

## Nutrition Guidelines for Heart and Blood Vessel Disease

Many factors affect your chances of getting heart and blood vessel disease. Some of these risk factors can't be changed (family history, age and gender). Yet, by watching what you eat, you **can** improve your blood fat levels, control your weight and reduce high blood pressure.

By making wise food choices, you can lessen your risk of:

- Stroke (caused by blockages in the arteries that lead to the brain).
- Heart attack (caused by blockages in the arteries around the heart).
- Peripheral vascular disease (caused by blockages in arteries in the legs).

### Risk Factors of Heart and Blood Vessel Disease

- High LDL (low-density lipoprotein) or low HDL (high-density lipoprotein) cholesterol levels
- Family history of heart disease, stroke or peripheral vascular disease
- Tobacco use
- High blood pressure
- Diabetes
- Obesity
- Inactive lifestyle
- Male
- Age
- Smoking

### Blood Fats

Fat is an important part of the blood. It is a major source of energy for muscles. It helps transport vitamins throughout your body. Fat is also needed to make certain body tissues.

Even so, some blood fats can lead to a type of heart and blood vessel disease called atherosclerosis. This disease is a buildup of cholesterol, calcium, and blood clotting factors in blood vessels. This buildup limits blood flow, which can increase the risk of a heart attack, stroke, leg pain or other problems.

### Blood Fat Levels

The guidelines below apply to adults 20 years and older. All values are in milligrams/deciliter.

#### Total Cholesterol

Ideal- less than 160  
Normal-less than 200  
High- more than 200

#### LDL Cholesterol for People Without Heart Disease

Ideal- less than 100  
Normal- less than 130  
High- more than 130

#### LDL Cholesterol for People with Heart Disease

Ideal- less than 70  
Normal- less than 100  
High- more than 100

#### Triglycerides

Ideal- less than 100  
Normal- less than 150  
High- more than 150

#### HDL Cholesterol

Men- More than 40  
Women- More than 50

### What These Levels Mean

Cholesterol is a substance found in all cells. Your body needs it for many functions. Lipoproteins are particles that carry cholesterol and other fats throughout the blood stream. Two important types of lipoproteins are **LDL** (low-density lipoprotein) and **HDL** (high-density lipoprotein).

High **LDL** levels increase the risk of heart and blood vessel disease. LDL cholesterol can collect in the arteries. LDL is often called “bad cholesterol.”

**HDL** removes extra cholesterol from your blood stream. This protects you from heart and blood vessel disease. HDL is often called “good cholesterol.”

**Triglycerides** are fats found in your food. Your liver can make them from excess calories, alcohol and sugars in your diet. They are also found in body fat. When triglycerides levels are high, HDL levels tend to be low.

### Fat in Your Diet

Fats are important nutrients your body needs. There are 4 types of fats in foods that we eat: saturated, trans-fat, monounsaturated, and polyunsaturated. Different fats have different properties and different effects on blood cholesterol levels. But all different types of fats contain the same amount of calories – 9 kcals per gram. We like to think of fats in 3 categories:

**Saturated fats** are hard or semi-solid at room temperature. These fats tend to raise LDL (bad) cholesterol levels and increase risk of heart disease and stroke. Limit intake of these fats to 11-13 grams per day (5-6% of total calories consumed)

These types of fats are found in animal foods such as

- All meats; fatty beef, lamb, pork, poultry skin, tallow (beef fat), lard
- All dairy; butter, cream cheese, sour cream, ice cream
- All tropical oils; coconut, palm kernel and palm oils

**Trans fats** are made when liquid vegetable oils are hardened to make shortening or margarine. They act like saturated fat and raise LDL (bad) cholesterol. Read ingredient list on food labels. Avoid foods that contain “partially hydrogenated oils”. Limit intake to 0-1g per day or as low as you can.

Main sources include:

- Processed foods such as donuts, cakes, pie crusts, biscuits, frozen pizzas, cookies, some crackers
- Stick margarine, shortening, store bought frosting
- Small amount are present in milk and meat products such as beef, lamb and butterfat

**Unsaturated fats** are mostly liquid at room temperature. They lower LDL (bad) cholesterol and should be included in your diet. Replace saturated fats (unhealthy) with unsaturated (healthy) fats in the diet.

