

Diabetes and Heart Disease

People with diabetes are at a higher risk for developing heart attacks and stroke than people who do not have diabetes. Adults with diabetes are 2 to 4 times more likely to have heart disease or suffer a stroke than people without diabetes.

A person with diabetes can reduce the risk of heart and blood vessel disease by knowing the “ABCs” of diabetes.

A is for A1C

A1C is a test that measures your blood glucose control over the past 3 months. Even a small drop in A1C reduces the risks of heart disease. You may help improve A1C with a change in your diet, medicines, and exercise routine.

B is for Blood Pressure

Blood that pushes too hard against artery walls (high blood pressure) makes your heart work harder. High blood pressure also can affect your kidneys.

C is for Cholesterol

Cholesterol, especially LDL (low-density lipoprotein), and triglycerides (tri-glycerides). High levels of fats in the blood may cause narrowing of the blood vessels that feed your heart and brain.

It is important to have good control of your blood glucose, blood pressure, and blood lipids if you have diabetes. You should ask your doctor or health care provider 3 important questions about the ABCs of diabetes:

- What are my A1C, blood pressure, and cholesterol numbers?
- What are my treatment goals?
- What do I need to do to reach my goals?

Treatment goals for people with diabetes (American Diabetes Association Guidelines, 2013)

- Hemoglobin A1C: less than 7 percent
- Blood pressure: less than 140/80 mmHg, (but lower goals of less than 130/80 mmHg may be appropriate for certain individuals, such as younger persons, if it can be achieved without a lot of treatment burden.
- Target lipid levels for people with diabetes are:

Total cholesterol: less than 200

LDL cholesterol: less than 100

HDL cholesterol:

- More than 40 for men
- More than 50 for women

Triglycerides: less than 150

What You Can do to Improve your Blood Glucose Control

- Improve your diet and exercise routine. There are many benefits to regular exercise. Ask your doctor if exercise is safe for you. With your doctor’s approval, choose an activity that you enjoy. Exercise examples include walking, pedaling a stationary bicycle, and swimming. Most health care professionals recommend exercising at least 30 minutes most days of the week.
- Check your blood glucose at least 2 times per day or as your diabetes team tells you. Look for blood glucose patterns. Most often, high blood glucose numbers are caused by an imbalance between insulin that is produced by your body or injected insulin and how much food you eat.
- Take your prescribed medicines. Do not skip taking prescribed medicines.

- If you are not sure when and how to take your medicine, ask your diabetes educator.
- Eat healthy foods and pay attention to the quantity of the foods in your diet.
- Carbohydrates (car-bo-hy-drates) are foods that turn into glucose when eaten. They are the best source of energy for your body. Too many carbohydrates can raise blood glucose levels. It is important to learn how to balance carbohydrate intake with medicine and exercise. Ask your dietitian how much carbohydrates you may eat at each meal.
- Discuss your symptoms or medical concerns with your health care team. Monitor and write down your blood glucose levels regularly. Keep track of your A1C. Check your blood pressure regularly. At least once a year, have your cholesterol checked.

Eating Guidelines for a Healthy Heart

- Limit the amount of saturated fats to less than 7 percent of total calories.
- Limit the amount of total fats you eat to less than 30 percent of your total calories for the day. Most of your fat should come from eating polyunsaturated and monounsaturated fatty acids. Ask your dietitian to help determine how much fat and saturated fat you need.
- Avoid trans fats as much as possible.
- Limit meat consumption to 6 ounces per day.
- Choose lean meats, fish, and skinless poultry.
- Bake, broil, grill, boil, or steam all foods.
- You should not eat more than 2 to 4 eggs per week. Ask your dietitian for current advice about eating eggs.
- Eat foods that are high in fiber, including oats and oatmeal, cooked dried beans, peas, lentils, kidney beans, and black beans. Other sources of fiber include fruits and vegetables.
- Choose skim milk, 1 percent milk, and other low-fat dairy products.
- Special margarines, including Take Control and Benecol can help block the absorption of cholesterol from the intestines. Ask your doctor or dietitian if these margarines are appropriate for you.
- Soy protein also can reduce cholesterol level. Ask your dietitian to show you how to incorporate soy protein into your diet.

What You Can do to Reduce Sodium in your Diet

Because a high salt (sodium) intake can increase blood pressure, people with diabetes are often encouraged to reduce the amount of salt in their food.

- When cooking, do not use salt. If you cannot give up salt, use half as much as you usually do.
- Do not use salt at the table. Fill your shakers with pepper, onion powder, or garlic powder, and put them on the dining table.
- Use herbs, spices, lemon juice, or vinegar instead of salt.
- Eat less of processed foods. About 75 percent of the sodium in your diet may come from processed foods. Processed foods include cold cuts, bacon, sausages, canned soups, canned vegetables, boxed pasta, rice, or potatoes. Snack foods including chips, pretzels, popcorn, and other baked goods also are high in sodium.
- Eat fresh meats, poultry, and fish instead of cold cuts, frozen dinners, or canned meats. Buy low-sodium canned soups, low-sodium canned vegetables, unsalted crackers, and unsalted pretzels. Pop your own popcorn and season it with pepper or sprinkle it with sugar substitutes.
- Condiments such as mustard, catsup, soy sauce, meat tenderizers, seasoned salt, garlic salt, and onion salt are high in sodium.
- Processed cheeses are high in sodium. You may switch to natural cheeses such as Swiss or cheddar cheese. You may want to shop for reduced-fat varieties of cheeses.
- Eat out less often. If you eat out, ask to have your food prepared without salt, or MSG (monosodium glutamate). Ask to have sauces, gravies, and salad dressings served on the side.

