

Source information: Health information provided by healthcare professionals at Geisinger.

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Patient education

What is high blood pressure?

Your heart pumps blood to your entire body through blood vessels. The force your heart uses to pump blood through blood vessels is your blood pressure.

A blood pressure reading is made up of two numbers. The top number, or systolic blood pressure, is how hard your heart is working when it beats. The bottom number, or diastolic blood pressure, is how hard your heart is working at rest between beats. Both numbers are equally important.

Your blood pressure changes throughout the day. It is lowest at night when you are sleeping. Excitement, nervousness and sometimes exercise will cause your blood pressure to go up. When you are relaxed it usually comes back down.

If your blood pressure does not come back down after relaxing, it is called high blood pressure. This can lead to health problems including heart attack, stroke, blindness, and kidney failure. In most cases, keeping your blood pressure below 140/90 will lower your risk for these health problems. In some cases your doctor may want your blood pressure to be a little higher. Talk to your doctor to about your blood pressure goal.

Blood pressure is typically recorded as two numbers, written as a ratio like this:

$\frac{117}{76}$ Mm Hg

Read as "117 over 76 millimeters of mercury"

	Blood pressure	My blood pressure goal
Normal blood pressure	119/79 or below	
Pre-high blood pressure	Between 120/80 and 139/89	
High blood pressure	140/90 and above	

Types of high blood pressure

Primary high blood pressure: This is the most common type of high blood pressure. It does not have a direct cause. It develops slowly over many years and does not have signs or symptoms. The only way to know you have high blood pressure is to have it checked by your healthcare provider.

Secondary high blood pressure: This type of high blood pressure is not as common. Things like tumors of the adrenal glands, kidney disease or hormonal changes can cause it. This type of high blood pressure usually happens suddenly. Once the cause is treated, the blood pressure usually comes back down.

White coat high blood pressure: This term describes when someone's blood pressure is high in the doctor's office and normal at other times. In this case, your doctor may ask you to check your blood pressure at home from time to time.



Checking your blood pressure

Having your blood pressure checked is easy and painless. It can be checked at the doctor's office, a local pharmacy or even at home. If you are using a home machine, it is important to bring it with you to the doctor's office so he or she can check if it's giving accurate readings.

When your doctor asks you to check your blood pressure at home, they want to know if your blood pressure is high all the time or only at the doctor's office. Knowing how to take your blood pressure at home is important. Making sure the readings you get are accurate will also help your doctor decide if you need medicine or a change in medicine.

Checking your blood pressure at home

- Make sure the blood pressure cuff fits your arm. A blood pressure cuff that is too big or too small will give you a false reading. Ask your doctor or pharmacist to help pick the right cuff for you.
- Relax; sit in a chair with a back and both feet flat on the floor. Roll up your sleeve if it is not too tight or take your arm out of your shirt. Keep your arm relaxed and at your side while checking your blood pressure.
- Being relaxed for five minutes before checking your blood pressure is important. Being nervous, anxious or active before checking blood pressure may give a false high reading.
- Do not drink coffee, tea, soda or use tobacco for at least 30 minutes before checking your blood pressure.
- Both tobacco and caffeine will cause your blood pressure to rise.

How does high blood pressure feel?

You may have high blood pressure and not know it. You do not feel sick, and it does not affect what you enjoy doing. However, over time it can be serious and damage your heart, kidneys, brain, and eyes. That is why it is important to catch high blood pressure early. Your doctor should check your blood pressure every time you go to the office. High blood pressure may cause:

- Dizziness
- Nosebleeds
- Headaches
- Blurred vision or seeing spots

These things can happen for many reasons, but sometimes they are because of high blood pressure.

If you have any of these problems, talk to your doctor.

Getting needed care quickly

You have a lot of options when you need care. We want to help you get the right care in the right place. This chart can help you find options.



Your first stop should be your primary care physician (PCP), who oversees your health needs.

Cost: PCP copay (\$)

What your PCP treats

- Common cold
- Sinus infection
- Skin rashes/allergies
- Depression
- Stress
- High blood pressure
- Asthma
- Acne
- Stomach problems



Convenient and urgent care facilities in-network can be a cost conscious way to receive treatment.

Cost: PCP or specialist copay (\$\$)

What they treat

- Accidents/falls
- Sprains/strains
- Fever/flu
- Minor broken bones
- Vomiting/diarrhea
- Skin rashes
- Eye irritation

Perks

- Low copays
- Appointments not necessary
- Short wait times
- After-hours treatment



Call 911 or go to the nearest emergency room for treatment of life-threatening issues.

