

## Risk Factors and Coronary Heart Disease

Extensive clinical and statistical studies have identified several factors that increase the risk of coronary heart disease and heart attack. Major risk factors are those that research has shown significantly increase the risk of heart and blood vessel (cardiovascular) disease. Other factors are associated with increased risk of cardiovascular disease, but their significance and prevalence haven't yet been precisely determined. They're called contributing risk factors.

The American Heart Association has identified several risk factors. Some of them can be modified, treated or controlled, and some can't. The more risk factors you have, the greater your chance of developing coronary heart disease. Also, the greater the level of each risk factor, the greater the risk. For example, a person with a total cholesterol of 300 mg/dL has a greater risk than someone with a total cholesterol of 245 mg/dL, even though everyone with a total cholesterol greater than 240 is considered high-risk.

### **What are the major risk factors that can't be changed?**

**Increasing Age**

**Male Sex (Gender)**

**Heredity (Including Race)**

### **What are the major risk factors you can modify, treat or control by changing your lifestyle or taking medicine?**

**Tobacco Smoke**

**High Blood Cholesterol**

**High Blood Pressure**

**Physical Inactivity**

**Obesity and Overweight**

**Diabetes Mellitus**

### **What other factors contribute to heart disease risk?**

**Stress**

**Alcohol**

**Diet and Nutrition**

## Risk Factors You Can Change

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Some risk factors can be modified, treated or controlled, and some can't. The more risk factors you have, the greater your chance of developing coronary heart disease. Also, the greater the level of each risk factor, the greater your risk. For example, everyone with total cholesterol greater than 240 mg/dL is considered high-risk, but a person with a total cholesterol of 300 mg/dL has a greater risk than someone with a total cholesterol of 245 mg/dL.

### **Major risk factors you can modify, treat or control by changing your lifestyle**

**Tobacco smoke:** Smokers' risk of developing coronary heart disease is 2–4 times that of nonsmokers. Cigarette smoking is a powerful independent risk factor for sudden cardiac death in patients with coronary heart disease; smokers have about twice the risk of nonsmokers. Cigarette smoking also acts with other risk factors to greatly increase the risk for coronary heart disease. People who smoke cigars or pipes seem to have a higher risk of death from coronary heart disease (and possibly stroke) but their risk isn't as great as cigarette smokers'. Exposure to other people's smoke increases the risk of heart disease even for nonsmokers.

**High blood cholesterol:** As blood cholesterol rises, so does risk of coronary heart disease. When other risk factors (such as high blood pressure and tobacco smoke) are present, this risk increases even more. A

person's cholesterol level is also affected by age, sex, heredity and diet. Here's the lowdown on where those numbers need to be:

**Total Cholesterol:** Less than 200 mg/dL

**LDL (bad) Cholesterol:**

- If you're at low risk for heart disease: Less than 160 mg/dL
- If you're at intermediate risk for heart disease: Less than 130 mg/dL
- If you're at high risk for heart disease (including those with existing heart disease or diabetes): Less than 100mg/dL

**HDL (good) Cholesterol:** 40 mg/dL or higher for men and 50 mg/dL or higher for women

**Triglycerides:** Less than 150 mg/dL

**High blood pressure:** High blood pressure increases the heart's workload, causing the heart to thicken and become stiffer. This stiffening of the heart muscle is not normal, and causes the heart not to work properly. It also increases your risk of stroke, heart attack, kidney failure and congestive heart failure. When high blood pressure exists with obesity, smoking, high blood cholesterol levels or diabetes, the risk of heart attack or stroke increases several times.

**Physical inactivity:** An inactive lifestyle is a risk factor for coronary heart disease. Inactive is generally considered when someone sits in chair more than walking or engaging in regular exercise or other physical activity. Regular, moderate-to-vigorous physical activity helps prevent heart and blood vessel disease. The more vigorous the activity, the greater your benefits. However, even moderate-intensity activities help if done regularly and long term. Physical activity can help control blood cholesterol, diabetes and obesity, as well as help lower blood pressure in some people.

