

DASH Eating Plan

Description of the DASH Eating Plan

DASH is a flexible and balanced eating plan that helps create a heart-healthy eating style for life.

The DASH eating plan requires no special foods and instead provides daily and weekly nutritional goals. This plan recommends:

- Eating vegetables, fruits, and whole grains
- Including fat-free or low-fat dairy products, fish, poultry, beans, nuts, and vegetable oils
- Limiting foods that are high in saturated fat, such as fatty meats, full-fat dairy products, and tropical oils such as coconut, palm kernel, and palm oils
- Limiting sugar-sweetened beverages and sweets.

Based on these recommendations, the following table shows examples of daily and weekly servings that meet DASH eating plan targets for a 2,000-calorie-a-day diet.

Daily and Weekly DASH Eating Plan Goals for a 2,000-Calorie-a-Day Diet

Food Group	Daily Servings
Grains	6–8
Meats, poultry, and fish	6 or less
Vegetables	4–5
Fruit	4–5
Low-fat or fat-free dairy products	2–3
Fats and oils	2–3
Sodium	2,300 mg*
	Weekly Servings
Nuts, seeds, dry beans, and peas	4–5
Sweets	5 or less

*1,500 milligrams (mg) sodium lowers blood pressure even further than 2,300 mg sodium daily.

When following the DASH eating plan, it is important to choose foods that are:

- Low in saturated and *trans* fats
- Rich in potassium, calcium, magnesium, fiber, and protein
- Lower in sodium

Following the DASH Eating Plan

The DASH eating plan is easy to follow using common foods available in your grocery store. The plan includes daily servings from different food groups. The number of servings you should have depends on your daily calorie (energy) needs.

To figure out your calorie needs, you need to consider your age and physical activity level. If you want to maintain your current weight, you should eat only as many calories as you burn by being physically active. This is called energy balance. (For more information about energy balance, go to the Health Topics [Overweight and Obesity](#) article.)

If you need to lose weight, you should eat fewer calories than you burn or increase your activity level to burn more calories than you eat.

Consider your physical activity level. Are you sedentary, moderately active, or active?

- Sedentary means that you do only light physical activity as part of your typical daily routine.
- Moderately active means that you do physical activity equal to walking about 1.5 to 3 miles a day at 3 to 4 miles per hour, plus light physical activity.
- Active means that you do physical activity equal to walking more than 3 miles per day at 3 to 4 miles per hour, plus light physical activity.

Use the chart below to estimate your daily calorie needs.

Daily Calorie Needs for Women

Age (years)	Calories Needed for Sedentary Activity Level	Calories Needed for Moderately Active Activity Level	Calories Needed for Active Activity Level
19–30	2,000	2,000–2,200	2,400
31–50	1,800	2,000	2,200
51+	1,600	1,800	2,000–2,200

Daily Calorie Needs for Men

Age (years)	Calories Needed for Sedentary Activity Level	Calories Needed for Moderately Active Activity Level	Calories Needed for Active Activity Level
19–30	2,400	2,600–2,800	3,000
31–50	2,200	2,400–2,600	2,800–3,000
51+	2,000	2,200–2,400	2,400–2,800

After figuring out your daily calorie needs, go to the table below and find the closest calorie level to yours. This table estimates the number of servings from each food group that you should have. Serving quantities are per day, unless otherwise noted.

DASH Eating Plan—Number of Food Servings by Calorie Level

Food Group	1,200 Cal.	1,400 Cal.	1,600 Cal.	1,800 Cal.	2,000 Cal.	2,600 Cal.	3,100 Cal.
Grains^a	4–5	5–6	6	6	6–8	10–11	12–13
Vegetables	3–4	3–4	3–4	4–5	4–5	5–6	6
Fruits	3–4	4	4	4–5	4–5	5–6	6
Fat-free or low-fat dairy products^b	2–3	2–3	2–3	2–3	2–3	3	3–4
Lean meats, poultry, and fish	3 or less	3–4 or less	3–4 or less	6 or less	6 or less	6 or less	6–9
Nuts, seeds, and legumes	3 per week	3 per week	3–4 per week	4 per week	4–5 per week	1	1
Fats and oils^c	1	1	2	2–3	2–3	3	4
Sweets and added sugars	3 or less per week	3 or less per week	3 or less per week	5 or less per week	5 or less per week	≤2	≤2
Maximum sodium limit^d	2,300 mg/day	2,300 mg/day	2,300 mg/day	2,300 mg/day	2,300 mg/day	2,300 mg/day	2,300 mg/day

a Whole grains are recommended for most grain servings as a good source of fiber and nutrients.

b For lactose intolerance, try either lactase enzyme pills with dairy products or lactose-free or lactose-reduced milk.

c Fat content changes the serving amount for fats and oils. For example, 1 Tbsp regular salad dressing = one serving; 1 Tbsp low-fat dressing = one-half serving; 1 Tbsp fat-free dressing = zero servings.

d The DASH eating plan has a sodium limit of either 2,300 mg or 1,500 mg per day.

