STROKE AWARENESS AND PREVENTION

William and Mary Wren Association Lecture Series

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Stroke: How Big Of A Problem Is It?

- Acute stroke is a neurologic emergency
- Every year there are 795,000 strokes in the U.S.
- Stroke is the 5th leading cause of death in the U.S.
- Stroke is a leading cause of long term disability
- 3/4 of all strokes occur in those over the age of 65
- The risk of stroke doubles each decade after age 55
Stroke: How Big Of A Problem Is It?

Stroke Death Rates, 2011-2013
Adults, Ages 35+, by County

Rates are spatially smoothed to enhance the stability of rates in counties with small populations.

Data Source:
National Vital Statistics System
National Center for Health Statistics

Stroke Death Rates, 2011-2013
Adults, Ages 35+, by County
Stroke: How Big Of A Problem Is It?

Adapted from http://www.strokeassociation.org
# Stroke: Myths vs. Facts

<table>
<thead>
<tr>
<th><strong>MYTH</strong></th>
<th><strong>FACT</strong></th>
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<tbody>
<tr>
<td>Stroke cannot be prevented.</td>
<td>Up to 80 percent of strokes are preventable.</td>
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<tr>
<td>There is no treatment for stroke.</td>
<td>At any sign of stroke call 9-1-1 immediately. Treatment may be available.</td>
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<td>Stroke only affects the elderly.</td>
<td>Stroke can happen to anyone at any time.</td>
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<td>Stroke happens in the heart.</td>
<td>Stroke is a &quot;brain attack&quot;.</td>
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<td>Stroke recovery only happens for the first few months after a stroke.</td>
<td>Stroke recovery is a lifelong process.</td>
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<td>Strokes are rare.</td>
<td>There are nearly 7 million stroke survivors in the U.S. Stroke is the 4th leading cause of death in the U.S.</td>
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<td>Strokes are not hereditary.</td>
<td>Family history of stroke increases your chance for stroke.</td>
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<td>If stroke symptoms go away, you don’t have to see a doctor.</td>
<td>Temporary stroke symptoms are called transient ischemic attacks (TIA). They are warning signs prior to actual stroke and need to be taken seriously.</td>
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Stroke: What Is It?

- Stroke is a neurologic emergency

- Most strokes occur due to blockage of blood flow to the brain

- Some strokes also occur due to bleeding of a blood vessel in the brain

- Both types of strokes are serious and require immediate medical care

- Preventable and treatable
Ischemic Stroke

A foreign mass traveling through the bloodstream is called an embolus. If it lodges in a small artery, blood flow to part of the brain stops.
Hemorrhagic Stroke

- Dura
- Arachnoid
- Subarachnoid hemorrhage
- Skull
- Cerebral artery aneurysm
- Aneurysm rupture

[Image: Hemorrhagic Stroke diagram]

http://watchlearnlive.heart.org/media/hemstr.png

RIVERSIDE CARE DIFFERENCE
SAFETY • HEALING • KINDNESS • RESPECT
Ischemic Stroke: What Is It?
Ischemic Stroke and TIA

- Blood vessel blockage causing brain cells to die within minutes
- Part of the body controlled by that part of the brain stops functioning
- Effect of stroke depends on extent of stroke
  - Large area of the brain → large stroke
  - Small area of the brain → depends on the location!
- TIA = Transient ischemic attack, temporary stroke symptoms
  15% of strokes preceded by TIAs
Ischemic Stroke: Scary but True

How many neurons are lost/ min of lack of blood flow?

1.9 Million/ Minute!!!!

Stroke January 1, 2006 vol. 37: 263-266
Stroke: Scary but True

Does the brain age more quickly after a stroke?

YES!

3.6 years for each hour without treatment
How do you know when you are having a stroke or a TIA?
Stroke and TIA: Warning Signs

- Sudden numbness or weakness of the face, arm, or leg, especially one side
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause
Ischemic Stroke and TIA: Think F.A.S.T.

- **Face**: Ask the person to smile. Does one side of the face droop?

- **Arms**: Ask the person to raise both arms. Does one arm drift downward? Or is one arm unable to raise up?

- **Speech**: Ask the person to repeat a simple phrase. Is his or her speech slurred?

- **Time**: If you observe any of these signs, call 9-1-1 immediately.
Stroke and TIA: Warning Signs

What to do if you are experiencing any of these warning signs?

Note time symptoms began

and

CALL 9-1-1

DO NOT WAIT FOR SYMPTOMS TO IMPROVE OR WORSEN
Ischemic Stroke: Treatment

- Immediate medical attention after symptom onset is key to timely treatment

- Eligible patients may benefit from an FDA approved IV clot-busting medicine (IV tPA)

- However, this medicine must be given within 3h, and in some cases can be given up to 4.5 h, to benefit from it

- Quick treatment improves your chances of survival and lowers your chances of complications
Ischemic Stroke: Treatment

Some patients may also be eligible for a catheter based procedure to remove the blood clot.
Ischemic Stroke and TIA: Treatment

- Other procedures or surgery may be necessary to open up an artery that is narrowed by fatty deposits in order to minimize the chances of another stroke.

- Blood thinning medications may be needed to prevent the next stroke, and these might include aspirin, plavix, coumadin, or other agents.

- High blood pressure, high cholesterol, diabetes, smoking, illicit drug use, excessive alcohol use, obstructive sleep apnea, and obesity are controllable risk factors.

