



High Blood Pressure

Overview

High blood pressure, also called hypertension, means the pressure of the blood in your blood vessels is higher than it should be. About 1 of 3 adults in the U.S. have high blood pressure, only around half of which have their hypertension under control. Blood pressure is measured using the systolic blood pressure, which measures the pressure in your blood vessels when your heart beats, and the diastolic blood pressure, which measures the pressure in your blood vessels when your heart is at rest between beats. Hypertension is defined in an adult as a blood pressure greater or equal to 140 mmHg systolic and greater or equal to 90 mmHg diastolic. If untreated, hypertension will eventually lead to health problems such as heart disease, kidney failure, and dementia.

Risk Factors

Certain risk factors for hypertension are fixed, such as age and genetics. However, a range of modifiable lifestyle factors, including diet and weight management, plays a large role in risk reduction.

Other risk factors include:

- Obesity
- Atherosclerosis
- Alcoholism
- Renal disease
- Endocrine or neurologic disorders
- Diabetes

Symptoms

Most people with high blood pressure have no signs or symptoms. Rarely, the following symptoms may occur over time if untreated:

- Headaches
- Shortness of breath
- Nosebleeds

Dietary Approaches to Stop Hypertension (DASH)

The DASH diet is a lifelong approach to healthy eating that was designed to help treat and prevent hypertension. The DASH diet is a healthy way of eating that can significantly reduce blood pressure, results can even be seen after just two weeks. By reducing sodium in your diet and increasing a variety of plant based foods rich in potassium, calcium, and magnesium, the DASH diet helps lower blood pressure and also aids in prevention of osteoporosis, cancer, heart disease, and diabetes. See below for recommendations on following the DASH diet.

Sodium

Sodium causes an increase in fluid accumulation in the body's tissues. Too much sodium in the diet can cause the body to retain fluid, which increases blood pressure. Reducing sodium intake will help lower blood pressure and reduce the risk of cardiovascular disease.



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Tips to reduce sodium in your diet:

- Choose and prepare foods that are low in salt in order to help control your blood pressure.
- Cook at home when possible. Prepared or packaged foods contain high amounts of sodium and phosphorous and restaurants often use sodium for flavoring.
- Use spices, herbs for seasoning instead of salt.
- Buy lower sodium versions of foods at the supermarket when possible.
- Drain and rinse canned vegetables, fruits, beans, meats, and fish with water before eating to reduce the sodium content.
- Sodium can be found in a variety of forms. Check food labels for the following: monosodium glutamate (MSG), baking powder, baking soda, sodium nitrate, and sodium citrate.

Potassium

Potassium is a mineral that is found in a wide variety of plant and animal foods. It is required for normal cell function, muscle contraction, and maintaining a healthy heartbeat. Potassium also helps balance out the amount of sodium in your cells. If you don't consume enough potassium in your diet you may accumulate too much sodium in your blood.

Foods that are high in potassium:

- **Fruits:** Apricot; Avocado; Banana; Cantaloupe; Dates; Dried fruits; Grapefruit juice; Honey dew; Kiwi; Mango; Nectarine; Orange, orange juice; Papaya; Pomegranate; Prunes, prune juice; Raisins
- **Vegetables:** Acorn squash; Artichoke; Bamboo shoots; Baked beans; Butternut squash; Refried beans; Beets, fresh then boiled; Black bean; Cooked broccoli; Brussels sprouts; Chinese cabbage; Raw carrots; Dried beans and peas; Greens (except kale); Hubbard squash; Kohlrabi; Legumes; Lentils; Canned mushrooms; Parsnips; White and Sweet Potatoes; Pumpkin; Rutabagas; Cooked spinach; Tomatoes, tomato products; Vegetable juices
- **Other Foods:** Bran, bran products; Chocolate; Granola; Milk; Nuts and seeds; Peanut butter; Salt substitutes; Salt-free broth; Yogurt; Meats, poultry, fish

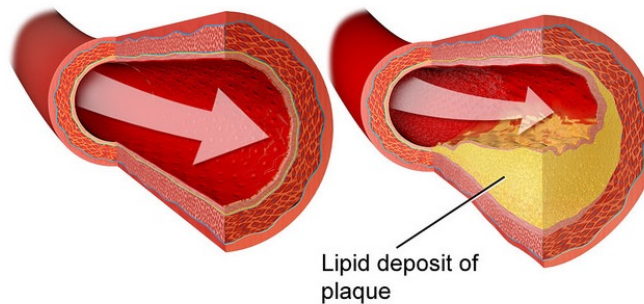
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Fat and Cholesterol

A diet high in saturated fat, trans fat, and cholesterol is one of the greatest risk factors for heart disease. Foods that contain saturated fat and cholesterol come from animal sources such as meat, poultry, and dairy products. High blood cholesterol levels eventually lead to a condition called atherosclerosis, a buildup of plaque in your arteries that can result in a heart attack or stroke. The DASH diet aims to limit total fat intake to less than 30% of your daily calories.

