

BE Healthy

A BANNER PUBLICATION

© MAY 2007

NO. 9

Sponsored by



BWH BRIGHAM AND WOMEN'S HOSPITAL

MGH MASSACHUSETTS GENERAL HOSPITAL



MASSACHUSETTS

Boston Public Health Commission

Stroke: Awareness of warning signs is key

Henry Jenkins is almost 70 years old and is not doing too bad these days.

His stroke didn't ruin his ability to remain relatively independent.

His speech is a little slower and the right side of his body is no longer strong. Walking is not as easy as it once was. But he manages, with the help of a short leg brace and four-pronged cane.

While it takes a little more time, he can still dress himself. He is proud of the fact that he has mastered buttoning his shirt with one hand, his left hand, the one that he seldom used before the stroke.

A health aide comes over twice a week to give him a bath, but for the most part, Jenkins is one of the fortunate ones.

According to the American Stroke Association, someone has a stroke every 45 seconds, and someone dies from a stroke every three minutes. Strokes are the third leading cause of death in America, and a staggering one out of 16 deaths are the result of complications brought on by the chronic disease.

Someone has a stroke every 45 seconds, and someone dies from a stroke every three minutes.

Worse, it is the leading cause of adult disability.

It knows no barriers — black or white, rich or poor, professional athlete or weekend gardener. And the impact on a neurological system is as varied as the damage wrought on oceanfront property during a hurricane, leaving some without the ability to talk or walk or understand. Others are left virtually unscathed.

In Boston, the death rate from stroke in blacks is about 50 percent higher than that for Latinos and whites, and almost

three times the rate in Asians.

Despite having hypertension and high blood cholesterol — two red flags for a potential stroke — Jenkins said he didn't know a stroke was coming, and worse, he didn't even want to know.

His fear of medical bad news was so strong that whenever his friend made appointments for a yearly physical, he would simply wait around the doctor's office — then walk right back out without seeing even a nurse, much less a doctor.

"I was healthy," he said. "I was

always active. I loved to walk a lot and work around the house."

Having a stroke was the farthest thing from his mind — with good reason.

Aside from the medical complications, strokes have developed a hard-earned reputation and a depressing social stigma.

"A lot of people would rather die than suffer from all the disabilities associated with strokes," said Dr. Lee H. Schwamm, a leading expert on strokes and director of Acute Stroke Services and Vice Chairman of neurology at Massachusetts General Hospital.

Unlike heart attack survivors, those who have come through a stroke are much more reluctant to share their stories publicly. For a variety of reasons, there remains just too much embarrassment, too much denial and too much fear.

"A lot of people tend to have a way of magical thinking when it comes to chronic diseases like stroke," Schwamm said.

"They believe that if they don't know about it, the problem will somehow go away."

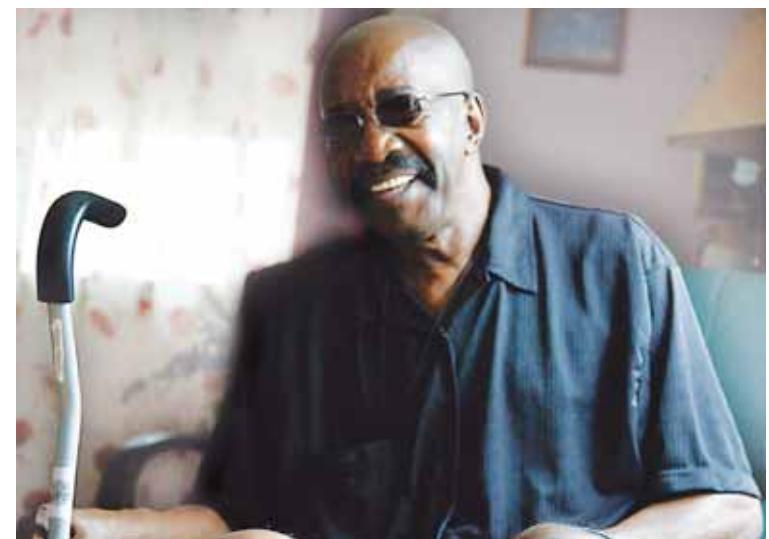
It doesn't work like that. Most people — particularly those most vulnerable — tend to deny their risk factors and ignore what are very real symptoms.

