Blood Pressure and the DASH Eating Plan

What is high blood pressure?

Blood pressure (BP) is the force of blood pressing against the walls of your arteries. Blood pressure is needed to move blood to the rest of your body. However, too much pressure over time can:

- Damage and harden the arteries.
- Weaken the artery walls, making them more likely to break or burst.
- Promote fatty plaque buildup, or atherosclerosis [ath-ehr-oh-skler-OH-sis]. This narrows the arteries and restricts blood flow.
- Increase the amount of work the heart has to do, causing further damage to the heart muscle.

How is BP measured?

BP is measured with an inflatable arm cuff attached to a machine or gauge. It displays the pressure in millimeters of mercury (mmHg). A blood pressure measurement is expressed as 2 numbers:

- The top number is your **systolic** [sis-TAHL-ik] blood pressure. It measures the pressure in your arteries when the heart beats, pushing blood through the arteries.
- The bottom number is your **diastolic** [DIE-eh-stahl-ik] blood pressure. This measures the pressure that stays in your arteries when the heart relaxes between beats.

Both of these numbers show the level of the stress on your artery walls. If either number is too high you could have high blood pressure.

What are the symptoms?

Rarely, people with high blood pressure may have dizziness, headaches, or nose bleeds. However, **most people don't have any signs or symptoms**. For this reason, you should have your blood pressure checked regularly, even if you're feeling fine.

Category	Systolic		Diastolic
Normal BP	less than 120	and	less than 80
Elevated BP	120 to 129	and	less than 80
Stage 1 high BP (hypertension)	130 to 139	or	80 to 89
Stage 2 high BP(hypertension)	140 or higher	or	80 to 89
Hypertensive crisis (call your doctor right away)	higher than 180	or	90 or higher

What causes it?

Most commonly, high blood pressure develops a little at a time over many years. Certain things can increase your risk for high blood pressure. These are called **risk factors.** Some you cannot change, others you can. Check your risk factors on the list below.

Risk factors you CANNOT change	Risk factors you CAN change
☐ Family history	☐ Physical inactivity
☐ Age: Risk increases as you age	☐ Being overweight or obese
☐ Race: Risk increases in African Americans	☐ Diet
	☐ Smoking and tobacco use
	☐ Stress
	☐ Use of birth control pills

See the next pages for tips on managing the risk factors you can control.

Manage your BP with MAWDS

M



Take your MEDICINE

If your doctor prescribes blood pressure medicine, take it every day, even if you feel fine. Even if your blood pressure is at its goal, it may not stay there without your medicines.

A



Get enough ACTIVITY each day

Staying active is one of the best ways to control your blood pressure. Physical activity can cut your risk of developing high blood pressure in half. Aim for at least 30 minutes every day of moderate-to-intense physical activity — like a brisk walk.

W



Maintain a healthy WEIGHT

Carrying extra weight increases your risk of high blood pressure. Losing even 5 to 10 percent of your current weight can lower your risk. If you weigh 200 pounds, that means losing just 10 to 20 pounds.

D



Follow a healthy DIET

Studies show that following a healthy eating plan — such as **the DASH eating plan** described on these pages — lowers your systolic blood pressure by an average of 11 points, and your diastolic blood pressure by an average of 5 points. This plan can also help prevent other serious problems like osteoporosis, cancer, heart disease, stroke, and diabetes.

S



Stop SMOKING and manage STRESS

Tobacco use harms your arteries and increases your blood pressure. Lots of stress over many months or years also can hurt your body. Quitting smoking and learning to manage stress can lower your blood pressure and improve your overall health.

Do the DASH

DASH stands for ***Dietary Approaches to Stop Hypertension.*** The DASH eating plan plan focuses on a few important minerals that help control blood pressure: potassium, sodium, magnesium, and calcium.

Potassium

Potassium helps your kidneys get rid of extra sodium. It also relaxes the walls of your blood vessels, which can help lower blood pressure. To increase potassium in your diet, focus on these foods:

- Fruits and vegetables (like dried apricots and Swiss chard)
- Fat-free or low-fat dairy products (like yogurt)
- Fish (like wild Atlantic salmon)
- Nuts and seeds (like pumpkin seeds and pistachios)
- Legumes (like lentils and kidney beans)

Potassium-based salt substitutes can also help lower sodium intake and reduce blood pressure. **Important:** Ask your doctor before using these substitutes, as they are not safe for everyone.

Sodium

Eating too much sodium can increase your blood pressure. Fact: Salt is not the only source of sodium. Soy sauce and sodium additives, like monosodium glutamate (MSG) and sodium nitrate, are also high in sodium. Lowering sodium is a key part of the DASH plan:

- **Standard DASH plan:** up to 2,300 mg sodium per day
- **Lower-sodium DASH plan:** less than 1,500 mg sodium per day

Tips to reduce sodium

Avoid high-sodium foods such as:

- Pre-made foods in cans, boxes, and bags
- Deli items like ham, salami, potato salad, and pickles

Read food labels carefully. Foods with 140 mg or less per serving are considered low sodium. See the handout: ***Sodium: How to Read Food Labels***

Magnesium

Helps lower your blood pressure by relaxing the blood vessels and regulating electrolytes

Good sources of magnesium include whole grains, nuts and seeds (like almonds and pumpkin seeds), and beans (like black beans).

Calcium

Calcium helps lower your blood pressure. Low calcium levels can cause blood pressure to rise. Include calcium-rich foods at each meal to help your body absorb calcium.

