



Home Blood Pressure Guide: Arm Cuff



THE OHIO STATE UNIVERSITY
WEXNER MEDICAL CENTER

Learning About Your Blood Pressure

Your health care provider would like to know how your blood pressure is when you are at home. You can do that by using different kinds of home monitoring equipment. This guide will help you understand more about your blood pressure and how to watch it at home.

What is blood pressure and how is it measured?

Blood pressure measures the pressure of the blood in the arteries. Arteries are tubes that carry blood from your heart to the rest of your body. The arteries can automatically contract (get smaller) or expand (get bigger). When arteries contract, the pressure inside becomes higher. When arteries expand, the pressure inside becomes lower. If arteries remain contracted or become clogged, the disease hypertension (high blood pressure) occurs.

- **Systolic (SYS):** The top number is the pressure in the arteries each time the blood is pushed out of the heart.
- **Diastolic (DIA):** The bottom number is the resting pressure when the heart relaxes between beats. The harder it is for blood to flow through the arteries, the higher the blood pressure numbers will be.
- **Pulse Rate (PUL):** The rate at which your heart beats. Your pulse is usually called your heart rate, which is the number of times your heart beats each minute (bpm).

Blood Pressure Numbers

Blood pressure is measured in millimeters of mercury (mm Hg). For example, if your blood pressure is “140 over 90” or 140/90 mm Hg. This is 140 mm Hg systolic and 90 mm Hg diastolic.

Getting ready

Blood Pressure Category	Blood Pressure Reading
Normal	systolic less than 120, and diastolic less than 80
Elevated	systolic 120 to 129, and diastolic less than 80
High – Hypertension Stage 1	systolic 130 to 139, or diastolic 80 to 89
High – Hypertension Stage 2	systolic 140 or higher, or diastolic 90 or higher
Severe hypertension – Consult your health care provider right away	systolic higher than 180 and/or diastolic higher than 120

For a digital copy of this book, please visit go.osu.edu/pted5008.

Talk to your healthcare provider if you have any questions about your care.

For more education, contact the Library for Health Information at 614-293-3707 or health-info@osu.edu.

A diagnosis of high blood pressure will not be made until your blood pressure has been checked several times and it stays high. Keeping your blood pressure under good control is very important, especially if you have other medical problems, such as diabetes, kidney disease, or have had a stroke.

Why is high blood pressure bad?

High blood pressure means that your heart is working harder than normal to pump blood to the rest of your body's organs and tissues. This may cause other health problems, such as a heart attack, stroke, kidney failure, and hardening of the arteries (atherosclerosis).

Many people with high blood pressure do not feel sick. This does not mean that you do not need treatment for your high blood pressure.

What can be done for high blood pressure?

In most cases, the cause of high blood pressure is unknown. Although there is no cure for high blood pressure, it can be controlled through lifestyle changes and medicine. Your doctor may try one medicine or a combination of medicines to see what works best for you.

If you have high blood pressure:

- Follow your doctor's advice and make lifestyle changes (see next section).
- Review the rest of this packet to learn more about getting a home blood pressure monitor so you can record your blood pressure readings between doctor visits.
- Talk to your doctor if your medicine is giving you side effects. **Do not stop taking the medicine without first talking with your doctor.**
- Continue taking your medicines, even if you feel fine and your blood pressure returns to normal.

Healthy changes to lower blood pressure

There are many things that you can do to lower your blood pressure. These diet and lifestyle changes include:

- **Eat for heart health.** Choose more fruits, vegetables, and whole grains, and limit foods high in salt and saturated fat.
- **Develop an exercise program,** with guidance from your doctor. Regular exercise improves your overall physical health, helps with weight loss, and lowers blood pressure.
- **Limit drinking alcohol.** Having more than 1 alcoholic drink a day for women or more than 2 drinks a day for men can cause problems with high blood pressure.
- **Work toward a weight that supports your health.** Ask your health care provider what a healthy weight is for you.
- **Learn to relax** and take time out to do things you enjoy. Ongoing stress has been linked to high blood pressure.
- **Stop smoking or using other tobacco.** Smoking or using other tobacco products causes your arteries to contract, which increases your blood pressure. Ask your doctor about medicines to help you quit. For a copy of the Quitting Tobacco Use Book go to go.osu.edu/pted3430.

High blood pressure nutrition tips

DASH Diet

The DASH diet is an eating plan that can help lower your blood pressure. DASH stands for Dietary Approaches to Stop Hypertension. It includes eating fruits, vegetables, and low-fat or nonfat dairy foods. It also includes eating whole grains, fish, and poultry.



