



# Cholesterol

## WHAT IS CHOLESTEROL?

Cholesterol is a soft, waxy substance found 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.

## WHY IS CHOLESTEROL DISCUSSED AS A HEALTH RISK?

When people talk about their cholesterol level, they mean the amount of cholesterol in their blood. Having too much cholesterol in your blood (more than 200mg/dL) is a risk factor for heart disease. High blood cholesterol levels can affect the heart by building up cholesterol, in a form called plaque, in the lining of the heart's blood vessels. Over time, this build-up can block the vessels. If blood cannot get to the heart, this causes a heart attack.

## WHAT CAUSES HIGH BLOOD CHOLESTEROL?

A family history of high blood cholesterol puts you at a greater risk for high blood cholesterol. Some of the foods you eat can increase your risk. If you eat foods high in dietary cholesterol and saturated fat, you will raise your cholesterol level. Saturated fat (animal fats) can raise blood cholesterol more than anything else in your diet. Being overweight or obese also increases your risk for high cholesterol.

For most people, eating foods lower in saturated fats and cholesterol can reduce their blood cholesterol levels.

## WHERE DOES DIETARY CHOLESTEROL COME FROM?

Cholesterol is found only in animal products.

Food sources include:

- Meats
- Fish
- Poultry
- Egg yolks
- Whole milk dairy products

Food from plants such as fruits, vegetables, grains, nuts, and seeds do not contain cholesterol.

## UNSATURATED FATS

Unsaturated fats come from vegetables. They are liquid at room temperature and are divided into two types; monounsaturated and polyunsaturated.

Monounsaturated fats are found in canola oil, olive oil, and peanut oil. Monounsaturated fats should make up 10 to 15 percent of the total calories in your diet.

Polyunsaturated fats are found in corn oil, sunflower seeds and oil, safflower seeds and oil, and soybeans and soybean oil. These fats should make up no more than 10 percent of the total calories in your diet.

## SATURATED FAT

Saturated fats come from animal sources such as beef, veal, lamb, pork, ham, butter, cream, cheese made from cream, and whole milk. They are usually solid at room temperature and are often used in store-bought bakery items, candies, fried foods, and non-dairy creamers.

Saturated fats are also found in coconut, palm and palm kernel oils, cocoa butter, hydrogenated oils, and shortening. These are known as saturated vegetable fats. Saturated fats should make up less than 10 percent of the total calories in your diet.

The more firm the fat, the more saturated it is. For example, stick margarine and shortenings are more saturated than soft tub-type margarines. As with all saturated fats, intake should be limited to less than 10 percent of the total calories in your diet.

## HOW CAN I REDUCE FAT AND CHOLESTEROL IN MY DIET?

- Use vegetable fats instead of animal fats when cooking.
- Select lean meats, and trim visible fat from meat before cooking.
- Limit meat portions. Your total meat intake should be five to six ounces per day.
- Eat fish or skinless poultry more often than beef or pork.
- Limit liver and other organ meats in your diet.
- Choose low-fat or non-fat dairy products and cheese.
- Eat more grains, fruits, vegetables, dried beans, and peas.
- Limit the number of egg yolks you eat to three or four per week.
- Roast, bake, or broil meats and other foods instead of frying.
- No more than 30 percent of your total daily calories should come from fat.



# ABCs of Heart Disease and Diabetes

People with diabetes are at a higher risk for heart attacks and strokes than people who do not have diabetes. Adults with diabetes are two to four 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 three 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 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.

High levels of fats in the blood may cause narrowing of the blood vessels that feed your heart and brain.

Two types 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 protects 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:

- Meats
- Poultry
- Whole milk dairy products
- Fish
- Egg yolks

Food from plants such as fruits, vegetables, grains, nuts, and seeds do not contain cholesterol.

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 three 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\*:

- Hemoglobin A1C: less than seven percent
- Blood pressure: less than 130 over 80 (130/80)
- 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

## IMPROVING YOUR BLOOD GLUCOSE CONTROL

- Improve your diet and exercise routine.
- Check your blood glucose at least two times per day or as your diabetes team tells you.
- 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.
- Learn how to balance carbohydrate intake with medicine and exercise. Ask your dietitian about the quantity of 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.

