

# Self-measured blood pressure monitoring to improve blood pressure control

## Did you know?

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Self-measured blood pressure monitoring (SMBP), sometimes called home blood pressure monitoring, occurs when patients take their own blood pressure measurements outside of a clinical setting.<sup>1</sup>

## Why is SMBP important?<sup>2</sup>

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- Offers a better predictor of cardiovascular events, such as heart attacks and strokes, compared to those obtained from routine office blood pressure measurements
- Improves clinicians' ability to accurately diagnose patients with hypertension (because it provides a greater number of blood pressure readings over a longer period of time, which is more representative of what a patient's true blood pressure is)
- Avoids misdiagnosis due to *white coat* hypertension, since patients measure their blood pressure outside the office
- Allows clinicians to assess whether anti-hypertensive treatment is sufficiently controlling a person's blood pressure (because it provides a greater number of readings, taken at different times during the day or night)
- Takes some of the burden of managing hypertension away from the primary care practice, and helps patients take more responsibility for their own care through the use of a shared care plan

## What kind of SMBP device should patients use?

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The SMBP device should be:

- An automated, upper arm monitor<sup>2</sup>
- Validated using the protocol from either the Association for the Advancement of Medical Instrumentation or the British Hypertension Society<sup>3</sup>
- Brought into the clinicians' office for testing shortly after purchase and once a year thereafter to ensure the cuff fits the patient and the device is working properly<sup>2</sup>

## When should patients use the SMBP device to measure and record their blood pressure?<sup>4</sup>

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- Blood pressure measurements should be taken twice daily, taking two readings, one minute apart in the morning and then two readings, one minute apart in the evening.
- These measurements should be taken for a minimum of four days, and preferably seven days, discarding the first day's readings. The readings should be averaged into a single systolic and diastolic blood pressure reading, which is used to determine if the patient has hypertension or if their BP is in control. A mean BP  $\geq$  135/85 mm Hg is consistent with a diagnosis of hypertension.
- The patient may need to record measurements for longer periods of time (up to 21 days) to accurately assess control of blood pressure after a change in medication has occurred. Mean BP  $<$  135/85 mm Hg is considered at goal for most people.

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Always make sure patients know what to do should they have a blood pressure measurement that is outside the pre-determined acceptable range or if they experience any symptoms with a high or low blood pressure measurement, including seeking emergency treatment if appropriate. This guidance to the patient should be individualized by the clinician and reinforced by clinical staff at the initiation of any SMBP monitoring program.

- Frequency of measurements is typically decreased to one to two times a week after blood pressure control is achieved (at the direction of the clinician).

## How should patients use the SMBP device to measure and record their blood pressure?<sup>2</sup>

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Patients should follow the same checklist recommended for office blood pressure measurements:

- Rest for five minutes
- Don't exercise or eat before the measurement
- Empty the bladder
- Sit with feet flat on the floor and legs uncrossed
- Sit in a quiet room in a chair with back and arm support
- Support arm at heart level
- Don't talk during the measurement

## How will the blood pressure measurements be recorded and shared with the clinical team?<sup>5</sup>

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- Patients should understand how their particular device records measurements. For example, it may store measurements that can be read later, calculate an average of multiple readings or transmit information to other devices (such as smartphones, tablets or computers).
- Patients need a way to communicate blood pressure readings back to the clinical team; for example, by telephone, secure fax, secure telemedicine website, EHR patient portal or at the time of an office visit.
- Patients must have clear instructions so they know what to do if they experience symptoms associated with high or low blood pressures, or if they get a blood pressure reading out of the expected range.

## What additional support makes SMBP most effective?<sup>5</sup>

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Strong evidence exists showing SMBP plus additional support is considerably more effective than SMBP alone.

This support may include:

- Counseling on medication adherence and lifestyle modification
- Access to an electronic system for medication refill requests, appointments or measurement reminders
- Shared care plan outlining the SMBP process the patient will follow and how the patient will communicate results with the clinical team, as well as titration of therapy when indicated

**For more information on improving blood pressure control, contact [ihobp.surveys@ama-assn.org](mailto:ihobp.surveys@ama-assn.org).**

## References

1. Centers for Disease Control and Prevention *Self-Measured Blood Pressure Monitoring: Action Steps for Public Health Practitioners*, GA: Centers for Disease Control and Prevention, US Dept. of Health and Human Services; 2013.
2. Pickering TG, Miller NH, Ogedegbe G, et al. Call to action on use and reimbursement for home blood pressure monitoring: A Joint Scientific Statement from the American Heart Association, American Society of Hypertension, and Preventive Cardiovascular Nurses Association. *Hypertension*. 2008;52:10–29.
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4. Mancia Giuseppe, Fagard Robert, Narkiewicz Krzysztof et al. 2013 ESH/ESC Guidelines for the management of arterial Hypertension. *Journal of Hypertension*. 2013;31:1281–1357
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