Cost: ER copay (\$\$\$)

What the ER treats

- Difficulty breathing
- Chest pain
- Poisoning
- Sudden/severe pain
- Uncontrolled bleeding
- Fainting

How to control high blood pressure

High blood pressure is very serious because even though you feel fine it is causing damage to your blood vessels. Without having your blood pressure checked, you cannot tell what your blood pressure is. This puts you at risk for a heart attack, stroke, kidney failure and even blindness. There are many things that you can do to keep your blood pressure under control.

Get to a healthy weight

Being overweight puts you at risk for many things including high blood pressure, diabetes and heart disease. Your doctor may talk to you about a healthy weight. This is not the same as your "ideal weight." An ideal weight is the weight you should be for your age and body frame. A healthy weight is the weight where you start seeing lower risks for diabetes, high blood pressure and heart disease. You can get these health benefits by losing as little as 5 to 10 percent of your current weight. To calculate 5 percent of your weight multiply your weight by .05, for 10 percent multiply your weight by .10.

Ask your doctor what your healthy weight is. Start slow, you did not gain the weight overnight and you will not lose the weight overnight. Losing weight at one to two pounds a week is a good rate, and is easier to keep off. It could take months to get to your healthy weight. That is all right because you are also learning how to make healthier choices that last a lifetime. Once you reach your healthy weight, do not stop. Keep practicing the healthy habits you learned.

Be active

Being active keeps your heart strong, relieves stress and helps you lose weight. An active lifestyle keeps your muscles strong. Strong muscles burn more calories than fat. It does not matter what you do as long as you are moving. You can change your activities each week or each season to stay motivated. You will see your blood pressure lower, sometimes in just a few weeks. Talk to your doctor before starting any exercise program.

Start slow:

- Choose an activity you like to do.
- Do the activity with family or friends.
- Start with 10 minutes 5 times a week and increase by 5 minutes every week.
- The goal is to be active 30 to 60 minutes most days of the week.

Eat healthy

Eating healthy is not a diet. It does not stop when you reach your goal weight. It is a lifelong choice to live and be healthy. Eating healthy simply means you eat many different foods in the portions your body needs.

When you have high blood pressure, you need to watch the amount of salt (sodium) you eat. Your body needs salt but only a little. When you eat more salt than you need, your kidneys hold on to extra water. When you have high blood pressure, this extra water can increase your blood pressure.

Most people only need 2,400 milligrams of sodium a day. If you have heart failure, it could be less. To give you an idea, 1 teaspoon of salt equals 2,400 milligrams.

Even if you do not add salt to the food you eat or use it when cooking, you may be getting too much salt in your diet. Most of the salt you eat is from processed foods. When you go shopping look at the food labels and pick items labeled "reduced" or "no-salt-added."





Steps to decrease the salt in your diet

- Start by cutting the salt you use in half, then slowly cut back more each week.
- Buy fresh foods. If you use canned foods, rinse them off before cooking.
- Buy fresh chicken, fish or lean meat. Avoid canned, smoked, processed or cured foods.
- Do not add salt when cooking.
- Foods packed in brine like pickles, olives and sauerkraut usually have a lot of salt.
- Frozen dinners, mixed dishes, canned soups or broths and salad dressings often have a lot of salt.
- Instant or flavored rice, pasta and cereal mixes usually have added salt.
- Take the salt shaker off the table.
- Toppings like mustard, horseradish, ketchup, soy sauce and barbecue sauce usually have a lot of salt in them.
- Use seasonings to flavor foods rather than salt.

Stroke

A stroke occurs when the blood vessels in your brain are damaged. There are two types of strokes.

Ischemic stroke (no oxygen): This happens when a blood vessel in the brain is blocked. It prevents oxygen rich blood from getting to the cells in your brain.

Hemorrhagic stroke (bleeding): This happens when the wall of a blood vessel in the brain becomes weak and begins to leak blood.

Signs and symptoms of a stroke are sudden. If you have any of these symptoms, do not wait call 911.

- Confusion, trouble speaking or understanding
- Dizziness, loss of balance or coordination, or trouble walking
- Numbness, weakness, or drooping in face, arms or legs (especially on one side of the body)
- Problems seeing in one eye or both eyes
- Severe headache with no known cause

Kidney disease

Plaque builds up in the blood vessels that go to the kidneys. When these blood vessels narrow (renal artery stenosis), the kidney does not receive the amount of the blood it usually does. The kidneys are fooled into thinking there is not enough fluid for normal blood flow. They will then hold onto extra fluid and salt. This in turn causes your blood pressure to rise and further damage your blood vessels.

High blood pressure also damages the nephrons in the kidneys. Nephrons filter waste, extra fluid, and salt from the blood stream. Damaged nephrons may lead to a build up of fluid and waste products in your blood stream.

