

Measuring Blood Pressure Accurately



TARGET: **BP**[™]



Disclosures

- None

Objectives

- List factors (patient, observer, system) that can make blood pressure readings inaccurate and identify strategies to overcome those factors
- Use Measure Accurately and Patient-Measured Blood Pressure tools to identify opportunities for improving accuracy and reliability of blood pressure measurement
- Discuss use of self-measured blood pressure (SMBP) monitoring for clinical management of hypertension (HTN)
- Demonstrate measurement techniques for in-office and SMBP

Importance of measuring BP accurately

- BP variability exists in everyone
- A single office-based measurement correlates poorly with a patient's true BP
- Many office-based measurements are taken with poor technique
- Varying BP phenotypes exist (e.g. white coat HTN, masked HTN)
- BP measurements taken in and out of clinical settings can be used to confirm diagnoses and assess BP control

Accurate and reliable measurement is essential for diagnosis and management of high blood pressure

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). doi:10.1161/hyp.000000000000087.

Accurate BP measurement guidance

- 2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults
- Measurement of Blood Pressure in Humans: A Scientific Statement from the American Heart Association (2019)
- Self-Measured Blood Pressure Monitoring at Home: A Joint Policy Statement from the American Heart Association and American Medical Association (2020)

Polling question

How do you primarily take blood pressure in your organization?

Manual office blood pressure

Convenient and inexpensive

Devices require frequent calibration

Higher likelihood of terminal digit preference

Requires more time and skill compared to semi-automated and automated blood pressure

Can be impacted by observer, patient and environmental factors



Myers MG. Automated office blood pressure¹⁴; the preferred method for recording blood pressure. *Journal of the American Society of Hypertension*. 2016;10(3):194-196.

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Semi-automated blood pressure

Single measurement taken upon activation

Reduces the potential for technique-related errors compared to manual BP

Accurate and reliable when using validated devices, calibrated regularly with proper patient preparation, cuff selection and positioning

Allows for more time to be spent on patient preparation, cuff selection and positioning



*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). doi:10.1161/hyp.000000000000087.

Automated office blood pressure (AOBP)

Fully automated devices can take three BP measurements and average them

Can be integrated into primary care workflows- total measurement time ~5 min

Allows for unattended measurement

Correlates well with daytime mean BP during ambulatory BP monitoring (ABPM)



Ambulatory blood pressure monitoring (ABPM)

Most evidence from clinical trials for diagnostic accuracy and predicting future CV events

Can be used to identify BP patterns (eg, white coat HTN and masked HTN) that cannot be identified with office BP alone

Provides BP information during sleep as well as awake hours

Requires placement of an ABPM device on a patient for 24 hours and interpretation; access may be limited



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). doi:10.1161/hyp.0000000000000087.

Self-measured blood pressure (SMBP)

Better predicts future CV events than single conventional in-office measurement

- Can be used to identify BP patterns that cannot be identified with office BP alone
- With clinical support/co-interventions, can be effective at lowering BP and improving BP control rates



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). doi:10.1161/hyp.000000000000087.

BP measurement training, skills, and competence

Regardless of device or method, BP measurement accuracy relies on competence of observer

- Training and skills assessment should include:
 - Patient preparation and positioning
 - Selecting the appropriate cuff
 - Obtaining accurate, representative results
 - Documentation and communication
- Retraining of health care professionals every 6 months to 1 year should be considered
- Patients also need to be trained by a health care professional to self-measure their own BP

Muntner P, Shimbo D, Carey R et al; on behalf of the American Heart Association Council on Hypertension; Council on Cardiovascular Disease in the Young; Council on Cardiovascular and Stroke Nursing; Council on Cardiovascular Radiology and Intervention; Council on Clinical Cardiology; and Council on Quality of Care and Outcomes Research. Measurement of blood pressure in humans: a scientific statement from the American Heart Association. *Hypertension*. 2019;71:e35–e66. DOI: 10.1161/HYP.0000000000000087

Action Steps for Measuring Accurately

TARGET: **BP**[™]



Measure Accurately action steps

What can we do to improve the quality in-office of BP measurements?