Good sources of calcium include:

- Low fat and non-fat dairy like yogurt, milk, and cheese
- Calcium-fortified foods
- Canned fish with bones such as sardines and salmon
- Green leafy vegetables like spinach and kale

Limit caffeine and sodium. Drinking too much caffeine and eating a diet high in sodium can lower the amount of calcium in your body.

Important: Talk to your doctor and dietitian about how much calcium you need for your body.

Fiber

Helps lower your blood pressure. It supports a healthy gut and lower inflammation which affects blood pressure.

- Foods rich in fiber include whole grains, fruits, vegetables, legumes (like lentils and beans), and nuts and seeds.
- Foods with 5 or more grams of fiber per serving are considered high in fiber.

Aim to eat 30 grams of fiber per day.

The DASH plan is rich in whole grains, fruits and vegetables, fat-free or low-fat milk products, fish and poultry, beans, seeds, and nuts. The DASH plan suggests a certain number of daily servings from various food groups based on your calorie needs. Recommended calories are based on your sex, age, and activity level (see table at right).

If your goal is to reduce body fat, you will need to eat fewer calories each day and increase your activity level. A dietitian can help tailor the DASH eating plan to fit your individual health needs and food preferences.

Sex	Age	Calories needed based on activity level		
		Low	Medium	High
Female	19 to 30	2,000	2,000 to 2,200	2,400
	31 to 50	1,800	2,000	2,200
	51 and older	1,600	1,800	2,000 to 2,200
Male	19 to 30	2,400	2,600 to 2,800	3,000
	31 to 50	2,200	2,400 to 2,600	2,800 to 3,000
	51 and older	2,000	2,200 to 2,400	2,400 to 2,800

Checking your blood pressure

Your health care provider may ask you to check your blood pressure at home on a regular basis. Here are some tips:

- Use a monitor with an arm cuff that wraps around the upper arm and inflates automatically. Make sure the arm cuff is the right size for your arm.
- Choose a monitor that also displays heart rate.
- Check your blood pressure at least 2 or 3 times a week, at different times of the day.
- Wait at least a half hour after eating, drinking caffeine, or exercising to check your blood pressure
- Sit quietly for 5 minutes before taking your blood pressure.
- Place the cuff in the correct position on your arm.
- Sit straight up with both feet flat on the floor. Rest your arm on a table or the arm of a chair.
- Keep track of your results in an app, notebook, or tool such as Intermountain's ***BP Tracker.*** Ask your provider for a copy.



The DASH eating plan

Food Group	Servings based on calorie level			Serving sizes	Examples
	1,600	2,000	2,600		
Grains Major sources of energy and fiber. Whole grains are good sources of fiber, vitamins, and minerals.	6 *per day*	6 to 8 *per day*	10 to 11 *per day*	1 slice bread 1 ounce dry cereal (between ½ cup and 1¼ cups, depending on cereal type); check the nutrition label ½ cup cooked rice or pasta	Whole wheat bread, whole wheat pasta, oatmeal, brown rice, unsalted pretzels, and popcorn
Vegetables Rich sources of potassium, magnesium, and fiber.	3 to 4 *per day*	4 to 5 *per day*	5 to 6 *per day*	1 cup raw, leafy vegetables ½ cup cut-up raw or cooked vegetables ½ cup vegetable juice	Broccoli, carrots, collards, green beans, kale, lima beans, potatoes, spinach, squash, sweet potatoes, tomatoes
Fruits Important sources of potassium, magnesium, and fiber.	4 *per day*	4 to 5 *per day*	5 to 6 *per day*	1 medium fruit ¼ cup dried fruit ½ cup fresh, frozen, or canned fruit or fruit juice	Apples, apricots, bananas, dates, grapes, oranges, grapefruit, mangoes, melons, peaches, pineapples, raisins, strawberries, tangerines
Fat-free or low-fat milk and milk products Major sources of calcium protein, and Vitamin D.	2 to 3 *per day*	2 to 3 *per day*	3 *per day*	1 cup milk or yogurt 1½ ounces cheese	Fat-free (skim) or low-fat (1%) milk; fat-free, low-fat, or reduced-fat cheese; fat-free or low-fat regular or frozen yogurt
Lean meats, poultry, and fish Rich sources of protein and magnesium.	3 to 6 *per day*	6 or less *per day*	6 *per day*	1 ounce cooked meats, poultry, or fish 1 egg	Only lean meats (trim away visible fat; broil, roast, or poach; remove poultry skin)
Nuts, seeds, and legumes Rich sources of energy, magnesium, protein, and fiber.	3 *per week*	4 to 5 *per week*	1 *per day*	⅓ cup or 1½ ounces nuts 2 Tablespoons peanut butter 2 Tablespoons or ½ ounce seeds ½ cup cooked legumes (dry beans and peas)	Almonds, hazelnuts, mixed nuts, peanuts, walnuts, sunflower seeds, peanut butter, kidney beans, lentils, split peas
Fats and oils	2 *per day*	2 to 3 *per day*	3 *per day*	1 teaspoon soft margarine or vegetable oil 1 Tablespoon mayonnaise 2 Tablespoons low-fat salad dressing	Soft margarine, vegetable oil (such as canola, corn, olive, or safflower), low-fat mayonnaise, light salad dressing
Sweets and added sugars	none	5 or less *per week*	2 or less *per day*	1 Tablespoon sugar, jelly, or jam ½ cup sorbet or gelatin 1 cup lemonade	Fruit-flavored gelatin, fruit punch, hard candy, jelly, maple syrup, sorbet and ices, sugar

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