Things That Affect the Cholesterol Level in a Diet

A diet that is high in saturated fats, trans fats, and cholesterol can raise total cholesterol and LDL cholesterol levels. The first step toward a lower cholesterol and LDL level is to reduce the amount of saturated fats and cholesterol you eat.

Cholesterol

Cholesterol is a soft, waxy substance found in your blood stream and in all of the body's cells. The liver is the organ that makes cholesterol. Blood cholesterol level reflects the amount of cholesterol produced by the liver and the cholesterol we take in from our diets.

Two examples of cholesterol are low-density lipoprotein (LDL), and high-density lipoprotein (HDL).

- LDL is known as “bad cholesterol.” Too much LDL in the blood can block the blood vessels.
- HDL is known as “good cholesterol.” A high HDL level seems to protect your body from heart disease.
- Healthy food choices and an active lifestyle have a significant impact on LDL and HDL levels.
- Cholesterol is found only in animal products. Food sources include meat, organ meats, fish, poultry, egg yolks, and whole milk dairy products. Food from plants such as fruits, vegetables, grains, nuts, and seeds do not contain cholesterol.

Dietary Fats and How they Affect Lipid (Cholesterol, LDL, Triglycerides) Levels

- **Saturated fats** increase LDL and are the main dietary cause of high blood cholesterol. Fats of this type are solid at room temperature, and mostly come from animal products. Sources of saturated fat are in animal products such as beef, chicken, lard, butter, whole milk, and whole milk dairy products. Some vegetable oils are highly saturated. These include coconut oil, palm oil, palm kernel oil, and cocoa butter. You may find saturated fats in commercially baked products. It is important to read the food labels to identify the sources of fat in the products you buy. The American Heart Association (AHA) recommends less than 7 to 10 percent of your daily calories should come from saturated fats.
- **Unsaturated fats** include polyunsaturated fats and monounsaturated fats. Polyunsaturated fats come from safflower, sunflower, corn, and soybean oils. Monounsaturated fats come from olive oil, canola oil, avocado, olives, and some nuts such as almonds and hazelnuts. Both polyunsaturated and monounsaturated fats may help lower blood cholesterol and LDL levels when you use them in your diet in place of saturated fats.
- **Omega-3 fatty acids** are in fatty fish such as salmon, albacore tuna fish, and flax seeds. They have properties that protect the heart. They help lower triglycerides and help prevent blood from clotting.
- **Trans fats** are formed when vegetable oils go through a process called hydrogenation (hy-dro-ge-NAY-shen). They change from a liquid to a solid state. Trans fats tend to increase LDL and total cholesterol levels, and decrease your HDL level. Shortenings, stick margarine, and hydrogenated vegetable oils are high in trans fats.

Help to Reduce Your Intake of Saturated Fats

- Foods that are low in saturated fats include fat-free or low-fat dairy products, lean meats, fish, and skinless poultry.
- Shop for soft margarines (liquid or tub varieties) that are low in saturated fat and do not contain trans fats. Also, look for margarines with less than 2 grams of saturated fat per serving. Choose margarines that have liquid vegetable oil or water listed as the first ingredients on the nutrition label.

Help to Reduce Your Intake of Trans Fats

- Use liquid vegetable oil such as canola or olive oil in cooking and baking.
- Choose a liquid margarine or one that comes in a tub. Shop for a margarine that contains 2 grams or less of saturated fat per serving. Look for margarines that are “trans fat-free” or “non-hydrogenated.”
- French fries, doughnuts, cookies, and crackers are examples of foods that are high in trans fats. It is important to avoid these foods.
- Avoid commercially fried foods and baked goods. These products are usually high in fat and trans fats.

Be alert! Take action!

You must be on the alert for heart problems even if your risk factors are under control. Normally, your body will warn you of an approaching problem by showing symptoms. A high blood glucose level and high blood pressure cause

damage to blood vessels and lead to fatty deposits (plaque formation). A clot can form in the narrowed blood vessels and blood cannot get to the heart or brain, causing a heart attack or stroke.

If the blood vessels that supply the nerves are damaged, and blood flow is restricted, as in neuropathy (nur-OP-uh-thee), then you may have a “silent heart attack,” meaning you may have no symptoms.

Symptoms of heart attack or angina:

- Shortness of breath
- Sweating
- Pain or pressure in the chest, back, neck, or arm
- Feeling tired, weak, or faint
- Nausea or vomiting
- Dizziness

If you experience one or more of these symptoms, call 911 or the appropriate emergency medical service telephone number immediately.