Good sources include:

- Vegetable oils
- Nuts
- Seeds
- Fatty fish

**Poly and Monounsaturated fats** are types of unsaturated fats.

Sources include:

- Olive oil, avocado oil, canola oil, olive oil, safflower oil, peanut oil, sesame oil. Nuts such as peanuts,

pecans, almonds, sesame and avocados and olives (monounsaturated fats).

- Corn, soybean, safflower, sunflower, canola and cottonseed oils (polyunsaturated fats).
- Tofu, other forms of soybeans; flax seeds and walnuts and their oils. Include these and other oils if you don't eat fish in your diet.
- Fatty fish such as salmon, mackerel, herring, and sardines. Include fish 2-3 times per week in your diet.

**Cholesterol** is found in all foods from animals, such as meat, eggs, and milk. Foods that are high in cholesterol are also high in saturated fats. Therefore, limit saturated fats by limiting foods from animals to lower cholesterol intake in the diet. Your body can make all the cholesterol it needs. You can include up to one egg daily (limit yolk to 4 yolks a week). Eating foods high in saturated fats increases blood cholesterol levels more than eating cholesterol rich foods. Eat **more** poly and monounsaturated fats. Eat **less** saturated fats and **no** trans-fat. **Replace** animal fats with plant fats.

### **Sodium and Blood Pressure**

Sodium is mostly found in salt (sodium chloride). A low-sodium diet can prevent and treat high blood pressure. When you consume large amounts of salt, your body may retain fluid. This increases pressure on your arteries. Excess salt in the diet can also make it harder for high blood pressure medicines to work. People with high blood pressure, African Americans, and those who are 50 years or older should limit their sodium to 1,500mg to 2000mg per day. The goal for other Americans is 2300mg or less of sodium per day.

### **To Reduce Sodium Intake**

- Remove salt from your table.
- Try cooking with half as much salt as in the past or do not add any salt when you cook.
- Read food labels and avoid high sodium processed foods.
- Use herbs and spices for flavor instead of salt.
- Make low-sodium choices when eating out.

To learn more about the Dietary Approaches to Stop Hypertension (DASH) eating plan, visit:

[http://www.nhlbi.nih.gov/files/docs/public/heart/dash\\_brief.pdf](http://www.nhlbi.nih.gov/files/docs/public/heart/dash_brief.pdf).

### **Fiber**

Fiber is the portion of the plant foods we eat that we don't digest. Eating 20-30 grams of fiber per day (with a focus on soluble fiber) can help to reduce LDL by 5-15%. You can find soluble fiber in fruits and vegetables, whole grains, dried peas and beans, nuts, chia seed and flaxseed.

### **To Increase Fiber Intake**

- Use more fruits and vegetables (aim for at least 4-5 cups per day).
- Use whole grain breads and cereals. Include those with oats and barley.
- Plan meatless meals once a week or more, using navy beans, kidney beans, pinto beans, garbanzo beans, lentils, or split peas as a protein source.

### **Exercise**

Exercise strengthens your heart, raises your HDL, lowers your triglycerides and helps with weight control. It can include aerobic activities like jogging, fitness walking (2.5 to 3.5 mph), biking, aerobic dancing, swimming, cross-country skiing, and rowing. It can also include routine daily

movement like taking the stairs, mowing the lawn and washing windows. Experts suggest at least 150 minutes of exercise per week. If you are using exercise for weight control, aim to exercise 4 to 5 days per week (at least 30 minutes each day) to increase the number of calories you burn.

### **Diet Guidelines**

If you follow the food guidelines in this handout, your total fat, saturated fat, and trans-fat intake should meet certain goals. You do not need to count fat grams, but some people find it helpful to keep track. As a guideline:

- Total fat amounts: While there is no limit on total fat consumed, if you are trying to lose weight decrease intake.
- Saturated fat amounts: up to 11-13 grams per day or 5-6% of total calories that is consumed for men and women.

**ChooseMyPlate** provides guidelines that help you make better food choices. The ChooseMyPlate food guide suggests you find a balance between food and exercise by staying within your calorie needs. To find the amounts of food that are right for you, go to: [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov).

