

What should the blood pressure treatment goal be in adults with hypertension in 2016?

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On the basis of randomized clinical trial data including the Hypertension in the Very Elderly (HYVET) trial (1) and the Systolic Hypertension in the Elderly (SHEP) trial (2-4), the American College of Cardiology Foundation/ American Heart Association 2011 hypertension guidelines (5), the European Society of Hypertension/European Society of Cardiology 2013 hypertension guidelines (6), the 2014 American Society of Hypertension/International Society of Hypertension guidelines (7), and the American Heart Association/American College of Cardiology Foundation/ American Society of Hypertension 2015 guidelines on treatment of hypertension in adults with coronary artery disease (8) recommended that the blood pressure be lowered to less than 140/90 mmHg in adults younger than 80 years and to less than 150/90 mmHg in adults aged 80 years and older. Data from 9,787 adults in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study also supported these recommendations (9).

The 2013 Eighth Joint National Committee (JNC 8) guidelines for management of hypertension recommended lowering the blood pressure in adults aged 60 years or older to less than 150/90 mmHg if they did not have diabetes mellitus or chronic kidney disease and to less than 140/90 mmHg if they had diabetes mellitus or chronic kidney disease (10). These guidelines were not endorsed by any professional societies. The minority view from JNC 8 recommended lowering the blood pressure in adults aged 60 years and older with hypertension to less than 140/90 mmHg (11).

The new guidelines for the treatment of hypertension will be strongly influenced by the results from the Systolic Blood Pressure Intervention Trial (SPRINT) (12,13).

SPRINT randomized 9,361 adults with a systolic blood pressure of 130–180 mmHg and an increased cardiovascular risk but without diabetes mellitus, history of stroke, symptomatic heart failure within the past 6 months, a left ventricular ejection fraction of less than 35%, and an estimated glomerular filtration rate less than 20 mL/min/1.73 m² to a systolic blood pressure goal of less than 120 mmHg or less than 140 mmHg. Of the 9,361 adults aged 50 years and older, 2,636 (28.2%) were aged 75 years and older (mean age 79.9 years) (12). Of the patients aged 75 years and older, 30.9% were frail (13).

The primary composite outcome of myocardial infarction, other acute coronary syndrome, stroke, heart failure, or death from cardiovascular causes was decreased 25% by intensive blood pressure treatment in the whole group (12) and by 34% in adults aged 75 years and older. All-cause mortality was decreased by 27% by intensive blood pressure treatment in the whole group (12) and by 33% in adults aged 75 years and older (13). Heart failure was decreased by intensive blood pressure treatment 38% in the whole group (12) and by 38% in adults aged 75 years and older (13). On the basis of these data and other clinical trial data, I recommend a blood pressure treatment goal of less than 120/80 mmHg in high-risk adults such as those treated in SPRINT. The 2016 Canadian viewpoint also recommends a systolic blood pressure goal of less than 120 mmHg in these high-risk persons (14).

Expert medical opinion will have to be used to recommend what the optimal blood pressure goal should be in adults with hypertension not included in the SPRINT trial. On the basis of data from the ACTION to Control Cardiovascular Risk in Diabetes Blood Pressure (ACCORD

BP) trial (5-17), this author recommends treating older adults with diabetes mellitus at increased cardiovascular risk to a blood pressure treatment goal of less than 130/80 mmHg or to less than 120/80 mmHg with more intensive monitoring for serious adverse events (18).

Randomized clinical trial data are needed to determine the optimal blood pressure goal in persons with hypertension not included in the SPRINT trial. Until these data are available, on the basis of the available clinical trial data, my expert medical opinion recommends treating adults with heart failure with reduced or preserved left ventricular ejection fraction, adults with a left ventricular ejection fraction below 35%, adults with a history of stroke or transient ischemic attack, and adults with an estimated glomerular filtration rate less than 20 mL/min/1.73 m² to a blood pressure goal of less than 130/80 mmHg.