## REDUCING SODIUM IN YOUR DIET

Because a high 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.
- Use herbs, spices, lemon juice, or vinegar instead of salt.
- Eat fewer 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, and boxed pasta, rice, or potatoes. Snack foods including chips, pretzels, popcorn, and other baked goods are also 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, ketchup, soy sauce, meat tenderizers, seasoned salt, garlic salt, and onion salt are high in sodium.
- Processed cheeses are high in sodium. Switch to natural cheeses such as Swiss or cheddar cheese.
- 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.

## EATING GUIDELINES FOR A HEALTHY HEART

- Limit the amount of saturated fats to less than seven percent of total calories.
- Limit the amount of total fats you eat to less than 30 percent of your total calories for the day.
- Avoid trans fats as much as possible.
- Limit meat consumption to six ounces per day.
- Choose lean meats, fish, and skinless poultry.
- Bake, broil, grill, boil, or steam all foods.
- You should not eat more than two to four eggs per week. Ask your dietitian for current advice about eating eggs.
- Eat foods that are high in fiber, including fruits and vegetables, oats and oatmeal, cooked dried beans, peas, lentils, kidney beans, and black beans.
- Choose skim milk, one 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.

*\*American Diabetes Association Guidelines, 2011.*



## Nutrition Labeling

Food labels are found on all food products except fresh fruits and vegetables. The label offers complete, useful, and accurate nutrition information. They also tell about serving size, calories, fat, cholesterol, sodium, carbohydrates, sugar, and protein per serving.

The consistent format helps you directly compare the nutritional content of various foods. Food labels have the title “Nutrition Facts.”

### READING FOOD LABELS

#### Serving Size

“Serving Size” is the top information line on the label right under “Nutrition Facts.” Always look at serving size first. All of the nutrient amounts on the label refer to that amount of food, not the total package. Right below serving size, the label shows how many servings are in the package. It is important to multiply the numbers on the label (sodium, fat, cholesterol, calories) by number of servings you actually eat.

#### % Daily Value

Below “Serving Size” is “% Daily Value.” The % Daily Value shows you how much of the recommended amounts the food provides in one serving, if you eat 2,000 calories a day.

If you want to consume less of a nutrient such as saturated fat, cholesterol, or sodium, choose food with a lower % Daily Value. Five percent or less is considered low.

If you want to consume more of a nutrient like fiber, choose foods with a higher % Daily Value. Twenty percent or more is considered high.

### RECOMMENDED FOODS

#### Meats, Poultry, and Fish

- Lean beef, pork, or lamb trimmed before cooking
- Skinless poultry
- Grilled, baked, or broiled fish and shellfish

#### Milk, Yogurt, and Cheese

- Egg whites, cholesterol-free egg substitute
- One percent or skim milk
- Natural or low fat processed cheese and low fat or non-fat cottage cheese
- Low or non-fat yogurt, frozen yogurt, or yogurt beverages
- Low or non-fat sour cream and low or non-fat coffee creamer

#### Breads, Grains, Cereals, and Pasta

- Whole grain breads, tortillas, bagels, buns, and pasta
- Oatmeal
- Brown or wild rice
- Whole grain or multigrain cereals and low fat granola
- Low fat, wheat, graham, or animal crackers

### **Fruits and Vegetables**

- Fresh, frozen, or canned vegetables without added fat, salt, or cream sauce
- Fresh, frozen, dried, or canned fruit in its own juice
- Fresh, frozen, or canned fruit juice

### **Fat and Oils**

- Peanuts, walnuts, almonds, olives
- Olive oil, peanut oil, or canola oil
- Sunflower, safflower, corn, and soy oils
- Natural peanut butter
- Soft tub margarine with no trans fats, or fat-free margarine spray
- Salad dressings made with olive or canola oil

### **FOODS TO AVOID**

#### **Meats, Poultry, and Fish**

- Ground or corned beef, prime rib, and organ meats
- Fried chicken, poultry with skin
- Fried fish or shellfish
- Lunch meats like bologna, salami, pepperoni, sausage, or bacon

