

How to measure your blood pressure at home

Follow these steps for an accurate blood pressure reading

1 PREPARE

Avoid caffeine, cigarettes and other stimulants 30 minutes before you measure your blood pressure.

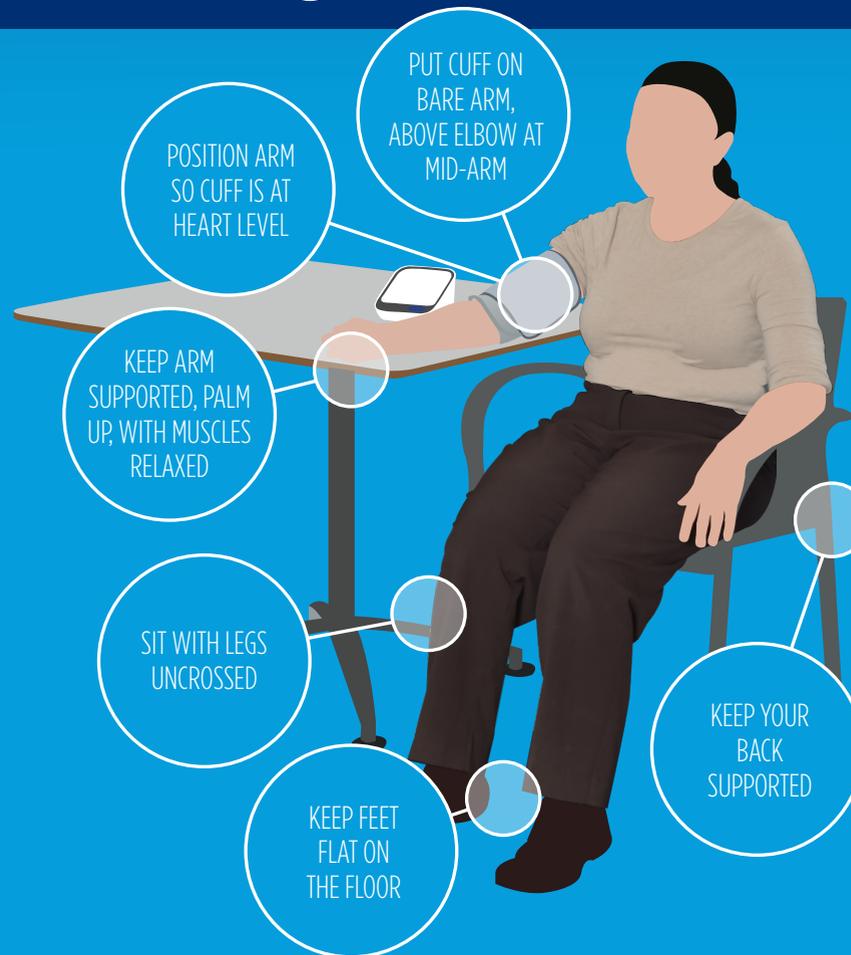
Wait at least 30 minutes after a meal.

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.

2 POSITION



3 MEASURE

Rest for five minutes while in position before starting.

Take two or three measurements, one minute apart.

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.





BP interpretation tables

JNC-7 definitions

Use this chart to reconcile in-office blood pressure (BP) and self-measured blood pressure (SMBP) measurements to classify and manage patients. All numbers are in mm Hg.

In-office BP average	SMBP average	Classification	Management
Less than 120/80	Less than 120/80	Normal blood pressure	Recheck BP in office in one year
120–139/80–89	120–134/80–84	Elevated BP/ Prehypertension	Healthy lifestyle changes and recheck SMBP every 3–6 months
Less than 140/90	Greater than or equal to 135/85	Masked hypertension	Manage as sustained hypertension due to increased cardiovascular risk or consider 24-hour ambulatory BP monitoring (ABPM)
Greater than or equal to 140/90	Less than 135/85	White coat hypertension	Recheck SMBP every six months
Greater than or equal to 140/90	120–134/80–84	White coat hypertension and Elevated BP/ prehypertension	Healthy lifestyle changes and recheck SMBP every 3–6 months
Greater than or equal to 140/90	Greater than or equal to 140/90	Sustained hypertension	Manage per hypertension guideline recommendations or treatment protocol used at your organization



BP interpretation tables

ACC/AHA 2017 Hypertension Guideline

Use this chart to reconcile in-office blood pressure (BP) and self-measured blood pressure (SMBP) measurements to classify and manage patients. All numbers are in mm Hg.

