Lifestyle recommendations reduced blood pressure in patients with above optimal blood pressure


In patients with above optimal blood pressure (BP), what is the relative effectiveness of 2 behavioural interventions [established lifestyle recommendations (ELR) and ELR plus the Dietary Approaches to Stop Hypertension (DASH) diet] compared with advice only?

METHODS

**Design:** randomised controlled trial.

**Allocation:** concealed.

**Blinding:** blinded (data collectors).

**Follow up period:** 6 months.

**Setting:** 4 clinical centres in Maryland, Louisiana, North Carolina, and Oregon, USA.

**Patients:** 810 generally healthy adults who were ≥25 years of age (mean age 50 y, 62% women), had above optimal BP (mean systolic BP 120–159 mm Hg and diastolic BP 80–95 mm Hg across 3 screening visits), were not taking antihypertensive medication, and had a body mass index of 18.5–45.0. Exclusion criteria: regular use of drugs affecting BP; target organ damage or diabetes; use of weight loss medication; previous cardiovascular event; congestive heart failure; angina; cancer diagnosis or treatment in the previous 2 years; consumption of ≥21 alcoholic drinks/week; and pregnancy, planned pregnancy, or lactation.

**Interventions:** ELR (weight loss for overweight participants, reduced sodium intake, increased physical activity, and limited alcohol intake) (n = 268); ELR plus DASH diet (reduced fat and cholesterol, increased potassium, calcium, magnesium, protein, and fibre) (n = 269); or advice (a single 30 minute individual counselling session) (n = 273). Patients in the ELR and ELR plus DASH diet groups had 14 group meetings and 4 individual counselling sessions during the initial 6 months.

**Outcomes:** change in systolic and diastolic BP from baseline to 6 months.

**Patient follow up:** 87% completed all 3 follow up visits at 6 months.

**Analysis:** by intention to treat. Patients in the ELR and ELR plus DASH groups had greater reductions in systolic and diastolic BP than patients in the advice group (table). The 2 behavioural intervention groups did not differ (table).

**Conclusion:** Patients with above optimal blood pressure (BP) who received established lifestyle recommendations, with or without the Dietary Approaches to Stop Hypertension diet, had greater reductions in BP than those who received advice only.

A modified version of this abstract appears in ACP Journal Club and Evidence-Based Medicine.

**Commentary**

The link between high BP and risk of cardiovascular disease is well known. Research shows that single interventions such as weight loss, sodium reduced diets, the DASH diet, increased physical activity, and limited alcohol intake reduce BP. The PREMIER study provides new insight into the effect of 2 behavioural interventions for lifestyle management of BP compared with conventional advice.

Study strengths include the randomised controlled design, objective measures of adherence to the interventions, and the inclusion of women and African-American participants, which enhances the generalisability of the findings. Although most of the methods were detailed meticulously, it is unclear whether dietitians provided counselling to the intervention groups or to the advice group only.

Nurses in acute care and community settings often have opportunities to provide counselling about the prevention or reduction of high BP. Depending on the context of practice, advice counselling may be the only practical option that is possible. However, nurses might be able to implement behavioural programming approaches in some settings.

The PREMIER study shows the benefits of established multiple lifestyle changes for BP. However, the additional improvement in BP expected as a result of adding the DASH diet to established lifestyle recommendations did not occur. For some patients, making multiple changes can be overwhelming. Nurses can encourage these patients by emphasising that they can reduce their BP by making a single established lifestyle change.

Ruth Martin Misener, RN, MN
Primary Health Care Nurse Practitioner Program and Nunavut Nursing Program
School of Nursing, Dalhousie University
Halifax, Nova Scotia, Canada


---

**Table:** Established lifestyle recommendations (ELR) or ELR plus Dietary Approaches to Stop Hypertension (DASH) diet or advice only for above optimal blood pressure (BP)*

<table>
<thead>
<tr>
<th>Outcomes at 6 months</th>
<th>Mean between-group differences in BP change (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ELR v advice</td>
</tr>
<tr>
<td>Systolic BP (mm Hg)</td>
<td>–3.7 (–5.3 to –2.1)</td>
</tr>
<tr>
<td>Diastolic BP (mm Hg)</td>
<td>–1.7 (–2.8 to –0.6)</td>
</tr>
</tbody>
</table>

*Abbreviations defined in glossary.
†Not significant.