#### **Milk, Yogurt, and Cheese**

- Egg yolks
- Whole or two percent milk
- Full-fat cheese
- Cream cheese, ice cream, sour cream, whipped cream or topping
- Creamer or half and half

#### **Breads, Grains, Cereals, and Pasta**

- High-fat crackers
- Commercially baked pastries, muffins, or biscuits

### **Fruits and Vegetables**

- Fried vegetables
- Vegetables prepared with butter, cheese, or cream sauce
- Fried fruit
- Fruit served with butter or cream sauce

### **Fat and Oils**

- Butter, stick margarine, or shortening
- Coconut oil, palm kernel oil, palm oil
- Dressings made with egg yolk, cheese, sour cream, or whole milk

### **Tips for Cutting Calories**

- Measure your foods with measuring cups so that you know how much you are eating.
- Don't drink your calories, choose calorie-free beverages. You will feel fuller and satisfied getting your calories from food.
- Drink plenty of water. Try to drink 64 ounces of water a day.
- Eat your food from a plate instead of a bag or box, it will allow you to see how much you are eating.
- Keep a journal of your food intake, and try new foods once a week. This will add variety to your diet so you don't get bored with what you are eating.
- Cut back on butter, margarine, or mayonnaise. Choose light margarine in a soft tub instead.



## Weight Management Tips — Lifestyle

Successful weight management involves reducing the amount of calories you take in, increasing your exercise level, and making lifestyle changes. Understanding how and why you eat are two big steps toward making changes in your lifestyle to lose weight. Making slow changes and having realistic goals will help you reach those ultimate goals of a reduced weight and a healthier body.

### HERE ARE SOME WAYS YOU CAN MAKE CHANGES:

- **Keep track of everything you eat** — the times of day you eat, and how you are feeling at those times. This may help you identify times when you overeat, eat out of boredom, or eat automatically or unconsciously.
- **Slow down** — Put your fork down between bites and chew all of your food thoroughly. Remember that it takes 20 to 30 minutes for your stomach to signal your brain that you are full.
- **Use smaller plates and bowls** — Dinner plates have grown by 2 inches over the last 20 years. It now takes more food to fill up the plate.
- **Don't eat standing up** — Sitting down at the table with food on a plate makes you realize and remember what you eat.
- **Brush your teeth after meals and snacks** — This gets the taste of food out of your mouth.
- **Don't keep candy or snack food out where you can see it and easily be tempted** — Remember the old saying: “out of sight, out of mind.”
- **Concentrate on eating when you are eating** — Don't eat while watching television or reading.
- **Shop from a list** — Avoid going to the grocery store when you are hungry.
- **Be positive and realistic about your approach to losing weight** — Forget the “all or nothing” approach. One meal doesn't blow an entire week's or month's effort. Just get back on track at your next meal.
- **Try not to label foods as “bad,” “illegal,” or “forbidden”** — It's not so much what you eat, but how much you eat that adds the pounds.
- **Give up on guilt** — One cookie, brownie, or piece of cake won't make you gain weight. Feeling guilty about it and then overeating as a result can.

*Continued*



### REMEMBER THE FIVE DS TO FIGHT CRAVINGS:

- **DELAY** from eating for at least 10 minutes after you have a craving so that eating is not impulsive but is a conscious activity.
- **DISTRACT** yourself from giving in to a craving by doing something that requires concentration.
- **DISTANCE** yourself from food. Leave the room, or if you're at a restaurant, ask the waiter to remove your plate.
- **DETERMINE** how important it is for you to eat the food you crave and how much you really want it.
- **DECIDE** what amount is reasonable and appropriate. Eat it slowly and savor every bite.

### STAY ON TRACK

Try to think of your weight loss plan as “management” rather than “control.”

Managing your cravings, managing your exercise, and planning your grocery shopping trips will help you reach your goals.

Trying to control everything can lead to disappointment. Everyone has ups and downs. It's important to stay motivated. If you go overboard one day, don't give up. Just get right back on track the next day.





