Recovering from Stroke

Understanding Stroke and the Recovery Process

Dignity Health®
St. John's Hospital Camarillo
St. John's Regional Medical Center

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Welcome

St. John's Regional Medical Center and St. John's Hospital Camarillo are recognized by The Joint Commission as Certified Stroke Centers. This certification recognizes that patients admitted with a diagnosis of stroke receive the best possible care based on recommendations from the American Stroke Association and the Brain Attack Coalition.

In addition, the hospitals have been honored by the American Heart Association/American Stroke Association for our stroke program and was recently recognized by the *U.S. News & World Report* for high performance in Stroke Care.

If you want to know more about the services we offer, please contact our Stroke Program Manager at **(805) 988-7144**. In addition, while you are here, if there is anything that our nurses, doctors, or other members of your health care team can do to help you recover, please feel free to ask.

To learn more about the St. John's Hospitals' treatment of stroke, please scan the QR code to view our informative video featuring Dr. Mani Nezhad, MD, Medical Director, Stroke Program.

The Joint Commission

American Heart Association

American Stroke Association

Certified Stroke Centers by The Joint Commission

Recognize a Stroke

What is a Stroke or 'Brain Attack'?

A stroke occurs when the blood flow to the brain is interrupted. The brain cells can no longer receive oxygen and nutrients, and will begin to die.

Signs and Symptoms of Stroke

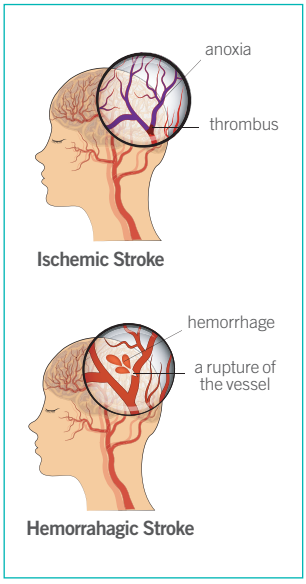
B – Balance: Is the person experiencing a sudden loss of balance or coordination?
E – Eyes: Is the person having a sudden change in vision or trouble seeing?
F – Face: Ask the person to smile. Does one side of the face droop?
A – Arms: Ask the person to raise both arms. Does one arm drift downward?
S – Speech: Ask the person to repeat a simple phrase. Is their speech slurred or strange?
T – Time: If you observe any of these signs, call 9-1-1 immediately.

Balancing trouble | **E**yes: blurred vision | **F**ace drooping | **A**rm weakness | **S**peech difficulty | **T**ime to call 911

Types of Strokes and Treatments

Stroke Types

- **Ischemic Stroke:** This is the most common type of stroke. It happens when an artery in the brain is blocked from oxygen.
- **Hemorrhagic Stroke (Bleeding Stroke)**: A blood vessel in the brain bursts and spills blood into and around the brain. High blood pressure or aneurysms can make vessels weak enough to burst.
  - **Aneurysmal Subarachnoid Hemorrhage:** When an aneurysm ruptures in the brain.
  - **Intracerebral Hemorrhage:** When a vessel in the brain tissue ruptures.
- **Transient Ischemic Attack (TIA):** The artery within the brain or one that goes to the brain is blocked and blood flow to that area of the brain slows down or stops. This is sometimes called a mini stroke. With a TIA, the artery becomes unblocked after a short time.



Initial Emergent Treatments

- **Thrombolytic Therapy (ex. Tenecteplase (tNKASE®):** The main treatments for an acute ischemic stroke are medications often called "clot-busters." These medications are given through an intravenous (IV) line and must be administered within 4.5 hours from the time the stroke symptoms began. Before they are administered, a CT scan is performed to detect the possibility of any bleeding within the brain. There are other criteria that must be met in order to provide these medications safely; a neurologist will determine if they should be given upon arrival to the emergency room.
- **Mechanical Thrombectomy:** A procedure where a physician removes a blood clot from a blocked artery in the brain in order to restore blood flow to or within the brain. A catheter is inserted through an artery in the wrist or groin, and then the blood clot is removed using a special retrieval and/or suction device. This treatment greatly reduces the chances of disability from stroke if performed within 24 hours from the onset of stroke symptoms.
- **Hemorrhagic Stroke Treatments:** Medications to stop the bleeding in the brain can be given, as well as medications to lower the blood pressure or reduce swelling in the brain. In some instances, a neurosurgeon may perform surgery to drain the blood, secure an aneurysm, or reduce the pressure in the brain.