DASH Eating Plan—Serving Sizes, Examples, and Significance

Food Group	Serving Sizes	Examples and Notes	Significance of Each Food Group to the DASH Eating Plan
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Grains^a	1 slice bread 1 oz dry cereal ^b ½ cup cooked rice, pasta, or cereal ^b	Whole-wheat bread and rolls, whole-wheat pasta, English muffin, pita bread, bagel, cereals, grits, oatmeal, brown rice, unsalted pretzels and popcorn	Major sources of energy and fiber
Vegetables	1 cup raw leafy vegetable ½ cup cut-up raw or cooked vegetable ½ cup vegetable juice	Broccoli, carrots, collards, green beans, green peas, kale, lima beans, potatoes, spinach, squash, sweet potatoes, tomatoes	Rich sources of potassium, magnesium, and fiber
Fruits	1 medium fruit ¼ cup dried fruit ½ cup fresh, frozen, or canned fruit ½ cup fruit juice	Apples, apricots, bananas, dates, grapes, oranges, grapefruit, grapefruit juice, mangoes, melons, peaches, pineapples, raisins, strawberries, tangerines	Important sources of potassium, magnesium, and fiber
Fat-free or low-fat dairy products^c	1 cup milk or yogurt 1½ oz cheese	Fat-free milk or buttermilk; fat-free, low-fat, or reduced-fat cheese; fat-free/low-fat regular or frozen yogurt	Major sources of calcium and protein
Lean meats, poultry, and fish	1 oz cooked meats, poultry, or fish 1 egg	Select only lean; trim away visible fats; broil, roast, or poach; remove skin from poultry	Rich sources of protein and magnesium
Nuts, seeds, and legumes	½ cup or 1½ oz nuts 2 Tbsp peanut butter 2 Tbsp or ½ oz seeds ½ cup cooked legumes (dried beans, peas)	Almonds, filberts, mixed nuts, peanuts, walnuts, sunflower seeds, peanut butter, kidney beans, lentils, split peas	Rich sources of energy, magnesium, protein, and fiber
Fats and oils^d	1 tsp soft margarine 1 tsp vegetable oil 1 Tbsp mayonnaise 2 Tbsp salad dressing	Soft margarine, vegetable oil (canola, corn, olive, safflower), low-fat mayonnaise, light salad dressing	The DASH study had 27% of calories as fat, including fat in or added to foods
Sweets and added sugars	1 Tbsp sugar 1 Tbsp jelly or jam ½ cup sorbet, gelatin dessert 1 cup lemonade	Fruit-flavored gelatin, fruit punch, hard candy, jelly, maple syrup, sorbet and ices, sugar	Sweets should be low in fat

a Whole grains are recommended for most grain servings as a good source of fiber and nutrients.

b Serving sizes vary between ½ cup and 1¼ cups, depending on cereal type. Check the product's Nutrition Facts label.

c For lactose intolerance, try either lactase enzyme pills with dairy products or lactose-free or lactose-reduced milk.

d Fat content changes the serving amount for fats and oils. For example, 1 Tbsp regular salad dressing = one serving; 1 Tbsp low-fat dressing = one-half serving; 1 Tbsp fat-free dressing = zero servings.

The DASH Eating Plan as Part of a Heart-Healthy Lifestyle

The DASH eating plan is just one key part of a heart-healthy lifestyle, and combining it with other lifestyle changes such as physical activity can help you control your blood pressure and LDL-cholesterol for life.

To help prevent and control [high blood pressure](#):

- Be physically active.
- Maintain a healthy weight.
- Limit alcohol intake.
- Manage and cope with stress.

Other lifestyle changes can improve your overall health, such as:

- If you [smoke](#), quit.
- Get plenty of sleep.

To help make lifelong lifestyle changes, try making one change at a time and add another when you feel that you have successfully adopted the earlier changes. When you practice several healthy lifestyle habits, you are more likely to achieve and maintain healthy blood pressure and cholesterol levels.

Living With the DASH Eating Plan

Understanding the DASH eating plan will help you start and follow this plan for life.