**A Mediterranean diet** may be best to prevent heart and blood vessel disease. This eating pattern includes about 30% of the calories as fat, with saturated and trans fats less than 7%. Most of the fat should come from monounsaturated fat (olive oil, canola oil, nuts and avocados). Cheese and meat are only eaten in small amounts. Fruits, vegetables, whole grains, fish and vegetable proteins (legumes and nuts) make up most of the diet. This diet is higher in unsaturated fats so you may need to reduce portions to prevent weight gain.

### **Food Guidelines**

Follow these guidelines to reduce your intake of fat, saturated fat, cholesterol, and calories. Choose foods you “can eat” most often and limit foods to “avoid.”

#### **Milk and Dairy You Can Eat**

- Skim milk, 1% milk
- Low fat/non-fat cream substitutes
- Evaporated skim milk
- Soymilk (calcium added)
- Low fat, part skim cheese
  - Mozzarella (part-skim)
  - Farmer’s cheese
  - Part skim or non-fat ricotta
  - Reduced fat cheese (5g fat per ounce or less)
- Low/Non-fat:
  - Cottage cheese
  - Yogurt
  - Sour cream
  - Cream cheese
  - Frozen yogurt
  - Sherbet
  - Ice cream

#### **Milk and Dairy to Avoid**

- Whole/2% milk
- Full fat, natural cheese
- Processed cheese
- Ice cream
- Frozen custard
- Full fat sour cream
- Cream, half & half
- Non-dairy creamers (if made with coconut or palm oils)
- Full fat cream cheese

#### **Breads, Cereals, Grains You Can Eat**

- Whole grain breads
- English muffins
- Whole grain bagels
- Cereals, whole grain
- Pancakes, waffles (with 5g fat or less)

- Rice cakes
- Pita bread
- Tortilla, corn or flour
- Rice, barley, quinoa, bulgar
- Pasta, whole grain
- Graham crackers
- Soda crackers (high in salt)
- Crackers (with 2 grams of fat or less per serving-high in salt)

### **Breads, Cereals, Grains to Avoid**

- Doughnuts, other fried breads
- Croissants
- Crescent rolls
- Sweet rolls
- Muffins or biscuits made with saturated fats
- Crackers with more than 2 grams of fat per serving
- Chow mein noodles, ramen noodle with palm oil
- Granola (unless 2 grams of fat or less per serving)
- Rice/noodle mixes (unless no fat)

### **Protein Foods You Can Eat**

- Lean beef- top sirloin, tenderloin, top loin, ground round, rump, arm, flank
- Lean pork- loin chop, tenderloin
- Game, venison, rabbit
- Poultry- chicken, turkey (skinless)
- Low fat/fat free hot dogs (high in salt)
- Fish, all types
- Shrimp (4oz per week)
- Egg white/egg substitute
- Peanut butter
- Dried or canned beans, split peas, lentils
- Textured vegetable protein
- Tofu
- Ham (high in salt)
- Low fat TV dinners/frozen meals (high in salt)

- Low fat turkey bacon or sausage (high in salt)
- Low fat turkey lunch meats (3 grams fat or less per ounce-high in salt)
- Turkey/chicken brat (high in salt)
- Vegetarian burgers/sausage (made of soy-high in salt)
- Low fat creamed soups (high in salt)

### **Protein Foods to Avoid**

- Fatty beef- regular hamburger, T-bone, prime rib, porter house, ribs
- Fatty pork- ribs, sausage, bacon
- Fatty poultry- duck, goose, self-basting turkeys, poultry skin
- Lunch meats/cold cuts (with more than 3 grams of fat per ounce)
- Hot dogs
- Brats
- Deep fried meats and seafood
- Creamed soups

Limit meat, poultry and low-fat cheese intake to a total of 6oz per day. One 3oz serving is about the size of a deck of cards. Choose meats that are lean 'select' cuts rather than 'prime/choice' cuts. Trim visible fat before cooking. Prepare by baking, roasting, broiling or grilling to reduce fat content. Try meatless meals 1 to 2 times per week to further lower fat intake and increase fiber.

### **Vegetables and Fruits You Can Eat (At Least 4-5 Cups per Day)**

- Fresh, frozen, dried or canned fruits
- Fruit juice (limit)
- Fresh or frozen vegetables
- Avocado
- Canned vegetables or vegetable juices (high in salt)
- Pickles (high in salt)
- Sauerkraut (high in salt)
- Olives (high in salt)

### **Vegetables and Fruits to Avoid**

- Fried, deep-fried, creamed or au gratin
- Coconut and coconut milk in large amounts
- Vegetables in sauces or cheese, frozen

### **Fats You Can Eat**

Only use these fats in small amounts to control calories.

