

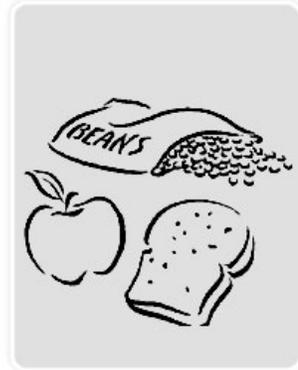
Low Cholesterol Diet

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Purpose

Fat is a major energy source for the body. However, it is not the body's only source of energy. Too much fat in the diet can be harmful. It is especially bad for the circulatory system, because it raises blood cholesterol levels that can contribute to heart attack or stroke. This diet is designed to reduce fat and cholesterol blood levels. The diet goals are:



- decrease total dietary fat, especially saturated and trans fat, also known as hydrogenated fat
- decrease dietary cholesterol
- limit sodium intake
- increase intake of fiber, especially complex carbohydrates and prebiotic fibers
- decrease calories, if needed, to reach a healthy body weight

Cholesterol in the Diet

The heart pumps blood through blood vessels called arteries. This blood carries vital oxygen and nutrients needed by tissues and organs throughout the body. The heart itself is supplied with blood vessels called coronary arteries. When cholesterol levels rise above normal limits and stay high, some cholesterol is left behind in the arteries. Over the years, waxy cholesterol plaques build up on the artery walls, and so reduce or block blood flow. When blood flow to the brain is blocked, a stroke occurs. When plaque blocks a coronary artery, angina or a heart attack may be the outcome.

Cholesterol in the body comes from two sources. Most cholesterol is made by the liver from various nutrients and especially from ingested fats. The liver makes just about all the cholesterol the body will ever need. Since all animals can make their own cholesterol, some cholesterol in the human body comes directly from eating animal foods. These foods include meats, poultry, egg yolks, organ meats, whole milk and milk products. This cholesterol is absorbed through the intestines and added to what the liver makes. It is also known that a diet high in saturated fat increases cholesterol production in the body. Therefore, reducing dietary cholesterol and fats helps to keep blood cholesterol levels within a healthy range.

Most important of all is to significantly reduce the amount of animal meat, meat products and trans fat in the diet.

Fats in the Diet

Dietary fats can be saturated (bad) or unsaturated (good). An easy way to remember the difference is that saturated fats solidify or remain solid at room temperature. Unsaturated fats do not: they are soft or liquid at room

room temperature. Unsaturated fats do not, they are soft or liquid at room temperature. To reduce blood cholesterol levels, it is especially important to limit saturated fats. Saturated fats are found mainly in meats and dairy products made with whole milk.

Unsaturated fats (polyunsaturated and monounsaturated) are found mostly in plants, and are less likely to raise blood cholesterol levels. In fact, monounsaturated fats such as olive, peanut, or canola oils may even help to lower blood cholesterol. There are a few vegetable fats such as coconut oil, palm oil, and cocoa butter (found in chocolate) that act like saturated fats in the body, so they should be avoided.

In the past, food manufacturers "hydrogenated" vegetable oils to prevent rancidity and increase shelf life. These chemically derived oils are commonly known as **trans fats**. They act in the body exactly as do the saturated animal fats, raising cholesterol and, especially, the bad LDL cholesterol. These trans fats should be avoided. Always read the ingredients label on foods. For example, coconut and palm oils are bad, as are saturated fats, and should be avoided. Mono- and polyunsaturated oils like olive oil, canola and cottonseed are good.

Butter and Spreads

Butter is a highly saturated fat and should be avoided. Most of the stick margarines contain trans fat. These too should be avoided. Tub spreads generally contain mono- or polyunsaturated fats, so these are suitable. However, even some of these may contain trans fats so it is important to read the label and ingredients. The tub spreads, Promise and Smart Balance, can particularly be recommended.

