





**The American Heart Association** is proud to provide support for this educational opportunity, including access to free blood pressure monitoring.

### Greetings!



At the American Heart Association, we know managing high blood pressure is an important part of preventing heart disease and stroke.

That's why we are working to provide materials that will help you learn how to measure - and hopefully, control - your blood pressure. With the materials provided, you will learn a simple and efficient way to measure your own blood pressure and take action to change your health!

Nearly half of all Americans have high blood pressure, which increases the risk of heart attack and stroke. Certain heart and stroke symptoms require immediate medical intervention and every second matters. Calling 9-1-1 at the first sign of heart attack, stroke, or cardiac arrest can save lives.

In this booklet, you will find a variety of resources, including:

- Diagrams on how to check your blood pressure accurately
- Questions to talk to your provider about your blood pressure control
- Tips on how to manage your blood pressure
- Information about how and why to limit stress and salt, along with other tips for improving your heart health
- Guidance on how to choose a Health App

This opportunity **should not** replace your medical visits. One of the most important parts of controlling your blood pressure is making sure you keep track of your blood pressure readings and communicate with your doctor. We strongly encourage you to communicate regularly with a primary care provider about your heart health (incl. blood pressure) and taking the necessary steps for a healthier life. If you do not have a local doctor, a list of local health care providers, including those who offer free or low-cost care, is provided to help your search.

We hope you benefit from this information and continue to stay safe and healthy!





### **HOW TO MANAGE BLOOD PRESSURE**



### **UNDERSTAND READINGS**

Make smart choices and swaps to build an overall healthy eating style. Watch calories and eat smaller portions.

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

### 117 76

Read as "117 over 76"

millimeters of mercuru.

### **SYS TOLIC**

The top number, the higher of the two numbers, measures the pressure in the arteries when the heart beats (when the heart muscle contracts).

### **DIASTOLIC**

The bottom number, the lower of the two numbers, measures the pressure in the arteries when the heart is resting between heart beats.

BLOOD PRESSURE CATEGORY	SYSTOLIC MM HG (UPPER #)		DIASTOLIC MM HG (LOWER #)
Normal	Lower than 120	and	Lower than 80
Elevated Blood Pressure	120 –129	and	80
High Blood Pressure (Hypertension) Stage 1	130 –139	or	80 -89
High Blood Pressure (Hypertension) Stage 2	140 or higher	or	90 or higher
Hypertensive Crisis (Consult your doctor immediately)	Higher than 180	and/ or	Higher than 120

### **/**

### **TRACK LEVELS**



A diagnosis of high blood pressure must be confirmed with a health care professional. Any unusually low blood pressure readings should also be evaluated.

Health care professionals can take blood pressure readings and provide recommendations.

### Learn more at heart.org/lifes8





### **EAT SMART**

Eat a healthy diet of vegetables, fruits, whole grains, beans, legumes, nuts, plant-based proteins, lean animal proteins like fish and seafood.

Limit sugary foods and drinks, red or processed meats, salty foods, refined carbohydrates and highly processed foods.



### **MOVE MORE**

Physical activity helps control blood pressure, weight and stress levels.



### **MANAGE WEIGHT**

If you're overweight, even a slight weight loss can reduce high blood pressure.



### **NO NICOTINE**

Every time you smoke, vape or use tobacco, the nicotine can cause a temporary increase in blood pressure.



### **SLEEP WELL**

Short sleep (less than 7 hours) and poor-quality sleep are associated with high blood pressure.







## What Is High Blood Pressure?

Blood pressure is the force of blood pushing against the artery walls. It's measured in millimeters of mercury (mm Hg).

The blood pressure is defined as high when the pressure in your arteries is higher than it should be.

Blood pressure is written as two numbers, such as 112/78 mm Hg. The upper number, called systolic pressure, is the pressure when the heart beats. The lower number, called diastolic pressure, is the pressure when the heart rests between beats.