For African Americans, the problems are worsened by the slew of risk factors that plague black health — diabetes, high blood pressure, high "bad" cholesterol, smoking, poor nutrition and lack of exercise.

In plain language, a stroke is a "brain attack." It is a sudden hurricane of neurological problems that can leave a person without the ability to speak or see or move entire regions of their bodies.

The attack occurs when a blood vessel in the brain becomes clogged or

Jenkins, continued to page 4



Henry Jenkins thought he was healthy. He didn't know he had both high blood pressure and high cholesterol — he was too afraid to go to the doctor for checkups. Since his stroke, Jenkins encourages everyone to get screened.

The clock is ticking...

Almost 2 million brain cells die each minute a stroke goes untreated. It is important to recognize the signs of a stroke in order to seek immediate emergency care. If your stroke is caused by a clot, you may benefit from a medication that breaks up the clot and reduces the long-term disability associated with stroke. But you have only three hours from the onset of your symptoms to receive the clot-buster.

Call 911 should you experience:

- ◆ Sudden numbness, weakness, or paralysis of the face, arm or leg, usually on one side of the body
- ◆ Sudden trouble speaking or understanding speech. For instance, slurred speech or speaking gibberish.
- ◆ Sudden trouble seeing in one or both eyes. Some people become blind in one half of their visual field.
- ◆ Sudden trouble walking, dizziness, loss of balance or coordination
- ◆ Sudden, severe or unusual headache with no known cause
- ◆ Sudden confusion or problems with memory or spatial orientation

You don't need to experience all the symptoms to suspect a stroke. Any one symptom can be an indicator of a stroke. Call 911.

Source: American Heart Association

It can happen anywhere

Gerald Willoughby knew something was wrong but didn't think much of it.

He was on the Orange Line subway, almost near the Forest Hills station, when he kept dropping his day planner.

It was odd to say the least.

But every time he tried to grasp the notebook with his left hand, it would fall to the floor.

Willoughby shook off the warning sign and went on about his business. He couldn't use his left hand while driving home that night, but that didn't seem to matter either.

It mattered when he arrived home and his wife took a good look at him. She saw that the left side of his face had begun to droop.

Still, no real panic.

They didn't call 911. Instead, they headed out for a previously scheduled doctor's appointment. Instead of visiting his general practitioner, Willoughby saw an endocrinologist at the same health center. While in the office, Willoughby fell unconscious.

As it turned out, doctors dis-

covered that Willoughby had a tumor on one of his adrenal glands. Those glands are located on top of the kidneys and help regulate blood pressure. Willoughby's weren't working properly, causing his blood pressure to be abnormally high.

He had been diagnosed with high blood pressure at the age of 30 and prescribed numerous medicines to keep the condition under control. They didn't. And the technology at the time didn't allow doctors to clearly define the tumor.

He was 43 years old when his first stroke occurred on the Orange Line that day in 1997. Over the next seven years, he suffered five more. In one four week period, he had four strokes.

It wasn't until specialists detected the tiny tumor that doctors knew how to solve Willoughby's problem. The tumor was removed, his blood pressure improved and instead of as many as eight medications a day, Willoughby is now down to just one.

More important, his risk for having yet another stroke is way down.

Willoughby, continued to page 4

May is National Stroke Awareness Month



Strike out against stroke before it strikes you

Keep your hypertension under control

Hypertension, or high blood pressure, is a contributing factor to stroke. Preventing hypertension or learning to control it if you already have it are important steps for taking control of your health.

There are several lifestyle changes that can help prevent and control high blood pressure. Among these is the

importance of maintaining a healthy weight, since being overweight significantly increases blood pressure. In some cases, losing just a few pounds has been shown to help lower blood pressure. Regular physical activity — anything from taking the stairs instead of the elevator to going for a brisk walk each day — is also very impor-

tant. Ask your doctor exactly how much exercise you should be doing each day.