What to Expect During Your Stay

During Your Stay

Our goal during your hospitalization is to:

- Provide appropriate treatments to reduce disability
- Learn the cause of your stroke, and locate the part of the brain affected by your stroke
- Make sure you are able to swallow safely to ensure you have a safe way to receive your medications and nutrition
- Assess your ability to perform activities of daily living independently, including your ability to move and walk
- Assess your ability to talk and understand words
- Assess your risk for depression and anxiety
- Keep you safe from injury
- Provide you with information regarding how to reduce your risk factors

Possible Tests

- **Computed Tomography (CT):** A test used to create detailed images of the skull, the tissue inside the brain, and the fluid-filled spaces inside the brain. This is often the first test done to see if the stroke symptoms are caused by bleeding in the brain.
- **Computerized Tomography Angiogram (CTA):** A CTA images the blood vessels inside of the brain and in the neck. It detects blockages or blood clots inside the larger vessels in these areas.
- **Diagnostic Cerebral Angiogram:** This test provides detailed images of the blood vessels inside of the head and neck. A physician inserts a small catheter through an artery in the groin or wrist and then injects a contrast dye. Through X-ray pictures called fluoroscopy, the vessels can be evaluated. During this test, decreased blood flow from a clot or narrowing can be identified as well as any other structural abnormalities within the head and neck.
- **Magnetic Resonance Imaging (MRI):** Strong magnetic and radio waves are used to create pictures inside the brain and surrounding nervous tissues. The MRI of the brain can show injuries much sooner than the CT scan.
- **Magnetic Resonance Angiography (MRA):** Strong magnetic and radio waves are used to create pictures inside the blood vessels inside of the brain.

- **Transcranial Doppler (TCD):** Soundwaves are used to examine blood flow in the brain. This test is done by applying an ultrasound probe to the head.
- **Carotid Ultrasound:** A test that uses sound waves to look for fatty deposits causing narrowing or blockages in the vessels in your neck that carry blood to your brain.
- **Echocardiogram:** A type of ultrasound using sound waves to produce moving pictures of your heart. This test looks at the size of the heart, and how the blood flows and pumps. It also looks for structural deformities and blood clots within the heart. This test is performed by applying an ultrasound probe to the chest. It can also be done by inserting a small probe into the esophagus (transesophageal echocardiogram or TEE). A TEE uses the same ultrasound waves as the echocardiogram to examine the heart, however in some cases clearer pictures of the heart are needed, so a TEE is recommended. If it is recommended, the patient will be sedated during the procedure to reduce discomfort, stress, and anxiety.
- **Hemoglobin A1c:** This is a blood test that averages the level of your blood sugar over a two- to three-month period. It can be used to diagnose diabetes, or to see if people with diabetes need to adjust their diabetes medicines so that they can stay within their desired blood sugar ranges.
- **Lipid Panel:** A blood test that measures the amount of lipids (fats) in your blood. Four types of lipids are measured:
  - **Total Cholesterol:** the sum of your blood's cholesterol.
  - **High Density Lipoprotein (HDL):** HDL is known as the good cholesterol; it helps keep the arteries open in the body so the blood can flow freely.
  - **Low Density Lipoprotein (LDL):** LDL is known as the bad cholesterol; too much can cause fatty deposit and plaque in your arteries which reduces blood flow, causing heart attack or stroke.
  - **Triglycerides:** Your body converts the calories it doesn't need into triglycerides after eating. Triglycerides are stored in fat cells. High triglyceride levels are associated with eating too many sweets or drinking too much alcohol, smoking, being sedentary, or having diabetes with high blood sugar levels.

What to Expect During Your Stay *continued*

Who Are Your Stroke Caregivers?

Attending Physician: Establishes a coordinated plan of care, through diagnostic and therapeutic interventions.

Dietitian: Plans a healthy diet that is specialized to your needs.

Neuro-Interventionalist: A doctor who uses imagery to guide access to the brain's vessels and structures in order to treat a stroke.

Neurologist: A doctor specializing in neurology (the central nervous system) who treats disorders that affect the brain, spinal cord, and the nerves. Neurologists recommend tests, treatments, therapies, and medications. They also plan with the patient and care team on how to prevent future strokes.

