Elevated LDL (Low Density Lipoprotein)

Many things affect your child's chances of having heart and blood vessel disease as an adult. Some of these risk factors, such as family history, age, and gender, cannot be changed. Some of the risk factors **can** be changed, such as:

- Unhealthy weight
- Tobacco use and second-hand exposure
- High blood pressure
- Low HDL cholesterol

Cholesterol build-up can start in children as young as 2 years of age. By making wise food and lifestyle choices now, your child can lower the risk of many health problems when they are older. These health problems include:

- A **stroke** caused by blocked arteries that lead to the brain.
- A **heart attack** caused by blocked arteries around the heart.
- **Peripheral vascular disease** caused by blocked arteries in the legs.

Cholesterol is found in all cells. It is needed for many body functions. Two types of cholesterol are HDL and LDL. Increased **LDL** levels have been found to increase the risk of heart and blood vessel disease. LDL can collect in the arteries. This is why it is called "lousy" cholesterol.

Fat is needed for energy, to move vitamins throughout your body, and to make certain hormones. But some types of dietary fat can lead an increase in LDL levels.

Diet and Lifestyle Choices Which Raise LDL Levels

- Frequently eating foods high in saturated and trans fats. Not enough fiber in the diet.
- Not getting enough exercise.

Diet and Lifestyle Choices Which Reduce LDL Levels

- Increasing your fiber intake, especially your intake of soluble fiber.
- Decreasing saturated and trans fat intake.
- Meeting your daily recommended physical activity needs.

Saturated fats tend to raise blood cholesterol levels. Children should limit their saturated fat intake to about 4-5 grams per meal and 0-1 grams per snack. Teenagers should limit their intake to about 6-7 grams per meal and 0-2 grams per snack. Saturated fats are found in:

- Fatty cuts of meats, especially red meats
- Some processed meats
- Whole fat dairy products including yogurt, some cheeses, whole milk, and ice cream
- Other animal products including butter, lard, and beef tallow
- Fried foods including French fries, most chips, fried chicken (including many kinds of chicken tenders and nuggets), and other deep-fried foods
- Baked treats including cakes, donuts, pastries, and cookies
- Tropical oils including palm, palm kernel, and coconut oil.

Trans fats are man-made when liquid vegetable oils are hardened to make shortening or margarine. They raise your "lousy" LDL cholesterol AND decrease your "happy" HDL cholesterol. Try to avoid trans fat. While the amount of artificial trans fats allowed in our food system has been limited in more recent years, trace amounts can still be found in some processed foods. Foods with trans fats include:

- Some shelf-stable baked goods: cookies, pies, cakes, etc.
- Fried foods: donuts, French fries, fried meats
- Snack foods: some microwaved popcorn, some chips
- Refrigerated dough (baked goods): canned biscuits, canned cinnamon rolls, frozen pie crust, frozen pizza crust
- Non-dairy coffee creamers
- Vegetable shortening
- Shelf-stable frosting

Fiber is the edible part of plant foods. It is recommended that children consume an adequate amount of fiber in their diet to improve and maintain good cholesterol levels. It is important to eat a mixture of soluble and insoluble fiber. Soluble fiber turns the contents of your stomach into a gel-like substance. The change in viscosity helps with the removal of cholesterol from your body, lowering your LDL cholesterol levels. Sources of soluble fiber include many fruits and vegetables, chickpeas, oats, quinoa, barley, chia seed, flaxseed, almonds, and walnuts. Aim for one-quarter to one-half of your daily fiber intake to be from soluble fiber.

Age	Recommended Daily Fiber
1-3 years	19 g
4-8 years	25 g
9-13 years	Girls: 26 g Boys: 31 g
14-18 years	Girls: 29 g Boys: 38 g

To Increase Fiber Intake

- Eat more fresh, frozen, or canned fruits and vegetables (aim for at least 5 servings per day).
- Eat whole grain breads, pasta, and cereals.
- Plan some meatless meals using beans or lentils as a protein source.

