Kaiser Permanente Medical Center

STROKE INFORMATION

KAISER PERMANENTE®

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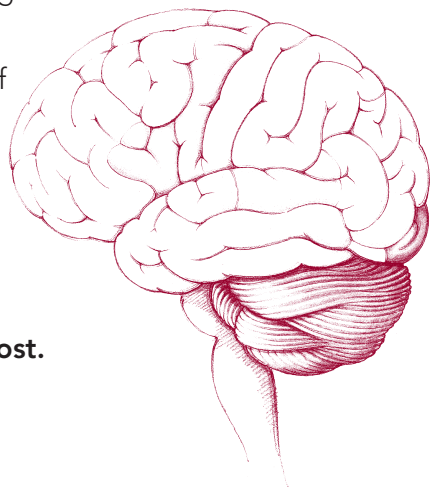
WELCOME

Welcome to Kaiser Permanente Medical Center. We follow The Joint Commission (TJC) and American Stroke Association (ASA) recommendations for stroke care. The goals of the stroke program are to ensure that stroke patients receive the best stroke care. Kaiser Permanente offers a full range of neuroscience services and is committed to improving stroke care nationwide.

Signs and Symptoms of a stroke:

Watch for the following:

- Sudden one-sided weakness, numbness, or paralysis
- Sudden trouble seeing
- Sudden problems speaking or understanding
- Sudden dizziness or loss of balance
- Sudden severe headache with no apparent cause



If you or someone you know is having a stroke, Call 9-1-1 fast!

Remember: Time lost is brain lost.

The following information is general. Always speak with your doctor about your specific type of stroke and treatments.

The best thing that you can do to prevent a stroke is to decrease your risk factors and know the signs and symptoms of stroke.

WHAT IS A STROKE?

Most strokes are caused when blood stops flowing to part of the brain.

GOALS DURING YOUR HOSPITALIZATION

- Locate the part of your brain affected by the stroke.
- Learn the cause of your stroke.
- Assess if you can swallow safely.
- Assess your ability to move, talk, read, write, and understand words.
- Assess your body's ability to control functions such as the bladder and bowels, and your ability to dress and bathe yourself.
- Reduce your risk of having another stroke.

THINGS TO EXPECT DURING YOUR HOSPITALIZATION

- Tests you may have:
  - CT, MRI, or ultrasound
  - Chest X-ray to look at your lungs
  - EKG to look at your heart
  - Blood tests
- A nurse will:
  - Start an Intravenous line (IV), if needed, to give you medicine or fluid.
  - Give you oxygen to help you breathe easier if you need it.
  - Frequently check your blood pressure, heart rate, respirations, and temperature.
  - Frequently test your ability to move, see, talk, and understand.
  - Test to make sure you can swallow safely.
  - Give you medicine to control your blood pressure. This may not be given for the first few days.
  - Instruct you on the activities that are safe for you.
  - Tell you the name of the doctors and nurses who are taking care of you.
- *Possible* consultations:
  - Neurologist
  - Neurosurgeon
  - Physical Medicine and Rehabilitation
  - Cardiologist

Diet and Fluids

When you first come in to the hospital *please do not eat or drink before checking with your nurse.* We first need to test your ability to eat or drink safely.

Diagnosing Stroke

Your doctor will use tests to learn how your brain works and gets its blood supply. Tests may include:

- CT scan (Computed Tomography) or CAT scan is a test of the brain. It uses X-rays to take a picture of the brain. It will show any bleeding or clots in your brain.
- MRI (Magnetic Resonance Imaging) uses a large magnetic field to produce an image of the brain. It shows the location and extent of brain injury. MRI is used to diagnose strokes in locations such as the brain stem, the part of the brain that connects with the spinal cord.
- Vascular Imaging (CT angiogram, MR angiogram, ultrasound, or catheter angiogram) tests use different ways to look at the blood supply to your brain. They show narrowed or blocked arteries, or abnormal areas.

