Heart *The Basics of Heart Disease*

Heart disease is the number 1 killer of women. Whatever your age, you need to take action to protect your heart. People can have different kinds of heart disease. The most common kind of heart disease is coronary artery disease (CAD). You can get this disease when your heart doesn't get enough blood. If your heart doesn't get enough blood, you can have a heart attack.

Disease Statistics for Women

- Cardiovascular disease (CVD) ranks as America's No. 1 killer.
- 79.4 million people in the United States have some form of cardiovascular disease (CVD).
- Cardiovascular disease includes stroke, high blood pressure, congestive heart failure, birth heart defects, hardening of the blood vessels, and other diseases of the circulatory system.
- One in three female adults have some form of cardiovascular disease.
- Females represent 52.8 percent of deaths from cardiovascular disease.
- In the United States in 2004, all cardiovascular diseases combined claimed the lives of 459,096 females while all forms of cancer combined killed 267,058 females. Breast cancer killed 40,954 females; lung cancer killed 68,461 females.
- 49 percent of black/African-American women have cardiovascular disease.
- 35 percent of non-Hispanic white women have cardiovascular disease.
- 34.4 percent of Mexican-American women have cardiovascular disease.

Sources: 2004 Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), and the National Heart, Lung, and Blood Institute NHLBI).

The Basics of Stroke

Stroke is the number 3 killer of women. Stroke is also a major cause of serious, long-term disability for women. A stroke occurs when the blood supply to the brain is cut off. When that happens, the brain doesn't get the oxygen and nutrients it needs. Then certain brain cells are injured or die

A stroke happens fast. The most common signs of a stroke are sudden:

- numbness or weakness of the face, arm, or leg, especially on one side of your body
- trouble seeing in one or both eyes
- trouble walking, dizziness, or loss of balance or coordination
- confusion or trouble speaking or understanding speech

If you have any of these symptoms or see anyone with these symptoms, call 911 right away. Every minute counts!

If you're having a stroke, you may not be able to call 911. In fact, you may not even be able to move or talk! In most stroke cases, it's a family member, coworker, or other bystander who calls 911. That's why everyone should become familiar with the signs of a stroke

Risk factors and causes of heart attacks

The American Heart Association (AHA) estimates that in 2007, approximately 700,000 people in the United States will have a heart attack for the first time. According to the AHA, episodes of angina based on age, gender and race are as follows:

Age	Gender/Race	Annual Rates of New Heart Attacks* per 1,000
65-74	Male, non black	28.3
	Male, black	22.4
	Female, non black	14.1
	Female, black	15.3
75–84	Male, non black	36.3
	Male, black	33.8
	Female, non black	20.0
	Female, black	23.6
85+	Male, non black	33.0
	Male, black	39.5
	Female, non black	22.9
	Female, black	35.9

*Source: AHA's *2007 Heart and Stroke Statistical Update*

Beyond genetics, a number of other risk factors may serve to either promote atherosclerosis or interrupt the disease process. Risk factors can be either controllable (e.g., diet, exercise and smoking) or uncontrollable (e.g., age, gender). To date, researchers have found that:

- Patients with unstable plaque deposits are at greater risk for a heart attack than those with compact, calcified plaque deposits. Some researchers have tried to develop methods to determine the degree of calcification, which may help predict the risk of heart attack.

- The risk of plaque rupture appears to increase in the morning hours, which may explain why more heart attacks occur between 6 a.m. and noon.

- People with chronic kidney disease tend to have high blood pressure, which places added stress on waste-removing filters in the kidney (*nephrons*). Uncontrolled high blood pressure also contributes to heart disease through a process known as remodeling, where there is enlargement and weakening of the heart's left ventricle (left ventricular hypertrophy) and increased risk of heart attack. Research has found that heart attack survival decreases even with mild to moderate kidney disease.

- People with high levels of a certain type of lipoprotein called Lp(a) in the blood may be at increased risk of heart attack. Research has found that high Lp(a) levels may increase a person's risk of heart attack over a 10-year period by as much as 70 percent.

- People with metabolic syndrome have been found to have double the risk for heart attack and stroke when compared to people without the syndrome. The characteristics of metabolic syndrome are elevated fasting blood glucose levels, abdominal obesity, high LDL ("bad") cholesterol levels, high triglyceride levels and high blood pressure.

- Researchers have found a connection between infection and increased risk of heart attack. Infectious diseases, such as influenza, destabilize plaque and increase risk of plaque rupture. In some studies, influenza vaccines have been shown to reduce the risk of plaque rupture among the elderly, thus reducing the risk of heart attack and stroke.

Effects of stress on heart health

The "fight or flight" response involves a complex series of reactions between mind and body. This is a normal and essential process, to a point. For our ancestors, the stressors were largely physical, such as the daily challenge to survive. The relatively brief surges in the body's metabolism were necessary to hunt, fight, evade a predator or seek shelter.

In contrast, modern stressors are typically emotional, be they positive (preparing for big event) or negative (e.g., bereavement, divorce, financial insecurities). As such, they tend to be chronic, causing a continued stress response that can impact on cardiovascular health either directly or indirectly.

The stress response includes a number of physical changes that can affect cardiovascular health, including:

- A faster heartbeat can make the person vulnerable to certain types of chest pain (angina) and abnormal heart rhythms (arrhythmias).

- Stickier or thicker blood due to greater clotting ability can raise the risk of blood clots.

- Cardiac ischemia (a condition in which the heart does not get enough blood) is sometimes seen in response to stress, because stress causes the blood vessels to constrict abruptly. This decreases the blood flow to the heart, which over time can significantly increase the risk of death from a cardiovascular event.