# Blood Pressure

## WHAT IS BLOOD PRESSURE?

Blood pressure is vital to life. Blood pressure makes it possible for blood to circulate throughout our bodies. With each beat of the heart, blood is pumped out of the heart into our blood vessels. The blood carries oxygen and food to our vital organs — such as the brain, heart, and kidneys — so they can work. Blood pressure is the force (tension) that the blood exerts in our blood vessels.

## HOW IS BLOOD PRESSURE MEASURED?

A blood pressure check measures two things, so your blood pressure reading will have two numbers. The first or top number shows systolic pressure. It shows the pressure of blood against the artery walls when your heart contracts and pumps out blood. The second or bottom number shows diastolic pressure. It shows the pressure of blood against the artery walls when your heart rests between pumps and fills with blood. An example of a blood pressure reading is 130/80 (read as “130 over 80”). The systolic pressure is 130. The diastolic pressure is 80.

## WHY SHOULD I KNOW MY BLOOD PRESSURE NUMBERS?

You should learn and remember your blood pressure numbers. Blood pressure numbers fall into three ranges. The ranges show if your blood pressure is healthy or if you have a health problem.

## WHAT DO THESE NUMBERS MEAN?

It is normal for your blood pressure to fluctuate based on the time of day. With that in mind:

- If your blood pressure is under 120/80 mmHg or is most of the time, it is considered to be normal
- If your blood pressure is over 120/80 mmHg, but below 130/80 mmHg most of the time, it is considered pre-hypertension
- If your blood pressure is 130/80 mmHg or higher most of the time, it is considered high blood pressure or hypertension

BLOOD PRESSURE	SYSTOLIC	DIASTOLIC
Normal	under 120	and under 80
Pre-hypertension	120 to 129	or under 80
Stage 1 hypertension	130 to 139	or 80 to 89
Stage 2 hypertension	140 or over	or 90 or over

## RISK FACTORS

There are many factors that affect blood pressure including:

- The amount of sodium and water in your body
- Your hormone levels
- The condition of your kidneys, nervous system, or blood vessels

## YOU HAVE A HIGHER RISK OF BLOOD PRESSURE IF YOU:

- Are of African American descent
- Have a family history of high blood pressure
- Have diabetes
- Smoke
- Are overweight or obese
- Drink too much alcohol (more than one drink per day for women; more than two drinks per day for men)
- Consume too much sodium in your diet
- Are often stressed or anxious

## WHY IS HIGH BLOOD PRESSURE DANGEROUS?

High blood pressure is dangerous because it puts a strain on your body. It can harm your body in a number of ways. First of all, it adds to your heart's work load. Over time as your heart works harder than normal, it tends to get bigger. A slightly bigger heart may still work well, but a heart that is too enlarged may not be able to meet your body's needs.

High blood pressure also affects your arteries and arterioles, which are the smaller arteries. As we grow older, the arteries harden and become less flexible, even if we don't have high blood pressure. But having high blood pressure tends to speed up this process. Another name for hardening of the arteries is arteriosclerosis.

Sometimes a hardened artery becomes narrowed by a build-up of material called plaque. This is called atherosclerosis. If left unchecked, this can lead to chest pain, heart disease, heart attack, or even death.

When high blood pressure damages the arteries, they may not be able to supply the amount of blood the body needs. When the body's organs don't get enough oxygen and food from the blood, they cannot work properly. High blood pressure may contribute to kidney disease or eye problems, for example.

## WHAT CAN I DO ABOUT HIGH BLOOD PRESSURE?

The good news is that high blood pressure is preventable, treatable, and there are many things you can do to control your blood pressure including:

- Eating a heart-healthy diet and drinking plenty of water
- Exercising regularly, reducing stress, and maintaining a healthy body weight
- Limiting your sodium and alcohol intake
- Quitting smoking

**If you think you may have, or be at risk for high blood pressure, consult your primary care physician or visit UPMC's Heart and Vascular Institute at [UPMC.com/HVI](https://www.upmc.com/hvi).**