In-office BP average	SMBP average	Classification	Management
Less than 120/80	Less than 120/80	Normal blood pressure	Recheck BP in office in one year
120–129/less than 80	120–129/less than 80	Elevated BP	Healthy lifestyle changes and recheck SMBP every 3–6 months
Less than 130/80	Greater than or equal to 130/80	Masked hypertension	Manage as sustained hypertension due to increased cardiovascular risk or consider 24-hour ambulatory BP monitoring (ABPM)
Greater than or equal to 130/80	Less than 130/80	White coat hypertension	Recheck SMBP every six months
Greater than or equal to 130/80	120–129/less than 80	White coat hypertension and elevated BP	Healthy lifestyle changes and recheck SMBP every 3–6 months
Greater than or equal to 130/80	Greater than or equal to 130/80	Sustained hypertension	Manage per current hypertension guideline recommendations



Self-measured blood pressure monitoring Loaner program agreement

FOR OFFICE STAFF

Lender information

Organization name

Address

Phone number

Patient information

Name

Patient ID

Preferred contact information (phone or email)

Equipment information

Device manufacturer and model

Device ID

Supplies (check all that apply):

- | | |
|--|--|
| <input type="checkbox"/> BP cuff (variable size) | <input type="checkbox"/> BP cuff (XL) |
| <input type="checkbox"/> Carrying case | <input type="checkbox"/> Batteries _____ |
| <input type="checkbox"/> Power cord | <input type="checkbox"/> Other _____ |

Return by: _____/_____/_____
Month Day Year

- I agree to participate in the self-measured blood pressure device loaner program and follow the guidelines given to me.
- I agree to return this device in good working condition on or before its due date.

Patient signature

Date



Self-measured blood pressure Device accuracy test¹

A patient's self-measured blood pressure (SMBP) monitoring device should be tested before it is used as part of an SMBP program. Also test the device annually or any time blood pressure readings are questionable.

Step 1

Complete the table below.

Care team should take five blood pressure readings using a combination of the patient's SMBP device and the office's method of blood pressure measurement.

Measurement	Device	Systolic blood pressure (SBP)
A	Patient's	
B	Patient's	
C	Office's	
D	Patient's	
E	Office's	

SBP Example
133
132
141
134
139

Step 2

Part 1: Average measurements B and D

Part 2: Compare average of B and D to measurement C

Part 3: If the *difference* is ...

- **Less than 5 mm Hg**, this device can be used for SMBP
- **Between 6 and 10 mm Hg**, proceed to Step 3
- **Greater than 10 mm Hg**, *replace* the device before proceeding with your SMBP program

Example

Part 1: $(132 + 134) / 2 = 133$

Part 2: $133 - 141 = 8$ (note: if the difference is a negative number, ignore the negative sign)

Part 3: Difference is 8, which is between 6 and 10 mm Hg, so proceed to Step 3

Step 3

Part 1: Average measurements C and E

Part 2: Compare average of C and E to measurement D

Part 3: If the *difference* is ...

- **Less than or equal to 10 mm Hg**, this device can be used for SMBP
- **Greater than 10 mm Hg**, *replace* the device before proceeding with your SMBP program

Example

Part 1: $(141 + 139) / 2 = 140$

Part 2: $140 - 134 = 6$ (note: if the difference is a negative number, ignore the negative sign)

Part 3: Difference is 6, which is less than or equal to 10 mm Hg, so proceed with SMBP program

1. Eguchi et al. A Novel and Simple Protocol for the Validation of Home Blood Pressure Monitors in Clinical Practice. *Blood Press Monit.* 2012;17(5):210-213.



Self-measured blood pressure

Staff competency on training patients

Overview: This form can be used to assess staff competency when training patients on self-measured blood pressure (SMBP).