We encourage you to call your healthcare provider if you experience any of the following:

- Change in urination (color, frequency or difficulty)
- Decreased appetite, nausea or vomiting
- Difficulty breathing
- Difficulty concentrating or memory difficulty
- Fatigue
- Headaches
- Higher blood pressure
- Itching of the skin
- Metallic taste in your mouth
- Swelling (edema) in the legs, ankles, hands or face
- Weight loss or weight gain

Damage to your eyes

High blood pressure also affects the tiny blood vessels in your eyes. Just like in your heart, brain, and kidneys high blood pressure can cause the blood vessels in your eyes to swell and leak. If left untreated it can cause blindness.

The information contained in this booklet is not a substitute for medical treatment. If you have any questions or concerns contact your health care provider.

Sources

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If high blood pressure goes untreated

It is crucial to take steps that keep your blood pressure under control so it does not lead to more serious conditions.

Heart attack

When you are young and healthy, your blood vessels easily stretch as blood pumps through them. As you get older, your blood vessels naturally become stiffer and do not stretch as easy. This causes your heart to work harder to push the same amount of blood through your blood vessels.

The increased force causes the inner wall of the blood vessels to become rough which catches plaque (cholesterol, fat and other things) that float by in the blood. As plaque builds up, the blood vessels become narrow or totally blocked. If this happens in your heart, it can cause a heart attack.

If you are having a heart attack, you may experience:

- Cold sweats
- Crushing chest pain or pressure
- Dizziness
- Light-headedness
- Pain in the upper body or arms
- Shortness of breath
- Tiredness

Women may also have pain, pressure or a squeezing feeling in their upper back, lower chest or upper abdomen. If you have any of these symptoms, do not wait. Call 911.

Heart failure

With heart failure, the heart does not fill or cannot push the blood through the blood vessels. Heart failure may occur after a heart attack or after years of high blood pressure.

A heart attack damages the heart muscle. This damage changes how the heart pumps blood to the rest of the body. This can cause extra fluid to back up in your feet, legs and sometimes your lungs. Call your healthcare provider if you gain two pounds or more in a day or five pounds in a week, are more tired than usual, feel tightness or pain in your chest, experience shortness of breath, experience increased coughing, or have swollen feet, ankles, legs or belly.

Understanding food labels

Nutrition Facts	
6 servings per container	
Serving size	1 cup (230g)
Amount per serving	
Calories	245
<small>% Daily Value*</small>	
Total Fat 12g	14%
Saturated Fat 2g	10%
Trans Fat 0g	
Cholesterol 3mg	3%
Sodium 210mg	9%
Total Carbohydrate 34g	12%
Dietary Fiber 7g	25%
Total Sugars 5g	
Includes 4g Added Sugars	8%
Protein 11g	
Vit. D 4mcg 20%	Calcium 210mg 16%
Iron 3mg 15%	Potassium 380mg 8%

*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

This food label says:

- Each serving is 1 cup
- 6 servings in the entire box
- 210 milligrams of salt in each serving
- If you eat the whole box, you would be eating 6 cups and 1,260 milligrams of salt. 1,260 milligrams is over half of your salt intake for a full day.

Top sources of sodium in the diet

- Breads and rolls
- Cheese
- Cold cuts and cured meats
- Meat dishes
- Pasta dishes
- Pizza
- Poultry
- Sandwiches
- Snacks
- Soups

Fight salty snack-time cravings with these healthy switches

Buffalo popcorn

Toss air-popped popcorn with olive oil, chili powder and a sprinkle of Parmesan cheese.

Spicy wheat pretzels

Pair whole wheat pretzels with spicy mustard for an irresistible treat. Add a couple of low-fat cheese cubes to make this snack extra filling.

Cheese kale chips

Tear kale leaves into large pieces and arrange on a baking sheet. Spritz with olive oil and bake at 350° Fahrenheit until crisp. While warm, sprinkle with a little grated Parmesan cheese.





DASH diet

Your doctor may also talk to you about a DASH diet (Dietary Approach to Stop Hypertension). A DASH diet is simply increasing the fruits, vegetables and whole grains you eat. It is also cutting back on animal fat, saturated fat, cholesterol and salt.

Food	Servings each day	One serving is
Whole grains	6 servings each day	1 slice of bread or 1 ounce of cereal or 1/2 cup of rice
Vegetables	3 to 4 servings each day	1 cup raw or 1/2 cup cooked or 3/4 cup of juice
Fruits	4 servings each day	1 medium sized fruit or 1/4 cup dried or 1/2 cup fresh or 3/4 cup of juice
Low-fat or fat-free dairy	2 to 3 servings each day	1 cup of milk or 1 1/2 ounces of cheese or 1 cup of yogurt
Lean meat, chicken, fish	3 to 4 servings each day	2 1/2 to 3 1/2 ounces or 1 egg
Nuts, seeds, dry beans	3 servings each day	1/3 cup of nuts 2 tablespoons of seeds 1/2 cup of cooked dry beans
Low-fat and oils	2 servings each day	1 teaspoon of vegetable oil or margarine or 1 tablespoon of mayonnaise or 2 tablespoons of salad dressing
Sweets	3 servings each day	1 tablespoon of sugar or 1 tablespoon of jelly/jam or 1/2 ounce of jelly beans or 8 ounces of lemonade or fruit punch

Keeping track of what you eat helps you see how much you are eating and where you can make changes.

