

# Who Is at Risk for Heart Disease?

Certain traits, conditions, or habits may raise your risk for coronary heart disease (CHD). These conditions are known as risk factors. Risk factors also increase the chance that existing CHD will worsen.

Women generally have the same CHD risk factors as men. However, some risk factors may affect women differently than men. For example, diabetes raises the risk of CHD more in women. Also, some risk factors, such as birth control pills and menopause, only affect women.

There are many known CHD risk factors. Your risk for CHD and heart attack rises with the number of risk factors you have and their severity. Risk factors tend to "gang up" and worsen each other's effects.

Having just one risk factor doubles your risk for CHD. Having two risk factors increases your risk for CHD fourfold. Having three or more risk factors increases your risk for CHD more than tenfold.

Also, some risk factors, such as smoking and diabetes, put you at greater risk for CHD and heart attack than others.

More than 75 percent of women aged 40 to 60 have one or more risk factors for CHD. Many risk factors start during childhood; some even develop within the first 10 years of life. You can control most risk factors, but some you can't.

To find out whether you're at risk for CHD, talk with your doctor or health care provider.

## **Risk Factors You Can Control**

### ***Smoking***

Smoking is the most powerful risk factor that women can control. Smoking tobacco or long-term exposure to secondhand smoke raises your risk for CHD and heart attack.

Smoking exposes you to carbon monoxide. This chemical robs your blood of oxygen and triggers a buildup of plaque in your arteries.

Smoking also increases the risk of blood clots forming in your arteries. Blood clots can block plaque-narrowed arteries and cause a heart attack. The more you smoke, the greater your risk for a heart attack.

Even women who smoke fewer than two cigarettes a day are at increased risk for CHD.

## ***High Blood Cholesterol and High Triglyceride Levels***

Cholesterol travels in the bloodstream in small packages called lipoproteins (LI-po-pro-teens). The two major kinds of lipoproteins are low-density lipoprotein (LDL) cholesterol and high-density lipoprotein (HDL) cholesterol.

LDL cholesterol is sometimes called "bad" cholesterol. This is because it carries cholesterol to tissues, including your heart arteries. HDL cholesterol is sometimes called "good" cholesterol. This is because it helps remove cholesterol from your arteries.

A blood test called a lipoprotein panel is used to measure cholesterol levels. This test gives information about your total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides (a type of fat found in the blood).

Cholesterol levels are measured in milligrams (mg) of cholesterol per deciliter (dL) of blood. A woman's risk for CHD increases if she has a total cholesterol level greater than 200 mg/dL, an LDL cholesterol level greater than 100 mg/dL, or an HDL cholesterol level less than 50 mg/dL.

A triglyceride level greater than 150 mg/dL also increases a woman's risk for CHD. A woman's HDL cholesterol and triglyceride levels predict her risk for CHD better than her total cholesterol or LDL cholesterol levels.

## ***High Blood Pressure***

Blood pressure is the force of blood pushing against the walls of the arteries as the heart pumps blood. If this pressure rises and stays high over time, it can damage the body in many ways.

Women who have blood pressure greater than 120/80 mmHg are at increased risk for CHD. (The mmHg is millimeters of mercury—the units used to measure blood pressure.)

High blood pressure is defined differently for people who have diabetes or chronic kidney disease. If you have one of these diseases, work with your doctor to set a healthy blood pressure goal.

## ***Diabetes and Prediabetes***

Diabetes is a disease in which the body's blood sugar level is too high. This is because the body doesn't make enough insulin or doesn't use its insulin properly.

Insulin is a hormone that helps move blood sugar into cells, where it's used for energy. Over time, a high blood sugar level can lead to increased plaque buildup in your arteries.

Prediabetes is a condition in which your blood sugar level is higher than normal, but not as high as it is in diabetes. Prediabetes puts you at higher risk for both diabetes and CHD.

Diabetes and prediabetes raise the risk of CHD more in women than in men. In fact, having diabetes doubles a woman's risk of developing CHD.

