

Your Care in the Hospital

What is a Stroke (Brain Attack)?

A stroke (brain attack) happens when a blood vessel (artery) that brings blood to the brain is blocked or has burst. The lack of blood flow causes the brain cells to die. After a stroke, some body functions may be lost, like speech or movement in parts of the body. This depends on two things:

- which part of the brain was damaged
- how severe the attack was

Stroke is the third leading cause of death in the United States after heart disease and cancer, and is the leading cause of serious and long-term disability.

There are two types of strokes, *ischemic* and *hemorrhagic*.

- 1. Ischemic strokes:** make up about 80% of all strokes. Ischemic strokes happen when the blood supply to the brain is blocked. There are two main types of ischemic strokes:
 - a. Thrombotic strokes:** are the most common type of strokes. These strokes are caused by a blood clot (thrombus) in an artery that blocks blood flow to a part of the brain. These blood clots usually form in arteries damaged by atherosclerosis, or **plaque**.
 - b. Embolic strokes:** are caused by a clot (embolus) that moves around. The clot forms in another part of your body (usually in the heart or neck) which clogs an artery.
- 2. Hemorrhagic strokes:** make up about 20% of all strokes. Hemorrhagic strokes happen when an artery bursts, causing bleeding in the skull. There are two types of hemorrhagic strokes:
 - a. Intracerebral hemorrhage:** bleeding happens inside the brain.
 - b. Subarachnoid hemorrhage:** bleeding happens on the surface of the brain, in the subarachnoid space (between the brain and the skull). Bleeding is usually caused by an aneurysm (a blood-filled pouch that expands out from an artery wall) that has burst or arteriovenous malformation (AVM, a tangle of blood vessels that is present when you are born).

Your Hospital Stay

Most people stay in the hospital for 3-6 days after an ischemic stroke and possibly longer after a hemorrhagic stroke. The length of stay depends on:

- if you need surgery,
- if the cause of your stroke is known
- if you need more therapy.

Your Medicines in the Hospital

Immediate Treatment for Ischemic Strokes

Clot Bursting Medicines

You may get medicines in a vein (intravenously) to treat an ischemic stroke. These medicines, called *thrombolytics*, help break up blood clots caused by a stroke. In general, this treatment must be given within 4.5 hours after the start of a stroke.

Medicines to break up the clot may also be given using a catheter (thin tube). The catheter is put into a blood vessel in the groin, and guided into the blocked blood vessel in the brain. Blood thinners may also be used to prevent more clots from forming.

The major risk of these treatments is bleeding. This bleeding can be very severe and may be life-threatening.

Mechanical Clot Removal

This technique also uses a catheter that is guided into the blocked blood vessel. The clot is removed using a mechanical device, like a *coil* or *snare*. This treatment is often given together with the medicine to break up the clots.

Investigational Acute Stroke Treatments

You are at a research center for stroke treatment and may be asked to take part in a research study. These new stroke treatments may include new devices, medicines, and combination treatments. If you are eligible, you will get information about these new treatments and you can choose to participate.

Your Medicines in the Hospital *(continued)*

Ischemic Stroke Prevention

An important part of stroke care includes taking medicines to prevent more blood clots. You may get one of the following clot prevention medicines:

- 1. Anticoagulants (“blood thinners”):** Coumadin (Warfarin) or Heparin
 - **Purpose:** To prevent new blood clots from forming.
 - **Action:** Anticoagulants prevent blood clots from forming or growing.
 - **Possible side effects:** Bleeding or bruising.
 - **With these medicines, your doctor needs to watch you closely and you need regular blood tests.**
- 2. Antiplatelets:** Aspirin, Clopidogrel (Plavix), Dipyridamole/Aspirin combination (Aggrenox)
 - **Purpose:** To prevent thrombotic strokes.
 - **Action:** Antiplatelets prevent blood clots from forming or growing.
 - **Possible adverse effects:** Bleeding or bruising.
 - **You do not need regular blood tests when taking these medicines.**

WARNING SIGNALS of BLEEDING

Tell your doctor or nurse if you have any signs of bleeding:

- easy bruising
- bleeding when you brush your teeth
- dark brown urine
- dark brown, red or black stool
- cuts that won't stop bleeding

Surgery and Interventional Radiology

Ischemic Strokes

Some strokes are caused by a blockage of the carotid arteries (the arteries on both sides of the front side of your neck). You have a higher risk of stroke if these arteries are blocked.

