THE UNIVERSITY OF MAINE Cooperative Extension

Bulletin #4366

# *Dining with Diabetes*
# C for Cholesterol: Lowering Your Risk for Cardiovascular Disease

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Although diabetes increases risk for heart disease, there are steps you can take to reduce risk. Your health care provider assesses your risk for heart disease by considering many factors. As was mentioned in University of Maine Cooperative Extension bulletins #4364, *A for A1C: Carbohydrates and Blood Sugar*, and and bulletin #4365, *B for Blood Pressure*, high blood sugar and high blood pressure are two factors that increase risk. Another is dyslipidemia, a condition in which cholesterol and fat levels in the blood are abnormal. A fasting blood test called a lipid profile is performed to determine if you have dyslipidemia. The lipid profile includes several important values including those for LDL cholesterol, HDL cholesterol, and triglycerides. Elevated LDL cholesterol increases risk while a higher HDL level lowers risk. This can be remembered by thinking of LDL cholesterol as *Least Desirable* and HDL cholesterol as *Highly Desirable*. Depending upon other risk factors, your health care provider may set your LDL cholesterol goal at 100 mg/dl or as low as 70 mg/dl. Good HDL cholesterol readings are 50 mg/dl or above in women, and 40 mg/dl or above in men. Triglyceride levels of 150 mg/dl and above are considered elevated.

In addition to taking prescribed medications, controlling blood sugar, participating in regular physical activity, and maintaining a healthy body weight, there are several dietary recommendations that can improve lipid profiles.

Type of dietary fat has a greater effect on cardiovascular risk than total amount of fat consumed. Some kinds of dietary fat are needed for good health. Fat does not cause blood sugar to rise. Fat takes longer to digest so you may feel fuller longer after eating a fat-containing meal as compared to a fat-free meal. But be careful because all fat is high in calories. Consuming too much fat can contribute to weight gain.

## Saturated Fat

Too much saturated fat in the diet can cause blood LDL cholesterol levels to rise. Saturated fats come from animal foods and tropical oils and they tend to be solid at room temperature. Think of the bacon drippings that solidify as they cool to room temperature. It's best to replace saturated fat with more healthful liquid oils instead of replacing saturated fat with carbohydrates. You may decrease the amount of

| Blood Test | Goal* |
|---|---|
| LDL Cholesterol | 100 mg/dl or less |
| HDL Cholesterol | Women: 50 mg/dl or above<br>Men: 40 mg/dl or above |
| Triglycerides | Less than 150 mg/dl |

**“Use liquid vegetable oil instead of butter, lard, palm oil and coconut oil.”**

saturated fat in your diet by following these recommendations:

1. Limit consumption of butter, lard, palm oil, and coconut oil, and products made from them. Instead, use liquid oils and products made with liquid oils like canola, corn, olive, peanut, safflower, sesame, soy, and sunflower oils. Read the Nutrition Facts panel on margarine food labels to select margarine with lowest amount of saturated fat.
2. Choose fat-free (skim) or low-fat (1%) dairy products like milk, yogurt, kefir, and cheese. If you eat regular cheese, do so only occasionally and keep portion sizes small.
3. Choose lean meats and keep portion sizes to no more than 3 ounces, about the size of a deck of cards. Four ounces of raw meat, fish or poultry cook down to about a 3-ounce serving. In the Plate Method, the protein food group is represented by the lower right quarter of the plate. Trim away visible fat on meats. Lean cuts are those that require slow moist cooking methods, like a pot roast or stew beef. Cuts that remain tender with dry cooking methods tend to have fat marbling that can’t be trimmed. Skim off fat that rises to the top of soups, stews, and other mixed dishes. Skim fat from drippings before making gravy. When cooking higher fat meats, use methods in which fat drips away from meat, like broiling or grilling.
4. Remove skin from poultry prior to seasoning and cooking. Like meats, keep portion sizes to three ounces, about the size of a deck of cards.
5. Avoid processed meats like bacon, lunchmeats, sausage, and hot dogs.
6. For prepared items, check nutrition facts panel on food label for saturated fat content.
7. Substitute nuts, nut butters, and seeds for meats in some meals. But be careful to limit serving size because, even though they contain healthy fats, nuts and seeds are still high in calories.