- Use validated devices, calibrate when appropriate
- Use correct measurement technique
- Perform the proper number of BP measurements

**Use validated,
calibrated devices**

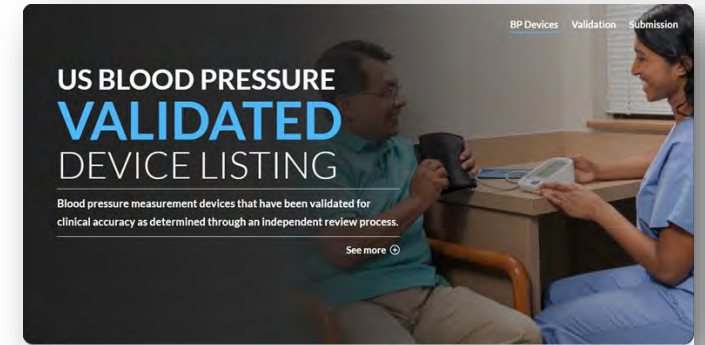
TARGET: **BP**[™]



Device validation

Only devices that have been independently validated using an internationally accepted established protocol should be used

- US Blood Pressure Validated Device Listing (VDL™) launched in 2020 – [ValidateBP.org](https://validatebp.org)
- International validated device listings also available
 - Stride BP: stridebp.org/bp-monitors
 - Hypertension Canada: hypertension.ca/bpdevices
 - British and Irish Hypertension Society: bihsoc.org/bp-monitors/



Polling question

How often are your blood pressure devices checked for accuracy?

Calibration of devices

- Ensures ongoing proper device function
 - Every 12-24 months for automated devices
 - Every 6 months for wall-mounted manual devices
 - Every 2-4 weeks for handheld manual devices
 - Work with biomed department to develop guideline-supported calibration process

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). doi:10.1161/hyp.000000000000087.

Use correct measurement technique

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Obtain initial BP measurement

At first visit for a new patient, one BP measurement should be performed on each arm

- Arm with higher BP = “BP arm”
- “BP arm” should be arm used going forward; document in the chart

For all patients, take initial BP measurement

- Use correct technique and positioning
- Document initial measurement in vitals field in EHR

Polling question

What error do you see most commonly occur during blood pressure measurement?

Common measurement errors and effect on BP

When the patient has....	Blood pressure can change by an estimated* ...
Crossed Legs	2–8 mm Hg ¹
Cuff over clothing	5–50 mm Hg ²
Cuff too small	2–10 mm Hg ²
Full bladder	10 mm Hg ²
Talking or active listening	10 mm Hg ²
Unsupported arm	10 mm Hg ^{1,2}
Unsupported back/feet	6.5 mm Hg ³

* *These values are not cumulative*

1 Pickering. et al. Recommendations for Blood Pressure Measurement in Humans and Experimental Animals Part 1: Blood Pressure Measurement in Humans. *Circulation*. 2005;111: 697-716.

2 Handler J. The importance of accurate blood pressure measurement. *The Permanente Journal*/ Summer 2009/ Volume 13 No. 3 51

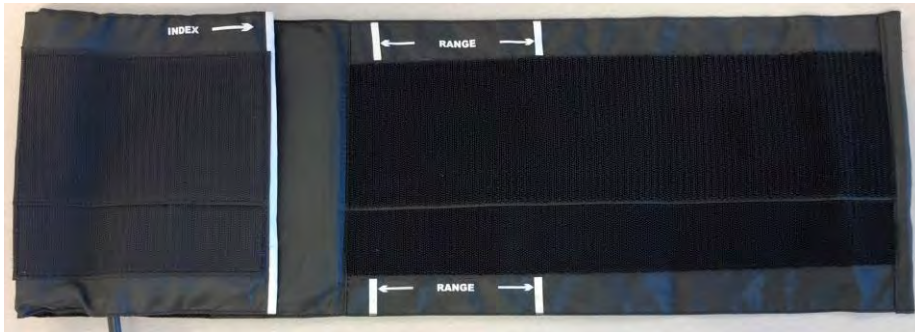
3 Cushman, W, Cooper K, Home Richard. Effect of back support and stethoscope head on seated blood pressure determinations. *American Journal of Hypertension*. March 1990-VOL 3, NO. 3: 240-241

Choosing correct cuff size

Wrong size cuff → most common error in BP measurement

Cuff bladder length: 75%–100% of the patient's measured arm circumference

Cuff bladder width: 37%–50% of the patient's arm circumference



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). doi:10.1161/hyp.000000000000087.