How a Stroke Affects Your Brain and Body

The area in your brain where the stroke occurs will affect the symptoms you have.

If the stroke occurs in the:

- **Front part of the brain** – your ability to control emotions and make decisions may be affected.
- **Right side of the brain** – the left side of your body may be affected and you may have a hard time paying attention to people or things on your left side.
- **Left side of the brain** – the right side of your body may be affected, and your ability to read, write, and talk may be affected.
- **Back of the brain** – your ability to see may be partially affected.
- **Brain stem** – different symptoms can occur depending on the part affected.

TYPES OF STROKE

There are three types of stroke:

- Ischemic
- Hemorrhagic
- Transient Ischemic Attack (TIA)

What is an Ischemic Stroke?

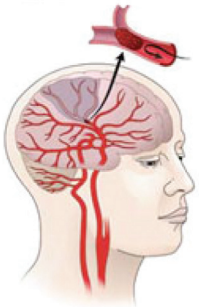
Ischemic (is-KE-mik) strokes are caused by lack of blood to part of the brain. It is caused by narrowed or clogged blood vessels to the brain that cut off blood flow (See Figure 1):

- About 87% of all strokes are ischemic.
- Symptoms develop over a few minutes or get worse over hours.
- Symptoms may be loss of strength or feeling on one side of the body, problems with speech or changes in vision or balance.
- A TIA may occur before an ischemic stroke.

An ischemic stroke occurs when a blood vessel supplying the brain becomes blocked, as by a clot.

Figure 1

Courtesy of National Institute of Neurological Disorders and Stroke



Types of Ischemic Strokes:

- **Thrombotic strokes** are caused by a blood clot (thrombus) in a brain artery. The clot blocks blood flow to part of the brain. Blood clots usually form in arteries damaged by plaque build-up (atherosclerosis).
- **Embolic strokes** are caused by a moving clot (embolus) that may have formed in the heart. Clots are carried in the blood and clog a blood vessel in or connected to the brain.
- **Systemic hypoperfusion** occurs because of low blood flow. The heart fails and too little blood reaches the brain. This is how a heart attack may cause a stroke.
- **Cryptogenic stroke** has an unknown cause. This means your doctor has done tests and cannot find a cause. Up to 40% of ischemic strokes have an unknown cause.

How are ischemic strokes treated?

- *Some* Ischemic strokes can be treated with a drug called Tissue Plasminogen Activator (tPA). This medicine is given into the vein (intravenous), and dissolves the clots that are stopping the blood flow to the brain. The drug must be given within a few hours of the time the symptom(s) begin.
- Some blood clots can be removed from the arteries in the brain.*
- Some will need other medical treatment.

* A patient who is medically eligible for endovascular stroke treatment will be transferred to a Kaiser Permanente facility or a community hospital that can perform these treatments.

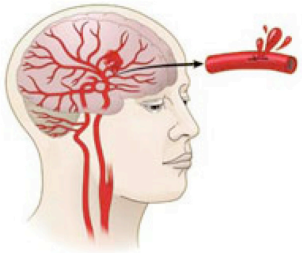
What is a Hemorrhagic Stroke?

Hemorrhagic (hem-o-RAYG-ik) strokes happen when a blood vessel in the brain breaks. Then blood can leak into the brain and kill brain cells (See Figure 2).

- Symptoms appear suddenly.
- Symptoms may be a very bad headache, nausea, and vomiting.

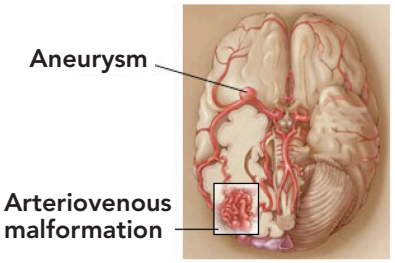
A hemorrhagic stroke occurs when a blood vessel bursts, leaking blood into the brain. **Figure 2**

Courtesy of National Institute of Neurological Disorders and Stroke



Types of hemorrhagic stroke:

- **Subarachnoid** (sub-ar-RAK-noid) **hemorrhage (SAH)** is when a blood vessel breaks and bleeds into the space between the brain and the skull. The most common cause is a ruptured aneurysm caused by high blood pressure. An aneurysm is a blood-filled pouch that balloons out from an artery wall (See Figure 2a).



