

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 cholesterol, reduce high blood pressure, and manage your weight.

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 or High Triglyceride levels
- Family history of heart disease, stroke or peripheral vascular disease
- Tobacco use/Smoking
- High blood pressure
- Diabetes
- Obesity
- Inactive lifestyle
- Male
- Age

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 Triglycerides 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

- Some meats; fatty beef, lamb, pork, poultry skin, tallow (beef fat), lard
- Some 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. Limit intake to 0-1g per day or as low as you can. Food companies are allowed to list “0 g Trans Fat” on the nutrition facts label if it is less than half a gram per serving. They still must list hydrogenated and partially hydrogenated oils under the ingredients list, so avoid foods that contain “partially hydrogenated oils” or “hydrogenated oils” in the ingredients list.

Main sources include:

- Processed foods such as donuts, cakes, pie crusts, biscuits, frozen pizzas, cookies, some crackers
- Stick margarine, shortening, store bought frosting
- Small amounts 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.

Poly-unsaturated and Mono-unsaturated fats are the two types of unsaturated fat.

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, chia seeds, almonds, 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 can also be high in saturated fats. Eating foods high in saturated fats increases blood cholesterol levels more than eating cholesterol rich foods. Your body can make all the cholesterol it needs. You can include up to one egg daily (limit yolk to 4 yolks a week). Eat **more** poly and monounsaturated fats. Eat **less** saturated fats and **no** trans-fat.

Sodium and Blood Pressure

Sodium raises blood pressure. Sodium is found in table salt (in the form of sodium chloride) and many packaged foods. 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, those who are 50 years or older should limit their sodium to 1500mg to 2000mg per day. The goal for other Americans is 2300mg or less of sodium per day.

To Reduce Sodium Intake

- Remove the saltshaker 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 packaged foods.
- Use herbs and spices for flavor instead of salt.
- Make low-sodium choices when eating out and ask for your dish to be made without added salt!

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

<https://patient.uwhealth.org/healthfacts/379>

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 (good cholesterol), lowers your triglycerides and may help manage weight. 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.

A Mediterranean diet is a good diet to follow 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.

Food Guidelines

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

Milk and Dairy to Include)

- 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

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 made with coconut or palm oils
- Full fat cream cheese
- Canned coconut milk

Breads, Cereals, Grains to Include

- 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
- Whole grain crackers (may be 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 to Include

- 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 6 oz per day. One 3 oz 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 to Include (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 to Include

- 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

Snacking Tips

Choosing healthy snacks between meals can help keep energy levels up, manage hunger, and help with portion control. Just like meals, healthy snacks should have more than one food group (healthy fat, lean protein, grain or fruit/vegetable). Two food groups help keep you full of stable energy. The snack ideas below pair a serving of protein with a serving of carbohydrate. When picking carbohydrate choices like popcorn or crackers, look for something with less than 140 mg of sodium per serving.

Examples (this is not an exhaustive list, ask your RD if you would like a longer list of snacks)

- Apple and peanut butter
- Berries and Greek yogurt
- Whole grain toast and sun butter
- Celery and hummus
- Whole grain crackers and avocado spread

Cookbooks

The Road to a Healthy Heart Runs through the Kitchen, by Joe and Bernie Piscatella, Workman Publishing, 2005.

The New American Heart Association Cookbook, 9th Edition, Clarkson Potter, 2017

American Heart Association LowSalt Cookbook, 4th Edition, Clarkson Potter, 2013

American Heart Association Quick and Easy Cookbook, 2nd Edition, Clarkson Potter, 2012

American Heart Association Healthy Slow Cooker Cookbook, 1st Edition, Harmony, 2012

The Diabetes and Heart Healthy Cookbook, American Heart Association and American Diabetes Association, 2nd Edition, 2014.

Diabetes & Heart Healthy Meals for Two, American Heart Association and American Diabetes Association, 2008

The Complete Idiot's Guide to the Mediterranean Diet, Tessman & Green, 1st Edition, Alpha, 2010

The Everyday DASH Diet Cookbook: Over 150 Fresh and Delicious Recipes to Speed Weight Loss, Lower Blood Pressure, and Prevent Diabetes (A DASH Diet Book), Marla Heller, MS, RD, and Rick Rodgers, 2017

The New Mediterranean Diet Cookbook, Nancy Harmen Jenkins, 1st Edition, Bantam, 2008

The Mediterranean Diabetes Cookbook, Amy Riolo, 1st Edition, American Diabetes Association, 2010

Eating Well 500 Calorie Dinners, Price & Micco, Countryman Press, 2010

How to Cook Everything Vegetarian, Mark Bittman, 10th Edition, Houghton Mifflin Harcourt, 2017

The Complete Idiot's Guide to Vegan Living, Bennett & Sammartano, 2nd Edition, Alpha, 2012

The Great Vegan Bean Book, Hester & Comet, 2nd Edition, Fair Winds Press, 2013

Vegetarian Times Complete Cookbook, 2nd Edition, Houghton Mifflin Harcourt, 2005

The 28 Day DASH Diet Weight Loss Program: Recipes and Workouts to Lower Blood Pressure and Improve Your Health Paperback, De Santis, Andrews, Kelly, 2018

Web Sites

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

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

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

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

NIH Delicious Heart Healthy Eating
<http://healthyeating.nhlbi.nih.gov/>

MyPlate
<http://www.myplate.gov/myplate-kitchen/recipes>

American Heart Association
<http://www.heart.org/en/healthy-living/healthy-eating>

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 the phone number listed. You can also visit our website at 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**.

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© 2/2024 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#189