

# Depression and

# Heart Disease

## **Symptoms of Depression**

- **Persistent sad, anxious, or "empty" mood**
- **Feelings of hopelessness, pessimism**
- **Feelings of guilt, worthlessness, helplessness**
- **Loss of interest or pleasure in hobbies and activities that were once enjoyed, including sex**
- **Decreased energy, fatigue, being "slowed down"**
- **Difficulty concentrating, remembering, making decisions**
- **Insomnia, early-morning awakening, or oversleeping**
- **Appetite and/or weight changes**
- **Thoughts of death or suicide or suicide attempts**
- **Restlessness, irritability**

***If five or more of these symptoms are present every day for at least two weeks and interfere with routine daily activities such as work, self-care, and childcare or social life, seek an evaluation for depression.***

### **For more information about depression and research on mental disorders, contact:**

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Depression can strike anyone. However, research over the past two decades has shown that people with heart disease are more likely to suffer from depression than otherwise healthy people, and conversely, that people with depression are at greater risk for developing heart disease.<sup>1</sup> Furthermore, people with heart disease who are depressed have an increased risk of death after a heart attack compared to those who are not depressed.<sup>2</sup> Depression may make it harder to take the medications needed and to carry out the treatment for heart disease. Treatment for depression helps people manage both diseases, thus enhancing survival and quality of life.

Heart disease affects an estimated 12.2 million American women and men and is the leading cause of death in the U.S.<sup>3</sup> While about 1 in 20 American adults experiences major depression in a given year, the number goes to about 1 in 3 for people who have survived a heart attack.<sup>4,5</sup>

Depression and anxiety disorders may affect heart rhythms, increase blood pressure, and alter blood clotting. They can also lead to elevated insulin and cholesterol levels. These risk factors, with obesity,

form a group of signs and symptoms that often serve as both a predictor of and a response to heart disease. Furthermore, depression or anxiety may result in chronically elevated levels of stress hormones, such as cortisol and adrenaline. As high levels of stress hormones are signaling a “fight or flight” reaction, the body's metabolism is diverted away from the type of tissue repair needed in heart disease.

Despite the enormous advances in brain research in the past 20 years, depression often goes undiagnosed and untreated. Persons with heart disease, their families and friends, and even their physicians and cardiologists (physicians specializing in heart disease treatment) may misinterpret depression's warning signs, mistaking them for inevitable accompaniments to heart disease. Symptoms of depression may overlap with those of heart disease and other physical illnesses. However, skilled health professionals will recognize the symptoms of depression and inquire about their duration and severity, diagnose the disorder, and suggest appropriate treatment.

## **Depression Facts**

Depression is a serious medical condition that affects thoughts, feelings, and the ability to function in everyday life. NIMH-sponsored research estimates that almost 10 percent of American adults, or about 19 million people, experience some form of depression every year.<sup>4</sup> Although available therapies alleviate symptoms in over 80 percent of those treated, less than half of people with depression get the help they need.<sup>4,6</sup>

Depression results from abnormal functioning of the brain. The causes of depression are currently a matter of intense research. An interaction between genetic predisposition and life history appear to determine a person's level of risk. Episodes of depression may then be triggered by stress, difficult life events, side effects of medications, or other environmental factors. Whatever its origins,

depression can limit the energy needed to keep focused on treatment for other disorders, such as heart disease.

## **Heart Disease Facts**

Heart disease includes two conditions called angina pectoris and acute myocardial infarction (“heart attack”). Like any muscle, the heart needs a constant supply of oxygen and nutrients that are carried to it by the blood in the coronary arteries. When the coronary arteries become narrowed or clogged and cannot supply enough blood to the heart, the result is coronary heart disease. If not enough oxygen-carrying blood reaches the heart, the heart may respond with pain called angina. The pain is usually felt in the chest or sometimes in the left arm and shoulder. (However, the same inadequate blood supply may cause no symptoms, a condition called silent angina.) When the blood supply is cut off completely, the result is a heart attack. The part of the heart that does not receive oxygen begins to die, and some of the heart muscle may be permanently damaged.

Chest pain (angina) or shortness of breath may be the earliest signs of heart disease. A person may feel heaviness, tightness, pain, burning, pressure, or squeezing, usually behind the breastbone but sometimes also in the arms, neck, or jaws. These signs usually bring the person to a doctor for the first time. Nevertheless, some people have heart attacks without ever having any of these symptoms.

Risk factors for heart disease other than depression include high levels of cholesterol (a fat-like substance) in the blood, high blood pressure, and smoking. On the average, each of these doubles the chance of developing heart disease. Obesity and physical inactivity are other factors that can lead to heart disease. Regular exercise, good nutrition, and smoking cessation are key to controlling the risk factors for heart disease.

