

# Acute Emotional Stress and the Heart

Experiencing emotional or physical stress causes an increase in heart rate, elevation of blood pressure, and release of stress hormones. All these result in a greater workload for the heart, which can be dangerous. Stress can cause a heart attack, sudden cardiac death, heart failure, or **arrhythmias** (abnormal heart rhythms) in persons who may not even know they have heart disease. Individuals with congestive heart failure, coronary heart disease, known arrhythmias, or other heart or blood vessel diseases should avoid emotional stress whenever possible and learn to manage the effects of stress. Excessive physical exertion and emotional stress may cause problems in both men and women, but women seem to be particularly susceptible to developing heart problems in the face of emotional stress. Ask your doctor about any limitations on physical activity or vigorous exercise if you have heart disease.

The July 18, 2007, issue of *JAMA* includes an article about acute emotional stress and its effects on the heart.

## EFFECTS OF STRESS ON THE HEART

- Increased heart rate
- Increased blood pressure
- Release of **catecholamines** (stress hormones, including epinephrine, which is also known as adrenaline) from the adrenal glands
- Increased oxygen demand on the body (temporarily higher metabolic rate)
- Lower threshold for abnormal heart rhythms including ventricular tachycardia, ventricular fibrillation, and atrial fibrillation. Electrical instability in the heart makes it easier for these abnormal heart rhythms to occur.
- Spasm of **coronary** (heart) blood vessels, leading to **ischemia** (inadequate blood flow to the heart)

## PREVENTING AND MANAGING STRESS

- Avoid situations that you know will cause stress.
- Incorporate some type of exercise into each day.
- Eat a healthful diet rich in fruits, vegetables, and whole grains.
- Do not smoke.
- Use alcohol only in moderation.
- Quiet time, meditation, prayer, reading, yoga, and relaxation techniques (including biofeedback) can help in stress management.
- Family and friends can provide needed support. Talking about problems can help to reduce conflict and express feelings.
- If you have heart disease, your doctor may prescribe a **beta-blocker**, a type of medication to help lower the heart rate and control abnormal heart rhythms.

## FOR MORE INFORMATION

- American Heart Association  
[www.americanheart.org](http://www.americanheart.org)
- National Heart, Lung, and Blood Institute  
[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

## INFORM YOURSELF

To find this and previous JAMA Patient Pages, go to the Patient Page link on JAMA's Web site at [www.jama.com](http://www.jama.com). Many are available in English and Spanish. A Patient Page on cardiac arrest was published in the January 4, 2006, issue; one on risk factors for heart disease was published in the August 20, 2003, issue; one on automated external defibrillators was published in the August 9, 2006, issue; and one on implantable cardioverter-defibrillators was published in the May 2, 2007, issue.

Sources: American Heart Association; National Heart, Lung, and Blood Institute



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