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Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

References

1. Beckett NS, Peters R, Fletcher AE, et al. Treatment of hypertension in patients 80 years of age or older. *N Engl J Med* 2008;358:1887-98.
2. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. Final results of the Systolic Hypertension in the Elderly Program (SHEP). SHEP Cooperative Research Group. *JAMA* 1991;265:3255-64.
3. Perry HM Jr, Davis BR, Price TR, et al. Effect of treating isolated systolic hypertension on the risk of developing various types and subtypes of stroke: the Systolic Hypertension in the Elderly Program (SHEP). *JAMA* 2000;284:465-71.
4. Kostis JB, Davis BR, Cutler J, et al. Prevention of heart failure by antihypertensive drug treatment in older persons with isolated systolic hypertension. SHEP Cooperative Research Group. *JAMA* 1997;278:212-6.
5. Aronow WS, Fleg JL, Pepine CJ, et al. ACCF/AHA 2011 expert consensus document on hypertension in the elderly: a report of the American College of Cardiology Foundation Task Force on Clinical Expert Consensus documents developed in collaboration with the American Academy of Neurology, American Geriatrics Society, American Society for Preventive Cardiology, American Society of Hypertension, American Society of Nephrology, Association of Black Cardiologists, and European Society of Hypertension. *J Am Coll Cardiol* 2011;57:2037-114.
6. Mancia G, Fagard R, Narkiewicz K, et al. 2013 ESH/ESC guidelines for the management of arterial hypertension: the Task Force for the Management of Arterial Hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *Eur Heart J* 2013;34:2159-219.
7. Weber MA, Schiffrin EL, White WB, et al. Clinical practice guidelines for the management of hypertension in the community a statement by the American Society of Hypertension and the International Society of Hypertension. *J Hypertens* 2014;32:3-15.
8. Rosendorff C, Lackland DT, Allison M, et al. Treatment of Hypertension in Patients With Coronary Artery Disease: A Scientific Statement from the American Heart Association, American College of Cardiology, and American Society of Hypertension. *J Am Coll Cardiol* 2015;65:1998-2038.
9. Banach M, Bromfield S, Howard G, et al. Association of systolic blood pressure levels with cardiovascular events and all-cause mortality among older adults taking antihypertensive medication. *Int J Cardiol* 2014;176:219-26.
10. James PA, Oparil S, Carter BL, et al. 2014 evidence-based guideline for the management of high blood pressure in adults: report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA* 2014;311:507-20.
11. Wright JT Jr, Fine LJ, Lackland DT, et al. Evidence supporting a systolic blood pressure goal of less than 150 mm Hg in patients aged 60 years or older: the minority view. *Ann Intern Med* 2014;160:499-503.
12. SPRINT Research Group, Wright JT Jr, Williamson JD, et al. A Randomized Trial of Intensive versus Standard Blood-Pressure Control. *N Engl J Med* 2015;373:2103-16.
13. Williamson JD, Supiano MA, Applegate WB, et al. Intensive vs Standard Blood Pressure Control and Cardiovascular Disease Outcomes in Adults Aged ≥75 Years: A Randomized Clinical Trial. *JAMA* 2016;315:2673-82.
14. Padwal R, Rabi DM, Schiffrin EL. Recommendations for Intensive Blood Pressure Lowering in High-Risk Patients, the Canadian Viewpoint. *Hypertension* 2016;68:3-5.

15. ACCORD Study Group, Cushman WC, Evans GW, et al. Effects of intensive blood-pressure control in type 2 diabetes mellitus. *N Engl J Med* 2010;362:1575-85.
16. Margolis KL, O'Connor PJ, Morgan TM, et al. Outcomes of combined cardiovascular risk factor management strategies in type 2 diabetes: the ACCORD randomized trial. *Diabetes Care* 2014;37:1721-8.
17. Soliman EZ, Byington RP, Bigger JT, et al. Effect of Intensive Blood Pressure Lowering on Left Ventricular Hypertrophy in Patients With Diabetes Mellitus: Action to Control Cardiovascular Risk in Diabetes Blood Pressure Trial. *Hypertension* 2015;66:1123-9.
18. Aronow WS. Orthostatic Hypotension in Diabetics in the ACCORD (Action to Control Cardiovascular Risk in Diabetes) Blood Pressure Trial. *Hypertension* 2016;68:851-2.

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