



BP Monitoring at Home: no pressure patient education

ABSTRACT

Hypertension is increasingly common—and it is treatable. However, this requires frequent monitoring in order to titrate medications, ensure optimal control, and prevent complications. Educating patients on how to monitor their blood pressure at home is central to managing hypertension. This article explores specific advice physicians can give their patients on when and how to monitor their blood pressure at home, and provides resources to use in practice.

KEYWORDS: Hypertension, patient education, monitoring, blood pressure



Hypertension (HTN) is common among adults, with an estimated 1 in 4 Canadians living with high blood pressure (BP).¹ BP control is essential in order to prevent complications, ranging from renal disease to strokes. Hypertension Canada suggests that blood pressure should be monitored in-office about every month until targets are reached, and then every 3-6 months afterwards (although this is patient dependent).¹

In between visits, however, it is critical for patients to monitor their BP. At-home monitoring by patients has been shown to improve HTN control and prevent complications.² This makes sense: if we are seeing our patients every 3-6 months or so for their BP, what about the time in between? While fluctuations are common, important trends can lead to important changes in patient treatment. For example, should a patient experience extreme stress and forget to take their medication, their BP can increase significantly. Similarly, during times of illness or fatigue, patients may experience hypotensive episodes. Educating our patients on how to monitor their BP out of office, as well as the signs and symptoms to be aware of, is critical.



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The pandemic has brought about many changes, one of which being the lack of available blood pressure monitors at pharmacies. This has proven challenging for many patients who rely on these to check their BP. Home monitors may not be affordable for all, and not all insurance companies provide coverage for these monitors. Therefore, it is essential that when producing this education, physicians keep in mind resources available to the patient. Innovative ideas during the pandemic have emerged, including ‘pop up’ blood pressure clinics. Other strategies might include collaborating with the local pharmacy to keep BP machines

available while practicing sanitary practices. The remainder of this article will focus on the assumption that patients have access to a blood pressure monitor.

According to Hypertension Canada, patients should aim to measure their BP about once every month, for 1 week. They should record their readings on a log, one example of which can be found in figure 1. Of course, with the rise of technology, there are numerous apps available that patients can also use to track their BP. The important thing is that patients keep a log of their readings. When educating patients about this process, it is important to explain why it is essential for patients to do. Some talking points include explaining that BP readings vary day to day, so trends are important. Physicians can also tell their patients that when they come in office, the reading at that time may be falsely high (I.e. white coat hypertension), or low (I.e. masked hypertension). The reading in the office is a ‘one time snapshot’; while their home logs are trends.

How should patients check their BP, and at what time of the day? Generally, patients should check their BP at the same time of the day, preferably in the morning after medications. This helps the physician to see whether or not the medication and doses are appropriately controlling the BP.³ Patients should be taught

Figure 1: Blood Pressure Log

Every year, with your health care professional, review the technique for measuring your blood pressure properly, and check that your device is in good condition.

My target blood pressure at home is less than:

/ mmHG

systolic

 /

diastolic

I use my: ☐ Right Arm ☐ Left Arm

Date		Time	Comments	Heart Rate (beats/min)	BP Reading #1		BP Reading #2	
					Systolic	Diastolic	Systolic	Diastolic
June 15	Sample Morning	8:00 a.m.	Meds at 9 a.m.		138	82	135	80
	Sample Evening	8:00 p.m.	Upset		157	92	154	90
	Day 1 Morning							
	Day 1 Evening							
	Day 2 Morning							
	Day 2 Evening							
	Day 3 Morning							
	Day 3 Evening							
	Day 4 Morning							
	Day 4 Evening							

Taken from HTN Canada



to check their BP when they have not consumed alcohol or caffeine, or smoked, in the past half hour. Exercise can also cause changes in the BP, so physical activity should be avoided half an hour before checking. The patient should be taught to sit down with legs uncrossed, and keep their arm at table height. Generally the same arm should be used each time, although if a reading is not expected, it should be done on the other arm. Figure 2 has a great image that can be given to patients as a teaching tool. There are also numerous videos and resources available online that can be given to patients to help

educate them about this process. HTN Canada even has a list of devices that are approved for use. Keep in mind that auscultating is not recommended for patients, as errors are likely to occur. Of course, however, with proper education and demonstration, patients can be taught how to auscultate their family member’s blood pressure if relevant. Patients need to know what signs and symptoms to report to their physician regarding their BP. Of course, should patients experience chest pain, dizziness, new or changed headaches, etc. They should seek medical attention. If their readings are beyond the targets established by their physician, medical advice is warranted. It is also critical to inform patients to report low numbers, which may point to dehydration or over treatment.⁴ When patients are ill and unable to maintain hydration or oral intake, most physicians would tell their patients to hold their BP medications and seek medical attention. The SADMANS (figure 3) acronym, although used

