

## Q&A: Hypertension expert on optimizing blood pressure

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High blood pressure, or hypertension, is a common condition affecting nearly half of U.S. adults. According to the Centers for Disease Control and Prevention (CDC), 48% of Americans have high blood

pressure—defined as a systolic blood pressure greater than 130 mmHg or a diastolic blood pressure greater than 80 mmHg. A major risk factor for heart disease and other serious health problems, high blood pressure is more common in adults aged 45 and older and disproportionately affects non-white Americans.

Stephen Juraschek, MD, is a clinician-investigator at Beth Israel Deaconess Medical Center (BIDMC) who studies the hypertension epidemic from all angles. A national expert in blood pressure variability, Juraschek is passionate about the role of nutrition in optimizing blood pressure and promoting healthy aging in older adults. He has co-authored more than 200 peer-reviewed papers and participated in several [clinical trials](#) focused on nutrition and [lifestyle interventions](#) to improve clinical outcomes.

We asked Dr. Juraschek about his research and what the latest science says about how physicians and patients can work together to help everyone lead healthier lives.

**Many people have undiagnosed hypertension and are unaware because it's symptomless. Is high blood pressure simply an indicator of illnesses, or is it problematic in and of itself?**

The data are very consistent that the more we [lower blood pressure](#), the better people do. They live longer, have less cognitive decline, and have a lower risk of cardiovascular diseases like heart attacks and stroke. There's a lot of good evidence that targeting blood pressure does prevent actual organ injury and its negative consequences.

Elevated blood pressure over time can remodel the [blood vessels](#) so that they become less flexible and more rigid, causing greater pressure

overall. This is what we see with age-related hypertension; blood pressure rises with aging because chronic exposure to elevated blood pressure remodels the vasculature. It can be reversed to some extent, but is tricky to treat.

There's also cellular evidence that we may experience momentary injuries throughout the day as our blood pressure varies. If starting at a higher resting blood pressure when stressors occur (e.g., rushing to an appointment or an argument at home) blood pressure can be pushed into even higher levels may cause microinjuries that could have repercussions down the road.

Eventually, these microinjuries could lead to the weakening of a blood vessel that might burst, causing hemorrhagic stroke or rupture an unstable plaque in heart vessels causing a heart attack. If these microinjuries happen repeatedly in the heart or the brain or the kidneys, there can be a gradual decline to an organ's function.

**If you were counseling your own family members with hypertension, where would you place the emphasis on how they should go about managing this fairly complex condition?**

If we always focus on medication, there will always be individuals who don't have access to treatment.

I'm a big proponent of healthy nutrition. I think the U.S. hypertension epidemic is due to high-salt food, low potassium intake, and high calorie intake. We could do so much better as a society if we focused on a population-wide prevention strategy around healthy eating and lifestyle.

We did this interesting [study](#) published in *JACC* that looked at the

impacts of diet on subclinical cardiovascular disease. What we found is that a low sodium, high potassium diet for even a short period of time had a profound impact on subclinical markers of cardiac injury, suggesting that poor nutrition could be a major driver of damage to the heart over time.

That being said, lifestyle changes can be complicated and take time. I do encourage folks to take blood pressure medications to get their blood pressure into a healthy range in the short term while they work on lifestyle improvements for the long term.

There are debates about the benefits of intensive vs. standard blood pressure treatment among adults with orthostatic hypotension or standing hypotension. In another recent study published in [JAMA](#), our team evaluated whether the effect of intensive blood pressure treatment differs in this patient population. We found that the interventions were effective for participants with asymptomatic orthostatic hypotension or standing hypotension, so the condition presence should not be a deterrent to more intensive treatment.

## **What lifestyle changes have been shown to have the most impact on managing blood pressure?**

Six of the most evidence-based, non-pharmacologic approaches to blood pressure reduction include:

- Consuming low-fat dairy, lean proteins, fruits and vegetables, legumes, nuts, beans and whole grains. One great approach is the [Dietary Approaches to Stop Hypertension \(DASH\) diet](#).
- Increasing potassium intake through supplementation or potassium-rich foods.
- Reducing sodium intake. This is tricky but involves reviewing

nutrition facts and eating meals at home. There is a lot of sodium in processed, restaurant, and fast foods often in subtle places (e.g., bread and rolls)

- Limiting alcohol
- Exercising regularly (about 15 minutes a day or 150 minutes a week)
- Optimizing body weight through weight loss (if overweight or obese)

## **We know that there are disparities throughout health care, including cardiovascular disease among Black patients. How are these being addressed?**

Black adults are disproportionately affected by hypertension—more than half of Black adults have elevated blood pressure. Systemic racism is one major contributing factor, and it is important that we invest resources into identifying and alleviating those impacts.

Our team [led a paper](#) that found you could reduce risk for cardiovascular disease by about 10 percent by adopting the DASH diet for just eight weeks. This effect was even greater among Black adults.

We're also currently working on [two clinical trials](#), supported by the American Heart Association and the National Institutes of Health, focused on access to healthy foods in urban food deserts among Black adults with elevated blood pressure and hypertension. In Massachusetts, about one in three families lives in a food dessert, a [geographic area](#) where there is limited access to quality, healthy, and affordable food.

We randomize participants to work with either a dietitian or a self-directed grocery intervention. Dietitians assist participants to order groceries every week to promote adherence to the DASH diet, while also

monitoring their [blood pressure](#), cholesterol, blood sugar and weight. We'll be able to look at the effects of nutritional medicine in individuals who don't yet have a hypertension diagnosis, as well as seeing whether reducing sodium in people who are already taking medicine can help further reduce their hypertension.

I'm really excited about the impact of these studies. There have been a number of challenges, but they have also been a very invigorating labor of love for our team. The more we do, the more we realize the importance of social determinants of health and the tremendous need for interventions that address them.

Provided by Beth Israel Deaconess Medical Center

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