An aneurysm is a bulge in a blood vessel and an arteriovenous malformation is a tangled mass of thin-walled vessels. Both of these structures are associated with a risk of hemorrhagic stroke. **Figure 2a**

Courtesy of National Institute of Neurological Disorders and Stroke

- **Intracerebral hemorrhage (ICH)** occurs when a blood vessel bleeds into the tissue in the brain. High blood pressure or aging blood vessels are the main causes.
- **Intraventricular hemorrhage (IVH)** is when bleeding occurs into the fluid-filled center of the brain (the ventricles).

How are hemorrhagic strokes treated?

- Hemorrhages may be life-threatening and hospital care may begin in an Intensive Care Unit.
- Medications may be given to control blood pressure and reduce further injury to the brain.
- Surgery or other procedures may be needed depending on the location, size, and cause.*

* A patient who is medically eligible for surgery or procedure(s) in the brain will be transferred to a Kaiser Permanente facility or a community hospital that can perform these procedures or treatments.

What is a TIA?

- TIA, or transient ischemic (TRAN-see-ynt is-KE-mik) attack occurs when a blood clot blocks an artery for a short time.
- Symptoms are the same as a stroke, but last only a few minutes to hours and there is no permanent change to the brain.
- Having a TIA increases the risk of stroke.
- Don't ignore symptoms. Call 9-1-1!

REHABILITATION

After a stroke you may be participating in a rehabilitation program. The goal of rehabilitation is to help you regain as much independence as possible.

- The team works closely with you and your family to learn about your home, who can help you at home, and how you can live at home.
- Stroke rehabilitation can begin soon after you are medically stable.
- Each patient is unique and the degree of improvement varies. The greatest amount of improvement occurs during the first six weeks, although smaller degrees of improvement can occur much later.

The hospital rehabilitation team may include:

A **Physical Medicine and Rehabilitation (PM&R) doctor** assesses and prescribes therapy for any loss of function. The rehabilitation doctor also treats and prevents medical issues associated with stroke. He or she may also recommend what setting is best for your rehabilitation to help you recover more quickly. You might continue to see a PM&R doctor in the clinic after discharge to address such issues as returning to work and driving after stroke.

A **physical therapist (PT)** works with you and your family to help you move better during your daily activities, including getting in and out of bed, walking, or using a wheelchair. The therapist addresses problems in balance, strength, and coordination.

An **occupational therapist (OT)** helps you regain the ability to care for yourself. An occupational therapist focuses on tasks of daily living, such as brushing teeth, getting dressed, bathing, and eating by yourself. Some occupational therapists also help patients who have lost their ability to swallow and teach you about the ways to prepare food if you have trouble swallowing.

A **speech therapist (ST) or Speech Language Pathologist (SLP)** works with patients who have difficulty swallowing or difficulty communicating or understanding information. A speech therapist provides exercises to help with speech and communication and the ability to eat and drink safely.

GETTING READY TO LEAVE THE HOSPITAL

After the hospital, you may need further care. This may mean going home and receiving extra therapy. Or you may need to receive more care in another setting such as a Board and Care facility (B&C), skilled nursing facility (SNF), or rehabilitation center.

Before leaving the hospital, your health care team will talk with you about:

- Concerns you may have about your plans to go home or to another facility.
- Your medicine(s) and possible side effects.
- Any special equipment to assist you in moving around.
- What to eat and drink for your health.
- Balancing rest and activity.
- Stopping smoking (if you smoke).
- Possibly becoming emotional (laughing and/or crying) at unexpected times.
- Follow-up appointments with your doctor and other health care providers.