Heart disease is treated in a number of ways, depending on how serious it is. For many people, heart disease is managed with lifestyle changes and medications, including beta-blockers, calcium-channel blockers, nitrates, and other classes of drugs. Others with severe heart disease may need surgery. In any case, once heart disease develops, it requires lifelong management.

## **Get Treatment for Depression**

Effective treatment for depression is extremely important, as the combination of depression and heart disease is associated with increased sickness and death. Prescription antidepressant medications, particularly the selective serotonin reuptake inhibitors, are generally well-tolerated and safe for people with heart disease. There are, however, possible interactions among certain medications and side effects that require careful monitoring. Therefore, people being treated for heart disease who develop depression, as well as people in treatment for depression who subsequently develop heart disease, should make sure to tell any physician they visit about the full range of medications they are taking.

Specific types of psychotherapy, or “talk” therapy, also can relieve depression. Ongoing research is investigating whether these treatments also reduce the associated risk of a second heart attack. Preventive interventions based on cognitive-behavior theories of depression also merit attention as approaches for avoiding adverse outcomes associated with both disorders. These interventions may help promote adherence and behavior change that may increase the impact of available pharmacological and behavioral approaches to both diseases.

Exercise is another potential pathway to reducing both depression and risk of heart disease. A recent study found that participation in an exercise training program was comparable to treatment with an antidepressant medication (a selective serotonin

reuptake inhibitor) for improving depressive symptoms in older adults diagnosed with major depression.<sup>7</sup> Exercise, of course, is a major protective factor against heart disease as well.

Use of herbal supplements of any kind should be discussed with a physician before they are tried. Recently, scientists have discovered that St. John's wort, an herbal remedy sold over-the-counter and promoted as a treatment for mild depression, can have harmful interactions with some other medications. (See the alert on the NIMH Web site: <http://www.nimh.nih.gov/events/stjohnwort.cfm>.)

Treatment for depression in the context of heart disease should be managed by a mental health professional—for example, a psychiatrist, psychologist, or clinical social worker—who is in close communication with the physician providing the heart disease treatment. This is especially important when antidepressant medication is needed or prescribed, so that potentially harmful drug interactions can be avoided. In some cases, a mental health professional that specializes in treating individuals with depression and co-occurring physical illnesses such as heart disease may be available.

While there are many different treatments for depression, they must be carefully chosen by a trained professional based on the circumstances of the person and family. Recovery from depression takes time. Medications for depression can take several weeks to work and may need to be combined with ongoing psychotherapy. Not everyone responds to treatment in the same way. Prescriptions and dosing may need to be adjusted. No matter how advanced the heart disease, however, the person does not have to suffer from depression. Treatment can be effective.

Other mental disorders, such as bipolar disorder (manic-depressive illness) and anxiety disorders, may occur in people with heart disease, and they too can

be effectively treated. For more information about these and other mental illnesses, contact NIMH.

Remember, depression is a treatable disorder of the brain. Depression can be treated in addition to whatever other illnesses a person might have, including heart disease. If you think you may be depressed or know someone who is, don't lose hope. Seek help for depression.

**For more information about heart disease, contact:**

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Web site: <http://www.nhlbi.nih.gov>

**References**

<sup>1</sup>Nemeroff CB, Musselman DL, Evans DL. Depression and cardiac disease. *Depression and Anxiety*, 1998; 8(Suppl 1): 71-9.

<sup>2</sup>Frasure-Smith N, Lesperance F, Talajic M. Depression and 18-month prognosis after myocardial infarction. *Circulation*, 1995; 91(4): 999-1005.

<sup>3</sup>*Morbidity and mortality: 2000 chart book on cardiovascular, lung, and blood diseases*. National Heart, Lung, and Blood Institute, 2000.  
<http://www.nhlbi.nih.gov/resources/docs/00chtbk.pdf>

<sup>4</sup>Regier DA, Narrow WE, Rae DS, et al. The de facto mental and addictive disorders service system. Epidemiologic Catchment Area prospective 1-year prevalence rates of disorders and services. *Archives of General Psychiatry*, 1993; 50(2): 85-94.

<sup>5</sup>Lesperance F, Frasure-Smith N, Talajic M. Major depression before and after myocardial infarction: its nature and consequences. *Psychosomatic Medicine*, 1996; 58(2): 99-110.

<sup>6</sup>National Advisory Mental Health Council. Health care reform for Americans with severe mental illnesses. *American Journal of Psychiatry*, 1993; 150(10): 1447-65.

<sup>7</sup>Blumenthal JA, Babyak MA, Moore KA, et al. Effects of exercise training on older patients with major depression. *Archives of Internal Medicine*, 1999; 159(19): 2349-56.

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