Limiting salt intake can also help in lowering blood pressure, as can limiting consumption of alcohol. In general, men should limit themselves to at most two alcoholic drinks a day, while women should consume no more than one. Smoking should also be avoided. In addition, reducing daily stress also helps in lowering blood pressure. Eating a healthy diet is also important and failing to do so will effectively undermine any of your other efforts.

There are also several drug treatment options for hypertension that you can ask your doctor about. There are five main groups of drugs that may be helpful in treating your hypertension:

- ACE inhibitors work by limiting the effect of chemicals that narrow blood vessels, allowing for easier passage of blood and lower blood pressure.
- Angiotensin II receptor blockers (ARBs) are similar to ACE inhibitors, and cut down on the chemicals in your body that narrow your blood vessels.
- Diuretics work by helping your body expel excess water and salt, effectively lowering blood pressure by safely lowering the volume of fluid in your body.
- Beta blockers can be used to reduce the effect of adrenaline on your heart, which decreases the amount of work your heart has to do and effectively lowers blood pressure.
- Calcium channel blockers, which widen blood vessels, are another commonly prescribed option.

All of these drug treatment options must be considered carefully with your doctor before they are employed.

Talking with your doctor about your particular risk factors and working with your doctor to develop a plan for maintaining a healthy lifestyle could be lifesaving conversations.

The sad statistics on stroke

Roughly 700,000 people in the United States have a stroke every year and one in every three adults have high blood pressure, or hypertension. Minorities suffer from strokes and hypertension at a significantly greater rate than their white counterparts. In a 2004 study, the American Heart Association reported that 2.4 percent of white males suffer from a stroke each year, versus 4.1 percent of all black males, and about 3 percent of all Mexican American and Hispanic males. The report also found that 31.9 percent of white females have high blood pressure, compared to nearly one in every two black females. Most striking is that the mortality rate of black males who experience a stroke is 73.9 percent, in contrast to 48.1 percent for white males.

There are two types of stroke. The more common is called an ischemic stroke and occurs when a blood clot impedes the flow of blood in an artery feeding the brain. Often the clot comes from another part of the body, such as the heart, and travels through the bloodstream to the brain, cutting off the blood supply to a part of the brain. These clots usually form as a result of too many fatty deposits and too much cholesterol in the blood. The second, less common, type of stroke is called a hemorrhagic stroke and occurs when a blood vessel in the brain bursts and leaks into the brain. This is usually a direct result of high blood pressure or weak blood vessel walls.

Occurrence of stroke is most directly related to high blood pressure, also known as hypertension. The risk factors of high blood pressure include family history of high blood pressure, being overweight or obese, diabetes, excessive drinking, and lack of physical activity and exercise. According to the American Heart Association, Americans of all racial backgrounds report deficient rates of participation in physical activity. Obesity also continues to be a serious national problem in 73.3 percent of black adults, 73.8 percent of Mexican American adults, and 64.3 percent of white adults.

The prevalence of risk factors for stroke and high blood pressure in minority communities makes it especially important for members of those communities to be aware of methods for decreasing their risks. To prevent high blood pressure it is important to live a healthy lifestyle, paying attention to diet and exercising on a regular basis. Diets should be low in sodium, fat and cholesterol, and individuals should consult their doctor about an appropriate exercise regimen. In addition, it is important to manage stress, another major factor in raising blood pressure. Experts also advise getting regular cholesterol and blood pressure checks and discussing with a doctor the possibility of medications that can lower both factors. These lifestyle changes require a lifelong commitment.

Good health takes more than a stroke of luck.

When it comes to high blood pressure, a contributing risk factor for stroke, your family genes are only part of the story. Lifestyle factors—including diet, exercise, and stress—can play a much greater role. That's good news, because it means you have the power to help improve your health and even extend your life.

Ask your doctor about things you can do to help prevent or control high blood pressure. It could be a lifesaving conversation.



MASSACHUSETTS

Blue Cross Blue Shield of Massachusetts is an Independent Licensee of the Blue Cross and Blue Shield Association

Stroke Prevention

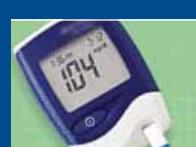
The good news is that stroke is largely preventable through lifestyle change and medications.



Know your blood pressure.
If it is high, work with your doctor to keep it under control.