Normal blood pressure is below 120/80 mm Hg. If you're an adult and your systolic pressure is 120 to 129, and your diastolic pressure is less than 80, you have elevated blood pressure. High blood pressure is a systolic pressure of 130 or higher, or a diastolic pressure of 80 or higher, that stays high over time.

High blood pressure usually has no signs or symptoms. That's why it is so dangerous. But it can be managed.

Nearly half of the American population over age 20 has HBP, and many don't even know it. Not treating high blood pressure is dangerous. It increases the risk of heart attack and stroke.

Make sure you get your blood pressure checked regularly and treat it the way your health care professional advises.

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		<b>DIASTOLIC mm Hg</b> (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120-129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130-139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/ or	HIGHER THAN 120

### Am I at higher risk of developing HBP?

There are risk factors that increase your chances of developing HBP. Some you can control, and some you can't.

### Those that can be controlled are:

- Cigarette smoking and exposure to secondhand smoke
- · Diabetes
- · Being obese or overweight
- High cholesterol
- Unhealthy diet (high in sodium, low in potassium, and drinking too much alcohol)
- Physical inactivity

### Factors that cannot be modified or are difficult to control are:

- · Family history of high blood pressure
- Race/ethnicity
- Age
- Gender (males)
- Chronic kidney disease
- Obstructive sleep apnea

Socioeconomic status and psychosocial stress are also risk factors for HBP. These can affect access to basic living needs, medication, health care professionals, and the ability to adopt lifestyle changes.

(continued)



### What Is High Blood Pressure?

### How can I tell I have it?

The only way to know if you have high blood pressure is to get it checked regularly.

For proper diagnosis of HBP, your health care professional will use an average based on two or more readings taken on two or more visits.



### What can I do about HBP?

- Don't smoke and avoid secondhand smoke.
- · Reach and maintain a healthy weight.
- Eat a healthy diet that is low in saturated and trans fats and rich in fruits, vegetables, whole grains and low-fat dairy products.
- Try to consume less than 1,500 mg/day of sodium (salt).
   Even reducing your daily intake by 1,000 mg can help.
- Eat foods rich in potassium such as bananas, avocados, cantaloupe, potatoes and sweet potatoes. Aim for 3,500
   5,000 mg of dietary potassium per day.
- Limit alcohol to no more than one drink per day if you're a woman or two drinks a day if you're a man.
- Be more physically active. Get 150 minutes of moderateintensity physical activity or 75 minutes of vigorous physical activity per week, or a combination of both, spread throughout the week. Add muscle-strengthening activity at least two days per week for more health benefits.
- Take medicine the way your health care professional tells you.
- Know what your blood pressure should be and work to keep it at that level.

### **HOW CAN I LEARN MORE?**

- 1 Call 1-800-AHA-USA1 (1-800-242-8721) or visit heart.org to learn more about heart disease and stroke.
- 2 Sign up for our monthly Heart Insight e-news for heart patients and their families at **HeartInsight.org**.
- 3 Connect with others sharing similar journeys with heart disease and stroke by joining our Support Network at heart.org/SupportNetwork.

### Do you have questions for your doctor or nurse?

Take a few minutes to write down questions for the next time you see your health care professional.

For example:

Will I always have to take medicine?

What should my blood pressure be?

### MY QUESTIONS:

We have many other fact sheets to help you make healthier choices to reduce your risk for heart disease, manage your condition or care for a loved one. Visit heart.org/AnswersByHeart to learn more.

## blood pressure at home How to measure your





# Follow these steps for an accurate blood pressure measurement

### 1. PREPARE

for 30 minutes before measuring your Avoid caffeine, smoking and exercise blood pressure.

Wait at least 30 minutes after a meal.

If you're on blood pressure medication, measure your BP before you take your medication.

Empty your bladder beforehand.

Find a quiet space where you can sit comfortably without distraction.