KEEPING YOURSELF SAFE AT HOME

Although leaving the hospital may seem scary at first, you should be able to recover faster at home if possible. There is a lot you can do to help your recovery.

Review Medications

You may have started on new medicines. If you have symptoms from the medicines, call your doctor.

- It is very important to take your medicines exactly as prescribed to help prevent another stroke.
- If you need help paying for your medication(s), please let your doctor know and a social worker will help.

Avoid Falls

- Get rid of anything in your home that may cause you to fall, such as throw rugs.
- Wear rubber-soled shoes so you do not slip.
- You may need handrails in your shower or tub.
- Move items such as furniture and electrical cords in your home so that walking paths are clear.

LIFESTYLE CHANGES TO PREVENT STROKE

You can prevent another stroke by knowing and managing your stroke risk factors. To help manage your risk factors, meet with your primary doctor regularly.

Risk Factors Checklist (please check all that apply)

- ☐ High blood pressure (hypertension)
- ☐ High blood cholesterol
- ☐ Diabetes
- ☐ Carotid or other artery disease
- ☐ Transient Ischemic Attack (TIA)
- ☐ Previous Stroke
- ☐ Atrial Fibrillation or other heart disease
- ☐ Obesity
- ☐ Low activity or sedentary lifestyle
- ☐ Smoking
- ☐ Too much alcohol
- ☐ Drug use

Control Your Blood Pressure

Blood pressure is the most important risk factor for stroke. Know your blood pressure and have it checked when asked by your doctor.

You can lower your blood pressure by:

- Keeping a healthy weight
- Exercising
- Taking your medicines

Your doctor may ask you to keep track of your blood pressure. Bring your readings to your appointments. Home blood pressure machines can be purchased at our pharmacy.

Lower Your Blood Cholesterol

High cholesterol increases the risk of clogged arteries and a stroke. Cholesterol can be lowered by losing weight, exercise, dietary changes, and medicine. It is important to take medication ordered by your doctor.

Manage Diabetes

- If you have diabetes and have had a stroke, good blood sugar control is critical to prevent future strokes.
- Work with your doctor to manage your diabetes
- It is important to get your blood tests, such as Hemoglobin A1C, when your doctor recommends. Hemoglobin A1C is a blood test that tracks what your blood sugar has been for the last three months.

Carotid Artery Disease

The carotid arteries in your neck give blood to your brain. A carotid artery with fatty buildup of plaque inside the artery wall may become blocked by a blood clot, causing a stroke. Treatments may be needed to open up these arteries in your neck.

History of Transient Ischemic Attacks (TIAs)

Recognizing and treating TIAs can reduce the risk of a major stroke. Know the warning signs of a TIA and seek emergency medical treatment immediately by calling 911.

History of Prior Stroke(s)

History of prior stroke can increase your chances of having another stroke.

Manage Atrial Fibrillation or Heart Disease

In Atrial Fibrillation, the heart's upper chambers quiver rather than beat. The blood then can pool and clot, increasing the risk of stroke. It is important to take medication ordered by your doctor.

Strokes may also be caused by heart disease or other heart conditions. Identifying and treating these conditions early can help lower your risk of a stroke.

Improve Your Diet

Avoid eating a lot of fat:

Fat in your food such as trans fat, saturated fat, and cholesterol cause hardening of arteries, which may cause strokes.

Try to:

- Eat less fatty foods and limit fat or oil when you are cooking. Trim the extra fat and skin from meats and poultry.
- Use low-fat or nonfat dairy products.
- Broil and bake foods rather than frying.
- Limit eggs to no more than three times a week.

Avoid eating a lot of salt:

A lot of salt (sodium) in the diet is linked to high blood pressure.

- Try not to add extra salt to your food.
- There is "hidden" salt in most processed and canned foods, and baking and pancake mixes. Read labels closely.
- Eat fresh food whenever possible.