Instructions:

- Perform competencies at least twice a year.
- Based on the trainer's observation, place a check mark in the appropriate column.
- Use the following options to document the method of validation:
 - If the trainer showed the employee how to do the procedure and the employee demonstrates the procedure, write "RD" for **return demonstration** in a simulated patient setting.
 - If the trainer is observing the employee perform the procedure while providing direct **patient care**, write "PC" for direct patient care observation.
- Both the employee and trainer should sign and date the competency form.
- Make the competency form part of the employee's training file.

Disclaimer: This clinical competency is not intended to be comprehensive. Additions and modifications to meet the needs of the local environment are encouraged.

Staff competency: Training patients on SMBP

Employee's name: _____ Trainer's name: _____

Procedure	Meets competency (check if "yes")	Needs more training (check if "yes")	Method of validation RD: return demonstration PC: direct patient care observation
Explain purpose of self-measured blood pressure (SMBP) to patient.			
Instruct patient to use bathroom if they need to prior to measuring BP.			
Tell patient to rest sitting in a chair for five minutes prior to BP measurement.			
Ensure patient's device has correct cuff size. <i>Note: You may need to guide the patient to purchase a different size cuff.</i>			
Show patient how to position cuff correctly on arm. <i>Note: Refer to manufacturer's user manual for correct placement of the tubing.</i>			
Place cuff against patient's bare skin.			
Teach patient proper positioning: <ul style="list-style-type: none"> • Seated in chair with back supported • Legs uncrossed • Feet flat on ground or supported by foot stool • Arm supported with BP cuff in place and positioned so middle of BP cuff is level with patient's heart 			
Ensure there are no distractions during the measurement: No talking, using electronic devices or watching television.			
Instruct patient to take two readings one minute apart in the morning and evening, a total of four readings per day, for seven days. If patient misses a BP reading, instruct to continue as scheduled.			
Show patient how to turn on device and press start button.			
If an error reading occurs, tell the patient to start over.			
When cuff is deflated and a reading is displayed, explain to the patient which numbers represent systolic and diastolic blood pressure.			
Show patient how to document their blood pressures. If their device has memory capability, show the patient how to review readings on the device.			
Provide patient with instructions (from the clinician) on what to do if readings are out of the expected range, and how and when to communicate readings back to the clinic.			

Comments: _____

Employee's signature: _____ Date: _____

Trainer's signature: _____ Date: _____

Self-measured blood pressure

Patient training checklist: Loaner device

Instructions: Use this checklist when training a patient how to perform self-measured blood pressure (SMBP) using a loaner device to ensure you cover all components.

Gather supplies

- Tape measure
- SMBP loaner device
- Blood pressure cuff
- Batteries or power cord
- What is SMBP? (PDF)
- SMBP infographic (PDF in English or Spanish)
- SMBP recording log (PDF)
- SMBP loaner device agreement (PDF)

Update “SMBP loaner device inventory management” sheet

Provide background information on SMBP to the patient (if not explained by provider)

- Explain how SMBP allows the provider to get a more accurate and complete picture of the patient’s blood pressure outside of the office (more readings, over a longer period of time, in the patient’s normal environment)

Tip: Hand out the “What is SMBP?” document.

Determine SMBP cuff size

- Use tape measure to measure the circumference of patient’s mid-upper arm in centimeters (see adjacent image)

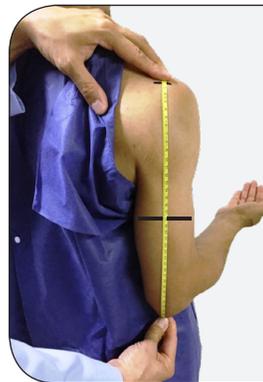
Determine patient’s blood pressure arm (if not currently identified)

- Measure patient’s blood pressure in each arm and use arm with higher reading for all future readings

Teach patient how to properly prepare for self-measurement

- Avoid caffeine, tobacco and exercise for at least 30 minutes before measurement
- Empty bladder if full
- Take BP measurements before blood pressure medications

Tip: Show [SMBP training video](#) and hand out the SMBP infographic.



Locate mid-upper arm

Using a measuring tape, place one end on bony prominence at the shoulder (acromion process) and measure length of arm to bony protuberance at the elbow (olecranon process). Divide this distance in half and that is the mid-upper arm where you should measure arm circumference for determining cuff size.