- **Carotid Endarterectomy (CEA)** is a surgery to remove the blockage of your carotid arteries.
- **Carotid angioplasty and stenting:** *Angioplasty* is a procedure that opens a blocked artery. The doctor inserts a catheter (thin tube) with a small balloon around it into the artery. The balloon is inflated to open up the blood vessel. The doctor may also place a hollow mesh tube, called a **stent**, into the artery to hold it open. Like carotid endarterectomy (CEA), this surgery can help reduce your risk of another stroke.

Hemorrhagic Strokes

Subarachnoid Hemorrhage (SAH): There are different treatments for this type of stroke. Your doctor may recommend surgery or endovascular (catheter) coiling.

- **Surgery – clipping the aneurysm through craniotomy:** This involves drilling a hole in the skull so the surgeon can fix the aneurysm. The surgeon puts a metal clip at the base of the aneurysm, sealing it off completely.
- **Coil Embolization:** This involves packing the aneurysm with super thin coiled threads. This procedure is done from inside the blood vessels, and is easier than surgery.

Intracerebral Strokes (ICH): This type of stroke is usually treated with medicines and sometimes surgery.

- **Medicines:** to lower blood pressure and control bleeding.
- **Surgery:** to remove the clot through a hole drilled in the skull.

After a Stroke

Once you have a stroke (brain attack) or TIA (Transient Ischemic Attack – a brief stroke that lasts only a few minutes), you have a much higher risk of another stroke. Watch for signs or symptoms of another stroke. **Call 911. Time lost is brain lost!!!**

Tell your doctors, nurses and/or therapists right away if you have any of the following warning signs of a stroke.

SYMPTOMS of a stroke:

1. Facial droop: best seen when a person smiles.
2. Arm: ask the person to hold out their arms with hands facing up and close their eyes. One side will drift down in a stroke. Weakness/loss of sensation may be seen in an arm or leg.
3. Speech: slurred, inappropriate words, or mute.

Planning Your Activities

- When you are able to get out of bed, ask your nurse for help.
- Start moving around slowly: turn in bed, sit in a chair, or walk to the bathroom. The nurses should help you with these activities until it is safe for you to do them on your own.
- A physical therapist teaches you to move safely and correctly. This is especially important if you have any difficulty moving your arms or legs.
- An occupational therapist works with you to re-learn activities of daily living such as eating, drinking, dressing, writing, reading, going to the bathroom, etc.
- A speech or occupational therapist helps you find the best way to communicate if you are having trouble speaking or understanding spoken words.
- A speech therapist works with you if you have difficulty swallowing. The speech therapist trains you to eat and recommends the best types of foods for you.
- Work with your case manager to plan your rehabilitation when you go home.
- If you use dentures and/or glasses, please have someone bring them to the hospital.

About Your Diet

- You can eat your regular diet if you are able to eat and swallow safely.
- A dietitian works with you to help you choose a balanced diet.

Problems with Swallowing

- A speech therapist and a dietitian help you find the best types of food to eat and show you ways to swallow safely.
- **Prevent food from going “down the wrong way” into your airway (lungs):**
 - Sit upright in a chair for meals.
 - Take small bites and eat slowly. Take time to chew your food.
 - Take one bite or sip at a time.
 - Don’t talk with food in your mouth.
 - Don’t use a straw to drink liquids.
 - Make sure you swallow everything in your mouth and do not have any food left behind in your mouth.
 - Sit up for about 30 minutes after you finish a meal and before you lie down.

Your Treatment and Tests

- **Oxygen therapy** (if needed).
- **Intravenous (IV) fluids** may be given until you are able to drink fluids.
- **A feeding tube** may be placed if you are not able to swallow foods or drinks.
- **A urinary catheter (small, thin tube)** is sometimes inserted into your bladder to help you pass urine.
- **“Neuro Checks”** are done by the doctor and nurse to see if the stroke has affected your thinking, memory, and the movement of your arms and legs. They ask you to say your name, the date and where you are. They check how your eyes react to light, and the strength and movement of your hands and feet.
- **Swallowing study** is done if you are having any trouble swallowing.
- **Head CT scan and/or MRI scan** show pictures of your brain and can show what kind of stroke you had and where it is located.
- **Carotid ultrasound** may be done to show the arteries on the sides of your neck.
- **Echocardiogram** may be done to look at your heart and heart valves.
- **Cerebral angiography** provides detailed information about the arteries and the brain.