**Obesity and overweight:** People who have excess body fat — especially if a lot of it is at the waist — are more likely to develop heart disease and stroke even if they have no other risk factors. Excess weight increases the heart's work. It also raises blood pressure and blood cholesterol and triglyceride levels, and lowers HDL ("good") cholesterol levels. It can also make diabetes more likely to develop. Many obese and overweight people may have difficulty losing weight. But by losing even as few as 10 pounds, you can lower your heart disease risk.

**Diabetes mellitus :** Diabetes seriously increases your risk of developing cardiovascular disease. Even when glucose levels are under control, diabetes increases the risk of heart disease and stroke, but the risks are even greater if blood sugar is not well controlled. At least 65% of people with diabetes die of some form of heart or blood vessel disease. If you have diabetes, it's extremely important to work with your healthcare provider to manage it and control any other risk factors you can. Persons who are obese or overweight should lose weight to keep blood sugar in control.

**What other factors contribute to heart disease risk?**

**Stress:** Individual response to stress may be a contributing factor. Some scientists have noted a relationship between coronary heart disease risk and stress in a person's life, their health behaviors and socioeconomic status. These factors may affect established risk factors. For example, people under stress may overeat, start smoking or smoke more than they otherwise would.

**Alcohol:** Drinking too much alcohol can raise blood pressure, cause heart failure and lead to stroke. It can contribute to high triglycerides, cancer and other diseases, and produce irregular heartbeats. It contributes to obesity, alcoholism, suicide and accidents. The risk of heart disease in people who drink moderate amounts of alcohol (an average of one drink for women or two drinks for men per day) is lower than in nondrinkers. One drink is defined as 1-1/2 fluid ounces (fl oz) of 80-proof spirits (such as bourbon, Scotch, vodka, gin, etc.), 1 fl oz of 100-proof spirits, 4 fl oz of wine or 12 fl oz of beer. It's not recommended that nondrinkers start using alcohol or that drinkers increase the amount they drink.

**Diet and Nutrition:** A healthy diet is one of the best weapons you have to fight cardiovascular disease. The food you eat (and the amount) can affect other controllable risk factors: cholesterol, blood pressure, diabetes and overweight. Choose nutrient-rich foods — which have vitamins, minerals, fiber and other nutrients but are lower in calories — over nutrient-poor foods. A diet rich in vegetables, fruits, whole-grain and high-fiber foods, fish, lean protein and fat-free or low-fat dairy products is the key. And to maintain a healthy weight, coordinate your diet with your physical activity level so you're using up as many calories as you take in.

## To Your Heart Health

By Louis Ignarro, Ph.D.  
Nobel<sup>†</sup> Laureate in Medicine

Your cardiovascular system is the driving force behind Cellular Nutrition. Over 100,000 miles in length and equipped with nearly six-trillion endothelial cells, your blood vessels produce the Nitric Oxide that supports Cellular Nutrition. Endothelial-derived Nitric Oxide functions in many important ways to support the cardiovascular and circulatory system. Endothelial damage, from a poor diet, obesity and lack of exercise, results in deficient Nitric-Oxide production and, therefore, increased risk of cardiovascular disease. Fortunately, there are easy ways to make your endothelium healthy by adjusting your diet, engaging in moderate exercise and taking Niteworks®.

### How does Nitric Oxide work?

Nitric Oxide, also known as NO, is the body's most widespread signaling molecule. NO promotes Cellular Nutrition by facilitating blood flow to every cell in the body. Because NO expands the diameter of the arteries, more nutrients are delivered to the cells and more waste products are removed from the cells. Nitric Oxide provides Cellular Nutrition to all organs of the body and also protects these organs against injury and disease caused by exposure to oxidants, a condition known as "oxidative stress." NO is the body's most potent antioxidant, protecting cells against free radical damage. In this regard, NO functions just like Vitamins E and C.