Check your cholesterol level.



If you have diabetes, learn how to manage it.



Don't smoke.



Maintain a healthy weight.



Exercise regularly.



Follow a healthy diet.
Eat foods that are high in fiber and low in fat and salt.



Drink alcohol in moderation, if at all.

Stroke

Questions & Answers

1. Why are strokes more common in blacks?

Blacks are at greater risk of stroke because they are more likely than other groups to have high blood pressure and diabetes, both major risk factors for stroke. High blood pressure can weaken and damage blood vessels in and around your brain, making them more likely to rupture (hemorrhage). When you have diabetes, your body can't handle sugar (glucose) appropriately, and also can't process fats efficiently. This can lead to atherosclerosis, or blockage of arteries to the brain, which can then lead to (ischemic) stroke.

2. Why are obesity and inactivity risk factors for stroke?

Being overweight or obese, and being inactive, increases your chance of developing high blood pressure, heart disease, atherosclerosis and diabetes — all of which increase your risk of a stroke. These conditions also lead to high cholesterol, which may increase your risk of atherosclerosis, which clogs your arteries. Exercise can lower your blood pressure, lower your cholesterol and improve the overall health of your blood vessels and heart. It also helps you lose weight, control diabetes and reduce stress.

3. Why does sickle cell anemia increase the risk for stroke?

Sickle cell disease, which is common in blacks, is a red blood cell disorder. Normal blood cells are round like doughnuts and flexible. They squeeze through small blood vessels to deliver oxygen to the body's tissues. In sickle cell anemia, the red blood cells are curved and shaped like a sickle, a farm tool used to cut wheat. The sickled cells tend to stick to and damage the inner wall of blood vessels and clog the flow of the blood. In the brain, this can cause a stroke.

4. Do women have a higher risk for stroke than men?

Each year, nearly 375,000 women suffer from stroke, and nearly one-third of female stroke victims will die as a result. More women suffer stroke annually than men, and a greater percentage of women stroke victims die compared to men. The risk of stroke is higher among women who take birth control pills, especially among smokers and those older than 35. However, today's low-dose pills carry a much lower risk than their earlier counterparts. Hormone therapy for menopause also carries a slightly increased risk of stroke.

5. Why do strokes differ from person to person?

Strokes differ from person to person depending on what area of the brain has been starved of blood and damaged. A stroke in the left side of the brain can leave a person with weakness on the right side, speech and language problems, slow and cautious behavior, and memory loss. A stroke in the right side of the brain can leave a person with weakness on the left side, spatial and perceptual difficulties, quick and impulsive behavior, and memory loss.

Maria Pamel Janairo of the Disparities Solutions Center assisted in the preparation of these responses.

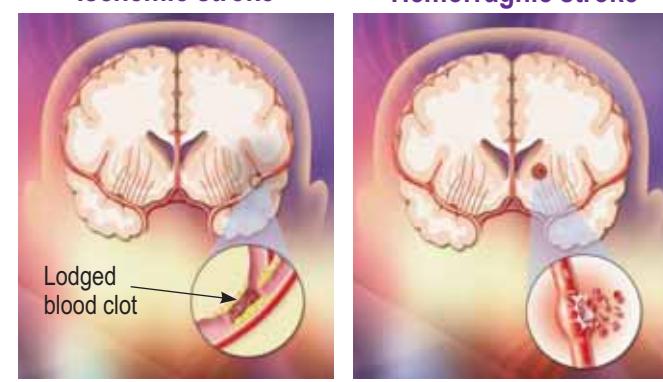


Joseph R. Betancourt, M.D.
Director of the Disparities
Solutions Center, Massachusetts
General Hospital

Anatomy of a stroke

Just as arteries in the heart become clogged and result in a heart attack, arteries in the brain can become clogged and lead to a "brain attack," or stroke. Ischemic strokes, the most common type, occur when blood vessels feeding the brain become clogged, preventing the normal flow of blood. The carotid arteries in the neck are a major source of blood to the brain.

In hemorrhagic strokes, the blood vessels in the brain burst. In both types of stroke, the brain is robbed of much needed oxygen and nutrients, and if left untreated, can cause irreparable damage.