Before menopause, estrogen provides women some protection against CHD. However, in women who have diabetes, the disease counters the protective effects of estrogen.

### ***Overweight and Obesity***

The terms "overweight" and "obesity" refer to body weight that's greater than what is considered healthy for a certain height.

The most useful measure of overweight and obesity is body mass index (BMI). BMI is calculated from your height and weight. In adults, a BMI of 18.5 to 24.9 is considered normal. A BMI of 25 to 29.9 is considered overweight. A BMI of 30 or more is considered obese.

You can use the National Heart, Lung, and Blood Institute's (NHLBI's) online BMI calculator to figure out your BMI, or your doctor can help you.

Studies suggest that where extra weight occurs on the body may predict CHD risk better than BMI. Women who carry much of their fat around the waist are at greatest risk for CHD. These women have "apple-shaped" figures.

Women who carry most of their fat on their hips and thighs—that is, those who have "pear-shaped" figures—are at lower risk for CHD.

To fully know how excess weight affects your CHD risk, you should know your BMI and waist measurement. If you have a BMI greater than 24.9 and a waist measurement greater than 35 inches, you're at increased risk for CHD.

If your waist measurement divided by your hip measurement is greater than 0.9, you're also at increased risk for CHD.

Studies also suggest that women whose weight goes up and down dramatically (typically due to unhealthy dieting) are at increased risk for CHD. These swings in weight can lower HDL cholesterol levels.

### ***Metabolic Syndrome***

Metabolic syndrome is the name for a group of risk factors that raises your risk for CHD and other health problems, such as diabetes and stroke. A diagnosis of metabolic syndrome is made if you have at least three of the following risk factors:

- A large waistline. Having extra fat in the waist area is a greater risk factor for CHD than having extra fat in other parts of the body, such as on the hips.
- A higher than normal triglyceride level (or you're on medicine to treat high triglycerides).
- A lower than normal HDL cholesterol level (or you're on medicine to treat low HDL cholesterol).
- Higher than normal blood pressure (or you're on medicine to treat high blood pressure).
- Higher than normal fasting blood sugar (or you're on medicine to treat diabetes)

Metabolic syndrome is more common in African American women and Mexican American women than in men of the same racial groups. The condition affects White women and men about equally.

### ***Birth Control Pills***

Women who smoke and take birth control pills are at very high risk for CHD, especially if they're older than 35. For women who take birth control pills but don't smoke, the risk of CHD isn't fully known.

### ***Lack of Physical Activity***

Inactive people are nearly twice as likely to develop CHD as those who are physically active. A lack of physical activity can worsen other CHD risk factors, such as high blood cholesterol and triglyceride levels, high blood pressure, diabetes and prediabetes, and overweight and obesity.

### ***Unhealthy Diet***

An unhealthy diet can raise your risk for CHD. For example, foods that are high in saturated and *trans* fats and cholesterol raise your LDL cholesterol level. A high-sodium (salt) diet can raise your risk for high blood pressure.

Foods with added sugars will give you extra calories without nutrients, such as vitamins and minerals. This can cause you to gain weight, which raises your risk for CHD.

Too much alcohol also can cause you to gain weight, and it will raise your blood pressure.

### ***Stress or Depression***

Stress may play a role in causing CHD. Stress can trigger your arteries to narrow. This can raise your blood pressure and your risk for a heart attack.

Getting upset or angry also can trigger a heart attack. Stress also may indirectly raise your risk for CHD if it makes you more likely to smoke or overeat foods high in fat and sugar.

People who are depressed are two to three times more likely to develop CHD than people who are not. Depression is twice as common in women as in men.

### ***Anemia***

Anemia (uh-NEE-me-eh) is a condition in which your blood has a lower than normal number of red blood cells.

The condition also can occur if your red blood cells don't contain enough hemoglobin (HEE-muh-glow-bin). Hemoglobin is an iron-rich protein that carries oxygen from your lungs to the rest of your organs.

If you have anemia, your organs don't get enough oxygen-rich blood. This causes your heart to work harder, which may raise your risk for CHD.