Normal Artery

Narrowing of Artery



Heart Healthy Fats to Include:

- **Omega-3 Fatty Acids:** Tuna, salmon, mackerel, trout, herring, and sardines; Ground flaxseed and flaxseed oil; Soybeans; Walnuts; Chia seeds
- **Monounsaturated Fats:** Canola oil, olive oil, and peanut oil; Olives; Avocados; Nuts and nut butters (e.g. almond butter and peanut butter)
- **Polyunsaturated Fats:** Vegetable oils (e.g. safflower, sunflower, sesame, and soybean oil)

Fats to Avoid:

- **Saturated Fats:** Animal foods (e.g. meat and dairy); Tropical oils (e.g. coconut, palm oil); Cocoa butter
- **Trans Fats:** Partially hydrogenated vegetable oils; Hydrogenated vegetable oil; Processed foods (e.g. cookies, snack foods)
- **Cholesterol:** Found only in animal foods (e.g. eggs, whole milk dairy products, meats)

DASH Diet Recommendations

- Limit sodium consumption to 2,300 milligrams per day.
- Aim for 6 to 8 servings of grains per day. Focus on whole grains because they have more fiber than refined grains, which can help lower your cholesterol. Examples of one serving of grains: 1 slice whole-wheat bread, 1 ounce dry cereal, ½ cup cooked cereal, rice, or pasta.
- Eat 4 to 5 servings of vegetables per day. Examples of one serving of vegetables: 1 cup raw vegetables or ½ cup cooked vegetables.
- Have 4 to 5 servings of fruits per day. Fruits are packed with fiber, potassium, and magnesium, all of which aid in lowering blood pressure. Examples of one serving of fruit: 1 whole-fruit or ½ cup fresh, frozen, or canned fruit.
- Aim for 2 to 3 servings of dairy per day. Dairy products are rich in calcium, vitamin D, and protein. Choose low fat or fat free dairy options to limit saturated fat intake. Examples of one serving include: 1 cup low fat milk, 1 cup low fat yogurt, or 1 ½ ounces part-skim cheese.

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- Try and eat less than 6 ounces of lean meat, poultry, or fish per day. Although these foods are rich in protein, vitamin B, iron, and zinc, animal products tend to be high in saturated fat and cholesterol. Focus on lean meat options and when possible choose heart healthy fish (e.g. salmon, herring, tuna) which is high in omega-3 fatty acids, to help lower cholesterol levels.
- Try to limit nuts, seeds, and legumes to 4 or 5 servings per week. These foods are high in magnesium, potassium, fiber, and phytochemicals; however, they are also high in calories. Examples of one serving: 1/3 cup of nuts, 2 tablespoons of seeds, or 1/2 cup cooked beans or peas.
- Have 2 to 3 servings of healthy fats and oils per day. Fat is essential to maintain health, however too much can increase risk for obesity, diabetes, and heart disease. Example of one serving: 1 teaspoon soft margarine, 1 tablespoon mayonnaise, or 2 tablespoons salad dressing.
- Limit consumption of sweets to 5 times per week or less. You don't have to completely remove sweets, but they should be limited in the diet. Example of one serving: 1 tablespoon sugar, jelly or jam, 1/2 cup sorbet, or 1 cup of lemonade.

Tips for Reading Food Labels

1. Check for sodium on the Nutrition Facts Label. A Daily Value (DV) of 20% or higher means the food is high in sodium. A DV of 5% or less means it's low in sodium.
2. Common terms associated with sodium to look for on food labels:
 - **Sodium Free:** Less than 5 mg of sodium per serving.
 - **Very Low Sodium:** 35 mg or less of sodium per serving.
 - **Low Sodium:** 140 mg or less of sodium per serving.
 - **Reduced Sodium:** At least 25% less sodium than the original product.
 - **No Added Salt/ Unsalted:** No salt was added during processing, not necessarily sodium free.
3. Choose foods that are low in saturated fat, trans fat, and cholesterol. A DV of 5% or less is considered low.
4. Look for foods that contain fiber to help lower cholesterol levels. A DV of 20% or food items containing at least 5 grams per serving are considered high in fiber.

Nutrition and Lifestyle Guidelines for Hypertension

- Achieve and maintain a healthy weight.
- Follow the DASH diet program.
- Soybean based products, such as tofu and tempeh, can be good alternatives to meat because they contain all the amino acids your body needs, just like meat.
- Limit sugar intake. It has no nutritional value but is very high in calories.
- Increase intake of fiber to help lower cholesterol levels. You should aim for 25-35 grams of fiber per day.
- Bake, broil, grill, boil, or steam foods instead of frying.
- Keep alcohol consumption to 1 drink per day for women and two drinks per day for men. Excessive alcohol consumption contributes to high blood pressure, irregular heartbeats, and obesity.
- Quit smoking. Smoking damages your blood vessels, raises blood pressure, and reduces the amount of oxygen in your blood.



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- Start an exercise routine. Exercise aids in reducing blood pressure and helps to achieve and maintain a healthy weight. Discuss with your registered dietitian what is the best exercise program for you.

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