Correct cuff placement

Key Tips:

- Use an upper-arm cuff
- Place cuff on bare skin
- Center the cuff bladder over the brachial artery, at heart level
- 1 finger should fit easily at the top and bottom of the cuff; 2 fingers should fit but will be very snug

*



*



* Photos courtesy of National Health and Nutrition Examination Survey (NHANES) blood pressure procedures manual 2019

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). doi:10.1161/hyp.000000000000087.

BP Cuff Demonstration

Patient preparation

Avoid caffeine, exercise and tobacco for \geq 30 minutes before measurement

Empty bladder, if full

Find a quiet environment

Rest in seat 3-5 minutes

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). doi:10.1161/hyp.000000000000087.

Patient positioning

- Back supported
- Legs uncrossed
- Feet flat on the floor or a step stool
- Arm supported
- Proper sized cuff placed on bare skin
- Middle of cuff at heart level



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). doi:10.1161/hyp.000000000000087.

Exam room considerations for preparation and positioning



Aneroid device should be at eye level of observer

Chair with back support and arm rest

Desk is an option for arm support

Consider a foot stool for petite patients

The footrest or exam table can be used for arm support

Perform BP measurements

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BP measurements

- A single reading is inadequate for clinical decision-making¹
- BP should be measured ≥ 2 times at clinic visits²
- Separate repeated measurements 1-2 minutes apart²
- Average the readings²

1. Whelton PK, Carey RM, Aronow WS, et al. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension*. 2017;doi:10.1161/HYP.000000000000065

2. 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). doi:10.1161/hyp.000000000000087.

Notification for high BP

- Notify provider of high BP
- Determine method to notify provider if BP is high
 - Verbal alert
 - EHR alert (ensure this is visible to the provider)
 - Visual cue
 - Options for visual cues include a heart sticker or magnet placed in the exam room or on exam room door, using a flag outside room, a laminated card on keyboard or the BP cuff left on patient

Self-measured blood pressure

TARGET: **BP**[™]



Self-measured blood pressure (SMBP)

SMBP monitoring refers to the regular measurement of BP by a patient at their home or elsewhere outside the clinical setting



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). doi:10.1161/hyp.0000000000000087.

Polling question

Do providers at your organization currently recommend patients to measure their blood pressure at home?

Self-measured blood pressure

- Use upper-arm, validated devices
- Cuff size should be appropriate for the patient's arm circumference
 - Home BP cuffs usually have a standard-sized cuff that will fit upper arms starting at 8" up to 14-18" (XL options available for some devices)

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). doi:10.1161/hyp.000000000000087.

Polling question

Who provides training and education on SMBP to patients?

Training patients to self-measure correctly

- Teach them how to prepare themselves for the measurement
 - Empty bladder
 - Rest 5 minutes
 - No talking or texting

- Show them how to use the device and properly put the BP cuff on their designated BP arm

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). doi:10.1161/hyp.0000000000000087.

Training patients to self-measure correctly

- Tell them how to position themselves during the measurement
 - Seated with back supported
 - Feet flat on floor, legs uncrossed
 - Cuff on bare arm
 - Arm with cuff supported on flat surface or table
- Tell them how often and when to measure
 - Take two blood pressure measurements in the morning and two in the evening
 - Perform measurements one minute apart

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). doi:10.1161/hyp.000000000000087.