Gut Bacteria and Prebiotic Fibers

The human intestine, especially the colon, is home to huge numbers of bacteria. These bacteria are part of the normal physiology within the gut. There are good and bad bacteria present. When the good colon bacteria are fed healthy prebiotic plant fibers, they thrive and produce many health benefits. The fibers that do this best are the prebiotic fibers present in vegetables such as artichoke, banana, onions, garlic, asparagus, leeks and many others. Eating 25-35 grams of varied fruits and vegetables a day will usually provide lots of these beneficial fibers.

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Fiber in the Diet

Fiber in the diet is now known to be increasingly important for cholesterol control and for those with known or suspected heart disease - heart attacks and angina. These are two reasons that 30 grams of fiber a day is important. First, ingested fiber blunts hunger, gives a feeling of fullness and in so doing, helps to control weight. Secondly, certain types of food fiber actually help to reduce cholesterol and triglyceride levels.

There are two main types of fiber - insoluble and soluble. All fiber moves through the gut into the colon unchanged. Within the colon, *insoluble fiber*, as present in wheat and corn, is not fermented by colon bacteria but rather clings to water and helps provide a bulky stool. *Soluble fiber*, on the other hand, is fermented by the good colon bacteria and, in so doing, helps to lower cholesterol and especially triglyceride, another nasty fat that is of concern to some heart patients.

The supplement psyllium and also oats are especially important in lowering cholesterol. Both of these fibers, along with the healthy prebiotic fibers, are present in Prebiotin-Heart Health™.

Special Considerations

In the not too distant past, obtaining food and providing shelter and protection for the family were the highest priorities. Before villages developed, finding food in the wild was a difficult task. Now, food is incredibly abundant. Even very poor families can get enough calories. So, the

following are some practical considerations to help you reach a heart healthy diet.

Labels

Fresh foods purchased at a local market are almost always the best. However, we usually can't avoid getting some packaged foods. Food labels provide a wealth of information. Read them. You will find:

- *Serving size* - Many manufacturers will have an unrealistically low serving size simply so they can artificially lower the amounts listed in the Nutrition Fact portion of the label. Be sure the serving size conforms to what you eat at a sitting.
- *Nutrition Facts* - Here is where you get information on calories, cholesterol, fat, fiber and sodium. It is best to avoid foods with an unrealistic low serving size and high fat content.
- *Ingredients* - In the very smallest print, you will find all the ingredients in the product. They have to be placed in the order of the highest to lowest amounts within the food. Packaged foods with perhaps 8 or more ingredients, many of which you do not recognize, may be packed with calories and fat in hidden ways. Be wary! An example of how one can be misled on labels is to see that there are 0 grams of trans fat in a product. The FDA allows the manufacturer to say this even when there is 0.5 gm of trans fat per serving. So, you must read the ingredients part of the label.

Packaged and Fast Foods

Packaged foods, fast food restaurants, and the ready availability of sugar and calorie laden liquids are in front of us at all times. To the extent you can, restrict your eating to those foods you and your companion have control over. It may not be as fast as packaged food and fast food restaurants, but the enjoyment of food preparation and taking control of your eating has its own rewards.

Sugar and High Fructose Corn Syrup

Nature never intended us to have so much sugar. Honey, molasses and sweet fruits were natural flavors. Now, enormous amounts of simple table sugars (sucrose) are put into many foods. The body processes these as calories, and the weight and cholesterol may both go up.

As bad as sugar has been, *high fructose corn syrup* (HFCS) may be worse, as our bodies were never designed to receive such large amounts of fructose, a natural fruit sugar. Again, calories, weight and cholesterol may go up. So, the advice is to limit sugar and HFCS. Together, excess sugar and HFCS may cause weight gain, metabolic syndrome and accompanying atherosclerosis. Read the labels.

Meats

The meat industry and farming has been one of the enormously successful businesses in the Western World. Not too many generations ago, meat on the dinner table was a rarity. Then, families in the US raised their own meat on farms. Finally, the meat industry, helped enormously by subsidized corn-based feed, was able to spread cuts of meat in front of us at very affordable prices. The answer for a cholesterol/weight concerned person is to cut back drastically on the frequency and the amount of meat. Remember, marbling in meat is saturated fat, and prepared and processed meats such as bacon, sausage, scrapple, bologna, etc., are very high in saturated fat. So, one should restrict the frequency of meats, where possible, trim away the fat, and select those meats with the lowest amounts of saturated fats.