Neuro Nurse Practitioners: Part of the care team for stroke patients. They manage and care for neurological and stroke patients during their stay in the hospital along side the Neurologists, Neuro-Interventionalists, and Neurosurgeons.

Neurosurgeon: A doctor who specializes in the diagnosis and surgical treatment of the nervous system and brain.

Occupational Therapist: Works with you to help you regain your ability to perform activities of daily living such as eating, grooming, bathing, dressing and toileting.

Pharmacist: A healthcare professional licensed in pharmacy. Duties include dispensing drugs that are prescribed, monitoring drug interactions, and counseling patients regarding the effects of proper drug usage.

Physical Therapist: Works with you to help you regain your functional mobility such as sitting up, standing up, walking and climbing stairs.

Primary Nurse: Registered nurses assess, monitor, and care for you during your hospital stay. They advocate for your care with all team members. The nurses will teach you how to care for yourself and how to prevent another stroke.

Social Worker: Assists you and your family to coordinate your care during your stay, as well as to provide emotional support and explore your needs preparing for discharge, housing, financial assistance, home care support, community referrals, and resources.

Speech Therapist: Assists you if you have difficulty speaking, swallowing or have cognitive impairments that may impact your everyday life.

Stroke Program Manager: Nurse Practitioner who develops, meets, and sustains the requirements needed to build and maintain stroke center certification. Also manages processes and quality improvement and use data to improve outcomes. They develop protocols based on evidence-based clinical practice guidelines.

Preparing to Leave the Hospital

Leaving the hospital may seem scary at first because so many things may have changed. Most stroke survivors are able to return home and resume many of the activities they did before their stroke. The hospital staff can help prepare you to go home or to another setting that can better meet your needs.

Living at home after stroke

To better prepare you for discharge, you will be evaluated for the following four factors:

1. Your ability to care for yourself: Rehabilitation should be focused on being able to perform daily activities such as eating, dressing, and bathing.
2. Ability to follow medical advice: This is a critical step in recovery and preventing another stroke or other complications after stroke. It is important to take medication as prescribed and follow medical advice.
3. Support of a caregiver: Someone should be available who is willing and able to help when needed.
4. Ability to move around and communicate: If stroke survivors are not independent in these areas, they may be at risk in an emergency or feel isolated.

What if I can't go home?

Your doctor may advise a move from the hospital to another type of facility that can meet your needs for a short time or permanently. It's important that the living place you choose is safe and supports your continued recovery. Your social worker and case manager at the hospital can give you information about facilities that might work for you.

Possibilities include:

- **Acute Rehabilitation:** Assists patients in regaining their highest level of function in communication, self-care, mobility, and emotional well-being. Most patients return home and are able to lead a relatively independent lifestyle. The program's interdisciplinary approach places special attention on regaining abilities rather than on the disability. Patients and their families actively participate in planning and implementing a comprehensive treatment plan with specific goals. Attainment of these goals is measured throughout the inpatient rehabilitation program. Outpatient therapy services are available after discharge. Patient and family training are designed to meet each patient's needs. Families learn to assist with certain portions of care in order for the patient to be as prepared as possible for discharge. At the time of discharge, the patient and family should have a clear understanding of physical and cognitive abilities and limitations, medications, and personal hygiene, skin care, and equipment needs.

  St. John's Regional Medical Center's Rehabilitation Program offers the most comprehensive and advanced neuro care in the region—with individualized inpatient and outpatient treatment programs tailored to your specific needs. With a focus on restoring function, enhancing mobility, and optimizing cognitive abilities, St. John's Rehab Program strives to maximize the potential for recovery. To learn more on the rehab services offered at St. John's, please visit **DignityHealth.org/StJohnsRehab**
- **Skilled Nursing Facility:** For people who need more than usual medical attention, continued therapy, and more than a caregiver can provide at home. This type of facility provides around-the-clock care.
- **Intermediate Nursing Facility:** An option for people who don't have serious medical problems and can manage some level of self-care.
- **Assisted Living**: An option for people who can live somewhat independently but need some assistance with things like meals, medications, and housekeeping.

Managing Your Health After a Stroke

Understanding and Developing Goals of Care

Risk factors are variables or "things" associated with an increased likeliness or predisposition for an individual's risk for disease or medical condition. Stroke is a medical condition that has both modifiable (things you can change) and non-modifiable (things you cannot change) risk factors. Both modifiable and non-modifiable risk factors can increase or decrease your risk for stroke.