Source: https://www.cdc.gov/nchs/data/nhanes/2017-2018/manuals/2017_Anthropometry_Procedures_Manual.pdf

Teach patient proper positioning for self-measurement

- Back supported
- Feet flat on the floor or a firm surface
- Legs uncrossed
- Cuff placed on bare upper arm
- Arm supported with middle of cuff at heart level

Tip: Refer to the SMBP video and/or infographic.

Teach patient how to use loaner device*

- How to turn on device
- How to start measurement
- How to troubleshoot

** Refer to device manual as needed.*

Teach patient how to properly self-measure

- Rest quietly for five minutes
- Take two measurements, one minute apart
- Avoid conversations and electronic devices during measurement
- Perform this process once in the a.m. and once in the p.m. for seven consecutive days

Tip: Provide patient with [link to SMBP training video](#) to reference later (also available in [Spanish](#)).

Teach patient how to use SMBP recording log

- Reminder: Staff to complete “For Office Use” section
- How to document systolic and diastolic blood pressure
- What to do if blood pressure is too high or too low
- What to do with log when week of measurements is complete

Use teach back or return demonstration methods to ensure patient understands how to properly self-measure

Complete SMBP loaner device agreement

Ensure all necessary office paperwork is complete

Self-measured blood pressure

Patient training checklist

Instructions: To ensure all necessary steps and components are covered, use this checklist when training your patients on how to perform self-measured blood pressure (SMBP).

Gather supplies

- Tape measure
- What is SMBP? (PDF)
- SMBP infographic (PDF in English or Spanish)
- SMBP recording log (PDF)
- SMBP device accuracy test (PDF)

Provide background information on SMBP to patient (if not explained by provider)

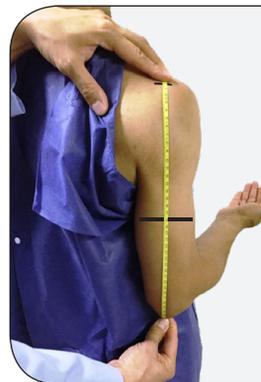
- Explain how SMBP allows the provider to get a more accurate and complete picture of the patient's blood pressure outside of the office (more readings, over a longer period of time, in the patient's normal environment)

Tip: Hand out the "What is SMBP?" document.

Determine SMBP cuff size

- Use tape measure to measure the circumference of patient's mid-upper arm in centimeters (see adjacent image)

Tip: Ideally, this is done before the patient purchases a device so you can ensure the device and cuff purchased are appropriate for the patient.



Locate mid-upper arm

Using a measuring tape, place one end on bony prominence at the shoulder (acromion process) and measure length of arm to bony protuberance at the elbow (olecranon process). Divide this distance in half and that is the mid-upper arm where you should measure arm circumference for determining cuff size.

Source: https://www.cdc.gov/nchs/data/nhanes/2017-2018/manuals/2017_Anthropometry_Procedures_Manual.pdf

Check patient's SMBP device for accuracy

Tip: Use the SMBP device accuracy test.

Determine patient's blood pressure arm (if not currently identified)

- Measure patient's blood pressure in each arm and use arm with higher reading for all future readings

Teach patient how to properly prepare for self-measurement

- Avoid caffeine, tobacco and exercise for at least 30 minutes before measurement
- Empty bladder if full
- Take BP measurements before blood pressure medications

Tip: Show [SMBP training video](#) and hand out the SMBP infographic.

Teach patient the proper positioning for self-measurement

- Back supported
- Feet flat on floor or firm surface
- Legs uncrossed
- Cuff placed on bare upper arm
- Arm supported with middle of cuff at heart level

Tip: Refer to the SMBP video and/or infographic.

Teach patient how to use device* (if applicable)

- How to turn on device
- How to start measurement
- How to troubleshoot

** Refer to device manual as needed.*

Teach patient how to properly self-measure

- Rest quietly for five minutes
- Take two measurements, one minute apart
- Avoid conversations and electronic devices during measurement
- Perform this process once in the a.m. and once in the p.m. for seven consecutive days

Tip: Provide patient with [link to SMBP training video](#) to reference later (also available in [Spanish](#)).