Following the DASH diet:

Food Type	Serving Size	DASH Guideline
Fruit	4 to 5 per day	A serving is 1 medium-sized piece of fruit, ½ cup chopped or canned fruit, ¼ cup dried fruit, or 4 ounces (½ cup) of fruit juice. Choose fruit more often than fruit juice.
Vegetables	4 to 5 per day	A serving is 1 cup of lettuce or raw leafy vegetables, ½ cup of chopped or cooked vegetables, or 4 ounces (½ cup) of vegetable juice. Choose vegetables more often than vegetable juice.
Low-fat and fat-free dairy	2 to 3 per day	A serving is 8 ounces of milk, 1 cup of yogurt, or 1½ ounces of cheese.
Grains	6 to 8 per day	A serving is 1 slice of bread, 1 ounce of dry cereal, or ½ cup of cooked rice, pasta, or cooked cereal. Try to choose whole-grain products as much as possible.
Lean meat, poultry, and fish	2 per day	A serving is 3 ounces, about the size of a deck of cards.
Nuts, seeds, and legumes	4 to 5 per week	A serving is ⅓ cup of nuts, 2 tablespoons of seeds, or ½ cup of cooked beans or peas. Legumes include cooked dried beans, lentils, and split peas.
Fats and oils	2 to 3 per day	A serving is 1 teaspoon of vegetable oil or 2 tablespoons of salad dressing.
Sweets and added sugars	5 servings or less a week	A serving is 1 tablespoon jelly or jam, ½ cup sorbet, or 1 cup of lemonade.

Be aware that all of these are the suggested number of servings for people who eat 1,800 to 2,000 calories a day. Your recommended number of servings may be different if you need more or fewer calories. Read more about the DASH diet and sample menus at go.osu.edu/pted3966.

Lower Your Sodium (Salt) Intake

There is a link between eating sodium and having high blood pressure. Reducing sodium in the diet can prevent high blood pressure in those at risk for the disease and can help control high blood pressure. Limiting sodium is part of a heart-healthy eating plan that can help prevent heart disease and stroke. Try to eat less than 2,300 milligrams (mg) of sodium a day. If you limit your sodium to 1,500 mg a day, you can lower your blood pressure even more.

Eat Fewer Processed Foods

Cutting back on the amount of processed or refined foods you eat can help control blood pressure. These foods, such as canned and instant soups, packaged mixes, and snack items, don't have enough calcium, potassium, and magnesium – the very nutrients you need to help lower your blood pressure. And these foods can be high in sodium, saturated fats, and trans fats.

Vegetarian Diet

You also may try a vegetarian diet. In general, vegetarian diets reduce blood pressure, although experts don't know exactly why. The DASH diet could easily be a vegetarian diet if legumes (for example, beans, lentils, peas, and peanuts) were substituted for meat. Vegetarian diets tend to be higher in potassium, magnesium, and calcium, as does the DASH diet. Vegetarian diets also are higher in fiber and unsaturated fats than other diets.

Potassium, Calcium, and Magnesium

Not eating enough foods containing potassium, calcium, and magnesium may contribute to high blood pressure.

To get enough of these nutrients, eat a balanced diet that contains plenty of fresh fruits, vegetables, dairy foods, and whole grains. Most people do not need to take dietary supplements to get enough potassium, calcium, and magnesium.

Good sources of potassium:

All fresh fruits and vegetables and meats are good sources of potassium. Examples include the following:

- Bananas, cantaloupe, oranges, and orange juice
- Raw or cooked spinach, lima beans, zucchini, broccoli, and artichokes
- Potatoes
- Legumes (cooked dried beans and peas) such as pinto beans, chickpeas (garbanzo beans), and lentils
- Nuts and seeds

Good sources of calcium:

- Low-fat dairy products (yogurt, skim milk, cheese)

Good sources of magnesium:

- Legumes (cooked dried beans and peas), seeds, and nuts
- Halibut
- Milk and yogurt
- Brown rice and potatoes
- Tomatoes
- Bananas and watermelon
- Leafy green vegetables



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Taking Your Blood Pressure Reading

Getting ready

- Do not eat, smoke, or exercise for at least 30 minutes. Also, do not use any medicines that can raise blood pressure for 30 minutes before taking your blood pressure reading.
- Rest at least 5 minutes before you take a reading. Sit in a comfortable, relaxed position with both feet on the floor. Do not move or talk while you are taking your blood pressure.
- Try not to take your blood pressure if you are nervous or upset.
- If you can, use the same arm for every reading. Readings can be different between your right and left arm.
- Blood pressure readings vary throughout the day. They usually are highest in the morning, decrease during the day, and are lowest in the evening. It can be helpful to take readings at different times at first to understand your own blood pressure trends. After that, it is okay to check around the same time each day.

When you first start taking your blood pressure at home, take it 2 times. Wait 1 minute between readings to let the blood flow back into your arm.