Controlling Daily Sodium and Calories

To [benefit](#) from the proven DASH eating plan, it is important to limit daily sodium levels to 2,300 mg, or 1,500 mg if desired, and to consume the appropriate amount of calories to maintain a healthy weight or lose weight if needed.

Ways to Control Sodium Levels

The key to lowering your sodium intake is to make healthier food choices when you're shopping, cooking, and eating out.

TIPS FOR LOWERING SODIUM WHEN SHOPPING, COOKING, AND EATING OUT

Shopping	Cooking	Eating Out
<p>Read food labels, and choose items that are lower in sodium and salt, particularly for convenience foods and condiments. *</p> <p>Choose fresh poultry, fish, and lean meats instead of cured food such as bacon and ham.</p> <p>Choose fresh or frozen versus canned fruits and vegetables.</p> <p>Avoid food with added salt, such as pickles, pickled vegetables, olives, and sauerkraut.</p> <p>Avoid instant or flavored rice and pasta.</p>	<p>Don't add salt when cooking rice, pasta, and hot cereals.</p> <p>Flavor your foods with salt-free seasoning blends, fresh or dried herbs and spices, or fresh lemon or lime juice.</p> <p>Rinse canned foods or foods soaked in brine before using to remove the sodium.</p> <p>Use less table salt to flavor food.</p>	<p>Ask that foods be prepared without added salt or MSG, commonly used in Asian foods.</p> <p>Avoid choosing menu items that have salty ingredients such as bacon, pickles, olives, and cheese.</p> <p>Avoid choosing menu items that include foods that are pickled, cured, smoked, or made with soy sauce or broth.</p> <p>Choose fruit or vegetables as a side dish, instead of chips or fries.</p>

*Examples of convenience foods are frozen dinners, prepackaged foods, and soups; examples of condiments are mustard, ketchup, soy sauce, barbecue sauce, and salad dressings.

Most of the sodium Americans eat comes from processed and prepared foods, such as breads, cold cuts, pizza, poultry, soups, sandwiches and burgers, cheese, pasta and meat dishes, and salty snacks. Therefore, healthier choices when shopping and eating out are particularly important.

Ways to Control Calories

To benefit from the DASH eating plan, it is important to consume the appropriate amount of calories to maintain a healthy weight. To help, read nutrition labels on food, and plan for success with DASH eating plan [sample menus](#) and other [heart-healthy recipes](#).

The DASH eating plan can be used to help you lose weight. To lose weight, follow the DASH eating plan and try to reduce your total daily calories gradually. Find out your daily calorie needs or goals with the [Body Weight Planner external link](#) and [calorie chart](#). Talk with your doctor before beginning any diet or eating plan.

General tips for reducing daily calories include:

- Eat smaller portions more frequently throughout the day.
- Reduce the amount of meat that you eat while increasing the amount of fruits, vegetables, whole grains, or dry beans.
- Substitute low-calorie foods, such as when snacking (choose fruits or vegetables instead of sweets and desserts) or drinking (choose water instead of soda or juice), when possible.

Increasing Daily Potassium

The DASH eating plan is designed to be rich in potassium, with a target of 4,700 mg potassium daily, to enhance the effects of reducing sodium on blood pressure. The following are examples of potassium-rich foods.

SAMPLE FOODS AND POTASSIUM LEVELS

Food	Potassium (mg)
Potato, 1 small	738
Plain yogurt, nonfat or low-fat, 8 ounces	530–570
Sweet potato, 1 medium	542
Orange juice, fresh, 1 cup	496
Lima beans, ½ cup	478
Soybeans, cooked, ½ cup	443
Banana, 1 medium	422

Fish (cod, halibut, rockfish, trout, tuna), 3 ounces	200–400
Tomato sauce, ½ cup	405
Prunes, stewed, ½ cup	398
Skim milk, 1 cup	382
Apricots, ¼ cup	378
Pinto beans, cooked, ½ cup	373
Pork tenderloin, 3 ounces	371
Lentils, cooked, ½ cup	365
Kidney beans, cooked, ½ cup	360
Split peas, cooked, ½ cup	360
Almonds, roasted, ½ cup	310

Meal Planning and Tips

NHLBI meal planning tools and tips can help you follow the DASH eating plan to meet nutritional goals.

Meal Planning Tools

The following tools can help you prepare and choose meals that meet the nutritional goals of the DASH eating plan.