SIT WITH LEGS UNCROSSED



minute apart, twice daily for seven days. Take two or three measurements, one

Keep your body relaxed and in position during measurements.

measurements—avoid conversations, Sit quietly with no distractions during TV, phones and other devices.

Record your measurements when finished.

KEEP YOUR BACK

KEEP FEET FLAT ON THE FLOOR

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## Self-measured blood pressure cuff selection



Blood pressure (BP) measurement devices with upper arm cuffs provide the most accurate measurements.<sup>1</sup> Wrist cuffs are not recommended for clinical use unless patients cannot use upper arm cuffs due to arm size or other medical reasons.<sup>1</sup> Finger devices are also not recommended for clinical use because these are less accurate than upper arm BP measurement devices.<sup>1</sup>

Below are steps to determine the appropriate upper arm cuff size. If possible, it may be easier for patients to have another person assist with the process.

### Ask patients to gather the following items

- Tape measure
- BP measurement device, cuff and manual (if device is already purchased)

### Locate mid-upper arm

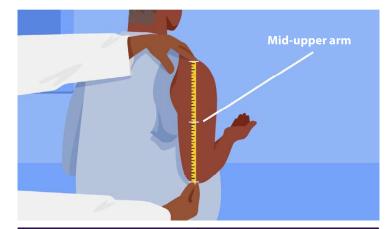
- Measure the length of the arm between the acromion process (bony protuberance on shoulder) and the olecranon process (bony protuberance at elbow).
- Divide the distance in half to locate the mid-upper arm.

### **Determine arm circumference**

 Wrap a tape measure around the mid-upper arm to determine arm circumference (typically measured in centimeters).

### **Determine cuff size**

Based on arm circumference, determine the cuff size
that is appropriate. Use this information to help with
device selection. Many BP measurement devices have
circumference ranges printed directly on the cuffs. This
information can also often be found in the device manual
or on the device box.



Arm circu	mference	
centimeters (cm)	inches (in)	Recommended cuff size
22-26	8.7-10.2	Small adult
27-34	10.6-13.4	Adult
35-44	13.8-17.3	Large adult
45-52	17.7-20.5	Extra-large adult

Modified from Table 3 in: Muntner P, Shimbo D, Carey RM, Charleston JB, et al. Measurement of blood pressure in humans: a scientific statement from the American Heart Association. *Hypertension*. 2019;73:e35–e66. doi: 10.1161/HYP.0000000000000008.

**Disclaimer:** This document is for informational purposes only. This document is not intended as a substitute for the medical advice of a physician; it offers no diagnoses or prescription. Furthermore, this information should not be interpreted as setting a standard of care, or be deemed inclusive of all proper methods of care, nor exclusive of other methods of care reasonably directed to obtaining the same results. This protocol reflects the best available evidence at the time that it was prepared. The results of future studies may require revisions to the recommendations in this protocol to reflect new evidence, and it is the clinician's responsibility to be aware of such changes.

1. Muntner P, Shimbo D, Carey RM, et al. Measurement of blood pressure in humans: a scientific statement from the American Heart Association. Hypertension. 2019;73(5):e35–e66. doi: 10.1161/HYP.00000000000000087.

### You've checked your blood pressure! What's next?



Blood pressure is a critical indicator **Blood Pressure Categories** of heart health and knowing your numbers is key! Thank you for taking that first step today. But what do those numbers mean and what should you do next?

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120-129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130-139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

First, make sure you are taking an accurate reading; using both a validated blood pressure cuff (as found on ValidateBP.org) and the proper technique shown below.

### Follow these steps for an accurate blood pressure measurement

### 1. PREPARE

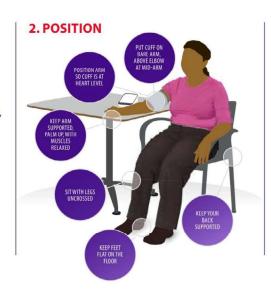
Avoid caffeine, smoking and exercise for 30 minutes before measuring your blood pressure.