Reprinted with permission © National Stroke Association

RISK FACTORS

Risk factors are characteristics that can increase your chance of stroke. Some risk factors cannot be changed.

- **Age** – Although a stroke can occur at any age, your risk of stroke increases as you get older.
- **Gender** – Although women have a slightly higher incidence of stroke, they are more likely to die of stroke than are men.
- **Family or individual history** – Your risk of stroke is higher if a parent or sibling has had a stroke. Also, you are at higher risk if you have already had a stroke or TIA, a "mini-stroke."
- **Race** – Blacks are at greater risk, partly due to a higher incidence of hypertension. Also, blacks can suffer strokes at an earlier age.

Other risk factors can be controlled through screening, medicine, and lifestyle changes.

- **High blood pressure** – the most common controllable cause of stroke
- **High cholesterol**
- **Heart disease***
- **Atrial fibrillation** – caused when the upper chambers of the heart beat erratically
- **Diabetes***
- **Obesity and poor diet***
- **Lack of exercise***
- **Sickle cell anemia**
- **Cigarette smoking***

* See previous issues of Be Healthy at www.baystatebanner.com/behealthy for additional information on these risk factors.

Healing the racial divide in health care

Dr. Joseph Betancourt wrote the book on health care disparities. Now he's trying to erase them.



When Joseph Betancourt was in medical school, he often saw children acting as interpreters for family members who did not speak English. Originally from Puerto Rico, and as the only Spanish-speaking medical student on his team, he had to interpret for hospitalized patients.

Years later, Joseph Betancourt, MD, MPH, co-authored a landmark study by the Institute of Medicine that found striking inequities in health and health care for racial and ethnic minorities across the US.

When Massachusetts General Hospital president Peter Slavin, MD created the Disparities Solutions Center at MGH, he chose Dr. Betancourt to lead it. "It is time to move from diagnosing the problem to treating it," said Dr. Slavin.

The MGH Center is the first hospital-based Disparities Solutions Center in the country to move disparities beyond research into policy and practice. It has \$3 million in support from MGH and Partners HealthCare.

The Disparities Solutions Center will:

- advise MGH in its efforts to identify and address racial and ethnic disparities in care;
- develop and evaluate customized solutions to

eliminate disparities in the health care community in Boston and beyond;

- educate, train and expand the number of leaders working to end disparities nationwide.

Perhaps most important, the center will transfer what it learns to hospitals and health centers, community groups, insurers, medical schools, educators, government officials, and of course, physicians

and nurses across the country.

One of the Center's first efforts is the new Diabetes Management Program at the MGH Chelsea Health Care Center, where more than 50 percent of patients are Latino. Latinos are more likely than whites to die from diabetes complications including kidney failure, blindness, heart disease, and amputations.

MGH Chelsea health professionals will help patients control their diabetes, get regular screenings, and prevent complications through telephone outreach, individual coaching, and group education sessions in English — and Spanish.

Translating talk into action is what Dr. Betancourt has been doing all his life.

More information at Boston Public Health Commission at www.bphc.org

The awful aftermath

Stroke is the third leading cause of death in this country and the leading cause of adult disability. Unlike many other serious illnesses, a stroke can leave visible and long-term changes to the victim's body, behavior and ability to communicate. After a stroke, the survivor often experiences:

1. **Weakness or paralysis on one side of the body**
2. **Numbness or decreased sensation on the affected side**
3. **Problems in speaking or understanding speech**
4. **Difficulty in self-care activities**
5. **Problems with thinking, judgment and memory**
6. **Inability to control emotions, e.g. inappropriate crying or laughing**
7. **Depression**
8. **Recurrent stroke** – about 25 percent of people who recover from a first stroke will have another stroke within five years

