

Intensive blood pressure control can extend life up to three years

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A new study by investigators at Brigham and Women's Hospital puts the results of a landmark trial about blood pressure control into terms that may be easier to interpret and communicate to patients. When data from

The Systolic Blood Pressure Intervention Trial (SPRINT) were published in 2015, the medical community responded enthusiastically to the news that reducing blood pressure lower than the normal targets could reduce overall death rates by 27 percent for adults at high cardiovascular risk. While these study results are being integrated into clinical practice, explaining what they mean and why they are important to patients can be challenging. Investigators from the Brigham describe how aggressively lowering blood pressure levels can extend a person's life expectancy. They report that having a blood pressure target of less than 120 mm Hg—rather than the standard 140 mm Hg—can add six months to three years to a person's lifetime, depending upon how old they are when they begin intensive blood pressure control. Results are published in *JAMA Cardiology*.

"When physicians discuss optimizing [blood](#) pressure, patients often wonder what benefits they may anticipate with intensive [blood pressure control](#)," said lead author Muthiah Vaduganathan, MD, MPH, a cardiologist at the Brigham. "That was the inspiration for our work: We've taken the data and reframed it to contextualize the results in a way that's most meaningful to patients."

Vaduganathan and colleagues used age-based methods to conduct their analysis. These methods are frequently used in other fields—for instance, when projecting the long-term survival benefits of a new cancer drug—but have not been commonly applied in studying [cardiovascular disease](#).

By applying age-based methods to the data from SPRINT, the team could estimate the long-term benefits of intensive blood pressure control. The SPRINT study enrolled more than 9,000 adults who were 50 years or older, were at high cardiovascular risk but did not have diabetes, and had a systolic blood pressure between 130- and 180-mm Hg (130 mm Hg or higher is considered high blood pressure). Participants were

randomized to intensive (at least 120 mm Hg) or standard (at least 140 mm Hg) systolic blood pressure targets. Participants were given antihypertensive therapies, free of cost, to achieve their blood pressure targets and were followed for an average of a little over three years.

Vaduganathan and colleagues estimated that if people had continued taking their antihypertensive therapies for the remainder of their lives, those with the intensive blood pressure target could add six months to three years to their life expectancy, compared to those with the standard blood pressure target. This span depended upon the person's age—for someone who began antihypertensive medications at 50 years old, they predicted a difference of 2.9 years; for someone 65 years old, a difference of 1.1 years; and for someone 80 years old, a difference of nine months.

The authors note that the analysis did not account for potential risks, including kidney injury and low blood pressure, that are associated with intensive blood pressure control. Estimates of survival benefits must be carefully weighed against these potential risks in the selection of blood pressure targets for individual patients.

"Our hope is that these findings offer a more easily communicated message when discussing the potential benefits and risks of sustained [blood pressure](#) control over time," said Vaduganathan. "These statistics about [life expectancy](#) may be more tangible and personalized for patients and more relatable when making these decisions."

More information: Vaduganathan, M et al. "Long-Term Benefit of Intensive Blood Pressure Control on Residual Lifespan in the Systolic Blood Pressure Intervention Trial (SPRINT)" *JAMA Cardiology* [DOI: 10.1001/jamacardio.2019.6192](https://doi.org/10.1001/jamacardio.2019.6192)

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