Wait at least 30 minutes after a meal.

If you're on blood pressure medication, measure your BP before you take your medication.

Empty your bladder beforehand.

Find a quiet space where you can sit comfortably without distraction.



### 3. MEASURE

Rest for five minutes while in position before starting.

Take two or three measurements, one minute apart, twice daily for seven days.

Keep your body relaxed and in position during measurements.

Sit quietly with no distractions during measurements—avoid conversations, TV, phones and other devices.

Record your measurements when finished.

View a video



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While only a healthcare professional can diagnose you with high blood pressure, you can get an idea of what your numbers may

mean with our online

Blood Pressure Calculator for BP Management

Access the Calculator (& more) by scanning the QR Code or flip over for a guide on what your numbers may mean.



### What should I do next?



Blood Pressure Calculator for BP Management

Find your numbers below & learn what might come next.

**Remember!** Only a doctor or other health care professional can officially diagnose someone with high blood pressure, so you are encouraged to share your readings with your primary care provider or use <a href="heart.org/findhelp">heart.org/findhelp</a> to find local resources. (In some cases, an additional guide may be available where you checked your blood pressure.)

### Normal Blood Pressure

Less than 120 Systolic

and



Less than 80 Diastolic

Congratulations! Your blood pressure **appears** to be normal. Keep looking for ways to make healthy choices around nutrition, physical activity, and tobacco use. Learn more at <a href="heart.org/lifes8">heart.org/lifes8</a>.

### Elevated Blood Pressure



120-129 Systolic

and



Less than 80 Diastolic

These readings **may** indicate **elevated blood pressure**. Unless steps are taken to control it, elevated blood pressure can turn into high blood pressure.

Work with your health care team to get your blood pressure in the normal range. Lifestyle changes can help.

### High Blood Pressure Stage 1



130-139 Systolic



80-89 Diastolic

or

Readings in either range may indicate high blood pressure Stage 1. Your health care professional should prescribe lifestyle changes. They may add medication based on your risk of heart disease or stroke. Medication should also be added if you have conditions such as diabetes, heart failure or kidney disease.

### High Blood Pressure Stage 2



140-179 Systolic

or



90-119 Diastolic

Readings in either range indicate that you may have high blood pressure Stage 2. Your health care professional should prescribe lifestyle changes and medication to lower your blood pressure. You may need one or more medications to keep your blood pressure in a healthy range.

### **Hypertensive Crisis**



180 or higher Systolic

and/or



120 or higher Diastolic

Readings in either range may indicate a serious concern.

Wait five minutes and take your blood pressure again.

If your readings are **still high**, call your health care professional right away.

Call 911 if your blood pressure is higher than 180/120 and you are having chest pain, shortness of breath, back pain, numbness, weakness, change in vision or difficulty speaking.





log? log? your medications	<ul> <li>□ Check labels for sodium</li> <li>□ Cook at home more often</li> <li>It's hard for me to manage my blood pressure because</li> <li>(choose all that apply):</li> <li>□ I don't like the way the medication makes me feel</li> <li>□ I'm having trouble getting my medication</li> <li>□ I'm having trouble changing my diet</li> <li>□ I can't easily exercise</li> </ul>	During your appointment, refer to this guide and have ready:  1. A complete list of all your medications (including over the counter, vitamins, and herbal supplements)  2. A pen and paper to take notes  Today my BP is:    Normal   Elevated   Stage 1   Stage 2
as prescribed?  Yes  Usually  Sometimes	□ I'm stressed/I don't feel well □ I forget what I need to do	Notes:
	During my appointment, I'd like to discuss (choose all that apply):  ☐ My medications ☐ Checking my blood pressure at home	
	<ul> <li>Reducing salt in my diet</li> <li>Getting more exercise</li> <li>Managing my weight</li> <li>Quitting smoking</li> </ul>	My next appointment is on:



# CONSEQUENCES OF HIGH BLOOD PRESSURE

High blood pressure (HBP) is often the first domino in a chain or "domino effect" leading to devastating consequences, such as:



## SEXUAL DYSFUNCTION

This can be erectile dysfunction in men or arousal dysfunction in women.



