

**How to lower your cholesterol**  
**Low Cholesterol/ Low Fat Dietary Guidelines**

A diet with less total fat, saturated fat, and cholesterol is recommended as the first step to lowering serum (blood) cholesterol and/or triglyceride levels. High cholesterol and lipids are associated with the build up of plaque in the arteries of the body that can reduce blood flow to the heart or head. This can lead to a heart attack or stroke. A reduction in serum cholesterol, especially high levels of low-density lipoprotein (LDL) “bad” cholesterol, reduces the risk of cardiovascular (heart) disease and stroke.

Three major dietary factors that contribute to high levels of serum cholesterol, including LDL cholesterol are: (1) high intake of saturated fat; (2) high intake of dietary cholesterol; and (3) an imbalance between calorie intake and activity level leading to obesity. Individuals with high triglycerides may also need to reduce foods high in sugar or refined carbohydrate, and avoid alcohol. A high serum level of high-density lipoprotein (HDL) “good” cholesterol is associated with a decreased risk of heart disease.

***As with any diet changes, consult with your physician or a registered dietitian before beginning a new program.***



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## General Guidelines

- **Total fat.** Reduction of total fat to no more than 25-35% of total calories (about 50 to 65 grams fat for a 1500-2000 calorie diet) helps to control both caloric and saturated fat intake. Bake, broil, or grill foods instead of frying to reduce total fat intake.
- **Saturated fatty acids** increase serum cholesterol and triglycerides. Foods rich in saturated fatty acids include meat fat and poultry fat, high fat dairy products (butter, whole milk, cheese, ice cream), palm oil, coconut oil, palm kernel oil, and cocoa butter. These should be avoided. Less than 7% total calories should come from saturated fat.
- **Dietary cholesterol** also increases serum cholesterol. Cholesterol is found only in animal foods; examples include dairy products, meat, fish, and poultry; egg yolks and organ meats are particularly rich sources. Less than 200 milligrams of dietary cholesterol should be consumed per day.
- **Polyunsaturated fatty acids** have a cholesterol lowering effect when they are substituted for saturated fat. However, too much polyunsaturated fat, that is, intakes greater than 10% of total calories may be associated with decreases in HDL cholesterol. Common foods rich in polyunsaturated fatty acids include corn oil, sunflower oil, safflower oil, soybean oil, walnuts and sunflower seeds.
- **Monounsaturated fatty acids** can lower LDL cholesterol. Monounsaturated fatty acids should be eaten as the majority of your total fat intake. Choose more plant sources of monounsaturated fatty acids such as olive, canola or peanut oils. Up to 10% of total calories from monounsaturated fatty acids is recommended.
- **Trans-fatty acids** are formed by the partial hydrogenation (hardening) of vegetable oils, and, in some studies have been shown to raise LDL cholesterol levels almost as much as saturated fats. Sources of trans-fatty acids are margarine, shortenings, and partially hydrogenated oils used in cakes, cookies, crackers, and fried foods. "Partially hydrogenated vegetable oils" on the food label is an indication that trans-fatty acids may be present. Limit these foods.
- **Dietary fiber** intake should be increased to 20 gm to 30 gm daily for adults, about 25% of which should be soluble fiber. Soluble fiber sources include oats, legumes, apples, grapefruit and oranges. An additional decrease in serum cholesterol may result when soluble fiber is added to a diet reduced in fat and cholesterol. Consumption of the recommended amount of dietary fiber can be met daily by eating the suggested five or more servings of fruits and vegetables, and six or more servings of whole grain products.
- **Obesity** is a risk factor for coronary artery disease. **Weight reduction** is associated with increased HDL cholesterol, decreased LDL cholesterol and triglyceride levels. Limit intake of desserts and sweets to decrease calories. Regular exercise is beneficial for weight control. Consult your physician regarding a weight reduction or exercise program.