Source: National Institute of Neurological Disorders and Stroke

BRIGHAM AND WOMEN'S HOSPITAL

PARTNERS
HEALTH CARE
A charitable non-profit organization

MASSACHUSETTS
GENERAL HOSPITAL

FREE SCREENINGS FOR STROKE, DIABETES, HEART DISEASE AND OBESITY

Date	Institution	Address	Time	Tel. No.
Fridays	Family Van	Uphams Corner	9 AM - 12 noon	617-442-3200
		Mattapan Square	1:30 - 4 PM	
Mondays	Family Van	Dudley Square	1:30 - 4:30 PM	617-442-3200
		Fields Corner	9 AM - 12 noon	617-442-3200
Tuesdays	Family Van	Codman Square	9 AM - 12 noon	617-442-3200
		Grove Hall	1:30 - 4 PM	
5/11	Dimock Community Health Center	Body & Soul, 55 Dimock Street, Roxbury	11 AM - 4 PM	617-442-8800 x1736
5/12	Boston Public Health Commission	Boston Senior Games U Mass/Boston, 100 Morrissey Blvd., Dorchester	9 AM - 2 PM	617-534-2295
5/16	Boston Public Health Commission	Mozart Park, Centre Street, Jamaica Plain	1 - 4 PM	617-534-2295
5/19	Boston Medical Center Outreach	New Hope Baptist Church 740 Tremont Street, Boston	9 AM - 1 PM	617-638-6138
5/29	Boston Public Health Commission	Healthworks Foundation Fitness Center, 90 Cushing Ave., Dorchester	11 AM - 2 PM	617-534-2295

Jenkins

continued from page 1

breaks. Sometimes a clot breaks free from another part of the body — typically the heart or the arteries in the neck — and moves through the blood stream to the brain.

Ischemic strokes, the most common type, are the result of blood clotting. One of the biggest culprits is atherosclerosis — fatty deposits, or plaque. Over time the plaque can grow large enough to narrow the artery, causing the blood to flow abnormally — if at all.

The second type is called hemorrhagic strokes and occurs when the walls of a weakened artery rupture and causes bleeding within the cranial cavity. These kinds of strokes are often triggered by high blood pressure.

In both types of stroke, the brain is robbed of much-needed oxygen and nutrients, and if left untreated, can cause irreparable damage.

It is estimated that almost 2 million brain cells die each minute a stroke is untreated. If the damage is severe, the parts of the body that are controlled by the affected part of the brain no longer function correctly.

Very often, the symptoms are mild and last for only a short period of time, usually less than five minutes, but can persist up to 24 hours. This is called a transient ischemic attack, or TIA, commonly referred to as a "mini-stroke."

The symptoms may be minor and disappear, but TIAs are often repeated and can be the harbinger of a bigger stroke at a later time.

According to the National Stroke Association, the likelihood of having another stroke within three months following a TIA is 11 percent. It's 20 percent within two years.

By all accounts, Jenkins wasn't having a minor stroke last year on September 30.

He was 68 years old at the time, and was watching television when he felt the right side of his body, including both his arm and leg, just getting "weaker and weaker."

He thought it would just go away and decided to go to sleep.

But he couldn't sleep. His right side was still deteriorating, and before he could do anything about it, he had fallen off the couch, barely able to call for help.

It's a miracle that his friend heard the

thud and Jenkins' slurred cries for help. She called 911.

He was quickly taken to Brigham and Women's Hospital. It's all a blur to him now, but he was there for about a week and underwent several procedures, including an angioplasty to open the arteries in his neck.

But treating Jenkins was difficult, largely because he couldn't remember when he started having weakness in his side. The timing question is not a trivial matter.

If the stroke is caused by a clot, it may benefit from the administration of a clot buster called tissue plasminogen activator (tPA), which breaks up the clot in the brain and may reduce permanent disability.

The treatment is time-sensitive. tPA must be administered within three hours of the onset of symptoms.

It is estimated that only about 5 percent of stroke victims arrive at the emergency department in time to receive tPA.

Not all strokes benefit from the treatment.

The Massachusetts Department of Public Health recognized the need for a system of emergency care for the diagnosis and emergency treatment of strokes and has already designated 69 hospitals as Primary Stroke Service Hospitals across the state.

These hospitals have a multidisciplinary team available 24 hours a day, seven days a week to offer immediate diagnostic and therapeutic services for acute stroke.

"Every minute counts," says Dr. Schwamm. "The sooner one realizes that they are having stroke, the better it is to get to a hospital. tPA doesn't work if administered after three hours. But it is twice as effective if given within the first hour compared to at 3 hours."