Averaging and documentation

- Calculate average of all measurements
- Document average systolic and average diastolic BP in medical record
- Share measurement results with provider for interpretation and treatment
- Notify patient of treatment and follow-up plan

SMBP Device Demonstration



Care team tools and resources

<https://targetbp.org/>

TARGET: **BP**[™]



Tools and resources

Technique Quick Check

TARGET:BP | American Heart Association | AMA

Technique quick-check

Excellent measurement technique requires training and skill building, but a few common problems related to patient preparation and positioning often account for unreliable readings.^{1, 2}

Use this tool to **verify** everyone in your practice or health center obtains blood pressure readings the right way and the same way every time. **Complete** four observations for each team member (e.g., medical assistant, nursing staff and physicians) who regularly takes blood pressure measurements, using one sheet for each person. **Repeat** on a quarterly or monthly basis or as needed.

General information														
Site name:				Date:										
Observer name(s):				Observation location (clinic, unit, etc.):										
Patient #1			Patient #2			Patient #3			Patient #4					
Device used	Yes	No	Comments	Yes	No	Comments	Yes	No	Comments	Yes	No	Comments		
1. Used a manual device	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
2. Used an automated device	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
Additional notes on availability, accessibility, quality and/or use patterns of blood pressure measurement devices in the practice (optional):														
Patient preparation and positioning			Patient #1			Patient #2			Patient #3			Patient #4		
1. Patient in the correct position ...	Yes	No	If no, why not?	Yes	No	If no, why not?	Yes	No	If no, why not?	Yes	No	If no, why not?		
1.1. Seated with back supported	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
1.2. Feet flat on the floor or footstool	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
1.3. Legs uncrossed	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
1.4. Arm bare	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
1.5. Arm supported	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
1.6. Arm at heart level	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			
2. Cuff used is correct size*	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>			

Positioning Infographic

TARGET:BP | American Heart Association | AMA

7 SIMPLE TIPS TO GET AN ACCURATE BLOOD PRESSURE READING

- USE CORRECT CUFF SIZE**
Cuff too small adds 2-10 mm Hg
- DON'T HAVE A CONVERSATION**
Talking or active listening adds 10 mm Hg
- EMPTY BLADDER FIRST**
Full bladder adds 10 mm Hg
- PUT CUFF ON BARE ARM**
Cuff over clothing adds 5-50 mm Hg
- SUPPORT ARM AT HEART LEVEL**
Unsupported arm adds 10 mm Hg
- SUPPORT BACK/FEET**
Unsupported back and feet adds 6 mm Hg
- KEEP LEGS UNCROSSED**
Crossed legs add 2-8 mm Hg

The common positioning errors can result in inaccurate blood pressure measurement. Figures shown are estimates of how improper positioning can potentially impact blood pressure readings.

Sources:

- Pickering, et al. Recommendations for Blood Pressure Measurement in Humans and Experimental Animals Part 1: Blood Pressure Measurement in Humans. *Circulation*. 2005;111: 697-716.
- Handler J. The importance of accurate blood pressure measurement. *The Permanente Journal*/Summer 2009/Volume 13 No. 3 51

This 7 simple tips to get an accurate blood pressure reading was adapted with permission of the American Medical Association and The Johns Hopkins University. The original copyrighted content can be found at www.ama-assn.org/ama-johns-hopkins-blood-pressure-resources.

Content provided by AMA | MAPBP

This resource is part of AMA MAP BP™, a quality improvement program. Using a single or subset of AMA MAP BP practice measures does not constitute implementing the program. AMA MAP BP includes guidance from AMA hypertension experts and has been shown to improve BP control by 10 percentage points and sustain results.

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Measure Accurately Quick-start Guide

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Measure accurately Quick start guide

Measuring blood pressure (BP) accurately in the clinical setting is critical to improving BP control. Here are some steps you can take to help incorporate evidence-based BP measurement techniques into your practice.

- 1. Assess how your health care organization currently measures BP**
It is important to understand how you and your health care team currently measure BP in order to identify ways to improve. Use the following tools to help establish a baseline:
 - Quick BP measurement quiz
 - Measure accurately pre-assessment
 - Technique quick check
- 2. Build your health care organization's knowledge in BP measurement**
 - Watch the [measure accurately webinar](#) and receive CME or CE
 - Host a journal club discussion on the [AHA Scientific Statement on BP Measurement](#)
 - Watch the [AHA Scientific Statement on BP Measurement webinar](#) and receive CME or CE
- 3. Train your care team on evidence-based BP measurement techniques**
Use the following tools to help train care team members on how to measure BP more accurately in the clinical setting:
 - BP positioning challenge
 - Steps to accurately measure BP
 - Technique quick check
Tip: conduct monthly audit
 - BP measurement infographic
Tip: place in every exam room

To receive the latest BP measurement information from Target: BP, sign up for the [newsletter](#).