- **Omega-3 fatty acids.** Fish is the best source of omega-3 fatty acids. Have one to two servings of fish per week to lower risk of coronary artery disease. Fish oil supplements may be beneficial, please check with your doctor.
- **Antioxidant vitamins B-6, B-12, C, betacarotene and folic acid** are being investigated for their role in preventing atherosclerosis (blocked arteries). The recommended allowance of all the major vitamins should be consumed as part of a well-balanced diet. In addition to being part of a low fat diet, dark green and dark yellow vegetables and fruits are rich sources of antioxidant vitamins. Eat five to nine servings of fruits and vegetables per day. Discuss your need to take vitamin/mineral supplements with your physician. Typically a multivitamin without iron plus supplemental vitamin B-6 (10 mg/day), vitamin B-12 (115 mg/day), folic acid (400-800mg/day) may be recommended.
- **Alcohol.** The *Dietary Guidelines for Americans* recommends that for those who do consume alcohol, limit intake to no more than 1 to 2 drinks per day. Alcohol should be avoided for individuals with high triglycerides.
- **Sodium** or salt in excess amounts may cause fluid retention and hypertension (high blood pressure) in sodium-sensitive persons. Numerous national agencies recommend that daily sodium intake should be limited to less than 3,000 mg per day. If you need to restrict salt, eliminate, or eat sparingly, high sodium processed foods, fast foods, hot dogs, luncheon meat, canned soups and canned vegetables. The (\*) symbol next to a food on the allowed list indicates that it is higher in sodium. Often a reduced salt version is available.
- **Caffeine** in moderation (two 6oz. cups of coffee or about 250 mg. caffeine per day) is considered safe. However, your physician may advise that you avoid caffeine if you had an abnormal heart rhythm (arrhythmia).
- **Fat Replacements:** These products may allow patients on fat controlled diets greater choices, but the use of fat-free and reduced fat foods should be considered in the context of a diet that is both balanced and varied. Fat replacements may have the same qualities as fat, such as taste and mouth feel, but may not have the same uses in cooking applications, such as baking or frying. Fat free foods should be used in moderation, especially if they are high in sugar and/or sodium.
- **Plant Stanols:** Plant stanols are a new food ingredient that can help reduce LDL cholesterol. Plant stanols are derived from naturally occurring substances in plants. Plant stanols help block absorption of cholesterol from the digestive tract. This in turn lowers blood levels of LDL cholesterol without effecting HDL cholesterol levels. Clinical research has demonstrated that 3 servings of foods containing this ingredient can result in as much as a 20-point reduction in cholesterol. Plant stanols are now available in regular and light spreads such as “Benecol”, “Take Control” and “Smart Balance” and are found in the margarine area of the grocery store. Your physician or dietitian may recommend using 2 to 3 servings per day in place of similar foods.

Food Group	Foods Allowed	Foods to Avoid
<p><b>Breads and Cereals</b></p> <p><i>Choose 6 or more servings per day</i></p>	<p>Breads--whole grain bread, pita, English muffins, bagels, sandwich buns, corn or flour tortilla</p> <p>Cereal--oat, wheat, rice, corn, multigrain</p> <p>Crackers--wheat, graham, soda, low-fat animal; bread sticks; melba toast; rice cakes</p> <p>Homemade baked goods using unsaturated oil, skim or 1/2% milk, and egg substitute</p> <p>Low fat or fat free quick breads, biscuits, whole grain muffins, pancakes or waffles</p>	<p>Breads in which eggs, fat, and/or butter are a major ingredient; croissants.</p> <p>High fat granolas</p> <p>High fat crackers, salted crackers</p> <p>Commercially baked pastries, muffins, biscuits, pancakes or waffles</p>
<p><b>Potato and Potato Substitutes</b></p>	<p>Any potato, pasta or rice without added fat</p>	<p>Fried or prepared with butter, cheese, or cream sauce</p>
<p><b>Soups</b></p>	<p>*Low fat and sodium reduced soups and broth; soups made with skim milk</p>	<p>Canned soups containing whole milk, cream, meat fat or poultry fat</p>
<p><b>Fruits</b></p> <p><i>Choose 2-4 servings per day</i></p>	<p>Fresh, frozen, canned, or dried, fruit juice</p>	<p>Fried fruit or fruit served with butter or cream sauce; avocados; olives</p>
<p><b>Vegetables</b></p> <p><i>Choose 3-5 servings per day</i></p>	<p>Fresh, frozen, * canned, without added fat or sauce, * vegetable juice</p>	<p>Vegetables fried or prepared with butter, cheese, or cream sauce</p>