NO deficiency and Endothelial Dysfunction cardiovascular disease is the leading cause of morbidity and untimely death in the U.S. and is sometimes associated with NO deficiency. The diseases resulting from NO deficiency include hypertension, stroke, atherosclerosis, heart attacks, diabetes, Alzheimer's disease, gastrointestinal ulcers and erectile dysfunction. A healthy vascular endothelium is essential to a healthy cardiovascular system because it is required for normal NO production and action. Vascular-endothelial dysfunction leads to decreased NO production and increased oxidative stress, creating a vicious cycle that promotes further endothelial dysfunction.

### Diet improves heart health

Another way to keep your endothelium healthy is through diet. A sensible diet that is low in fats and carbohydrates, but rich in proteins, will go a long way in promoting cardiovascular health. Decreased fat intake greatly reduces the body's production of destructive free radicals and decreased dietary carbohydrates limit the intake of calories. Eating a high-protein diet maintains muscle mass and energy levels. The combination of high protein plus low carbohydrates and fats can result in substantial weight loss, which further promotes a healthy cardiovascular system.

### A winning combination

The three lifestyle changes outlined—mild to moderate exercise, a high-protein diet and Niteworks®—have something in common: they all play a role in enhancing the production and action of endothelium-derived Nitric Oxide. For this reason, exercise, diet and Niteworks® are a winning combination for maintaining and improving your endothelial health—and a healthy endothelium means a healthy heart. When you combine their results, you can easily see how your overall health and general well-being can improve.



# Stress: How to Cope Better With Life's Challenges

## What causes stress?

Feelings of stress are caused by the body's instinct to defend itself. This instinct is good in emergencies, such as getting out of the way of a speeding car. But stress can cause physical symptoms if it goes on for too long, such as in response to life's daily challenges and changes.

When this happens, it's as though your body gets ready to jump out of the way of the car, but you're sitting still. Your body is working overtime, with no place to put all the extra energy. This can make you feel anxious, afraid, worried and uptight.

## What changes may be stressful?

Any sort of change can make you feel stressed, even good change. It's not just the change or event itself, but also how you react to it that matters. What's stressful is different for each person. For example, one person may feel stressed by retiring from work, while someone else may not.

Other things that may be stressful include being laid off from your job, your child leaving or returning home, the death of your spouse, divorce or marriage, an illness, an injury, a job promotion, money problems, moving, or having a baby.

## Can stress hurt my health?

Stress can cause health problems or make problems worse if you don't learn ways to deal with it. Talk to your family doctor if you think some of your symptoms are caused by stress. It's important to make sure that your symptoms aren't caused by other health problems.

## Possible signs of stress

- Anxiety
- Back pain
- Constipation or diarrhea
- Depression
- Fatigue
- Headaches
- High blood pressure
- Insomnia
- Problems with relationships
- Shortness of breath
- Stiff neck
- Upset stomach
- Weight gain or loss

## What can I do to manage my stress?

The first step is to learn to recognize when you're feeling stressed. Early warning signs of stress include tension in your shoulders and neck, or clenching your hands into fists.

The next step is to choose a way to deal with your stress. One way is to avoid the event or thing that leads to your stress--but often this is not possible. A second way is to change how you react to stress. This is often the best way.

## Tips for dealing with stress

- Don't worry about things you can't control, such as the weather.
- Prepare to the best of your ability for events you know may be stressful, such as a job interview.
- Try to look at change as a positive challenge, not as a threat.
- Work to resolve conflicts with other people.
- Talk with a trusted friend, family member or counselor.
- Set realistic goals at home and at work.
- Exercise on a regular basis.
- Eat well-balanced meals and get enough sleep.
- Meditate.
- Participate in something you don't find stressful, such as sports, social events or hobbies.

## Why is exercise useful?

Exercise is a good way to deal with stress because it's a healthy way to relieve your pent-up energy and tension. It also helps you get in better shape, which makes you feel better overall.

## What is meditation?

### Steps to deep breathing

- Lie down on a flat surface.
- Place a hand on your stomach, just above your navel. Place the other hand on your chest.
- Breathe in slowly and try to make your stomach rise a little.
- Hold your breath for a second.
- Breathe out slowly and let your stomach go back down.