Fish and Fish Oil

It is now well known that fish, and especially certain types of fish such as salmon, albacore tuna, lake trout, herring and mackerel, contain very healthy types of oils that actually lower cholesterol. The oils in these and other fish are particularly healthy for the heart patient. Fish should be consumed 3-4 times a week, preferably baked or broiled rather than sauteed or deep-fried with extra fats.

Fish oil capsules are a concentrated form of this oil and many cardiologists now recommend them for heart patients.

Whole Grains

Complex carbohydrates come from natural plants and not from processed foods. Sugar and high fructose corn syrup are simple carbohydrates and, to the extent possible, should be restricted. In particular, one should select *whole wheat* or *grain* foods. The FDA has strict requirements when this phrase is used. Almost every other term such as multigrain, 7 grain, grain plus, etc., can mean almost anything the manufacturer wants. Read the labels. In particular, avoid foods where the word "enriched" is used. What this means is that the flour has been refined down to white flour (no fiber and few complex carbohydrates) and it has

has been refined down to white flour (no fiber and few complex carbohydrates) and it has been "enriched" by adding a few vitamins. It is a bit of a deceit.

Sodium and Salt

Excess sodium is quite often linked closely to high cholesterol and heart disease. It certainly is directly related to high blood pressure. Low sodium foods are now widely available. There are many other spices that can be used other than table salt. Again, read the labels and especially the salt/sodium content on the nutrition part of the label.

Restaurants

In restaurants, ask the server how items are prepared. It should be remembered that tubs of butter sit around the kitchen simply because adding butter increases flavor and is used copiously by most chefs. Tell your server you are on a low saturated fat, low butter diet.

Food Groups

Meat, Poultry, Fish, Other Protein

Avoid

Choose

Lean Meats: Select meats with minimal marbling. Trim away excess fat. Generally, a serving size is about the size of a deck of cards. Broil or grill to allow excess fat to drip away.

Fatty Meats: Corned beef, mutton, ham, bacon, luncheon meat, short ribs, spare ribs, sausage, hot dogs, scrapple, sandwich spreads, all organ meats

Poultry: Chicken and turkey with skin removed.

Self basted poultry; processed poultry products such as turkey franks or bacon; chicken frankfurters, or scrapple. Check with your physician or nutritionist regarding how many whole eggs per week.

Eggs: Egg whites and low cholesterol egg substitutes. Whole eggs as recommended by a physician or nutritionist.

Seafood: Fish oils are particularly heart healthy. Those with the highest fish oil include swordfish, mackerel, albacore tuna, salmon, walleye, Pollack, and blue fish. Fish should be eaten at least 3 times per week.

Any seafood that is sauteed or deep fried

Cheese: Select low fat cheese such as cottage cheese, pot cheese, mozzarella, ricotta and Swiss.

Most cheeses are high in saturated fat. Avoid cream cheese, processed cheese and cheese spreads.

Wild Game: Elk, deer (venison), Bison, pheasant, rabbit, wild duck and squirrel

Domestic duck or goose

Beans: Beans of almost any type, peas, lentils; tofu; peanut butter

Canned baked beans (sugar and extra calories added). Check labels.

Milk: Skim, non-fat (fluid, powdered, evaporated, condensed), buttermilk, lactose-reduced and sweet Acidophilus made from skim milk

Any milk product made with whole or 2% milk, chocolate milk, milkshakes, eggnog, coconut milk

Yogurt: Made from skim or non-fat milk

Made from whole milk or custard style

Creamers: Only those containing polyunsaturated oils

Any containing coconut or palm oils; whipped, sour, light, heavy, half & half creams

Cereals, Grains, Complex Carbohydrates

Avoid

Choose

Cereals: Dry or Cooked: Oat cereals are

Coconut containing cereals, instant hot

Cereals, Dry or Cooked: Not cereals are particularly heart healthy. Check labels on all cereals for total calories, sugar and sodium. Cereal grains are low in saturated fat.