Figure 2: Blood Pressure Measurement Technique

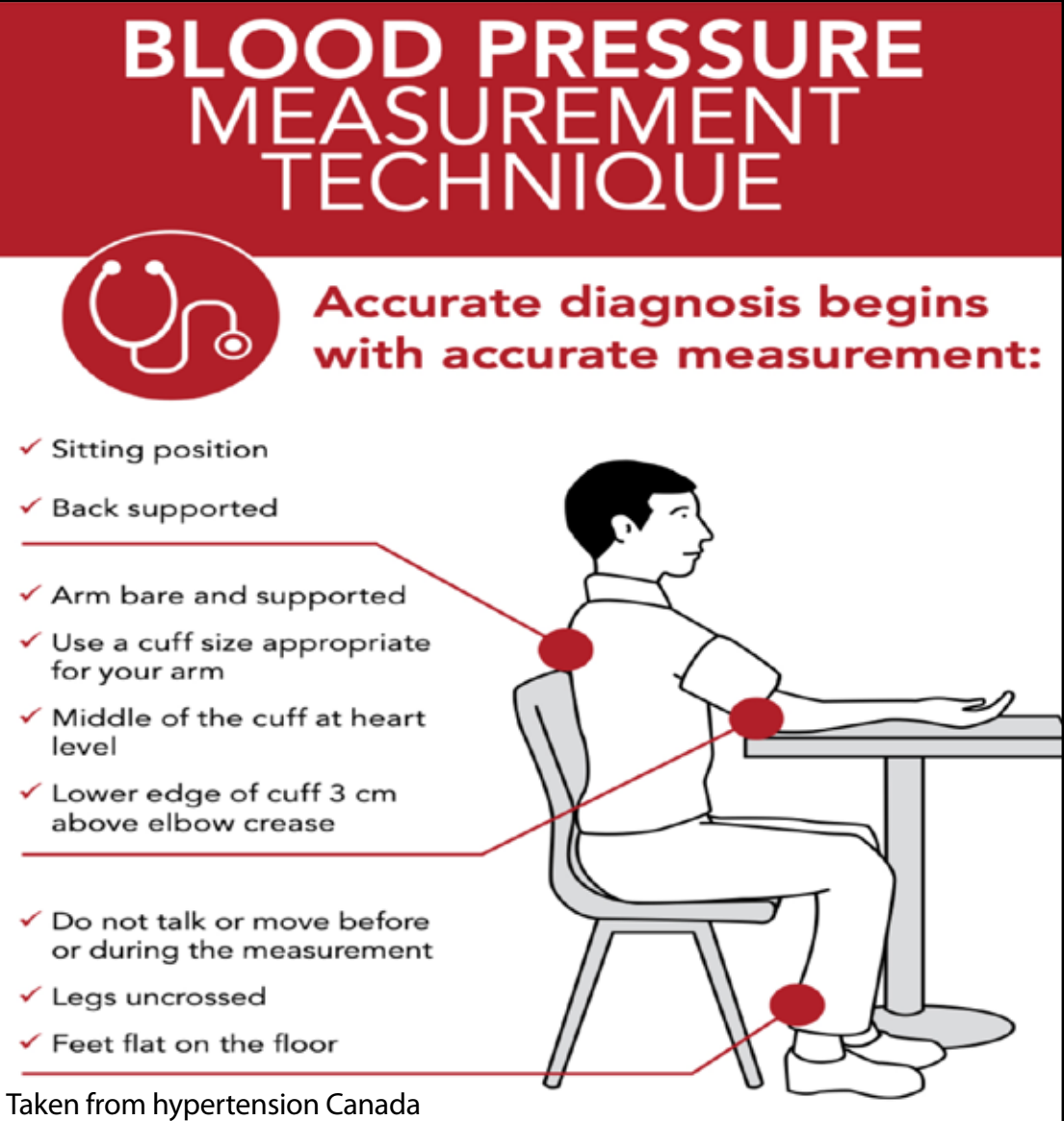


Figure 3: SADMANS Medication List

S	sulfonylureas
A	ACE-inhibitors
D	diuretics, direct renin inhibitors
M	metformin
A	angiotensin receptor blockers
N	non-steroidal anti-inflammatory
S	SGLT2 inhibitors





SUMMARY OF KEY POINTS

- 1) At-home monitoring by patients has been shown to improve HTN control and prevent complications.
- 2) Hypertension Canada recommends patients aim to measure their BP about once every month for for one week recording their readings in a log.
- 3) Patients should check their BP at the same time of day, preferably in the morning after medications, but before consuming alcohol or caffeine, or smoked, or exercised, in the past half hour.
- 4) Patients need to know what signs and symptoms to report to their physician regarding their BP.

for diabetics, is relevant to educate patients about as well.

While this article will not cover lifestyle changes in depth, this education is also important. Physical activity, smoking cessation, and a balanced diet are essential in maintaining BP control.² Limiting alcohol, managing stress, and adequate sleep have all been shown to positively impact BP. Of course, counselling on medications is essential. Generally, patients should be taught to take their BP medications in the morning, although some evidence has

emerged suggesting night-time administration may be more efficacious. The most important thing is that patients develop a routine that allows them to take their medication each day, preferably at the same time. Setting reminders on their phones, keeping their pills in a memorable spot, etc. can help with this. Side effects of individual medications also vary, and patients must be educated about these.

When patients come to their follow-up visits with their physician, they must be reminded to bring their logs with



CLINICAL PEARLS

Educating patients on monitoring their BP at-home between their medical visits is crucial.

Lifestyle changes are also important. Physical activity, smoking cessation, and a balanced diet are essential in maintaining BP control.

At every visit, physicians should review monitoring with their patients, lifestyle counselling, and medication adherence.



them. Physicians should take the BP in office (if not a virtual encounter), and compare with the logs.³ Trends in the log should

BY PROVIDING PATIENTS WITH CLEAR EDUCATION ON HOW TO MONITOR THEIR BP AT HOME, PHYSICIANS CAN DRASTICALLY IMPACT PATIENT EMPOWERMENT.

be reviewed, and the patient should be asked about events surrounding outlier numbers (ex. ‘What happened on that day when your numbers were higher?’). This will aid the patient and physician in determine what changes, if any, need to be made to the treatment plan. At every visit, physicians should review monitoring with their

patients, lifestyle counselling, and medication adherence.

While it may seem basic, a little education goes a long way. By providing patients with clear education on how to monitor their BP at home, physicians can drastically impact patient empowerment.² When patients have the resources and information they need to care for their health, positive outcomes are more likely. It’s really a no-pressure process!

References

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