- Preventing a first stroke, or a recurrent stroke requires controlling these modifiable risk factors.
Ischemic Stroke and TIA: Prevention

Modifiable risk factors: - Lifestyle

- Being overweight or obese
- Physical inactivity
- Heavy or binge drinking
- Illicit drug use: cocaine, amphetamines
- Cigarette smoking (2x), and second hand smoke
Ischemic Stroke and TIA: Prevention

Modifiable risk factors: - Medical

- High Blood Pressure (over 120/80 mm Hg) (1.5x)
- High cholesterol
- Diabetes (4x)
- Obstructive sleep apnea
- Cardiovascular disease – heart failure, infection, atrial fibrillation (5x)
Stroke Prevention

High Blood Pressure Control:

- Exercising
- Managing stress
- Maintaining a healthy weight
- Limiting sodium intake
- Alcohol intake
- Taking prescribed medications to control high blood pressure
Stroke Prevention

- Eating less cholesterol and fat, especially saturated and trans fats – influence fatty buildup
- Weight loss
- Diet containing 5 or more servings of fruits and vegetables daily
- Regular exercise – 30 min of activity daily
- Smoking cessation
- Avoiding illicit drugs
- Treatment of obstructive sleep apnea
Ischemic Stroke and TIA: Prevention

Non-modifiable risk factors:

- Personal or family history of stroke, TIA, or heart attack
- Age 55 or older
- African Americans have a higher risk of stroke (2x); Hispanics and Asians also have a higher risk of stroke than Caucasians
- More women die of stroke than men
- Women have a higher lifetime risk of stroke than men
Ischemic Stroke and TIA: Prevention

Preventive Medications:

- Antiplatelet drugs – makes it difficult for platelets to start forming clots, e.g., aspirin, Plavix
- Anticoagulants – decreases clot formation, e.g., coumadin
- High blood pressure lowering medications
- High cholesterol lowering medications
- Diabetes medications
- CPAP machine
- Smoking cessation aids
Ischemic Stroke and TIA: Take Home Message

**Stroke is Preventable**

**Stroke is Treatable**

[Image of infographic on stroke prevention and treatment]

1. **Saving a Minute May Save a Day**

Did you Know?

Quicker treatment for stroke may add healthy days to your life.

- 1 minute saved = 1.8 days of healthy living
- 15 minutes saved = 1 month of healthy living

2. **Ischemic stroke patients have up to 3 hours to receive tPA treatment.**

3. **Calling 9-1-1 is the quickest way to get treatment for stroke.**

http://news.heart.org/wp-content/uploads/2014/03/Save-a-Minute-8-5x11-SCIENCE-791x1024.png
Hemorrhagic Stroke: What Is It?
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Hemorrhagic Stroke: What Is It?

- 15% of all strokes
- Responsible for 40% of all stroke deaths
- Bleeding in the brain due to a ruptured brain blood vessel, malformation, or an aneurysm
- Damages brain cells, increases swelling and pressure in the brain
- High blood pressure and aging brain blood vessels are the most common causes for intracerebral hemorrhage
- Head injury, bleeding disorders, and blood thinners are some other causes of hemorrhagic stroke
Hemorrhagic Stroke: Risk Factors

- Most common cause of intracerebral hemorrhage is high blood pressure
- Most common cause of subarachnoid hemorrhage after trauma is due to a ruptured brain aneurysm
- Ruptured brain aneurysms are at increased risk of growth, rupture, and recurrence in people who
  - smoke cigarettes
  - binge drink
  - use illicit drugs
  - have high blood pressure
Hemorrhagic Stroke: Treatment

- Find the cause of bleeding and treat it to prevent re-bleeding
- Lower high blood pressure
- Stop blood thinning medications, and possibly give medications to reverse their effect
- Repair of an aneurysm, or vascular malformation with catheter based method or surgery
- Surgical removal of certain types of blood clots to relieve pressure
- Stereotactic radiosurgery to repair certain types of malformations
Hemorrhagic Stroke: Treatment
Stroke: Complications

- Paralysis, limb contractures, pain
- Difficulty talking or swallowing: Pneumonia
- Memory loss or thinking difficulties
- Emotional problems, depression
- Changes in behavior and self care ability
- Urinary tract infections, bladder control issues
- Seizures
- Bed sores
- Deep venous thrombosis
Stroke: Recovery and Rehabilitation

- Focus is on restoring function to permit return to independence

- Physical, occupational, speech, and cognitive therapy play an important role in the recovery of a patient after stroke

- Modifying risk factors to minimize chances of another stroke
Stroke: Take Home Message

I had a stroke when I was 49 years old. I am 67 now and have gone almost 20 years without another stroke.

Until I had my stroke, I didn't do anything good for my health.

I had high blood pressure, I was overweight, and I smoked. When bad things happen to people, they tend to think "why me?"

But, when I think about my stroke, I think "why not me?"

I had all the risk factors and wasn't taking care of myself like I am now.

I've learned a lot of important lessons from my stroke, which have caused me to change my eating habits, quit smoking, and really control my high blood pressure for the first time in my life.

I hope people realize they can prevent stroke. It doesn't have to happen to them.

Ted Turner
Stroke Survivor

http://stroke.nih.gov/materials/needtoknow.htm
Stroke is Preventable, and Treatable
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