Non-Modifiable: Those You Cannot Change

- Increasing age
- Family history of heart disease or stroke
- Previous stroke or TIA (transient ischemic attack)
- Ethnicity: African American, Hispanic, Native American or Alaskan Natives have a higher incidence of stroke

Modifiable: Those You Are Able to Change

- High blood pressure
- Diabetes
- Atrial fibrillation (irregular heart rhythm)
- High blood cholesterol
- Smoking
- Sleep apnea
- Carotid or other artery disease
- Alcohol or illegal drug use
- Obesity or sedentary lifestyle

Talk with your care team to learn ways to manage the risk factors you are able to control. Lifestyle changes and medications often help reduce these modifiable risk factors. Management of these risk factors may help prevent future strokes.

Lifestyle Recommendations After a Stroke

Life's Essential 8 are the key measures for improving and maintaining cardiovascular health, as defined by the American Heart Association. Better cardiovascular health helps lower the risk for heart disease, stroke and other major health problems. Below is a list of health behaviors and health factors that can help reduce your risk:

1. Health Behaviors: Eat Better

Aim for an overall healthy eating pattern that includes whole foods, lots of fruits and vegetables, lean protein, nuts, seeds, and cooking in non-tropical oils such as olive and canola.

2. Health Behaviors: Be More Active

Adults should get 2 ½ hours of moderate or 75 minutes of vigorous physical activity per week. Kids should have 60 minutes every day, including play and structured activities.

3. Health Behaviors: Quit Tobacco

Use of inhaled nicotine delivery products, which includes traditional cigarettes, e-cigarettes, and vaping, is the leading cause of preventable death in the U.S., including about a third of all deaths from heart disease. And about a third of U.S. children ages 3-11 are exposed to secondhand smoke or vaping.

4. Health Behaviors: Get Healthy Sleep

Most adults need 7-9 hours of sleep each night. Children require more: 10-16 hours for ages 5 and younger, including naps; 9-12 hours for ages 6-12; and 8-10 hours for ages 13-18. Adequate sleep promotes healing, improves brain function and reduces the risk for chronic diseases.

5. Health Factors: Manage Weight

Achieving and maintaining a healthy weight has many benefits. Body mass index, a numerical value of your weight in relation to your height, is a useful gauge. Optimal BMI is 25. You can calculate it online or consult a healthcare professional.

6. Health Factors: Control Cholesterol

High levels of non-HDL or "bad" cholesterol can lead to heart disease. Your health care professional can consider non-HDL cholesterol as the preferred number to monitor, rather than total cholesterol, because it can be measured without fasting beforehand and is reliably calculated among all people.

7. Health Factors: Manage Blood Sugar

Most of the food we eat is turned into glucose (or blood sugar) that our bodies use as energy. Over time, high levels of blood sugar can damage your heart, kidneys, eyes, and nerves. As part of testing, monitoring hemoglobin A1c can better reflect long-term control in people with diabetes or prediabetes.

8. Health Factors: Manage Blood Pressure

Keeping your blood pressure within acceptable ranges can keep you healthier longer. Levels less than 120/80 mm Hg are optimal. High blood pressure is defined as 130-139 mm Hg systolic pressure (the top number in a reading) or 80-89 mm Hg diastolic pressure (bottom number).

Learn More

For more information about each topic please scan the QR code, or visit **https://www.heart.org/en/healthy-living/healthy-lifestyle/lifes-essential-8**

Medication Guide

This sheet provides the purpose and common side effects for new medications you may receive during your stay. Medications can be used for many purposes. Prior to receiving your medication, you will be told the purpose of it. Medications may also cause different side effects. Some are natural and harmless, but can be uncomfortable.

Let your caregiver know about any side effects as quickly as possible. Your safety and comfort are our highest priorities for the medications you receive. If you have any questions or concerns, please ask your nurse or pharmacist.

Note: this is not a comprehensive list.

