

Several major risk factors predispose people to the most common type of heart disease, coronary artery disease. One of the most important of the risk factors is a high level of blood cholesterol (hypercholesterolemia). Many studies have shown that the risk of heart disease can be greatly reduced by lowering a person's elevated blood cholesterol. This guide explains what cholesterol is, what it does, how a high blood level of cholesterol can lead to heart and artery disease, and what you can do to lower your cholesterol and maintain it at a safe level.

Cholesterol's Functions

Cholesterol is a fatty, waxy substance that is present in all body cells. To meet the body's needs for hormones and bile acids, cholesterol is manufactured by the liver, but also enters the body when you eat foods containing certain fats such as those in meat and dairy products. When your cholesterol level is higher than required for normal body cell functioning it may accumulate in your blood. It is then circulated to the arteries, where it is deposited on the inner surface of these vessels. Such deposits are known as plaque. The accumulation of plaque in the arteries is called atherosclerosis. Although atherosclerosis develops gradually over a period of many years (sometimes beginning in childhood or adolescence), it is the major cause of both heart attacks and strokes. Atherosclerosis can be prevented, slowed, or even reversed by lowering the level of blood cholesterol—through diet, exercise, weight reduction, and/or medication.

Measuring Cholesterol to Prevent Accumulation

Every adult should have a blood sample analyzed periodically to determine his or her cholesterol level. If you discover that your level is high (greater than 200 mg/dl), you can take specific actions to reduce it under the supervision of your clinician.

Additional Testing

Cholesterol consists of a number of fatty components, some of which are harmful, while others help to clear the bloodstream of excessive cholesterol. The harmful component, low-density lipoprotein (LDL) cholesterol, causes fatty deposits in the arteries when its level is high. The helpful component, high density lipoprotein (HDL) cholesterol, picks up excess cholesterol and brings it to the liver where it is disposed of (metabolized). High levels of HDL cholesterol actually seem to protect against heart disease. Therefore, if your total blood cholesterol level is high, your doctor may order an additional test, to determine the relative proportions of LDL and HDL cholesterol. The chart below reflects the levels for persons aged 20 and older.

Age	Ideal	Borderline High	High Elevation
20 & over	Less than 200 mg/dl	200–239 mg/dl	240 mg/dl or Greater

Dietary Recommendations

If your blood cholesterol level is higher than it should be (above 200 mg/dl), and further testing shows a high level of harmful LDL cholesterol or a low level of helpful HDL cholesterol, your physician will recommend a specific program to help you reduce your total cholesterol and LDL levels, and improve your HDL level. Diet is a key element in any

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such program. Any diet prescribed for this purpose must be low in saturated fat intake, since these types of fats raise the level of blood cholesterol. Saturated fats are found primarily in beef, veal, lamb, and pork, as well as in butter, cream, whole milk, and most cheese. Saturated vegetable fats are also found in coconut oil, cocoa butter, and palm oil.

Conversely, monounsaturated fats, which are found in olive oil and peanut oil, do not cause an increase in blood cholesterol. Polyunsaturated fats, found in corn, safflower, and soybean oils, can help reduce cholesterol, but they should nonetheless be used only in limited amounts, since they are high in calories.

Reducing Fat and Cholesterol-rich Foods In Your Diet

The following suggestions will help you reduce the amount of fat (especially saturated fat) and cholesterol-rich foods in your diet:

- Eat more of the following foods, which contain little or no cholesterol: fruits, vegetables, whole-grain products (bread, cereal, rice), dried beans and legumes, and nuts (since nuts are high in calories, you may need to restrict them if you are on a weight-reduction program).
- Limit your intake of red meat.
- Eat proportionately less meat and proportionately more chicken or turkey (without skin), and fish.
- When you buy meat, select lean cuts, trim all the fat you can see, and discard the fat that cooks out of the meat.
- Plan to have several meatless or “low meat” main dishes each week (for example, baked beans, or other casseroles with little or no meat).
- Eat no more than 5 – 8 teaspoons of fats and oils per day (including those used in preparing foods, in baked goods, and on bread or salads).
- Use low-fat or non-fat milk and cheese; use small amounts of margarine high in polyunsaturated fat instead of butter.
- Eat no more than two egg yolks per week (including those used in cooking).
- Avoid shrimp, lobster, sardines, and organ meats. Eat these rarely and in small amounts.

Weight Management

Losing weight if you are overweight can help lower LDL and is especially important for those with a cluster of risk factors that includes high triglyceride and/or low HDL levels and being overweight with a large waist measurement (more than 40 inches for men and more than 35 inches for women).

Physical Activity

Regular physical activity is important for everyone. Exercise at least 5 days per week for 30 minutes or more each time. Exercise can be very helpful in raising HDL and lowering LDL, and is especially important for individuals who have high triglycerides, and/or low HDL levels who are overweight with a large waist measurement.

Conclusion

Hypercholesterolemia (high cholesterol in the blood) can easily be detected by a simple blood test. It can be effectively treated by a combination of supervised diet, exercise, weight reduction, and, occasionally, drug therapy. Every adult should know his/her cholesterol level and, if elevated, should follow a supervised program as recommended by your clinician. Remember: Diet is the cornerstone of any treatment program. All Americans should eat a healthy diet such as the ones recommended by the American Heart Association. For more information, please visit:

<http://www.americanheart.org/>

<http://www.nhlbi.nih.gov/chd/>