- **NHLBI In-Brief: Your Guide to Lowering Your Blood Pressure with DASH:** Contains a DASH log for tracking daily food and physical activity levels and a shopping and menu planner.
- **Weekly DASH menus:** Provides sample daily DASH eating plan menus at 1,500 mg or 2,300 mg daily sodium levels. These menus are based on a 2,000-calorie-per-day diet, and suggested serving sizes may be adjusted if other daily calorie targets are desired.
- **Heart-healthy recipes:** Provide additional ideas for menu planning.

Tips for Lifelong Success

When changing lifestyle habits, it is normal to slip off track occasionally. Follow these tips to get you back on track.

- **Ask yourself why you got off track.** Find out what triggered your sidetrack, and restart the DASH eating plan.
- **Don't worry about a slip.** Everyone slips, especially when learning something new. Remember that changing your lifestyle is a long-term process.
- **Don't change too much at once.** When starting a new lifestyle, try to avoid changing too much at once. Slow changes lead to success.
- **Break down the process.** Break goals into smaller, simpler steps, each of which is attainable.
- **Write it down.** Use the [Daily DASH Log](#) to keep track of what you eat and what you're doing while you are eating. You may find that you eat unhealthy foods while watching television. If so, you could start keeping a healthier substitute snack on hand.
- **Celebrate success.** Instead of eating out to celebrate your accomplishments, try a night at the movies, go shopping, visit the library or bookstore, or watch your favorite TV show.

Participate in NHLBI Clinical Trials

The National Heart, Lung, and Blood Institute (NHLBI) leads or sponsors many studies aimed at preventing, diagnosing, and treating heart, lung, blood, and sleep disorders.

Learn more about [participating in a clinical trial](#).

View all trials from [ClinicalTrials.gov](#) external link.

Visit [Children and Clinical Studies](#) external link to hear experts, parents, and children talk about their experiences with clinical research.

<https://www.nhlbi.nih.gov/health-topics/dash-eating-plan>

Health Benefits of the DASH Eating Plan

Three NHLBI-funded trials showed the health benefits of the DASH diet, such as lowering [high blood pressure](#) and LDL (bad) cholesterol in the blood, and shaped the final DASH eating plan recommendations.

Study Results

Three NHLBI-funded trials found the following health benefits of the DASH diet.

- [DASH \(Dietary Approaches to Stop Hypertension Trial\)](#): The DASH diet lowers blood pressure and LDL (bad) cholesterol compared with a typical American diet alone or a typical American diet with more fruits and vegetables.
- [DASH-Sodium \(DASH Diet, Sodium Intake, and Blood Pressure Trial\)](#): The DASH diet lowers blood pressure better than a typical American diet at three daily sodium levels. Combining the DASH diet with sodium reduction gives greater health benefits than the DASH diet alone.
- [PREMIER clinical trial](#): People can lose weight and lower their blood pressure by following the DASH eating plan and increasing their physical activity.

DASH Trial

This trial included 459 adults, some with and without confirmed high blood pressure, and compared three diets including 3,000 mg daily sodium:

- Typical American diet
- Typical American diet plus more fruits and vegetables
- DASH diet

None of the plans were vegetarian or used specialty foods. After 2 weeks, participants who added fruits and vegetables to a typical American diet or those on the DASH diet had lower blood pressure than those who followed a typical American diet alone.

However, the participants on the DASH diet had the greatest effect of lowering their high blood pressure.

Follow-up reports from the DASH trial showed that in addition to improving blood pressure, the DASH diet also lowered LDL cholesterol levels. High blood pressure and elevated LDL cholesterol are two major risk factors for cardiovascular disease.

DASH-Sodium Trial

This trial randomly assigned 412 participants to a typical American diet or the DASH diet. While on their assigned diet, participants were followed for a month at a high daily sodium level (3,300 mg) and two lower daily sodium levels (2,300 mg and 1,500 mg). Reducing daily sodium lowered blood pressure for participants on either diet. However, blood pressures were lower for participants on the DASH diet versus a typical American diet. Blood pressure decreased with each reduction of sodium. These results showed that lowering sodium intake and eating the DASH diet is more beneficial for lowering blood pressure than following the DASH diet alone.

PREMIER Trial

The [PREMIER trial](#) included 810 participants who were placed into three groups to lower blood pressure, lose weight, and improve health. The groups included:

- Advice-only group, did not receive counseling on behavior changes
- Established treatment plan, including counseling for 6 months
- Established treatment plan, plus counseling and use of the DASH diet

After 6 months, blood pressure levels declined in all three groups. The two groups that received counseling and followed a treatment plan had more weight loss than the advice-only group. However, participants in the established treatment plan who followed the DASH diet had the greatest improvement in their blood pressure.