### ***Sleep Apnea***

Sleep apnea is a common disorder that causes pauses in breathing or shallow breaths while you sleep. Breathing pauses can last from a few seconds to minutes. They often occur 5 to 30 times or more an hour.

Typically, normal breathing starts again after the pause, sometimes with a loud snort or choking sound. Major signs of sleep apnea are snoring and daytime sleepiness.

When you stop breathing, the lack of oxygen triggers your body's stress hormones. This causes blood pressure to rise and makes the blood more likely to clot.

Untreated sleep apnea can raise your risk for high blood pressure, diabetes, and even a heart attack or stroke.

Women are more likely to develop sleep apnea after menopause.

## **Risk Factors You Can't Control**

### **Age and Menopause**

As you get older, your risk for CHD and heart attack rises. This is due in part to the slow buildup of plaque inside your heart arteries, which can start during childhood.

Before age 55, women have a lower risk for CHD than men. Estrogen provides women with some protection against CHD before menopause. After age 55, however, the risk of CHD increases in both women and men.

You may have gone through early menopause, either naturally or because you had your ovaries removed. If so, you're twice as likely to develop CHD as women of the same age who aren't yet menopausal.

Another reason why women are at increased risk for CHD after age 55 is that middle age is when you tend to develop other CHD risk factors.

### ***Family History***

Family history plays a role in CHD risk. Your risk increases if your father or a brother was diagnosed with CHD before 55 years of age, or if your mother or a sister was diagnosed with CHD before 65 years of age.

Also, a family history of stroke—especially a mother's stroke history—can help predict the risk of heart attack in women.

Having a family history of CHD or stroke doesn't mean that you'll develop heart disease. This is especially true if your affected family member smoked or had other risk factors that were not well treated.

Making lifestyle changes and taking medicines to treat risk factors often can lessen genetic influences and prevent or delay heart problems.

### ***Preeclampsia***

Preeclampsia (pre-e-KLAMP-se-ah) is a condition that develops during pregnancy. The two main signs of preeclampsia are a rise in blood pressure and excess protein in the urine.

These signs usually occur during the second half of pregnancy and go away after delivery. However, your risk of developing high blood pressure later in life increases after having preeclampsia.

Preeclampsia also is linked to an increased lifetime risk of heart disease, including CHD, heart attack, and heart failure. (Likewise, having heart disease risk factors, such as diabetes or obesity, increases your risk for preeclampsia.)

If you had preeclampsia during pregnancy, you're twice as likely to develop heart disease as women who haven't had the condition. You're also more likely to develop heart disease earlier in life.

Preeclampsia is a heart disease risk factor that you can't control. However, if you've had the condition, you should take extra care to try and control other heart disease risk factors.

The more severe your preeclampsia was, the greater your risk for heart disease. Let your doctor know that you had preeclampsia so he or she can assess your heart disease risk and how to reduce it.

### **Emerging Risk Factors**

Research suggests that inflammation plays a role in causing CHD. Inflammation is the body's response to injury or infection. Damage to the arteries' inner walls seems to trigger inflammation and help plaque grow.

High blood levels of a protein called C-reactive protein (CRP) are a sign of inflammation in the body. Research suggests that women who have high blood levels of CRP are at increased risk for heart attack.

Also, some inflammatory diseases, such as lupus and rheumatoid arthritis, may increase the risk for CHD.

Some studies suggest that women who have migraine headaches may be at greater risk for CHD. This is especially true for women who have migraines with auras (visual disturbances), such as flashes of light or zig-zag lines.

Low bone density and low intake of folate and vitamin B6 also may raise a woman's risk for CHD.

More research is needed to find out whether calcium supplements with or without vitamin D affect CHD risk. You may want to talk with your doctor to find out whether these types of supplements are right for you.

Researchers are just starting to learn about broken heart syndrome risk factors. Most women who have this disorder are White and have gone through menopause.

Many of these women have other heart disease risk factors, such as high blood pressure, high blood cholesterol, diabetes, and smoking. However, these risk factors tend to be less common in women who have broken heart syndrome than in women who have CHD.

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