1. Start by finding out what you eat now. Write it down, including the amount.
2. Find out what you should be eating. Write it down, including the amount.
3. Start by making small changes in how you eat. Write it down.

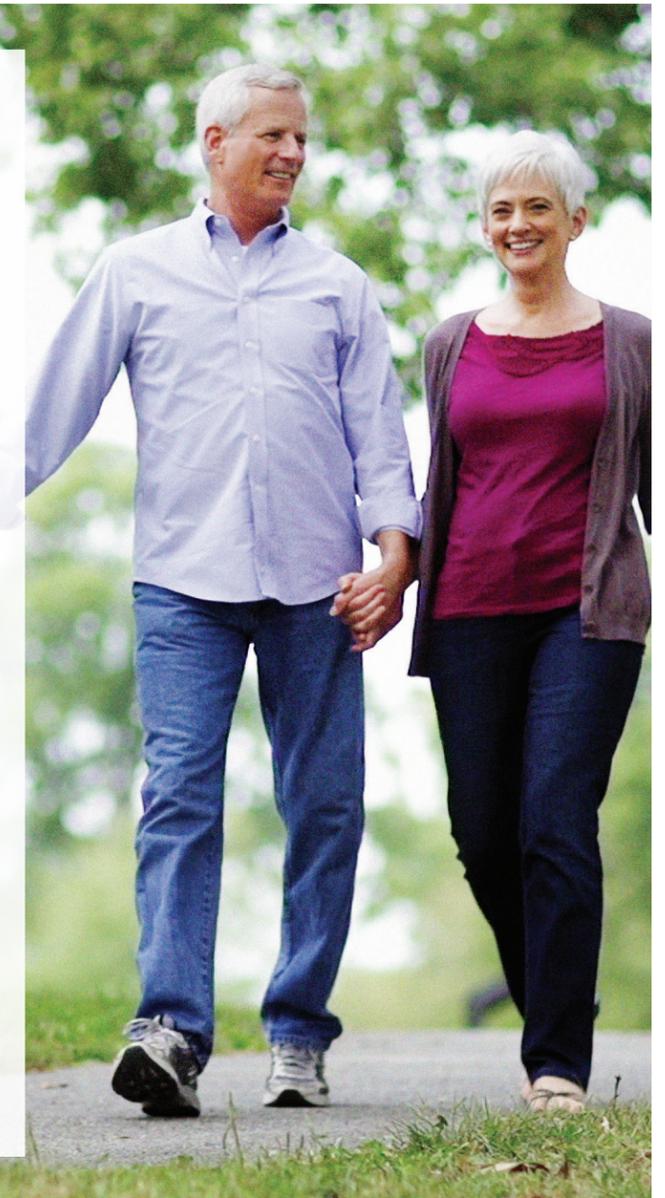
If you need help knowing what foods to eat or how much to eat, ask your doctor if you can see a registered dietitian.

Manage your stress

- Be active.
- Do one thing at a time.
- Do things you like to do.
- Picture how you will deal with a problem before it happens. Having a plan cuts down on stress.
- Spend quiet time just for you. 10 to 20 minutes of quiet reflection can help you relax.
- Set goals you can reach and be flexible. Not everything will go according to plan.
- When things are not going well, talk to family and friends.

Smoking or chewing tobacco is not a healthy way to deal with stress. The chemicals in the tobacco cause your blood vessels to tighten, which in turn pushes your blood pressure up. For information about our tobacco cessation program, call 800-883-6355.

If you drink alcohol, limit the amount to two a day for men and one a day for women. Recreational drugs also cause your blood pressure to rise. If you need medicine to help you deal with stress, talk to your doctor.



Take your medicine

Your doctor may prescribe you medicine, sometimes more than one, to help control your blood pressure.

Take your medicine every day, even if you feel well. Once your blood pressure is under control, do not stop taking your medications. Your high blood pressure is not gone; it just means your medicine is working. Making lifestyle changes like getting to a healthy weight, eating healthy and being active will help your doctor decide if you can take less medicine for high blood pressure. Always tell your doctor if you feel dizzy, have headaches or experience blurred vision.

Know what medicines you are taking and what each does for your blood pressure. Tell your doctor about all the medicine you take, including pills you buy off the shelf. Your blood pressure may go up or down with some off-the-shelf medicine. Your doctor or pharmacist can help you choose safer medications.