- Vegetable oil-based spreads
- Liquid oils- canola, avocado, olive, peanut, sesame, sunflower, safflower, corn, soybean, cottonseed
- Mayo/sandwich spreads- low fat
- Nuts/seeds in moderate amounts
- Salad dressings (reduced calorie-high in sodium)

### **Fats to Avoid**

- Margarine with hydrogenated oil
- Butter
- Lard
- Hardened vegetable shortening
- Coconut and palm oil
- Regular gravy
- Blue cheese salad dressing

### **Snacks and Desserts You Can Eat**

- Fruit
- Angel food cake
- Puddings from skim milk
- Cocoa powder, small amounts dark chocolate
- Cakes and cookies made with oil and egg whites
- Low fat, high fiber granola and breakfast bars
- Baked potato or corn chips
- Popcorn with little or no added fat
- Sherbet, fruit ices, popsicles, sorbet
- Low fat ice cream or frozen yogurt
- Vanilla wafers, graham crackers, ginger snaps

- Hard candy, licorice, jellybeans (small amounts)
- Jelly, jam, honey, syrups (small amounts)
- Pretzels (high in salt)

### **Snacks and Desserts to Avoid**

- Tortilla, potato or corn chips
- Candy bar
- Cakes and cookies made with hard fat and egg yolks
- Pies, pastry
- Frosted or chocolate covered granola bar
- Ice cream

**Cut down on added sugars.** Although sugar does not increase cholesterol levels, limit your sugar intake if you are overweight. Eat fewer servings of sugar and sweets if you have diabetes or high triglycerides. Snacks and desserts can lead to weight gain. Try to eat them in small servings.

### **Cookbooks**

The Road to a Healthy Heart Runs through the Kitchen, by Joe and Bernie Piscatella, Workman Publishing, 2006.

The New American Heart Association Cookbook, 8th Edition, Random House, 2010.

American Heart Association Low-Fat, Low-Cholesterol Cookbook, 3rd Edition, Random House. 2005.

American Heart Association Quick and Easy Cookbook, Random House, 2010

American Heart Association The Diabetes and Heart Healthy Cookbook, Random House, 2004.

The Complete Idiots Guide to the Mediterranean Diet, Penguin Publishing, 2010

The New Mediterranean Diet Cookbook, Bantam, 2009

Eat, Drink and Weigh Less, by Mollie Katzen and Walter Willet, Hyperion, 2006.

How to Cook Everything Vegetarian: Simple Meatless Recipes for Great Food by Mark Bittman and Alan Witschonke, 2007

The Complete Idiot's Guide to Vegan Living by Beverly Lynn Bennett and Ray Sammartano, 2005  
Vegetarian Times Complete Cookbook by Vegetarian Times Magazine, 2005

Vegetarian Cooking for Everyone by Deborah Madison, 2007

### **Web Sites**

National Cholesterol Education Program, Live Healthier, Live Longer  
<http://www.nhlbi.nih.gov/chd/>

American Dietetic Association  
<http://www.eatright.org>

Cooking Light Magazine  
<http://www.cookinglight.com>

Eating Well Magazine  
<http://www.eatingwell.com>

American Heart Association  
[www.americanheart.org](http://www.americanheart.org)

American Heart Association recipes  
<http://www.deliciousdecisions.org>

DASH (Dietary Approaches to Stop Hypertension) Diet  
<http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/>

National Stroke Association  
<http://www.stroke.org>

### **Who to Call**

If you are a UW Health patient and have more questions, contact UW Health at one of the phone numbers listed. You can also visit our website at  
[www.uwhealth.org/nutrition](http://www.uwhealth.org/nutrition).

Nutrition clinics for UW Hospital and Clinics (UWHC) and American Family Children's Hospital (AFCH) can be reached: **(608) 890-5500**.

Nutrition clinics for UW Medical Foundation (UWMF) can be reached at: **(608) 287-2770**.

If you are a patient receiving care at UnityPoint – Meriter, Swedish American or a health system outside of UW Health, please use the phone numbers provided in your discharge instructions for any questions or concerns.

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© 9/2020 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Clinical Nutrition Services Department and the Department of Nursing. HF#189