### STROKE

HBP can cause blood vessels in the brain to burst or clog more easily.



## HEART ATTACK

HBP damages arteries and causes them to narrow and stiffen.



## **HEART FAILURE**

HBP can cause the heart to enlarge and fail to supply enough blood to the body.

HBP can damage the

0

**VISION LOSS** 

vessels in the eyes.



## KIDNEY DISEASE/FAILURE

HBP can damage the arteries in the kidneys and interfere with their ability to effectively filter blood.



A simple **blood pressure check** is the first step to preventing the "domino effect."

Learn more at heart.org/HBP.

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# What Can I Do to Improve My Blood Pressure?

THE THEORY	Modification	Recommendation	Approximate SBP Reduction Range
The state of the s	Lose weight	Maintain normal body weight (BMI=18.5-24.9 kg/m²)	5 mm Hg
THUMBHITH.			
The state of the s	Follow the DASH eating plan	Diet rich in fruits, vegetables, low-fat dairy and reduced in fat	11 mm Hg
THUMBUTTON TO			
	Reduce sodium intake	<1500 mg of sodium per day, but aim for at least a 1,000 mg reduction in most adults.	5-6 mm Hg
THE THE PARTY OF T			
The state of the s	Physical activity	Be more physically active. Aim for at least 150 minutes of moderate-intensity aerobic exercise per week.	5-8 mm Hg
THUMBHUM.			
Thuman .	Moderate	No more than	:

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4 mm Hg

2 drinks/day for men and 1 drink/day for women

consumption of

alcohol



### Excess levels of sodium: How too much sodium affects your health



**9 out of 10** Americans consume too much sodium.

### - Where does sodium come from? —



More than 70%

comes from processed and restaurant foods



About **11%** 

is added while cooking or eating



occurs naturally

**3,400** milligrams Amount of sodium an American consumes on average in a day

1,500 milligrams
Recommended by the AHA
for ideal heart health

### Shake Out Salt

Keep your sodium intake in check as part of an overall heart-healthy eating pattern that emphasizes:

- Variety of fruits and vegetables
- Whole-grain foods
- Fat-free or low-fat dairy products
- Skinless poultry and fish
- Nuts and legumes
- Non-tropical vegetable oils
- Limiting saturated fat, sodium, red and processed meats, sweets and sugary drinks
- · Avoiding trans fat

### - Your Health -

Excess levels of sodium/salt may put you at risk for:

- Enlarged heart muscle
- Headaches
- Kidney disease
- Osteoporosis
- Stroke
- Heart failure
- · High blood pressure
- Kidney stones
- Stomach cancer

Excess levels of sodium/salt may cause increased water retention that leads to:

- Puffiness
- Bloating
- Weight gain

heart.org/Sodium



### STRESS LESS WITH HABITS



### 1. Slow down.

Plan ahead and allow enough time to get the most important things done without having to rush.

### 2. Sleep well.

Try to get seven to nine hours of sleep each night. To fight insomnia, get regular physical and activity during the day.

### 3. Let worry go.

The world won't end if a few things fall off your plate. Give yourself a break and just breathe.

### 4. Laugh it up.

Laughter makes us feel good. Don't be afraid to laugh out loud, even when you're alone.

### 5. Get connected.

A daily dose of friendship is great medicine. Make time to call friends or family so you can catch up.

### 6. Get organized.

Use "to do" lists to help you focus on your most important tasks and take big projects one step at a time.

### 7. Practice giving back.

Volunteer your time or spend time helping a friend. Helping others helps you.