Quite naturally, Jenkins would live his life a little differently, knowing what he now knows about strokes.

But the one thing he still has trouble understanding is that his perception of a stroke was much different from the reality.

It is a point that underscores the mysteries associated with stroke.

When he was watching television that night and his body was starting to break down, he remembers one thing very clearly.

He was never in pain.

Stroke Risk Scorecard



National Stroke Association

Check off all that apply to you.

Risk Factor	High Risk	Caution	Low Risk
Blood Pressure	>140/90 or I don't know <input type="checkbox"/>	120-139/80-89 <input type="checkbox"/>	<120/80 <input type="checkbox"/>
Cholesterol	>240 or I don't know <input type="checkbox"/>	200-239 <input type="checkbox"/>	<200 <input type="checkbox"/>
Diabetes	Yes <input type="checkbox"/>	Borderline <input type="checkbox"/>	No <input type="checkbox"/>
Smoking	I still smoke <input type="checkbox"/>	I'm trying to quit <input type="checkbox"/>	I am a non-smoker <input type="checkbox"/>
Atrial Fibrillation	I have an irregular heartbeat <input type="checkbox"/>	I don't know <input type="checkbox"/>	My heartbeat is not irregular <input type="checkbox"/>
Diet	I am overweight <input type="checkbox"/>	I am slightly overweight <input type="checkbox"/>	My weight is healthy <input type="checkbox"/>
Exercise	I am a couch potato <input type="checkbox"/>	I exercise sometimes <input type="checkbox"/>	I exercise regularly <input type="checkbox"/>
I have stroke in my family	Yes <input type="checkbox"/>	Not sure <input type="checkbox"/>	No <input type="checkbox"/>
TOTAL (number of check marks)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

If your RED score is 3 or more, please ask your doctor about stroke prevention right away. If your yellow score is 4-6, you're off to a good start. Keep working on it! If your green score is 6-8, congratulations! You're doing very well at controlling your risk for stroke!

This scorecard is not meant to take the place of consultation with your doctor. Talk to your doctor about appropriate screenings for your age, gender, race, and risk factors.

Source: National Stroke Association

A simple test

It is sometimes difficult to determine whether someone is having a stroke. Here are three simple things to ask the person to do to help you make a determination.

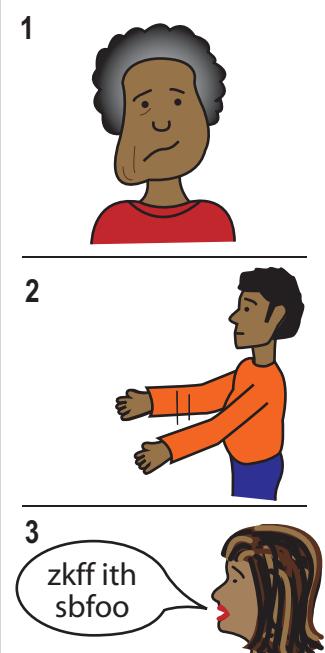
1. Ask the person to smile. Does only one side of the face turn up?
2. Ask the person to raise both arms to shoulder level. Can he raise both arms? Does one arm drift downward?
3. Ask the person to repeat a simple sentence, such as "The ball is red." Does he slur his words? Is he able to repeat the sentence at all? Does he appear to understand what you are requesting?

If one or more of these symptoms occur suddenly, it is possible that the person is having a stroke.

Call 911.

Take note of the time and tell the doctor when the symptoms began.

Source: National Stroke Association



Willoughby

continued from page 1

Massachusetts General Hospital. "If you have them, make sure they are controlled."

Dr. Schwamm also warned that managing risk factors is not the same thing as eliminating chronic diseases such as stroke.

"Even if the risk factors are controlled," Dr. Schwamm says, "it's not the same thing as having zero risks. Patients must plan their lives as if the risk factors are very much present in their everyday lives. These conditions require constant monitoring and medication to keep stroke and heart disease at bay."



Gerald Willoughby had a disorder of his adrenal glands, which caused his high blood pressure, and eventually resulted in a stroke. He continues to take medication to keep his hypertension in check.