- Glucose and fatty acids are converted to cholesterol if not used as energy during the stress response. This can promote hardening of the arteries (atherosclerosis). The process of atherosclerosis may also be hastened by
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- frequent increases in blood pressure, which can thicken the walls of the blood vessels. As a result, stress has been linked with an increased risk of heart attack and stroke.

- The sustained presence of stress hormones keeps the body in a state of tension, which can weaken the cardiovascular system over time and increase the likelihood of developing high blood pressure (*hypertension*).

In addition, chronic stress has been linked to a condition called *insulin resistance syndrome*. This syndrome is characterized by an inability to convert food into usable energy and, consequently, seems to interfere with the body's ability to dissolve blood clots. As a result, the body is more at risk for heart disease and other cardiovascular conditions.

People with driven or overcommitted personalities may have chronic stress and, therefore, may be at greater risk. Over time, this chronic stress may come to feel "normal" to some people, but the body is under stress all the same.

Researchers have recently discovered that some people can experience stress without realizing it. Participants in a study took a mental test designed to increase their stress level. Some of the participants did not report feeling stressed, and their pulse level remained the same. However, their blood pressure increased significantly, and researchers found they had a six-fold increase in the risk of heart attack or other severe coronary event.

Managing stress

Managing stress begins with identifying the stressor(s). A stressor is the cause of our stress, and it can be both good and bad. For example, starting a new job is usually a positive experience – and one that often causes stress while settling into new responsibilities.

In this example, the stressor is obvious. At other times, individuals may feel stressed without knowing why. The better people understand the stressors that affect them, the more effective they will be in controlling them.

It may be helpful to keep a daily log of activities and jot down the events that trigger stress reactions. After a week, examine the log for any patterns. If no pattern to stress is apparent, counseling may help identify the hidden stressors in one's life.

A person can use the following questions as a guide to finding a pattern to stress:

- *What major changes have occurred in my life recently*? These include illness, moving, changing jobs, unemployment, beginning or ending a relationship

- and life cycle transitions (marriage, pregnancy and raising children, loss of a loved one).

- *Are there time pressures*? Poor time management, in professional and personal lives, is a major cause of stress. Often, people sacrifice personal time to fulfill obligations to family and work. Sooner or later, the imbalance in our lives will catch up and cause feelings of pressure and stress.

- *How intense is the stress*? The frequency, intensity and duration of our stress may indicate its severity and cause. If stress levels skyrocket during work and drops when going home, the cause is obvious. If there is a nagging anxiety all the time, the stress may have a more subtle cause.

- *Is lifestyle affecting the ability to handle stress*? Many people use alcohol or drugs to relieve stress, but they may in fact be a cause of stress. Lack of sleep is another cause of stress. Sleep helps our bodies to recover from the day's events and challenges. Staying up late or frequent interruptions interferes with the ability to cope with stress. Lack of exercise may contribute to stress as well. Exercise has been shown to decrease the amount of stress hormones that are released in response to stress.

- *Are eating habits a factor in stress*? A balanced diet high in vitamin C and low in caffeine and sugar can help reduce stress. Conversely, a poor diet and erratic eating schedule can put the body under physical stress, making it harder for someone to deal with stressful situations.

- *Is physical health a factor in stress*? Pain and discomfort are both stressors. Illness and injury put the body under physical stress, which is a cause for emotional stress. Emotional stress, incidentally, is often perceived as a physical discomfort, such as stomach cramps.

- *How is stress being dealt with*? The wrong coping mechanism may be ineffective or even contribute to stress. Negative coping methods to avoid include:

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    - Criticizing one's self or blaming others
    - Yelling
    - Eating too much or too little
    - Smoking cigarettes
    - Abusing alcohol or drugs
    - Being isolated from friends and family
    - Acting aggressively or violently
    - Focusing on other people's problems
    - Avoiding one's own problems

Stress Impact Quiz

1) Question: All types of stress are uncomfortable and harmful.

- ☐ True
- ☐ False

2) Question: Which physical conditions have been associated with chronic stress?

- ☐ Ulcers, colitis attacks and diarrhea
- ☐ Angina attacks and heart attacks
- ☐ Tension headaches and muscle spasms
- ☐ All of the above

3) Question: Without realizing it, someone experiencing severe stress tends to:

- ☐ Take shorter, shallower breaths
- ☐ Take longer, deeper breaths
- ☐ Get the hiccups at least once a day
- ☐ Relax his or her muscles

4) Question: Acute stress is more likely to occur following what?

- ☐ Financial problems
- ☐ A sudden, loud noise
- ☐ Unsatisfactory work environment
- ☐ Caring for a sick relative

5) Question: People experiencing what should seek medical assistance for their stress?

- ☐ Pounding heartbeat
- ☐ Sweaty palms
- ☐ Dry mouth
- ☐ Increased energy

6) Question: What anxiety disorder may occur due to the stress caused by a crime or natural disaster?

- Obsessive–compulsive disorder
- Post–traumatic stress disorder
- Social anxiety disorder
- Panic disorder

7) Question: People who are tough or emotionally distant adapt to stress better than other people.

- True
- False

8) Question: Which is a healthy way to cope with stress?

- Drinking alcohol
- Smoking
- Eating junk food
- Exercising
- None of the above

9) Question: "Hidden stress" may be characterized how?

- Elevated pulse, normal blood pressure, without feeling stressed
- Elevated blood pressure, normal pulse, without feeling stressed
- Elevated blood pressure and pulse, without feeling stressed
- Normal blood pressure and pulse, but feeling stressed