

High Cholesterol

The high cholesterol levels that increase heart disease risk in adults may also be present in children. If high cholesterol levels are found in children over age 2 or in teenagers, diet changes may be recommended to help reduce cholesterol, along with some risk-lowering behaviors. Some uncommon genetic diseases may also cause abnormally high (or abnormally low) cholesterol levels.

What is high cholesterol and what are the health risks?

Higher than normal cholesterol levels are one of the main risk factors for heart disease in adults. Cholesterol plays a number of important roles in the body. However, when cholesterol levels rise too high, they increase the risk of atherosclerosis (narrowing or “hardening” of the arteries). Atherosclerosis that starts developing in childhood can lead to blocked arteries and heart disease in adulthood.

If your child or teenager has high cholesterol, the doctor may recommend dietary changes to reduce the amount of fat in the diet. Quite often, if the children have high cholesterol, so do the parents—your whole family may benefit from the new diet. Monitoring of cholesterol and other risk factors is especially important if your family has a history of premature heart disease.

- ! *It is important not to limit cholesterol in infants and toddlers less than 2 years old!* Babies need a lot of calories to support their rapid growth. Children under age 2 should rarely if ever be put on a low-cholesterol or low-calorie diet.

How is high cholesterol diagnosed?

Several types of cholesterol levels are measured. The following values are for children or adolescents at high risk:

- Total cholesterol:
 - Normal: less than 170 milligrams per deciliter (mg/dL).
 - Borderline: 170 to 199 mg/dL.
 - High: over 200 mg/dL.
- *Low-density lipoprotein (LDL) cholesterol.* Sometimes called “bad” cholesterol, high levels of LDL cholesterol lead to a higher risk of heart disease:
 - Normal: less than 110 mg/dL.
 - Borderline: 110 to 129 mg/dL.
 - High: over 130 mg/dL.
- *High-density lipoprotein (HDL) cholesterol.* Sometimes called “good” cholesterol, higher levels of HDL cholesterol

lead to a lower risk of heart disease. A good balance between LDL and HDL cholesterol is healthiest for both children and adults.

What causes high cholesterol?

- In most cases, high cholesterol results from a combination of lifestyle factors (especially diet and lack of exercise) and genetic (inherited) factors.
- Less commonly, high cholesterol in children results from specific inherited diseases.
- Like adults, children and teens with high cholesterol may have additional risk factors for heart disease:
 - Obesity.
 - Lack of exercise.
 - Diabetes.
 - High blood pressure.
 - Smoking.

Can high cholesterol be prevented?

Encouraging a healthy lifestyle—including proper diet, regular exercise, and avoiding obesity—may reduce your child’s risk of high cholesterol. This is especially important if you or others in your family have had high cholesterol or premature heart disease.

How is high cholesterol treated?

The doctor’s recommendations will depend on your child’s situation, including:

- Your child’s total, LDL, and HDL cholesterol levels.
- Your family’s history of cardiovascular disease.
- Lifestyle factors, especially obesity and lack of exercise.
- Other risk factors, such as diabetes and high blood pressure.

Diet is the first step in managing your child’s high cholesterol. Dietary changes are generally recommended for children, teens, and adults with LDL (“bad”) cholesterol levels over 110 mg/dL.

- The “Step I” diet is a low-fat diet (no more than 30% of calories from fat). It also limits the amount of cholesterol, which comes from animal fats, in the diet. In some situations, the doctor may recommend a diet that is even lower in fat.
- The doctor may recommend a visit with a dietitian, who can help develop a diet plan. It’s usually best to introduce the new diet gradually.



- In most cases, we recommend that all family members over age 2 follow the Step I diet; when the children have high cholesterol, the parents often do too.
- *Infants and toddlers under age 2 should not be put on a low-fat or low-calorie diet.*
- The doctor will check your child to see if the new diet is lowering your child's cholesterol levels. If target levels aren't reached, the doctor may recommend another diet ("Step II").
- Don't get discouraged if your child doesn't reach the target levels; it can be hard to make major reductions in cholesterol through diet alone. Even if your child doesn't reach the ideal cholesterol level, the dietary changes will help to reduce his or her long-term risk of cardiovascular disease.

Other risk factors may need attention too, including obesity and lack of exercise. Losing weight and increasing physical activity will not only help to reduce your child's cholesterol levels but also make him or her feel and look better. Teens (and adults) who smoke may need help in quit-

ting. It is also important to treat any related health problems, such as high blood pressure or diabetes.

Drugs may be recommended for some children over 10 years old whose cholesterol levels remain high despite changes in diet. We will probably recommend visits to a specialist with expertise in this area.

Other causes of high cholesterol, including specific inherited disorders, also require specialist treatment.



When should I call your office?

Call our office if you have any questions about treatment for your child's high cholesterol, including planning a healthy diet for your family.

Where can I get more information?

The American Heart Association offers a lot of helpful information on a healthy diet and lifestyle. On the Internet at www.americanheart.org, or call 1-800-AHA-USA-1 (1-800-242-8721).