, upset stomach and bloating	Aspirin Plavix Persantine Ticlid
Anticoagulant	Also interferes with blood's ability to clot. This is a more aggressive therapy, often used for patients with **atrial fibrillation**.	Bruising, bleeding, abdominal pain, stomach discomfort, gas and taste changes.	Coumadin Heparin Pradaxa Eliquis Xarelto
Antihypertensive	Used to treat **high blood pressure**. Depending on the type, these lower blood pressure by dilating blood vessels or decreasing the rate or force of heart contractions.	Insomnia, cold hands and feet, cough, slow heartbeat, impotence, skin rash, tiredness, loss of taste, depression and kidney damage.	Tenormin Toprol-XL Zesteril Altace
Cholesterol-lowering (statins)	Work in the liver to prevent the formation of cholesterol. Lower LDL (bad) cholesterol, raise HDL (good) cholesterol and lower triglycerides (fats).	Muscle aches and tiredness. Muscle problems should be reported to your doctor. Statins can be hard on your liver and regular liver function tests may be ordered.	Zocor Lipitor Mevacor Pravachol Crestor
Lipid-lowering	Fibrates aid in lowering triglycerides. They may also increase HDL (good) cholesterol, but are not very effective in lowering LDL (bad) cholesterol.	Nausea, stomach upset, diarrhea and liver irritation. When used for several years, may cause gallstones.	Lopid Tricor Atromid-S
	Niacin works in the liver by affecting the production of blood fats.	Flushing, itching and stomach upset. Can cause liver toxicity liver function should be monitored closely by your doctor. Patients with diabetes should be cautious about taking niacin as it can raise blood sugar levels. Consult your doctor before starting niacin.	Niacin
	Omega-3 fatty acid ethyl esters are intended to be used in addition to diet to lower triglycerides in patients whose level is greater than 500mg/dl.	Patients with allergies/sensitivities to fish or shellfish may have a severe adverse reaction to omega-3. This medication may also have negative reactions with other medications or supplements.	Lovaza Vascepa

MEDICATION CONSIDERATIONS

Your doctor will talk with you before starting any medication.

- For antiplatelet therapy it is important to discuss if you have a history of liver or kidney disease, stomach or intestinal disease, high blood pressure, asthma or any bleeding disorders. You may not be able to take specific medications or may require special doses.
- There are many prescription medications that make warfarin (Coumadin) weaker or stronger. You must discuss ALL of your medications with your doctor to determine what may be affected.
- Warfarin therapy also includes dietary restrictions.
- Anticoagulant therapy also requires regular blood tests (PT/INR) to make sure the correct dose is given. Too much warfarin increases your risk of bleeding, while too little increases your risk of stroke and heart attack.
- It is very important for you and your family to know what medications you are taking and to understand why you are taking each one.
- Keeping an updated list of your medications is highly recommended. Remember to bring this list with you for all doctor visits.
- It is also necessary for you and your family to know the side effects of all of your medications.
- Take your medications as prescribed by your doctor. If you have concerns or any side effects, let your doctor know. Do not stop taking any medications without first discussing with your doctor.

REHABILITATION

In the United States alone, more than seven million people survive a stroke every single year, yet each person has a unique experience. As you begin your journey on the road to recovery, we would like to help make your transition as easy as possible by providing you with helpful information regarding what to expect once you are discharged from the hospital.

The goal for stroke rehabilitation is to help you return to independent living as quickly and to the greatest extent possible. This might mean that you will have to change or relearn how to do certain things. Fortunately, there are many people and resources available to assist you, including speech, occupational, and physical therapists, social workers, and support groups, to name a few. You might have to spend some time in a rehabilitation hospital, have nurses or therapists visit you at home, or go to an outpatient facility for help in building your strength and continuing your daily activities despite the effects of your stroke.

1 in 4 stroke survivors has another stroke

Stroke is the leading cause of disability in the U.S.

Stroke is the #5 cause of death

EMOTIONAL CHANGES

Many people feel anger, anxiety, or depression after experiencing a stroke.

This is completely normal!

Support System

Seeking help and support from others who have experienced a stroke may help you and your family members cope with the sudden change in how you think and function.

Having a strong support system can also be a great way to relieve stress. Family members, friends, and your church family can be great resources.

There are also outside resources that you should become familiar with, such as support groups and community services (see handout).

HOW DO I REDUCE MY CHANCE OF HAVING ANOTHER STROKE?

- **Manage controllable risk factors.** Hypertension, diabetes, high cholesterol, atrial fibrillation, obesity, smoking, and immobility increase your chances of having another stroke. Have your blood pressure checked frequently, take all of your medications as prescribed, and follow your diet. If you have diabetes, keep your blood sugar under control.
- **Stay physically active.** Try to exercise three times per week for at least 20 minutes or as ordered by your doctor.
- **Eat a well-balanced diet,** low in cholesterol and saturated fats. Restrict salt and fluids as ordered by your doctor.
- **Take all medications** as prescribed by your doctor.
- **Stop using tobacco and e-cigarettes** and use alcohol in moderation.
- **Keep all of your appointments** with your doctor and therapists (speech, physical, and occupational).

SIGNS OF A STROKE.

BE FAST

Balance – Watch for sudden loss of balance.

Eye – Watch for sudden vision loss.

Face – Look for uneven smile.

Arm – Check if one arm is weak.

Speech – Listen for slurred speech.

Time – Call 9-1-1 at the first sign.

The sooner you call 911, the better chance of recovery.

- **DON'T DRIVE.**
- **DON'T DELAY.**
- **CALL 911 RIGHT AWAY.**

stelizabeth.com/stroke

St. Elizabeth HEALTHCARE

RESOURCES

- stelizabeth.com/freedomfromsmoking
- stelizabeth.com/stroke
- stelizabeth.com/healthyheadlines
- mayoclinic.org
- americanheart.org
- diabetes.org
- fda.gov/food
- eatright.org
- choosemyplate.gov
- cdc.gov/heartdisease
- nhlbi.nih.gov/health

REFERENCES

American Association of Neuroscience Nurses (2014) Comprehensive Review for Stroke Nursing Chobanian et al., 2003 AHA/ASA

APPS

Smoking Cessation

Smoke Free

MyQuitCoach

quitSTART

Healthy Eating

Fooducate

HealthyOut

Other

ASCVDRisk

Omada

MyFitnessPal

Exercise

Hot5

Runkeeper

Healthcare

MyChart

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