	Medication (Generic name)	Purpose	Common side effects
Diabetes	❑ Glipizide (Glucotrol) ❑ Insulin glargine (Lantus, Semglee) ❑ Insulin lispro (Humalog) ❑ Metformin (Glucophage) ❑ Regular insulin ❑ _____	Reduces blood sugar	**Low blood sugar** *Other possible side effects:* Diarrhea, Dizziness, Gas, Headache, Lightheadedness, Weakness, Weight gain/loss
Heart and Blood	**Antiplatelets** ❑ Aspirin (Ecotrin, Bayer) ❑ Clopidogrel (Plavix) ❑ Ticagrelor (Brilinta) ❑ _____ **Anticoagulants** ❑ Apixaban (Eliquis) ❑ Dabagatran (Pradaxa) ❑ Enoxaparin (Lovenox) ❑ Heparin ❑ Rivaroxaban (Coumadin) ❑ _____	Antiplatelets prevents platelets from sticking together. A blood clot can form when platelets stick together. Anticoagulants prevent blood clots from forming or getting bigger	**Risk of bleeding** *Other possible side effects:* Abdominal Pain (Warfarin), Bruising, Fever, Nausea (Enoxaparin), Stomach Upset
	❑ Amlodipine (Norvasc) ❑ Atenolol (Tenormin) ❑ Carvedilol (Coreg) ❑ Diltiazem (Cardizem, Tiazac, Dilacor XR) ❑ Hydralazine (Apresoline) ❑ Labetalol (Trandate) ❑ Lisinopril (Zestril, Prinivil) ❑ Losartan (Cozaar) ❑ Metoprolol (Toprol XL, Lopressor) ❑ Valsartan (Diovan) ❑ Verapamil (Calan, Verelan) ❑ _____	Reduces blood pressure and/or heart rate	**Dizziness, drowsiness, or headache** *Other possible side effects:* Constipation (Verapamil), Dry Cough, Fatigue
	❑ Atorvastatin (Lipitor) ❑ Pravastatin (Pravachol) ❑ Rosuvastatin (Crestor) ❑ _____	Reduces cholesterol	**Headache** *Other possible side effects:* Nausea, Diarrhea, Muscle Pain or Weakness

Life after a Stroke

Follow-up after Discharge

Use this sheet to guide you on your journey to set effective health-focused goals to ensure wellness is achieved and maintained now and as you continue on your healing journey.

Lifestyle Modifications:

Physical Exercise: _____

_____

Weight Loss: _____

_____

Smoking Cessation: _____

Disease Management:

Blood Pressure: _____

Cholesterol: _____

Heart Rate: _____

Medications:

Anticoagulants: _____

Coagulation Goal: _____

Cholesterol Lowering Agent: _____

Cholesterol Goal: _____

Diabetic Medication/Management: _____

Blood Sugar Goal: _____

Anti-hypertensive Medication: _____

Blood Pressure Goal: _____

Cardiac Rhythm/Rate Treatment: _____

Heart Rate Goal: _____

Additional Resources

Stroke survivors and their family caregivers need help adjusting to the changes in their lives. Connecting with other survivors and caregivers to share experiences, information, and advice can be incredibly beneficial. Below are several available resources that can be accessed to obtain more information about stroke support.

American Stroke Association
www.strokeassociation.org

American Stroke Association/American Heart Association
This link provides information on general disease topics as well as community events:
heart.org/en

Support group forum:
https://supportnetwork.heart.org/s/topic/0TO4T000000TY1zWAG/stroke

American Stroke Association/American Heart Association

Brain Injury Center- Ventura Support Group
braininjurycenter.org

National Institutes of Health
Although this is not a local link, it provides very useful information about all diseases, procedures, research, clinical trials, how to find medical information, and health newsletters.
health.nih.gov

National Aphasia Association
www.aphasia.org

Smoking Cessation
1-(800)-QUIT-NOW (784-8669)
https://www.cdc.gov/tobacco/data_statistics/fact_sheets/cessation/quitting/index.htm

Smoking Cessation

St. John's Regional Medical Center Community Education Classes
dignityhealth.org/stjohnsclasses

St. John's Regional Medical Center Community Education Classes

Patient Experience Questionnaire

St. John's Hospitals are always looking for ways to improve patient experience with the care they receive during their hospital stay. Please take time to fill out this brief questionnaire aimed at capturing responses of patients who have had a stroke. You can access the questionnaire by hovering over the QR code listed to your right. The link will take you to a brief questionnaire about your hospital stay. Responses will be used by the Stroke Program to evaluate processes and improve patient care.

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Notes

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