How to take your blood pressure reading

1. Sit in a comfortable position for 5 minutes before taking your blood pressure.
2. Push your sleeve up and lay your arm on a table. If your clothes are too tight around your arm, take off your shirt or blouse before checking your blood pressure.
3. Wrap the cuff around your upper arm just above the elbow. The cuff should be snug around your arm. Make sure the lower end of the cuff where the tube comes out is about 1 inch above your elbow.
4. Press the on/off button. Wait until the ready-to-measure “heart” symbol appears next to zero in the display window.
5. Press the start button. The cuff will inflate. After a few seconds, the cuff will begin to deflate. The numbers will begin to drop.
6. When the measurement is complete, the heart symbol stops flashing. The numbers tell you your blood pressure and pulse.

Keep a blood pressure log

Keep track of your blood pressure readings. This may help explain changes in your readings and help your health care provider to make sure you get the right treatment. You can use the log on page 10 of this guide or a spreadsheet on your computer. Some monitors can record your numbers for you and can transfer the information to your computer or phone.

Getting more accurate readings

These 7 things that can help you to get more accurate blood pressure readings.

1. Don't have a conversation while taking your blood pressure.

Talking can add 10 to 15 mm Hg.

2. Put the cuff on your bare arm.

Having the cuff over your clothes can add 10 to 40 mm Hg.

3. Support your arm at heart level.

Not supporting your arm can add 10 mm Hg.

4. Support your back.

Not supporting your back can add 5 to 10 mm Hg.

5. Empty your bladder first.

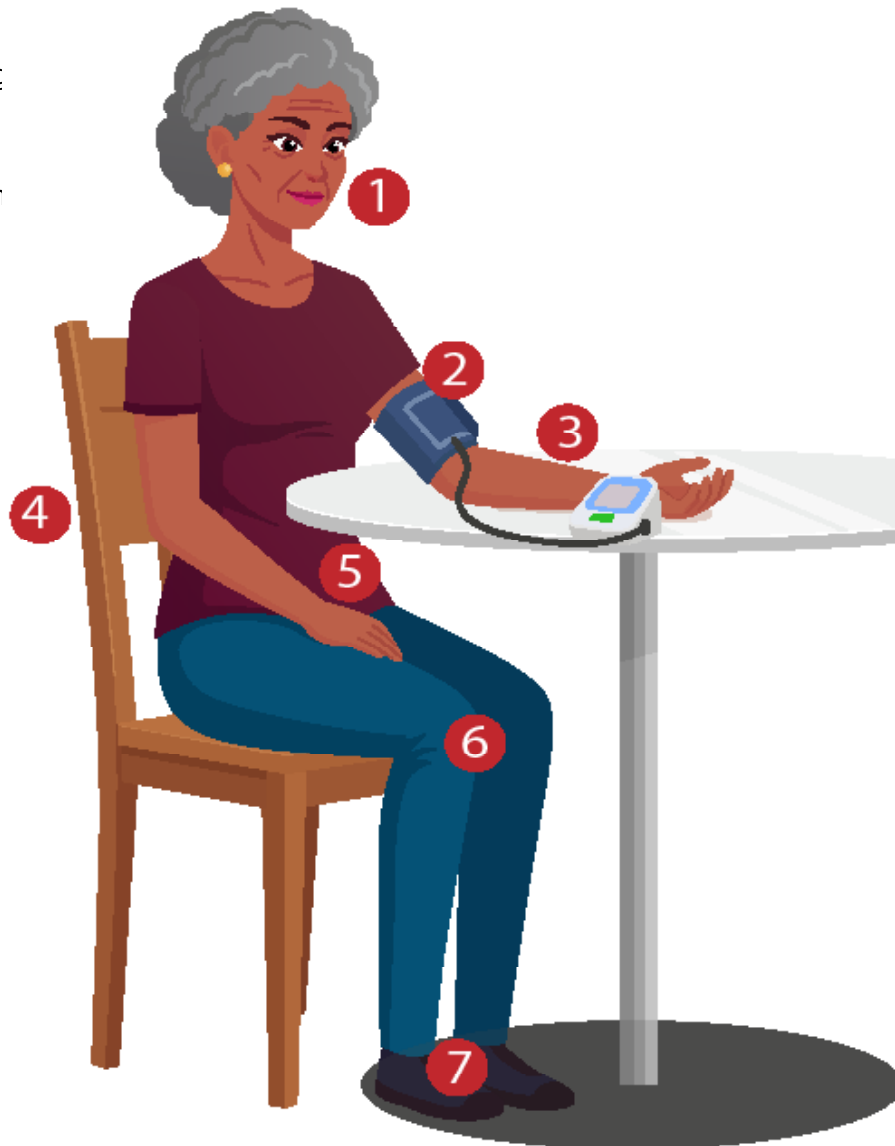
Having a full bladder can add 10 to 15 mm Hg.