Coconut containing cereals, instant hot cereals, granola

Pasta & Rice: Noodles, spaghetti, macaroni, brown rice (preferred), wild rice

Prepared with whole eggs, cream and cheese sauces; canned or boxed noodle and macaroni dishes; canned spaghetti dishes

Baked Goods: Whole grain breads and rolls; low fat or homemade muffins, pancakes, waffles and biscuits using polyunsaturated spread or oil and non-fat milk

Butter or cheese rolls and breads; croutons; commercial biscuits, muffins, pancakes, pastries, sweet rolls, donuts, croissants, popovers

Tortillas: Corn, soft flour made with unsaturated oils

Soft flour tortillas made with lard, shortening, hydrogenated fats, coconut and palm oils

Crackers/Snacks: Unsalted crackers, pretzels, popcorn prepared with air popper or mono/polyunsaturated oil

Salted crackers or snacks; fried snack foods; any snacks or crackers containing saturated fats, coconut or palm oils, hydrogenated or partially hydrogenated fats; cheese crackers or snacks; potato chips; corn chips; tortilla chips; chow mein noodles; commercial buttered popcorn

Fruits and Vegetables

Choose

Vegetables: Fresh, frozen or low sodium canned; low sodium tomato and vegetable juices

Spaghetti sauce; creamed, breaded or deep-fat fried vegetables; vegetables in sauces

Fruit: Fresh, unsweetened dried fruits; canned or frozen packed in water, own juice or light syrup preferred; all fruit juices (unsweetened preferred)

Canned or frozen packed in syrup, sweetened dried fruits, coconut, fried snack chips

Fats

Fats in nuts, seeds and avocado are mostly unsaturated and healthy. They are high in vitamins and minerals, but they also contain high calories and should be limited.

Choose

Polyunsaturated Fats: Sunflower, safflower, corn, soybean, cottonseed, sesame oils

Butter, lard, beef tallow, salt pork, bacon, bacon drippings, ham hock, animal fat, shortening, suet, chocolate, cocoa butter, coconut, coconut oil, palm and palm kernel oil, hydrogenated fat

Monosaturated Fats: Canola, olive, peanut oils

Spreads: Tub type vegetable spreads made with canola or other mono- or poly-unsaturated fats

Hardened stick margarine or butter, any spread made with saturated or trans fat

Salad Dressings: Olive oil and balsamic vinaigrette. Check labels for saturated or trans fats.

Made with saturated or trans fats, egg yolks

Seeds and Nuts: Unsalted, pumpkin, sesame, sunflower and others not on avoid list

Cashews, macadamia, pistachio, Brazil

Miscellaneous

Choose

Avoid

Avoid

Avoid

Desserts: Homemade baked goods made with unsaturated oils or spreads, skim or 1% milk and egg substitute or egg whites; gelatin; angel food cake; ginger snaps; fruit ice, fruit whips, sorbet, sherbet; low-fat frozen desserts; puddings, custards or junkets made with non-fat milk and egg allowances

Made with whole milk, cream, butter, chocolate and egg yolk; commercially prepared cakes, pies, cookies, pastries; ice cream; chocolate desserts; frozen cream pies; commercial dessert mixes such as cake and brownie mixes; chocolate; candies made with cream fillings

Beverages: Sparkling or mineral water, seltzer, club soda - unsweetened preferred; coffee; tea; Postum

Tonic, commercially or home softened water, instant cocoa mixes, Dutch processed cocoa

Soups & Sauces: Fat-free, low-salt broth, consomme and bouillon; homemade soup skimmed of fat; cream soup and sauces made with non-fat milk and fat allowance

Soup made with whole milk or cream; broth containing fat; canned soups; dehydrated soup mixes; bouillon not labeled low-sodium; gravy and sauces made with butter, other animal fat and whole milk

Other: Spices, herbs, pepper, lemon juice, garlic and onion powder, Tobasco, catsup, mustard, vinegar, relishes, jam, jelly, marmalade (unsweetened preferred)

Commercially fried foods, pickles, any foods containing items not allowed

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