Getting Support from the Medical Team

- Stroke is a serious condition that can cause some disabilities. It can be shocking for you and your family and hard to deal with. You and your family may feel depressed, anxious, frustrated, and angry after a stroke.
- Share your concerns and feelings with your doctors and nurses, case managers, social workers, and chaplains. Ask for help with financial concerns, getting ready to go home and your home situation.
- Case managers and social workers help you get ready to go home and in emergencies or difficult situations. They give you information about community resources for help over the long term.
- Financial counselors help if you have questions about your health insurance.
- Chaplains are available at all times. Please let your doctor or nurse know if you would like a visit.

Arranging Your Transportation Home

- You may not drive yourself home after a stroke. Have a family member or friend drive you.
- Speak with a case manager if you need help getting home or help getting up the stairs. Most insurance does not pay for your transportation home.

Continuing Care: Admission to a Post Acute Unit (Licensed Skilled Nursing Facility)

Your doctor may decide you need more time in a hospital to continue treatment or rehabilitation. If your condition is stable, but you still need more care than can be safely delivered at home, you may go to one of the California Pacific's Post Acute Units, or a Skilled Nursing Facility in the community.

California Pacific's Post Acute Units are licensed, Skilled Nursing Facilities that provide short-term care for people who do not need to be in the "acute" hospital. On a Post Acute Unit, you get more rehabilitation than you do in the hospital; for example, physical therapy, occupational therapy, speech therapy, IV antibiotics, and dressing changes.

A team of doctors, nurses, case managers, social workers, pharmacists, dietitians, and therapists work together to provide your care. Your primary care doctor does not change, but he or she may assign you to one of the doctors at the Post Acute Unit. Or, your doctor may be part of the medical team there.

Transferring to Acute Rehabilitation

The Acute Rehabilitation Center is a hospital with a team of doctors, nurses, therapists, case managers and social workers. Acute Rehabilitation is helpful for people who can do at least 3 hours of therapy a day. The type and amount of therapy you receive depends on the difficulties you are having after your stroke. Physical, occupational, speech, and respiratory therapists may work with you. The Acute Rehabilitation Center at California Pacific Medical Center is located at the Davies Campus (Castro & Duboce Streets).

The hospital arranges for your transfer by ambulance, wheelchair van, or private car if you are on the Pacific Campus. On the Davies Campus, you are transported by wheelchair or in your bed.

You and your doctor discuss when you are able to go home. Before you leave the hospital, a nurse case manager or a social worker meets with you and your family to talk about what you need to care for yourself at home, or to help you find a place to stay where you can get the help you need.

Preventing Another Stroke

About 1/3 of all stroke survivors have another stroke within 5 years. There are many medical conditions that can increase your risk of another stroke: high blood pressure, smoking, high cholesterol, and irregular heartbeat. To reduce your risk, maintain a healthy lifestyle and work with your doctor to treat your other medical problems.

Medical Conditions that Increase Your Stroke Risk

High blood pressure (hypertension) is the leading cause of stroke, but it is treatable. You are 4 to 6 times more likely to have a stroke if you have high blood pressure that is not being treated. Having high blood pressure causes blood vessels to develop plaque and blood clot blockages (ischemic stroke) or rupture (hemorrhagic stroke).

What you can do:

- Check your blood pressure regularly. If it is more than 135/85, tell your doctor. All stroke patients should have a normal blood pressure (120/80 or below).
- Eat low fat, low salt foods.
- Stop smoking.
- Exercise regularly, at least 3 times a week (15-40 minutes each time). Check with your doctor before starting an exercise program.
- Take medicines prescribed by your doctor to control your blood pressure.

Preventing Another Stroke *(continued)*

Diabetes (high blood sugar levels) increases your risk of having a stroke 2 to 3 times.