6. Don't cross your legs.

Crossing your legs can add 5 to 10 mm Hg.

7. Rest your feet flat on the floor.

Not supporting your feet can add 5 to 10 r



Choosing a Monitor With an Arm Cuff

Type of cuff

Blood pressure monitors come with a cuff that goes on your arm or a cuff that goes on your wrist. Upper arm devices that use a cuff on your arm are usually **preferred** for measuring blood pressure because they have better accuracy than wrist cuffs. In some cases, a wrist cuff may be used for people with a certain medical history that prevents them from using the upper arm.

Your doctor has recommended that you use a cuff on your arm.

Cuff size

Your arm measurement can be taken in the office. You can also measure this at home using a tape measure.

1. Hold out your arm.
2. Measure around your upper arm at the midway point between your elbow and shoulder to get your arm size.

If you do not have a tape measure, please ask for one from your health care team.

Use the guide below to find the right size for you (small adult, adult, large adult, or extra-large adult).



Arm size	Recommended cuff size
8.7 to 10.2 inches around	Small Adult
10.6 to 13.4 inches around	Adult
13.8 to 17.3 inches around	Large adult
17.7 to 20.5 inches around	Extra-large adult

If your arm measures 20.5 inches or more, you will need to pick a product such as the Welch Allyn 1700 series, which fits up to 21.2 inches. If you are not able to get this product or if your arm measures over 21.2 inches, talk to your doctor about other options, such as using a wrist cuff monitor.

<p>My upper arm size is: _____</p> <p>My cuff size is: _____</p>
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Use a validated monitor

You will want to choose a monitor that is validated. A validated device means that it has been tested to make sure it gives results that are accurate and reliable. Your health care provider can help you choose a validated device.

Examples of validated blood pressure machines using an arm cuff include:

- **Omron (multiple validated models, such as 3 Series and 5 Series)**
Adult/large adult cuff. Small adult cuff sold separately. See full list of Omron models at [ValidateBP.org](https://www.validatebp.org).
- **A & D Medical Talking+ Blood Pressure Monitor**
Small adult, medium, and large (sold with medium cuff, other sizes sold separately)
- **A & D Medical ULTRACONNECT Wireless Blood Pressure Monitor**
Integrated (fits small to large adult)
- **A & D Medical Advanced Manual Inflate Blood Pressure Monitor**
Medium/adult cuff
- **Welch Allyn Home Blood Pressure Monitor, 1700 Series**
Extra small, standard (default size), and extra-large (up to 21.2 inches)
- **Withings BPM Connect Wi-Fi Smart Blood Pressure Monitor**
Integrated (fits small to large adult size)

You can also see a listing of validated U.S. blood pressure devices at [validatebp.org](https://www.validatebp.org). and filter by 'Home' under device type to see validated options.

Take care of your home monitor

Check your blood pressure cuff often. Make sure all the parts of your monitor are in good condition. Even a small hole or crack in the tubing can lead to inaccurate results.

Blood Pressure Log


Please use this log to record the blood pressure and heart rate (pulse) readings you take at home. Note the date and time of day you take them. Write the blood pressure with the systolic number on the left and the diastolic number on the right: 120/80 for example. Bring this log with you when you talk to your health care provider.

Date	Time	Blood Pressure Systolic / Diastolic	Heart Rate (Pulse)	Comments (write down any symptoms you have here)
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To print another copy of this log, go to: go.osu.edu/pted893

My Blood Pressure Action Plan

 My **goal** blood pressure range is less than 140/90.

 My **caution** blood pressure is over 140/90, but less than 180/110.

 My **danger** blood pressure is over 180/120.

<p>I am doing well. 140/90 or less</p>	<p>Action</p> <ul style="list-style-type: none"> • Keep up the good work! • Follow my provider’s guidance for nutrition, physical activity, and taking medicines (if prescribed).
<p>My blood pressure is outside my goal range. Over 140/90, but less than 180/110</p>	<p>Action</p> <ul style="list-style-type: none"> • Caution needed. • Make changes to lower my blood pressure (eat healthy, exercise, lose weight, quit smoking, cut down on alcohol, and take medicines as prescribed). • Monitor my blood pressure closely. • Contact my provider to notify them of changes.
<p>RED ZONE: My blood pressure is too high. Over 180/120</p>	<p>Action:</p> <ul style="list-style-type: none"> • I am in trouble and need help. • Call my provider right away for instructions.

Call 911 if I am in the **red zone** and have any of the following problems:

- Trouble seeing or changes to my vision
- Sudden, severe headache
- Feeling confused
- Trouble speaking or understanding others
- Numbness or weakness in face, arms, or legs
- Sudden loss of balance or any dizziness
- Chest pain or tightness with or without shortness of breath, sweats, or nausea



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