THINGS YOU SHOULD KNOW

Your Risk for Stroke and How to Be Prepared
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If you are reviewing this brochure, your medical professionals feel that you are at risk for stroke.

This brochure was developed to give you a better understanding of the causes of stroke, ways to prevent one and how to be prepared if one occurs.

- In most cases, managing your risk factors can help prevent a stroke.
- 80% of all strokes in adults are preventable.
- There are certain risk factors and/or lifestyles that can make you more likely to have a stroke.
STROKE: THE NO. 5 CAUSE OF DEATH IN THE U.S.

More than 800,000 people in the United States have a stroke every year.

More than 690,000 U.S. strokes are caused when a clot cuts off blood flow to a part of the brain—that is called an ischemic stroke.

Stroke kills nearly 130,000 people a year. That’s 1 in every 20 deaths.

Sources: 1) Heart Disease and Stroke Statistics—2016 Update: A Report From the American Heart Association
There are some things you can do to prevent a stroke.

These are called controllable factors. If lifestyle changes are made, like eating healthy or not smoking, a person’s risk of stroke can be reduced.

**Controllable Factors:**

- High blood pressure
- Cigarette smoking
- Diabetes
- Carotid or other artery disease
- Peripheral artery disease
- Artial fibrillation
- Other heart disease
- Sickle cell disease (also called sickle cell anemia)
- High blood cholesterol
- Poor diet
- Physical inactivity and obesity

Sources:
1) http://www.strokeassociation.org/STROKEORG/AboutStroke/UnderstandingRisk/Understanding-Risk_UCM_308539_SubHomePage.jsp
2) http://stroke.ahajournals.org/content/28/7/1507.full#ref-13
3) http://stroke.ahajournals.org/content/31/5/1013.full
Some risk factors for stroke are simply not controllable. But knowing what they are is still important in determining your overall risk for stroke.

**Uncontrollable Factors:**

- **Age**
- **Gender**
- **Race**
- **Heredity**
- **Prior stroke, TIA or heart attack**

To learn more about how to prevent a stroke, go to [StrokeAssociation.org/BrainHealth](http://StrokeAssociation.org/BrainHealth)

Sources: 1) http://www.strokeassociation.org/STROKEORG/AboutStroke/UnderstandingRisk/Understanding-Risk_UCM_308539_SubHomePage.jsp  2) http://stroke.ahajournals.org/content/28/7/1507.full#ref-13 3) http://stroke.ahajournals.org/content/31/5/1013.full
BEING PREPARED

If you are at risk for a stroke, knowing the signs of a stroke can help you be prepared. Most often it’s family and bystanders who call 911 when a stroke occurs. Educating your family can save your life or someone else’s.
Learn and share the warning signs of stroke and be able to spot a stroke F.A.S.T.!

**F** FACE DROOPING / Does one side of the face droop or is it numb?

**A** ARM WEAKNESS / Is one arm weak or numb?

**S** SPEECH DIFFICULTY / Is speech slurred, are they unable to speak, or are they hard to understand?

**T** TIME TO CALL 911 / If the person shows any of these symptoms, even if the symptoms go away, call 9-1-1 and get to the hospital immediately.
Quick decisions and timely treatment may improve recovery.

Quick Treatment = Less Brain Damage

CALL 9-1-1 AND GET TO THE HOSPITAL AT THE FIRST SIGN OF STROKE SO YOU CAN BE EVALUATED AND RECEIVE TREATMENT IN TIME.

Sources:
1) http://circ.ahajournals.org/content/early/2014/12/18/CIR.0000000000000152.full.pdf+html
2) http://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_02.pdf
3) http://stroke.ahajournals.org/content/45/10/3019.short
THERE ARE TWO TYPES OF STROKES

Hemorrhagic

- A hemorrhagic stroke occurs when a weakened blood vessel ruptures and spills blood into brain tissue.

- The most common cause for the rupture is uncontrolled hypertension (high blood pressure).

- Two types of weakened blood vessels usually cause hemorrhagic stroke: aneurysms and arteriovenous malformations (AVMs).

Ischemic

- An ischemic stroke occurs as a result of an obstruction within a blood vessel supplying blood to the brain.

- Ischemic stroke accounts for 87% of all stroke cases, and are largely treatable if you get to the hospital in time.
The only FDA-approved treatment for ischemic strokes is tissue plasminogen activator (tPA, also known as Alteplase (IV r-tPA), given through an IV in the arm).

Alteplase (IV r-tPA) works by dissolving the clot and improving blood flow to the part of the brain being deprived of blood flow.

If administered within 3 hours (and up to 4.5 hours in certain eligible patients), Alteplase (IV r-tPA) may improve the chances of recovering from a stroke.

A significant number of stroke victims don’t get to the hospital in time for Alteplase (IV r-tPA) treatment; this is why it’s so important to identify a stroke immediately.
**ACUTE ISCHEMIC STROKE TREATMENT**

Dissolve clot with tissue plasminogen activator Alteplase (IV r-tPA).