Plant sterols/stanols block cholesterol from being absorbed in the intestine. Eating 2 grams of plant sterols per day can reduce LDL levels. It is not possible to consume this amount of plant sterols/stanols in your diet without supplements or consuming fortified foods. Ask your provider about supplement options.

Dietary cholesterol is any cholesterol that is found in the food we eat. While it is still recommended to eat a diet lower in cholesterol, newer research has found that reducing intake of saturated fat is more effective in reducing LDL levels.

Tips to Lower LDL

	Choose	Limit
Milk and Dairy Foods	• Skim or 1% white milk • Low-fat/part-skim cheese: mozzarella, swiss, farmer's cheese • Low-fat/non-fat frozen yogurt, sherbet, fruit sorbet • Low-fat/non-fat sour cream • Low-fat/non-fat cottage cheese or yogurt • Low-fat/non-fat cream substitutes	• Whole, 2% white milk • Full-fat natural cheeses, any processed cheeses • Full-fat ice cream • Full-fat sour cream • Full-fat cottage cheese • Full-fat yogurt • Cream, half & half
Protein Foods	• Lean beef: lean ground beef (90/10 or higher), top sirloin, tenderloin, rump, flank • Lean pork: loin chop, tenderloin, ham • Turkey sausage or turkey bacon • Lean lunch meats • Baked or grilled chicken and fish • Eggs • Vegetable/broth soups • Turkey/chicken hot dogs or bratwurst • Tofu, peanut butter, dried or canned beans, lentils, hummus, nuts and seeds	• Fatty beef: high-fat ground beef (80/20), T-bone, prime rib • Fatty pork: spare ribs, sausage • Pork sausage, bacon, chorizo • Lunch meats with more than 3 grams fat/ounce (often including peperoni and salami) • Deep-fried meats and seafood • Eggs prepared in butter • Creamed soups • Regular hot dogs or bratwurst • Summer sausage
Fats	• Margarine: soft tub or squeeze type (with 0 grams trans-fat), margarines fortified with plant sterols • Liquid oils: canola, olive, peanut, sesame, sunflower, safflower, soybean, cottonseed or flaxseed oils • Oil-based salad dressings • Mayo and sandwich spreads (light/reduced calorie, or made with olive oil)	• Butter, margarine with trans-fat • Coconut and palm oils • Vegetable shortening that contains partially hydrogenated vegetable oil • Beef tallow and other forms of animal lard • Cream cheese • Creamy salad dressings • Mayo (full-fat)

Other Ways to Reduce LDL

- **Physical activity.** Exercise strengthens the heart. Experts say to aim for 60 minutes of moderate to vigorous play or aerobic activity daily. Most daily physical activity should be focused on aerobic activity with a minimum of 3 days aerobic activity weakly. Aerobic activity increases your heart rate and includes walking, running, dancing, bike riding, swimming, and climbing stairs. Include weight-bearing exercise at least 3 days per week to build muscle mass. Strong muscles support your health in a variety of ways. Weight bearing exercise includes most forms of exercise but excludes swimming and cycling.
- **Limit screen time.** Limit screen time to no more than 1-2 hours daily for children over 2 years of age. Less than 1 hour per day for kids under 2. Screen time includes phones, tablets, computers, video games and TV.
- **Avoid alcohol.** Drinking under the age of 21 is illegal. For adults of legal drinking age, limit alcohol to no more than 1 standard drink per day for women and no more than 2 standard drinks per day for men. It is possible that red wine may have some cardiovascular benefits for lowering LDL, but this topic continues to be researched.

Who to Call

If you have questions, please contact your provider through MyChart or call your provider listed in your After Visit Summary or After Hospital Care Plan.

For a list of UW Health Clinics, please visit www.uwhealth.org/.

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 9/2026 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Clinical Nutrition Services Department and the Department of Nursing. HF#601