### 8. Be active every day.

Exercise can relieve mental and physical tension. Find something you enjoy and stick with it.

### 9. Give up the bad habits.

Too much alcohol, tobacco or caffeine can increase blood pressure. Cut back or quit to decrease anxiety.

### 10. Lean into things you can change.

Make time to learn a new skill, work toward a goal, or to love and help others.

Learn more at

heart.org/HealthyForGood.

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### FINDING THE RIGHT HEALTH APP



Health apps can be a great tool for maintaining a healthy lifestyle. And when they're synched with a wearable monitor or tracker, they can improve exercise routines or log valuable data to share with your doctor. But staying motivated to make and maintain lifestyle changes is key to success.

An app can only help you reach your health goals if you use it.

### HERE ARE SOME TIPS FOR CHOOSING A HEALTH APP:

FOCUS ON YOUR GOALS

Before downloading an app, consider what you need to do to achieve your goals and what would help you succeed. Does the app connect with a larger community to help motivate you? Is it easy to use? A diet tracker that requires complicated food entry each day may lose its appeal after a few days.

GET RECOMMENDATIONS

Ask your health care professional to suggest health apps that have worked for other patients with similar goals. Features that incorporate self-monitoring, which is key to changing behavior, are important. An emphasis on elements you'd find in a personto-person program such as calorie-controlled diets, physical activity, feedback and social support are also key.

AVOID APPS THAT PROMISE TOO MUCH.

Making lifestyle changes to move the needle on unhealthy habits takes time, so be skeptical if an app claims it can help you get results fast. Instead, look for evidence-based strategies to make lasting behavior changes, including self-monitoring, goal settings, cues or push notifications, social support and rewards. And be cautious about apps that are developed to sell a specific product.

DON'T RELY ON RATINGS

Studies have shown ratings are not correlated with quality or safety. In fact, a review in Journal of the American Medical Informatics Association found dozens of apps that offered poor and even harmful advice. Instead, stick to apps from or approved by credible sources such as health care professionals, health organizations or government agencies.

CHECK FOR REGULAR UPDATES

A 2019 BMJ study found apps not updated within the past six months tended to raise more safety concerns.

FIND OUT WHO DEVELOPED IT

Has the app been developed by an organization that designs other health apps or has a long track record? Has it been endorsed by any health organizations or were any health care professionals consulted to develop it? A diet app developed by a registered dietitian may be more useful than one developed by someone who's not.

**READ REVIEWS** 

Don't just focus on the number of downloads. Review feedback from long-time users to see what they've experienced. Their experiences may offer insight about pitfalls or challenges you may face using the platform.

UNDERSTAND THE COSTS Many apps offer free elements, but charge for other features. Read carefully to understand what you'll be able to access and its cost.

**TAKE A TEST DRIVE** 

Try an app out to see if the format works for you. If not, try something else. Don't get discouraged. You may need to try several before finding the best fit.



### Additional resources for your health journey.

Recursos adicionales para su viaje de salud.

Watch a video on how to check your blood pressure!

¡Mira un video sobre cómo controlar tu presión arterial!

Access a mobile-friendly guide on understanding blood pressure! <a href="heart.org/TalkAboutBP">heart.org/TalkAboutBP</a>.

**English** 



**Español** 









Blood pressure is 1 of the 8 elements of good heart health. Visit <a href="heart.org/Lifes8">heart.org/Lifes8</a> to learn more about the rest! Disponible en español.



Visit <a href="https://example.com/healthyForGood">healthyForGood</a> for additional infographics on healthy eating, physical activity, and more. Disponible en español.



Visit <u>Recipes.heart.org</u> to view hundreds of healthy recipes. Search by ingredient, "Budget-Friendly," "Quick & Easy," and more. <u>Disponible en español</u>.

recipes.heart.org/en/collections/lifestyles/recipes-in-spanish