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>- For patients who can be treated within 3 hours of stroke onset, Alteplase (IV r-tPA) can lead to better recovery after stroke.</td>
<td>- Bleeding of the brain, gums or other tissues are major risks.</td>
</tr>
<tr>
<td>- For select patients who are eligible to be treated up to 4.5 hours after stroke onset, Alteplase (IV r-tPA) can also improve outcomes.</td>
<td></td>
</tr>
<tr>
<td>- Treatment may improve survival rates.</td>
<td></td>
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</tbody>
</table>
Another strongly recommended treatment option is an endovascular procedure called mechanical thrombectomy, in which trained doctors try to remove a large blood clot by sending a wire-caged device called a stent retriever to the site of the blocked blood vessel in the brain.

To remove the clot, doctors thread a catheter through an artery in the groin up to the blocked artery in the brain. The stent opens and grabs the clot, allowing doctors to remove the stent with the trapped clot. Special suction tubes may also be used.

The procedure should be done within 6 hours of acute stroke symptoms, and only after a patient receives Alteplase (IV r-tPA).

*Note: Patients must meet certain criteria to be eligible for this procedure.
ACUTE ISCHEMIC STROKE TREATMENT

Remove larger clots with a stent retriever (eligible patients only).

Patients should receive Alteplase (IV r-tPA) and large clot should be present before being considered for endovascular (stent retriever) treatment.

**Benefits**
- High success rates (improved recovery and outcomes) in removing large clots/severe strokes.

**Risks**
- Bleeding (the most common associated risk).
- Tearing of the inner lining of the blood vessel.
Your medical professional can tell you which treatment options you are eligible for, and address any concerns you may have.
POST-STROKE REHABILITATION

Structure and Organization of Stroke Rehabilitation Care in the U.S.

Best evidence for post-stroke rehabilitation has been found in IRFs.

<table>
<thead>
<tr>
<th>SETTING</th>
<th>ADMISSION</th>
<th>MEDIAN LENGTH OF STAY</th>
<th>SPECIALIST INVOLVEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOSPITAL</td>
<td>Near onset</td>
<td>4 days (ischemic stroke) 7 days (hemorrhagic stroke)</td>
<td>Major: MD, RN More limited: OT, PT, SLT, SW</td>
</tr>
<tr>
<td>INPATIENT REHABILITATION FACILITY (IRF)</td>
<td>5–7 days</td>
<td>15 days (range, 8–30 days)</td>
<td>Major: MD, RN, OT, PT, SLT More limited: SW</td>
</tr>
<tr>
<td>SKILLED NURSING FACILITY</td>
<td>5–7 days</td>
<td>Highly variable (maximum, 100 days)</td>
<td>Major: LPN/LVN, NA, OT, PT, SLT More limited: MD, RN</td>
</tr>
<tr>
<td>LONG-TERM CARE (NURSING HOME)</td>
<td>Highly variable</td>
<td>Prolonged and highly variable</td>
<td>Major: LPN/LVN, NA More limited: RN, OT, PT, SLT, MD</td>
</tr>
<tr>
<td>LONG-TERM CARE HOSPITAL</td>
<td>Variable</td>
<td>25-days average (required)</td>
<td>Major: RN, MD More limited: OT, PT, SLT</td>
</tr>
<tr>
<td>HOME HEALTHCARE AGENCY</td>
<td>Variable (typically 5–30 days)</td>
<td>Maximum 60-days</td>
<td>Major: NA, RN More limited: OT, PT, SLT, MD</td>
</tr>
<tr>
<td>OUTPATIENT OFFICE</td>
<td>Variable (typically 5–30 days)</td>
<td>Variable</td>
<td>Major: OT, PT, SLT, MD</td>
</tr>
</tbody>
</table>

LPN/LVN, licensed practical or vocational nurse; MD, medical doctor; NA, nurse assistant; OT, occupational therapist; PT, physical therapist; RN, registered nurse (preferably with training in rehabilitation); SLT, speech-language therapist; SW, social worker.

Source: 1) Association/American Stroke Association Guidelines for Adult Stroke Rehabilitation and Recovery
What happens next can make all the difference.

Stroke rehab should include:

- Training to improve mobility and ability to do daily tasks
- Individually tailored post stroke exercise program
- Access to cognitive/engagement activities
  (books, games, computer)
- Speech therapy, if stroke caused difficulty speaking
- Eye exercises, if stroke causes a loss of vision
- Balance training for those with poor balance or fall risk

BEFORE INPATIENT DISCHARGE, A STRUCTURED FALL PREVENTION PROGRAM IS A MUST!

Source: 1) Association/American Stroke Association Guidelines for Adult Stroke Rehabilitation and Recovery
For general resources on stroke, visit: StrokeAssociation.org or call 1.888.4.STROKE

For more information on Acute Ischemic Stroke treatment options, visit: StrokeAssociation.org/AISToolkit