What you can do:

- Follow the diet given to you by your doctor or nutritionist.
- Exercise regularly, at least 3 times a week (15-40 minutes each time). Check with your doctor before starting an exercise program.
- If you are overweight, talk to your doctor or nutritionist about how to lose weight.
- Take medicines prescribed for your diabetes. Blood pressure control reduces your risk even more.

Heart (cardiovascular) conditions, such as heart failure, previous heart attack, heart valve disease, and especially atrial fibrillation (irregular heartbeat) can put you at a greater risk of stroke. If left untreated, atrial fibrillation can increase your risk of having a stroke 4 to 6 times.

What you can do:

- Get regular check-ups with your doctor.
- Take medicines prescribed by your doctor for your heart condition.

Smoking doubles your risk of having a stroke. If you smoke, **STOP** today. In addition to hurting the lungs, smoking also damages blood vessel walls, hardens the arteries, makes the heart work harder, and raises blood pressure. If you stop smoking today, within 2-5 years your risk of stroke will be the same as someone who never smoked.

What you can do:

- Ask your doctor for help to quit smoking.
- Call 1-800-NO-BUTTS for more information on smoking cessation.
- If you are in the hospital, speak with a nurse who helps patients with smoking cessation. Ask for a pamphlet with helpful tips and referrals.

Preventing Another Stroke *(continued)*

High cholesterol levels can block your arteries.

What you can do:

- Know your cholesterol numbers.
- Eat a diet that is low in cholesterol and fat, especially saturated fat. High cholesterol and fat are found in egg yolks, meat, and dairy products.
- Exercise regularly, at least 3 times a week (15-40 minutes each time). Check with your doctor before starting an exercise program.
- Take medicines prescribed by your doctor.

Heavy alcohol consumption: More than 2 alcoholic drinks per day can increase your blood pressure and your risk of stroke by 3 times. It can lead to liver disease and more.

What you can do:

- If you drink alcoholic beverages, talk to your doctor.
- Limit the amount of alcohol you drink to less than 3 oz. of liquor, 8 oz. of wine, 24 oz. of beer a day, or 2 drinks per day.

Illicit drug use, such as cocaine, amphetamines, and heroin can increase your blood pressure and cause irregular heartbeats that can lead to a stroke.

What you can do:

- Ask your doctor about a treatment program to help you stop taking these drugs.

Infections (viral and bacterial) can increase the risk for stroke.

What you can do:

- Maintain good dental and body hygiene.
- Wash your hands frequently, especially after using the rest room and before touching any part of your face (nose, eye, mouth).
- Talk to your doctor about any unusual infection that does not go away and any slow or non-healing wounds.

Preventing Another Stroke *(continued)*

Narrowing of carotid arteries, which are large blood vessels on either side of your neck where plaque can form and cause blockages.

What you can do:

- Ask your doctor if your carotid arteries contribute to your risk of stroke.
- Take your prescribed blood-thinning medicines.
- Your doctor may suggest surgery or angioplasty to remove plaque. This depends on the amount of the carotid blockage you may have.

Obesity, high-cholesterol, high-fat diet and lack of exercise can cause high blood pressure, heart disease, atherosclerosis, and diabetes.

What you can do:

- Control your weight. Talk to your doctor about a healthy weight for you.
- Eat a healthy diet: low cholesterol, low fat, plenty of whole grains, fruits and vegetables (4-6 servings per day).
- Exercise regularly, at least 3 times a week (15-40 minutes each time). Check with your doctor before starting an exercise program.

Psychological stress can raise the blood pressure and cause atherosclerosis (thickening and hardening of arteries) to get worse. Stress can be particularly dangerous in a person with high blood pressure and atherosclerosis conditions.

What you can do:

- Try stress-relieving techniques such as physical exercise, relaxation exercises, meditation, and find leisure activities that you enjoy.
- Express your feelings and concerns with loved ones, your doctor and staff.

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References: American Heart Association; American Stroke Association; Castillo-Richmond, et al. Effects of stress Reduction on Carotid Atherosclerosis in Hypertensive American. *Stroke*. 2002; 341:568.

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Note: This information is not meant to replace any information or personal medical advice which you get directly from your doctor(s). If you have any questions about this information, such as the risks or benefits of the treatment listed, please ask your doctor(s).