Measure Accurately Pre-assessment

Tools and resources

Competency Manual BP

Measure accurately

Staff competency for manual office blood pressure measurement

Clinical staff should be trained and tested on measuring blood pressure (BP) accurately. It is important for staff to understand the importance of accurate BP measurement for both in-office and out-of-office settings and to be able to explain these processes in a manner the patient will understand.

Using an essential competency* like this not only helps demonstrate that staff is trained and can effectively perform BP measurement, it also helps strengthen the education staff provides to patients who will self-measure their BP.

How to use competency form

- Competencies should be performed no less than twice annually

Competency Semi-auto and AOBP

Measure accurately

Staff competency for semi-automated and automated office blood pressure measurement

Clinical staff should be trained and tested on measuring blood pressure (BP) accurately. It is important for staff to understand the importance of accurate BP measurement for both in-office and out-of-office settings and to be able to explain these processes in a manner the patient will understand.

Using an essential competency* like this not only helps demonstrate that staff is trained and can effectively perform BP measurement, it also helps strengthen the education staff provides to patients who will self-measure their BP.

How to use competency form

- Competencies should be performed no less than twice annually
- Fill in name of employee and trainer

In-office BP average calculator

In order to obtain a representative blood pressure (BP) to guide the diagnosis and treatment of hypertension, take two or more BP readings when a patient's initial in-office BP is high and then average them. Use this tool to quickly calculate a patient's average systolic and diastolic BP.

BP READING	SYSTOLIC BP	DIASTOLIC BP
1	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>
+ Add BP Reading		

Clear/Restart

Calculate

<https://www.ama-assn.org/node/27271>

Tools and resources

SMBP Quick Start Guide

TARGET:BP |

Self-measured blood pressure Quick start guide

Self-measured blood pressure (SMBP) monitoring refers to the regular measurement of blood pressure (BP) by a patient in their home or elsewhere outside the clinical setting. SMBP enables health care providers to better diagnose and manage hypertension and helps patients take an active role in the process. Here are some steps you can take to incorporate evidence-based SMBP resources into your workflows.

- 1 Assess how your health care organization currently uses SMBP.**

It is important to understand how you and your health care organization currently use SMBP in order to identify ways to improve.

 - Use the **SMBP Pre-assessment tool** to help establish a baseline.
- 2 Build your health care organization's knowledge in SMBP.**
 - Review the **Patient-Measured BP** section of the Target:BP website.
 - Watch these webinars from our library to gain insights & best practices from experts and receive CME/CE credit:
 - Using SMBP to Diagnose & Manage HBP
 - Scientific Statement on BP Measurement
 - Improving BP Control Through Policy
 - Review this **CPT code one-pager** to learn about new CPT codes to cover SMBP.

Consider developing an SMBP loaner device program. (optional)

- SMBP Loaner Device Agreement***
- Device Inventory Management**

Provide care teams with resources to check SMBP device accuracy for patients, train patients on proper SMBP techniques and average SMBP measurements for provider interpretation.

- Device Accuracy Test**
- Patient Training Checklist**
- Patient Training Checklist for Loaner Devices (optional)**
- SMBP Average Calculator**

Set your patients up for success with resources to educate them on how to properly perform SMBP monitoring and record SMBP measurements.

- What is SMBP?**
- SMBP Training Video***
- SMBP Infographic***
- SMBP Recording Log**

AMAP Self-Measured Blood Pressure solution (AMAP SMBP) provides health care organizations with tools aimed to help ensure out-of-office blood pressure measurements are performed in accordance with the evidence-based clinical guidance.

