

Prepared For:		Date:	
Prepared By:		Contact:	

Cholesterol-Lowering Nutrition Therapy

A heart-healthy diet is recommended to reduce your unhealthy blood cholesterol levels to lower your risk for heart disease. Unhealthy blood cholesterol includes LDL-cholesterol (low-density-lipoprotein cholesterol) and non-HDL cholesterol (non-high-density-lipoprotein cholesterol).

Tips

To follow a heart-healthy diet,

- Eat a balanced diet with whole grains, fruits and vegetables, and lean protein sources.
- Achieve and maintain a healthy weight.
- Choose heart-healthy unsaturated fats. Limit saturated fats, *trans* fats, and cholesterol intake.
- Limit refined carbohydrates especially sugar, sweets and sugar-sweetened beverages.
- Eat more plant-based or vegetarian meals using beans and soy foods for protein.
- If you drink alcohol, do so in moderation: one serving per day (women) and two servings per day (men). One serving is equivalent to 12 ounces beer, 5 ounces wine, or 1.5 ounces distilled spirits.

Tips

Choose lean protein and low-fat dairy foods to reduce saturated fat intake.

- Saturated fat is usually found in animal-based protein and is associated with certain health risks. Saturated fat is the biggest contributor to raised LDL levels in the diet. Research shows that limiting saturated fat lowers unhealthy cholesterol levels. Eat no more than 7% of your total calories each day from saturated fat. Ask your RDN to help you determine how much saturated fat is right for you.
- There are many foods that do not contain large amounts of saturated fats. Swapping these foods to replace foods high in saturated fats will help you limit the saturated fat you eat and improve your cholesterol levels. You can also try eating more plant-based or vegetarian meals.

Instead of...	Try:
Whole milk, cheese, yogurt, and ice cream	1% or skim milk, low-fat cheese, non-fat yogurt, and low-fat ice cream
Fatty, marbled beef and pork	Lean beef, pork, or venison
Poultry with skin	Poultry without skin
Butter, stick margarine	Reduced-fat, whipped, or liquid spreads
Coconut oil, palm oil	Liquid vegetable oils: corn, canola, olive, soybean and safflower oils

Avoid *trans* fats.

- *Trans* fats increase levels of LDL-cholesterol. Hydrogenated fat in processed foods is the main source of *trans* fats in foods.

- *Trans* fats can be found in stick margarine, shortening, processed sweets, baked goods, some fried foods, and packaged foods made with hydrogenated oils. Avoid foods with “partially hydrogenated oil” on the ingredient list such as: cookies, pastries, baked goods, biscuits, crackers, microwave popcorn, and frozen dinners.

Choose foods with heart healthy fats.

- Polyunsaturated and monounsaturated fat are unsaturated fats that may help lower your blood cholesterol level when used in place of saturated fat in your diet. Research shows that substituting saturated fats with unsaturated fats is beneficial to cholesterol levels.

Instead of...	Try:
Butter, stick margarine, or solid shortening	Reduced-fat, whipped, or liquid spreads
Beef, pork, or poultry with skin	Fish and seafood
Chips, crackers, snack foods	Raw or unsalted nuts and seeds or nut butters Hummus with vegetables Avocado on toast
Coconut oil, palm oil	Liquid vegetable oils: corn, canola, olive, soybean and safflower oils

Limit the amount of cholesterol you eat to less than 200 milligrams per day.

- Cholesterol is a substance carried through the bloodstream via lipoproteins, which are known as “transporters” of fat. Some body functions need cholesterol to work properly, but too much cholesterol in the bloodstream can damage arteries and build up blood vessel linings (which can lead to heart attack and stroke). You should eat **less than 200 milligrams cholesterol per day**.
- People respond differently to eating cholesterol. There is no test available right now that can figure out which people will respond more to dietary cholesterol and which will respond less. For individuals with high intake of dietary cholesterol, different types of increase (none, small, moderate, large) in LDL-cholesterol levels are all possible.
- Food sources of cholesterol include egg yolks and organ meats such as liver, gizzards. Limit egg yolks to 2 to 4 per week and avoid organ meats like liver and gizzards to control cholesterol intake.

