

Cold weather may pose challenges to treating high blood pressure

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Blood pressure among patients diagnosed with hypertension appeared to slightly increase and rates of systolic (top number) blood pressure being controlled during an outpatient visit appeared to slightly decrease during

winter months, according to a new study to be presented at the American Heart Association's [Hypertension Scientific Sessions 2023](#), held Sept. 7–10, 2023, in Boston.

According to the American Heart Association's 2023 [Statistical Update](#), nearly half of adults in the U.S. have high [blood pressure](#). Previous research found that blood pressure varies with the seasons of the year. Most of this variation is in [systolic blood pressure](#)—the top number in a blood pressure reading that gauges the pressure in/against blood vessels during heartbeats. The study authors sought to understand whether [blood pressure control](#), defined in this study as less than 140/90 mm Hg among patients with hypertension, varied by season.

"Despite the smaller degree of systolic blood pressure variation in comparison to previous studies on seasonality in blood pressure, we were surprised to observe a large degree of change in blood pressure control between winter and [summer months](#)," said lead study author Robert B. Barrett, a software engineer at the American Medical Association in Greenville, South Carolina.

"Individuals with hypertension or values near the range of hypertension may benefit from periodic blood pressure monitoring and improvements in [physical activity](#) and nutritional patterns during winter months to offset adverse effects from seasonal blood pressure changes."

The researchers reviewed [electronic health records](#) for 60,676 adults treated for hypertension between July 2018 and June 2023 at six health care centers. Each participant remained on their originally prescribed classes of antihypertensive drugs throughout the review period. Primarily in the Southeast and Midwest regions, the centers ranged from small, federally-funded nonprofit health centers or clinics to large academic medical centers.

Seasonal blood pressure readings were analyzed to assess variations in blood pressure control during the winter vs. summer months (December through February vs. June through August, respectively) as part of a quality-improvement program for clinicians and health care centers. Study participants were an average age of 62 years old; 52.3% identified as white race; 59.7% identified as female.

The analysis of the health records found that, on average, participants' systolic blood pressure increased by up to 1.7 mm Hg in the winter months compared to the summer months. In addition, they found that blood pressure control rates decreased by up to 5% during the winter months.

Future directions for investigation might include analyzing the frequency of heart disease and deaths during each season, the authors noted.

The study's limitations include that the electronic health records did not capture a complete health history for each participant and that information collected for each patient was retrieved only from the institution where they were treated.

The [2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults](#) classifies hypertension as having top and bottom numbers greater than or equal to 130/80 mm Hg. This study defined hypertension as numbers greater than or equal to 140/90 mm Hg.

More information: Barrett presents The Effect Of Temperate Seasonality On Systolic Blood Pressure Is Amplified In Population Control Rates at 8:45 a.m. ET on Saturday, Sept. 9, 2023, Presentation #049; Abstract #493

Provided by American Heart Association

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