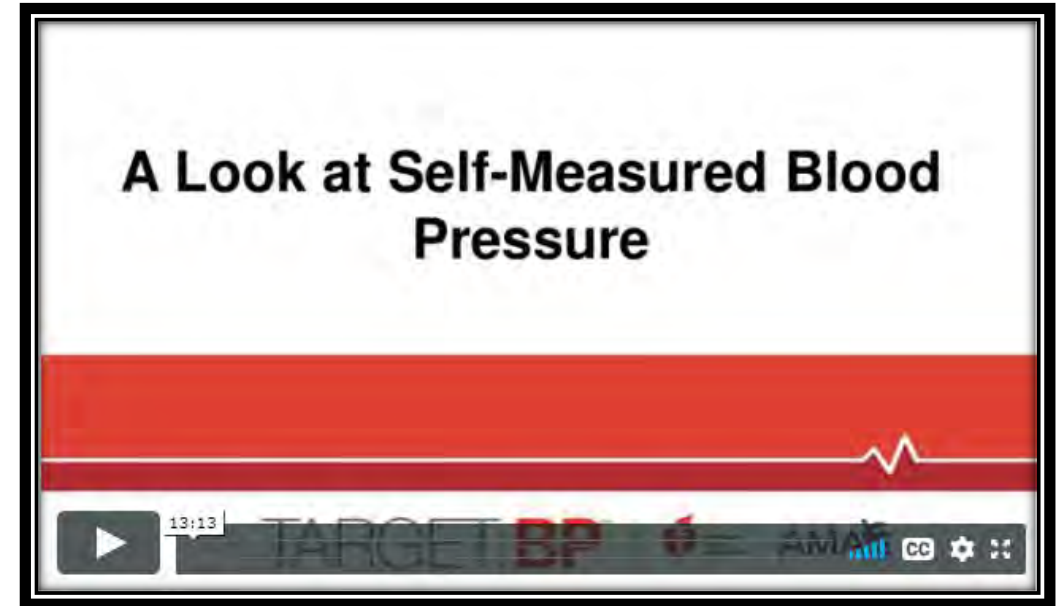
To get the latest information from Target:BP, sign up for the newsletter.

*Available in Spanish

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<https://tinyurl.com/look-at-SMBP>

Tools and resources

7 Day Recording Log

7 Day Recording Sheet Self-Measured Blood Pressure Monitoring

Name _____ Date _____

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:	MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:	MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:	MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:	MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:	MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:	MORNING ☀ 1 SYS DIA PULSE 2 SYS DIA PULSE NOTE:
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PRACTICE ADDRESS _____

Diagnostic SMBP, measure for 7 consecutive days

Confirmed hypertension

If your blood pressure measurement is:

MORE THAN	BETWEEN	LESS THAN
SYS DIA	SYS DIA	SYS DIA

Patient Training Checklist

TARGET:BP™ | American Heart Association | AMA


Self-measured blood pressure Patient training checklist

Instructions: To ensure all necessary steps and components are covered, use this checklist when training your patient's 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 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 the patient's mid-upper arm in centimeters (see image for more detail)

Tip: Ideally, this is done before the patient purchases a device so you can ensure the device



Locate mid-upper arm

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

Tools and resources

SMBP Patient Infographic

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

- POSITION ARM SO CUFF IS AT HEART LEVEL
- PUT CUFF ON BARE ARM, ABOVE ELBOW AT MID-ARM
- KEEP ARM SUPPORTED, PALM UP, WITH MUSCLES RELAXED
- SIT WITH LEGS UNCROSSED
- KEEP FEET FLAT ON THE FLOOR
- KEEP YOUR BACK SUPPORTED

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.

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This Prepare, position, measure handout was adapted with permission of the American Medical Association and The Johns Hopkins University. The original copyrighted content can be found at <https://www.ama-assn.org/ama-johns-hopkins-blood-pressure-resources>.

SMBP Training Video



[SMBP Training Video \(English\)](#)
[SMBP Training Video \(Spanish\)](#)

Polling question

What next steps will you take to improve BP measurement accuracy?



**Together, we can reduce the
number of Americans who have
heart attacks and strokes.**

TARGET: **BP**[™]