Teach patient how to use SMBP recording log

- Reminder: Staff to complete “For Office Use” section
- How to document systolic and diastolic blood pressure
- What to do if blood pressure is too high or too low
- What to do with log when week of measurements is complete

Use teach back or return demonstration methods to ensure patient understands how to properly self-measure

What is self-measured blood pressure?

Self-measured blood pressure (SMBP) is when you measure your blood pressure outside of the doctor's office or other health care settings.



Why do I need to measure my blood pressure if it was already measured at the doctor's office?

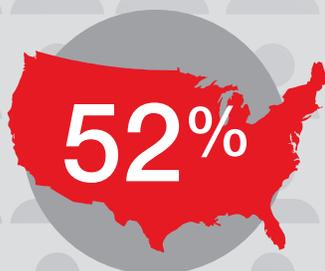
SMBP allows you to measure at different times throughout the day and over a longer period of time, helping your doctor get a more complete picture of your blood pressure.

How does SMBP help improve my health?

By using SMBP you and your care team can come up with a treatment plan to better control your blood pressure, which can prevent more serious health problems.

1 of 2

The consequences of uncontrolled hypertension can be costly ... and deadly.



of U.S. adults with high blood pressure do **not** have it under control



What do the numbers mean when I take a blood pressure reading?

Systolic blood pressure (SBP or SYS): Top number of your blood pressure measurement, indicates how much pressure your blood is exerting against your artery walls when the heart beats

Diastolic blood pressure (DBP or DIA): Bottom number of your blood pressure measurement, indicates how much pressure your blood is exerting against your artery walls while the heart is resting between beats

Pulse: Number of times the heart beats per minute

What are some important things to know before I start measuring my own blood pressure?

Use an SMBP device and blood pressure cuff that are recommended by your doctor or care team.

If you purchase your own device, ask your care team to check it for accuracy.

Understand the correct way to take a blood pressure reading.

Know when and how you will share your blood pressure readings with your doctor.

Make sure you have instructions from your care team on what to do if your blood pressure is out of the expected range.

Self-measured blood pressure: Seven-day recording log

Instructions: Complete the information below each time you take a measurement. It is best to take two measurements in the morning and two measurements in the evening for a week. If you miss any blood pressure measurements, leave that section blank and continue for the next time.

Blood pressure arm: Left or right (circle one)

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
(Date)						
Morning ☀						
1 SYS DIA						
PULSE						
2 SYS DIA						
PULSE						
Notes						
Evening 🌙						
1 SYS DIA						
PULSE						
2 SYS DIA						
PULSE						
Notes						

For office use

Patient name: _____

Patient ID: _____

PCP: _____

Total average: SYS / DIA

Report back results by:

Appointment _____

Phone _____

Email _____

Patient Portal _____

Other _____

Important information

Please call your doctor's office if:

- Your blood pressure is above _____ SYS or _____ DIA
- Your blood pressure is below _____ SYS or _____ DIA
- You have symptoms that concern you or have a question about your blood pressure.

Self-measured blood pressure

Using a wrist cuff to measure blood pressure*

* When an upper arm cuff cannot be used, validated wrist devices can be used for blood pressure estimation.¹



Correct forearm position

for wrist blood pressure measurement

1. Apply the wrist device
2. Keep elbow on table or desk with forearm bent
3. Place the wrist at heart level
4. Keep arm relaxed and hand resting against your body
5. Measure wrist blood pressure without moving arm from seated position

Incorrect forearm position²



Wrist higher than heart level



Forearm in horizontal position



Forearm vertical and close to the body

1. Nerenberg K et al. Hypertension Canada's 2018 guidelines for diagnosis, risk, assessment, prevention, and treatment of hypertension in adults and children. *CJC*. [www.onlinecjc.ca/article/S0828-282X\(18\)30183-1/fulltext](http://www.onlinecjc.ca/article/S0828-282X(18)30183-1/fulltext). Accessed April 24, 2018.

2. Casiglia et al. Poor reliability of wrist blood pressure self-measurement at home: A population-based study. *Hypertension*. <http://hyper.ahajournals.org/content/early/2016/08/22/HYPERTENSIONAHA.116.07961>. Accessed April 24, 2018.