Limit refined carbohydrates

- There are three types of carbohydrates: starches, sugar, and fiber. Some carbohydrates occur naturally in food, like the starches in rice or corn or the sugars in fruits and milk. Refined carbohydrates—foods with high amounts of simple sugars—can raise triglyceride levels. High triglyceride levels are associated with coronary heart disease.
- Some examples of refined carbohydrate foods are table sugar, sweets, and beverages sweetened with added sugar.

Achieve and maintain a healthy weight.

- Talk with your RDN or your doctor about what is a healthy weight for you.
- Set goals to reach and maintain that weight.
- To lose weight, reduce your calorie intake along with increasing your physical activity. A weight loss of 10 to 15 pounds could reduce LDL-cholesterol by 5 milligrams per deciliter.

Participate in physical activity.

- Talk with your health care team to find out what types of physical activity are best for you. Set a plan to get about 30 minutes of exercise on most days.
- To lower your LDL-cholesterol levels and to maintain your weight, 200 to 300 minutes per week of moderate or high-intensity physical activity is recommended.

Additional Nutrition Strategies

Consume foods rich in viscous (soluble) fiber

- Viscous, or soluble, is found in the walls of plant cells. Viscous fiber is found only in plant-based foods—animal-based foods like meat or dairy products do not contain fiber. In the stomach, viscous fibers absorb water and swell to form a thick, jelly-like mass. This helps to lower your unhealthy cholesterol.
- Rich sources of viscous fiber include asparagus, Brussels sprouts, sweet potatoes, turnips, apricots, mangoes, oranges, legumes, barley, oats, and oat bran.
- Eat at least 5 to 10 grams of viscous fiber each day. As you increase your fiber intake gradually, also increase the amount of water you drink. This will help prevent constipation.
- If you have difficulty achieving this goal, ask your RDN about fiber laxatives. Choose fiber supplements made with viscous fibers such as psyllium seed husks or methylcellulose to help lower unhealthy cholesterol.

Consume fortified foods or supplements with plant sterols and stanols.

- Plant sterols and stanols are found naturally in vegetable oils, nuts, seeds, and whole grains. To the body, sterols and stanols look like cholesterol and prevent the cholesterol you eat in food from being absorbed into the blood. This lowers unhealthy cholesterol levels.
- Eat 2 grams of plant sterols and stanols each day. Though plant sterols and stanols occur naturally in foods, natural foods only contain small amounts. Research shows that most people consume 200 milligrams to 400 milligrams of plant sterols and stanols in a typical diet. You will need to eat foods fortified with plant sterols and stanols to achieve the goal of 2 grams of plant sterols and stanols each day.
- If you have been diagnosed with phytosterolemia or sitosterolemia, avoid foods that are fortified with plant sterols and stanols and supplements.
- Foods rich in plant sterols and stanols include fortified margarine spreads, orange juice, and cereals, and breakfast bars
- Ask your RDN about taking a dietary supplement with plant sterol and stanols

Foods Recommended

Food Group	Foods Recommended
Grains	Whole grain breads and cereals, including oats and barley Pasta, especially whole wheat or other whole grain types Brown rice, quinoa or wild rice Whole grain crackers, bread, rolls, pitas
Protein Foods	Lean cuts of beef and pork (loin, leg, round, extra lean hamburger) Skinless poultry Fish Venison and other wild game Dried beans and peas Nuts and nut butters Meat alternatives made with soy or textured vegetable protein Egg whites or egg substitute Cold cuts made with lean meat or soy protein

Dairy	Nonfat (skim), low-fat, or 1%-fat milk or buttermilk Nonfat or low-fat yogurt or cottage cheese Fat-free and low-fat cheese Fortified non-dairy milk: almond, cashew, pea, and soy
Vegetables	Fresh, frozen, or canned vegetables without added fat or salt
Fruits	Fresh, frozen, canned, or dried fruit
Oils	Unsaturated oils (corn, olive, peanut, soy, sunflower, canola) Soft or liquid margarines and vegetable oil spreads Salad dressings Seeds and nuts Avocado

