

How effective are lifestyle changes for controlling hypertension?

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EVIDENCE-BASED ANSWER

Regular aerobic exercise, weight loss of 3% to 9% of body weight, reduced dietary salt, the DASH diet, and moderation of alcohol intake are all lifestyle interventions that lower blood pressure. Average blood pressure decreases range from 3 to 11 mm Hg systolic and 2.5 to 5.5 mm Hg diastolic, depending on the particular intervention (strength of recommendation

[SOR]: **A**, based on systematic reviews of randomized controlled trials [RCTs]). Studies of community-based interventions advocating combinations of the above have had mixed results with less reduction in blood pressure noted than for the individual interventions described above (SOR: **B**, RCTs with inconsistent results).

CLINICAL COMMENTARY

Lifestyle modifications plus drug therapy is the best treatment for patients with hypertension

Most Americans with hypertension are not at their goal blood pressure, so the value of lifestyle modifications cannot be ignored. While some clinicians argue that these modifications are unreliable, this review should serve to reinforce the substantial impact of lifestyle modifications. Clinicians should remember that drug therapy is the only treatment modality proven to lower blood pressure and cardiovascular morbidity

and mortality due to hypertension, based on evidence from outcome-based studies. Reducing cardiovascular morbidity and mortality is the ultimate goal of treating hypertension. Therefore, lifestyle modifications with antihypertensive drug therapy are the best treatments to reduce cardiovascular risk and attain goal blood pressure values for patients with hypertension.

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■ Evidence summary

Lifestyle changes are advocated as first-line therapy for hypertension. This review examines the evidence on exercise, dietary interventions, weight loss, alcohol moderation, and smoking cessation. Average systolic blood pressure (SBP) and diastolic blood pressure (DBP) changes are reported in the **TABLE**.

Exercise. A well-done systematic review and meta-analysis from 2002 (including 15 studies with 770 participants) concluded that for hypertensive patients, aerobic exercise with at least one 40-minute session of moderate inten-

sity per week is associated with a drop in SBP of about 5 mm Hg and a drop in DBP of about 4 mm Hg.¹

DASH diet. The Dietary Approaches to Stop Hypertension (DASH) diet is a diet rich in fish, chicken, lean meat, low-fat dairy, fruits, vegetables, whole grains, legumes, nuts, and seeds. In a high-quality RCT, the DASH diet lowered SBP for hypertensive patients by an average of 11 mm Hg and DBP by an average of 5.5 mm Hg compared with the control group.² Participants were provided with all food during the entire 8-week length of the trial.

TABLE

Average effect on blood pressure from lifestyle interventions

LIFESTYLE INTERVENTION	AVERAGE EFFECT ON SBP (MM HG)	AVERAGE EFFECT ON DBP (MM HG)
Regular aerobic exercise	-5	-4
DASH diet	-11	-5.5
Weight loss of 3% to 9% of body weight in overweight patients	-3	-3
Reduced salt diet	-5	-3
Alcohol moderation	-4	-2.5

SBP, systolic blood pressure; DBP, diastolic blood pressure

FAST TRACK

Interventions that lower blood pressure:

- regular exercise
- reduced salt
- DASH diet
- less alcohol
- weight loss of 3%–9%

Weight loss. A Cochrane review of 18 trials with 2611 participants concluded that for overweight hypertensive patients, weight loss of 3% to 9% of body weight is associated with 3 mm Hg decreases in both SBP and DBP.³

Salt reduction. A Cochrane review of 17 trials with 734 participants concluded that for individuals with hypertension, a reduced-salt diet results in a mean SBP and DBP reductions of 5 mm Hg and 3 mm Hg, respectively.⁴

Alcohol moderation. A well-done meta-analysis of alcohol reduction and blood pressure included 7 studies with 415 hypertensive patients.⁵ Mean baseline alcohol consumption was 3 to 6 alcoholic drinks per day, and the mean reduction in consumption was 67%. For this patient population, the average improvement was almost 4 mm Hg for SBP and nearly 2.5 mm Hg for DBP.

Smoking cessation. No high-quality studies show a long-term effect of smoking cessation on blood pressure. Smoking cessation has other well-documented health benefits and should still be recommended for patients with hypertension.

Multifactorial interventions. Thirteen randomized controlled trials of community-based interventions involving various combinations of lifestyle change advice show mixed results. In general, studies of

interventions that were more intensive (ie, longer in duration, larger number of sessions, small group or one-on-one as opposed to large group lectures) and studies with shorter follow-up periods showed more positive results. The magnitude of the blood pressure improvements tended to be lower than for each individual intervention described above. (References are located in the **APPENDIX** on our web site at www.jfoonline.com.)

Recommendations from others

The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure recommends lifestyle modifications for all patients with hypertension.⁶ They point out that DASH diet plan with 1600 mg sodium had average blood pressure effects similar to single-drug therapy.

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