## Trans Fat

Like saturated fat, trans fat causes blood LDL cholesterol levels to rise. However, there is evidence that it also causes beneficial HDL cholesterol levels to fall. While there is a small amount of trans fat naturally occurring in some foods, much is man-made and can be avoided. Manufacturers make trans fats by converting healthful liquid oils into solid trans fats through a process known as partial hydrogenation. Trans fat is often found in baked goods like cookies, cakes, and pies, margarine, shortening, French fries, chips, and flavored popcorn. Baked products made with trans fats tend to have a longer shelf life and trans fat used for frying lasts longer. The amount of trans fat in products like margarine and baked goods has dramatically declined since federal regulations have required its inclusion on food labels. Plans are underway to ban adding trans fats to food products. Unfortunately, it’s often replaced with a saturated fat like palm oil. Whenever possible, trans fat should be avoided. You may decrease the amount of trans fat in your diet by following these recommendations:

1. Read the nutrition facts panel on food labels. If a serving contains more than half a gram of trans fat, it must be listed and the food should be avoided. If a serving contains less than half a gram, it does not need to be listed as trans fat on the nutrition facts panel, but it will be included as partially hydrogenated oil in the ingredients list. It's possible to consume an excessive amount of trans fat by eating multiple servings of food that contain just under a half gram of trans fat per serving and are labeled as zero trans fat per serving.
2. Use the kind of peanut butter in which the oil separates and rises to the top. If the oil doesn't separate while stored on the shelf, the healthful peanut oil has been partially hydrogenated to become solid at room temperature, or has been replaced with a saturated fat like palm oil. Once the separated oil is stirred through, store the peanut butter in the refrigerator so it will stay mixed.
3. Use caution when dining out or ordering butter flavored popcorn at movie theaters.
4. Choose margarine that lists zero trans fat on the nutrition facts panel and no partially hydrogenated oil in the ingredients list. Better yet, use liquid oil. In many cultures people dip bread in olive oil instead of spreading butter or margarine on it.
5. Lite margarines are usually lower in calories because they contain water. Therefore, lite margarines are not recommended for cooking or baking.

**Note:** *The United States Food and Drug Administration will no longer allow manufacturers to add trans fat to food products after June 18, 2018. However, some products containing added trans fats may remain available on store shelves until January 1, 2021.*

## Cholesterol

For many years scientists believed dietary cholesterol was the primary concern for those who wanted to lower their blood cholesterol levels. Researchers now know dietary saturated and trans fats have the most effect on cholesterol levels.

Dietary cholesterol is found only in animal foods. Since most high cholesterol foods are also high in saturated fat, if you limit foods high in saturated fat, you will also limit cholesterol. Egg yolks and some shellfish contain cholesterol but little saturated fat. You can reduce the amount of cholesterol from eggs by using just the whites, mixing one yolk with two whites, or using an all egg white product available at grocery stores.

## Fatty Fish

Eating fatty fish such as salmon, mackerel, sardines, tuna or trout twice a week is associated with reduced risk for heart disease. The benefit is probably due to the omega-3 fatty acids found in fish. There are some plant food sources of omega-3 fatty acids like flax and chia seeds; however, little of the omega-3 fatty acids in these foods is converted into the effective form found in fish.

## Tip

Try placing olive oil, rinsed fresh rosemary and garlic in blender to make flavorful oil to drizzle sparingly on bread and vegetables. Store in sealed tub in refrigerator and use within a week. In the refrigerator, it may firm up to become a spread.

## Fiber

Viscous or soluble fiber can help lower LDL cholesterol levels. Soluble or viscous fibers form a gel in water and are fermented by bacteria in your intestines. Good sources of soluble fiber that belong in the starchy vegetable/grains lower left quarter of the Plate Method plate include legumes (beans and peas), oats, barley, and sweet potatoes. Brussels sprouts are a good low carbohydrate vegetable source. Fruit sources include oranges, apricots, apples, and pears. Peanuts, peanut butter, and nuts are good sources from the protein group. Ground flaxseeds sprinkled on cereal or other foods is another way to include more soluble fiber in your diet. Some people find it convenient to use a psyllium fiber supplement to boost their soluble fiber intake.

## Plant Sterols and Stanols

Plant sterols are naturally occurring substances that lower LDL blood cholesterol levels by blocking cholesterol absorption from the intestines. Some foods like corn, wheat, and soy contain sterols, but the amounts naturally occurring in these foods are so low it's difficult to consume enough to affect cholesterol levels. Unmodified sterols extracted from soybeans are used in making a specific brand of margarine. Stanols used in making another brand of margarine are synthetically produced and derived from pine trees.

Several food products have been fortified with these substances, including specific margarines, yogurt, cheese, orange juice, granola bars and bread. Studies have demonstrated sterol or stanol containing margarines were equally effective in lowering LDL cholesterol. Since heating destroys sterols, the cholesterol lowering impact of sterols is lost in cooking. Stanols, however, maintain their cholesterol lowering ability even if used in cooking. There is some evidence that sterols and stanols reduce blood concentration of beta carotene, alpha carotene and vitamin E, so if you use these products be sure to consume foods that contain these nutrients, such as vegetables, fruits, vegetable oils, nuts, seeds and whole grains.



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