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<p><b>Meats and Meat Substitutes</b></p> <p><i>Choose ≤5-6 ounces per day</i></p>	<p>Beef, pork, lamb, veal, venison, buffalo--lean cuts well trimmed before cooking Limit red meat to 3 x/week. Poultry without skin Fish, shellfish *Reduced fat or fat-free ham, luncheon meats or hot dogs Low fat tofu, tempeh; low fat or nonfat meat substitutes made with textured vegetable protein Eggs--limit egg yolks to 2-4/ week; egg whites, cholesterol-free egg substitutes Legumes--dried or canned beans, split peas and lentils</p>	<p>Regular ground beef, fatty cuts of meat, spare ribs, organ meats</p> <p>Poultry with skin, fried chicken Fried fish, fried shellfish Regular luncheon meats such as bologna, salami, sausage, hot dogs Egg yolks (more than 4/week); includes eggs used in cooking and baking Refried beans made with lard.</p>
<p><b>Dairy</b></p> <p><i>Choose 2-3 servings per day</i></p>	<p>Milk-- skim, 1/2% fat, or 1% fat (fluid, powdered, evaporated), buttermilk, low fat eggnog Yogurt--nonfat or low fat yogurt or yogurt beverages; 1% or nonfat soy or rice beverages *Cheese--low fat natural or processed cheese; other low fat or nonfat varieties such as cottage cheese or cream cheese with no more than 3 grams fat per ounce; soy cheese Frozen dairy dessert--low fat or nonfat ice cream or frozen yogurt Low fat coffee creamer; low fat or nonfat sour cream; fat-free whipped topping</p>	<p>Whole milk (fluid, evaporated, condensed), 2% fat milk, chocolate milk, imitation milk, eggnog Whole-milk yogurt, whole-milk yogurt beverages Regular cheeses ( American, blue, Brie, cheddar, Colby, Edam, Monterey Jack, whole-milk mozzarella, Parmesan, Swiss), cream cheese, Neufchatel cheese, 4% fat cottage cheese Regular ice cream Cream, half &amp; half, whipping cream, nondairy creamer, whipped topping, sour cream, cream sauce</p>

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<p><b>Desserts and Sweets</b></p> <p><i>Use sparingly</i></p>	<p>Sweets--sugar, syrup, honey, jam, preserves; candy made without fat (candy corn, jelly beans, gumdrops, hard candy); fruit-flavored gelatin Frozen desserts-- sherbet, sorbet, fruit ice, popsicles Cookies, cake, pie, pudding-- prepared with egg whites, egg substitute, skim milk, and unsaturated oil or margarine; ginger snaps; fig or other fruit bar cookies; fat-free cookies or cakes; angel food cake</p>	<p>Candy made with milk chocolate, coconut oil, palm kernel oil, or palm oil; fudge sauce</p> <p>Frozen treats made with regular ice cream</p> <p>Commercially baked pies, cakes, doughnuts, high-fat cookies, cream pies</p>
<p><b>Fats</b></p> <p><i>How Much?</i> <i>≤6-8 tsp. per day</i></p>	<p>Unsaturated oils--safflower, sunflower, corn, soybean, cottonseed, canola, olive, peanut Margarine--made from unsaturated oils listed above, light or diet margarine, especially soft or liquid forms Salad dressings--made with unsaturated oils listed above, low-fat or fat-free varieties *Seeds and nuts--peanut butter, other nut butters Plant Stanol Spreads ( 3 servings per day recommended)</p>	<p>Coconut oil, palm kernel oil or palm oil</p> <p>Butter, lard, shortening, bacon fat, stick margarine</p> <p>Dressings made with egg yolk, cheese, sour cream, or whole milk; mayonnaise Coconut</p>
<p><b>Beverages</b></p>	<p>Any except those listed to avoid</p>	<p>Beverages made with foods listed to avoid</p>
<p><b>Miscellaneous</b></p>	<p>*Mustard, ketchup, barbeque sauce, tomato sauce, pickles, relish, salsa Cocoa powder Herbs and spices *Low fat and fat-free snack chips, pretzels, popcorn Fat-free chip or vegetable dip</p>	<p>Hollandaise sauce Regular potato chips or snack chips Dips made with sour cream</p>