

Lowering target blood pressure would save lives and money

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Lowering blood pressure goals for adults at high risk of cardiovascular disease could save tens of thousands of lives annually and reduce costs, according to a computer simulation by researchers at Columbia

University Medical Center (CUMC) and New York-Presbyterian. Results of the study, published today in the online edition of *Hypertension* and presented today at the American Society of Hypertension Annual Scientific Meeting, could prompt a revision of national hypertension treatment guidelines, which had relaxed blood pressure goals for specific high-risk patients in recent years.

The results complement recent evidence from the Systolic Blood Pressure Intervention Trial (SPRINT), which found that having a more intensive [systolic blood pressure](#) (SBP) goal of 120 mmHg in patients at [high risk](#) for [cardiovascular disease](#) reduced both cardiovascular events and mortality by about one quarter, compared with the current goal of 140 mmHg.

In 2014, the 8th Joint National Committee (JNC8) on Detection, Evaluation, and Treatment of High Blood Pressure—appointed by the National Heart, Lung, and Blood Institute—issued new guidelines recommending that physicians aim for an SBP of 140 mmHg in adults with diabetes and/or chronic kidney disease and 150 mmHg in healthy adults over age 60. The new guidelines represented a major departure from previous JNC7 guidelines recommending SBPs of 130 mmHg and 140, mmHg for these groups, respectively, and were not endorsed by either the American Heart Association or the American College of Cardiology. Under the 2014 guidelines, over 5 million fewer individuals annually would receive drug treatment to lower their blood pressure, compared with the prior 2003 guidelines.

The CUMC team conducted a computer simulation to determine the value of adding the lower, life-saving SBP goal identified in SPRINT to the JNC7 and JNC8 guidelines for high-risk patients between the ages of 35 and 74 years. (High risk was defined as existing cardiovascular disease, [chronic kidney disease](#), or a 10-year cardiovascular disease risk greater than 15 percent in patients older than 50 years and with a pre-

treatment SBP greater than 130 mmHg.) The researchers performed the simulation on data from a national population of adults and added data on the quality-of-life impact of side effects as well as drug and blood pressure monitoring costs.

The study found that lowering treatment goals for this population in the JNC8 guidelines would prevent up to 43,000 additional deaths from cardiovascular disease each year. Adding more intensive goals to the JNC7 guidelines would prevent an additional 35,000 deaths.

The study also revealed that adding the lower SBP goals to the JNC7 and JNC8 [guidelines](#) would decrease overall treatment costs for men and would be cost-effective (representing a good value) compared with standard treatment in women.

"Hypertension treatment is cheap and effective, and fear of side effects should not dissuade physicians from treating to lower goals in high-risk individuals under 75 years of age," said Nathalie Moise, MD, MS, lead author, assistant professor of medicine at CUMC and faculty member of the Center for Behavioral Cardiovascular Health.

Any future savings would be sensitive to higher drug costs, added Dr. Moise. "Containing drug costs will be integral to affordable implementation of intensive blood pressure goals in this high-risk group."

"Our simulation shows that we have everything to gain by taking a more aggressive approach to lowering systolic [blood pressure](#) in patients with certain [cardiovascular disease risk](#) factors," concluded Dr. Andrew Moran, MD, MPH, the Herbert Irving Assistant Professor of Medicine at CUMC and physician at NewYork-Presbyterian/Columbia.

More information: Nathalie Moise et al, Comparative Cost-

Effectiveness of Conservative or Intensive Blood Pressure Treatment Guidelines in Adults Aged 35–74 Years, *Hypertension* (2016). [DOI: 10.1161/HYPERTENSIONAHA.115.06814](https://doi.org/10.1161/HYPERTENSIONAHA.115.06814)

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