Meal Planning Suggestions:

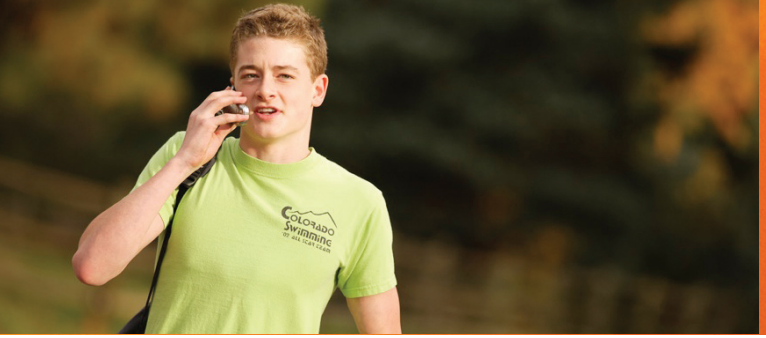
You can lower your risk of stroke through your food choices. The food that is good for you is good for your whole family.

- Eat a wide variety of foods every day. Try new foods.
- Eat high-fiber foods, such as fruits, vegetables, whole grains, and beans.
- Eat meals and snacks at regular times every day.
- Eat about the same amount of food each day.
- If you want to lose weight, cut down on your portion size.
- Try not to skip meals, as it may cause you to eat too much at your next meal.

Exercise to be a Healthy Weight

If you are inactive or overweight you are at increased risk of stroke and heart disease.

- Try to keep a healthy weight.
- Exercise regularly. Start slow and build up to at least 30 minutes a session at least three to four times per week.
- Check with your doctor before starting an exercise program.
- Exercise helps keep your weight, blood pressure, and cholesterol in control and also helps manage diabetes.



Stop Smoking

- If you smoke, make your most recent cigarette your last!
- Cigarette smoking has been identified as the most important preventable health hazard and cause for premature death worldwide.
- If you do not smoke, stay away from secondhand smoke.
- Ask your doctor for classes at Kaiser Permanente on how to stop smoking. Many of these classes or aides to stop smoking are free.

Limit Your Alcohol Intake

Too much alcohol can lead to multiple medical complications, including stroke. For those who consume alcohol, a recommendation of the American Heart Association and American Stroke Association is no more than two drinks per day for men and no more than one drink per day for non-pregnant women.

Drug Use

Drugs such as cocaine, amphetamines, and methamphetamines have a high risk of causing a stroke.

The Use of Blood Thinners

- Blood thinners (medicines that reduce clots in your arteries) can help prevent strokes.
- All blood thinners have some risk of causing you to bleed.
- Call your doctor if you have nose bleeds, bleeding gums, unusual bruising, or if you fall at home.

HOW CAN YOU LEARN MORE ABOUT STROKE?

- Talk to your doctor, nurse, or other health care professionals.
- **Kaiser Permanente** resources:
  - Log on: http://members.kp.org. Search for *Stroke*.
  - Go to kp.org/healthylifestyles or call your Kaiser Health Education department for information on possible classes, including PHASE (Prevent Heart Attack and Stroke Everyday).
  - Read: *Kaiser Permanente Healthwise Handbook*.
- **National Stroke Association** resources:
  - Log on: http://www.stroke.org
  - Call: 1-800-787-6537
- **American Stroke Association** resources:
  - Log on: http://StrokeAssociation.org
  - Call: 1-888-4-STROKE (1-888-478-7653) toll free
- Speak with other stroke survivors and caregivers trained to answer your questions and offer support.
- Get information on stroke support groups in your area.
- Sign up to get the *Stroke Connection Magazine*, a free publication for stroke survivors and caregivers.
- Ask about other local resources, such as support groups.

QUESTIONS FOR MY PHYSICIAN:

(Modified from Kaiser Permanente Santa Clara Medical Center; and information from the American Stroke Association, a division of the American Heart Association.)