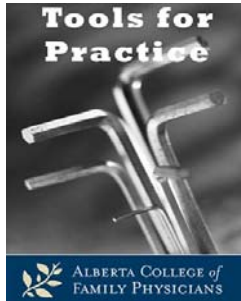


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Home in the Range – Home Blood Pressure Monitoring

Clinical Question:

Is home blood pressure monitoring (HBPM) helpful in the management of adult hypertension?

Guidelines

European¹, US² and Canadian³ Guidelines all recommend HBPM.

- Compared to Office Blood Pressure (OBP), HBPM,
 - o Is equal to or superior in predicting cardiovascular risk,
 - o May result in improved medication compliance
 - o Is more accurate (closer to the standard 24-hour Ambulatory BP)
- Diagnosis: The threshold for hypertension with HBPM is $\geq 135/85$ mmHg
 - o Thresholds for sub-groups are not yet firmly established
- Disagreement between OBP and HBPM^{1,2}
 - o If OBP is $\geq 140/90$ mmHg but HBPM is not $\geq 135/85$ mmHg, “white coat hypertension” is likely.
 - Occurs in <20% - prognosis may be modestly worse than normotensive but more develop true hypertension later.
 - o If OBP is not $\geq 140/90$ mmHg but HBPM is $\geq 135/85$ mmHg, “masked hypertension” is likely.
 - Occurs in <15% - prognosis may be similar to hypertensive
 - o If available, consider Ambulatory BP to help sort these out.
 - Ambulatory BP should probably be given precedent as it has the larger volume of outcome data. If Ambulatory BP disagrees with HPBM and OBP, repeat testing and follow-up should be considered as reproducibility is low in white coat and masked hypertension.
- Monitoring therapy: HBPM may improve compliance to prescribed treatment, and may result in slightly superior BP control than OBP^{1,2}

Context

- HBP is generally lower than OBP (averaging 7mmHg systolic / 5mmHg diastolic lower).⁴
The difference,

- Increases with age and in men (for systolic, not diastolic)
- Decreases in treated subjects.
 - Interventions to improve BP (e.g. medications) result in smaller reductions in HBPM than OBP.
 - In one systematic review,⁴ meds reduced OBP by 20.1/13.6mmHg and HBPM by 13.9/9.1mmHg
- No randomized controlled trial has compared HBPM and OBP on hard clinical outcomes

Approach¹⁻³

- Oscillometric device approved by the Canadian Hypertension Society. For details on HBPM including video and written instructions, encourage patients to consult www.hypertension.ca. For a list approved devices (cost \$80-\$130) see: <http://www.hypertension.ca/chs/deviceendorsements/devices-endorsed-by-chs/>).
 - Arm only (not wrist or finger) models
 - Educate patient to proper measurement technique
 - Preferable if device stores readings
 - Most recommend monitoring as duplicate readings twice daily for 7 days (and discard first day)
 - HBPM may not work well in patients with arrhythmia

Bottom-line: HBPM appears to provide some advantages over OBP assessment and may be a helpful addition for willing patients.

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Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians. Archived articles are available on the Towards Optimized Practice website.

This communication reflects the opinion of the author and does not necessarily mirror the perspective and policy of the Alberta College of Family Physicians.