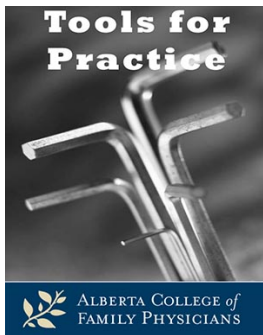


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Reviewed: July 13, 2016
Evidence Updated: No new evidence
Bottom Line: No change
First Published: September 7, 2009



Home in the Range – Home Blood Pressure Monitoring

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

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

Evidence:

- Multiple meta-analyses¹⁻⁴ have assessed the effect of HBPM on the management of hypertension.
 - One meta-analysis¹ of 26 studies (5,651 patients) comparing HBPM versus usual care.
 - At six months, systolic BP and diastolic BP improved by 3.9/2.4 mmHg.
 - Not statistically significant at 12 months and beyond.
 - No difference in quality of life.
 - Medication adherence was statistically significantly improved in three trials, but not in five others.
 - No trials have looked into hard cardiovascular outcomes.

Context:

- European,⁵ US⁶ and Canadian⁷ guidelines all recommend HBPM.
- Home and office-based BP monitoring perform similarly overall in diagnosing hypertension.⁸
 - The threshold for hypertension with HBPM is $\geq 135/85$ mmHg.
- Disagreement between OBP and HBPM:^{5,6}
 - "White coat hypertension":
 - Office BP $\geq 140/90$ mmHg and HBPM $< 135/85$ mmHg.
 - Occurs in $< 20\%$.
 - Prognosis may be modestly worse than being normotensive.
 - "Masked hypertension":
 - Office BP $< 140/90$ mmHg but HBPM $\geq 135/85$ mmHg.
 - Occurs in $< 15\%$.
 - Prognosis may be similar to being hypertensive.

- 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 HBPM and office BP, repeat testing and follow-up should be considered as reproducibility is low in white coat and masked hypertension.
- HBPM is superior to office BP measurements in predicting cardiovascular risk.⁹
- HBP is generally lower than office BP (averaging 7 mmHg systolic/5 mmHg diastolic lower).¹⁰ 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 medications reduced OBP by 20.1/13.6 mmHg and HBPM 13.9/9.1 mmHg).
- Approach:⁵⁻⁷
 - 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 of approved devices (cost \$80-130) see: www.hypertension.ca/chs/deviceendorsements/devices-endorsed-by-chs/
 - Arm-only (not wrist or finger) models.
 - Educate patients to proper measurement technique.
 - Preferable if device stores readings.
 - Most recommend monitoring as duplicate readings twice daily for seven days (and discard first day)
 - HBPM may not work well in patients with arrhythmia.

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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 practicing family physicians who are joined occasionally by a health professional from another medical specialty or health discipline. Each article is peer-reviewed, ensuring it maintains a high standard of quality, accuracy, and academic integrity.

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