Foods Not Recommended

Food Group	Foods Not Recommended
Grains	High-fat baked goods, such as doughnuts, biscuits, croissants, pastries, pies, cookies Snacks made with partially hydrogenated oils, including chips, cheese puffs, snack mixes, regular crackers, butter-flavored popcorn
Protein Foods	Higher-fat cuts of meats (ribs, t-bone steak, regular hamburger) Bacon Sausage Cold cuts, such as salami or bologna Corned beef Hot dogs Organ meats (liver, brains, sweetbreads) Poultry with skin Fried meat, poultry, and fish Whole eggs and egg yolks
Dairy	Whole milk, 2% fat milk Whole milk yogurt or ice cream Cream Half-&-half Cream cheese Sour cream Cheese
Vegetables	Fried vegetables Vegetables prepared with butter, cheese, or cream sauce
Fruits	Fried fruits Fruits served with butter or cream
Oils	Butter, Stick margarine Shortening Partially hydrogenated oils Tropical oils (coconut, palm, palm kernel oils)
Other	Candy, sugar sweetened soft drinks and desserts

Cholesterol-Lowering Vegan 1-Day Sample Menu

Breakfast	<p>1 slice whole wheat toast 2 tablespoons peanut butter without salt Tofu scramble made with: ½ cup calcium-set tofu ½ cup green pepper ½ cup spinach ½ cup tomatoes ½ cup white mushrooms 1 teaspoon canola oil 1 cup soymilk fortified with calcium, vitamin B12, and vitamin D</p>
Lunch	<p>1 cup reduced sodium split pea soup 1 whole wheat dinner roll 1 medium apple</p>
Dinner	<p>Salad made with: 1 cup lentils ½ cup cooked broccoli ½ cup cooked carrots 2 tablespoons hummus 1 cup sliced strawberries 1 cup soymilk fortified with calcium, vitamin B12, and vitamin D</p>
Evening Snack	<p>1 cup soy yogurt ¼ cup mixed nuts</p>

Cholesterol-Lowering Vegetarian (Lacto-Ovo) Sample 1-Day Menu

Breakfast	<p>1 cup cooked oatmeal 1 tablespoon ground flaxseed 1 cup blueberries 2 scrambled egg whites with 1 teaspoon canola oil 2 tablespoons salsa 1 cup fat-free milk 1 cup coffee Oil, canola</p>
Lunch	<p>2 slices whole wheat bread 2 tablespoons peanut butter without salt 1 small banana 6 ounces fat-free plain yogurt 1 cup sliced red pepper 2 tablespoons hummus 1 cup fat-free milk</p>
Evening Meal	<p>Stir fry made with: ½ cup tofu 1 cup brown rice ½ cup cooked broccoli ½ cup cooked carrots ½ cup cooked green beans 1 teaspoon peanut oil</p>
Evening Snack	<p>1 slice low-fat mozzarella cheese 1 medium apple</p>

Heart-Healthy Eating Sample 1-Day Menu

Breakfast	1 cup oatmeal 1 cup fat-free milk 1 cup blueberries 1 cup brewed coffee 1 ounce almonds
Lunch	2 slices whole-wheat bread 2 oz lean deli turkey breast 1 oz low-fat Swiss cheese 2 slices tomato 2 lettuce leaves 1 pear 1 cup skim milk
Afternoon Snack	1 oz trail mix (with nuts, seeds, raisins)
Evening Meal	3 oz broiled salmon 2/3 cup brown rice 1 tsp margarine 1/2 cup cooked broccoli 1/2 cup cooked carrots 1 cup tossed salad 1 teaspoon olive oil and vinegar dressing 1 small whole-wheat roll 1 tsp margarine 1 cup tea
Evening Snack	1 banana

Notes