

2016 US presidential election skewed BP, heart rhythms in those with existing conditions

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Notable for high levels of stress and anger, the 2016 U.S. presidential campaign and election may have increased the risk of potentially life-threatening heart rhythms and worsened high blood pressure in people with underlying cardiovascular disease who already had a history of these conditions, according to a new study published today in the *Journal of the American Heart Association* and in a separate preliminary study to be presented at the American Heart Association's Epidemiology, Prevention, Lifestyle & Cardiometabolic Health Conference 2021. The meeting is virtual, May 20-21, and offers the latest science on population-

based health and wellness and implications for lifestyle.

A peer-reviewed study published today in *JAMA*, (*Arrhythmia Risk During the 2016 United States Presidential Election: The Cost of Stressful Politics*—Lindsey Rosman et al.), is the first to investigate whether a stressful [election](#) can trigger potentially life-threatening heart rhythms (cardiac arrhythmias) in people with implanted cardiac devices who have a higher risk of these events.

Researchers examined the incidence of [cardiac arrhythmias](#) during the 2016 U.S. presidential election cycle on the heart rhythms in 2,436 adults (average age of 70.8 years, 74.5% white adults, 59.4% male) with implanted defibrillators or pacemakers that were capable of remote monitoring. Patients all resided in North Carolina, a key battleground state subject to a high volume of negative political advertisements and commentary during the 2016 U.S. presidential election.

Researchers compared data from implanted cardiac devices during a six-week span from two weeks before and four weeks after the 2016 U.S. presidential election (late October through early December) with a control period from June to July of 2016, prior to both political parties' presidential nominating conventions.

Compared with the control period there was:

- a significant increase in arrhythmias during the 2016 U.S. presidential election: there were 2,592 arrhythmic events during the election period compared to 1,533 events during the control period.
- a 77% increased risk in the overall incidence of arrhythmias (periods in which the heart beats too fast, too slow or irregularly);
- an 82% increased risk in the incidence of atrial arrhythmias (an abnormal heart rhythm that begins in the heart's upper

chambers); and

- a 60% increased risk in the rate of potentially life-threatening ventricular arrhythmias (an abnormal heart rhythm involving the heart's lower chambers), which can lead to cardiac arrest.

Results were similar when compared to the exact same period one year prior to the presidential election.

"We also found a higher burden of atrial fibrillation (AFib), an irregular and often rapid heart rate, meaning patients spent more time per day in AFib during the election," said Lindsey A. Rosman, Ph.D., lead author of the study and assistant professor of medicine in the division of cardiology at the University of North Carolina School of Medicine in Chapel Hill. "This is important because it can increase the risk of [blood clots](#), stroke and other heart-related complications."

The increase in arrhythmias surrounding the presidential election was not associated with people's age, sex, race/ethnicity, the type of cardiac device, or the presence of high [blood pressure](#), coronary artery disease or heart failure.

Researchers also linked data from the North Carolina State Board of Elections to their database to determine if political party affiliation and community election results were associated with more heart events during the 2016 election.

"We were surprised that we did not observe a higher incidence of arrhythmia among individuals who voted for the losing candidate, who was a Democrats in the 2016 presidential election. Nor did we see more arrhythmia among those who may have felt socially or ideologically disconnected from their community, such as a Democrat living in a county that voted for the Republican candidate who won the election, or a Republican in a county that voted for the Democratic candidate who

lost the election," Rosman said.

Unlike natural disasters or terrorist attacks, which are also highly stressful and linked to a rise in cardiac events, the fact that political elections are regularly scheduled offers health care professionals the opportunity to anticipate and assist patients in effectively managing stress.

"Attention to mental health issues including stress is an important part of routine clinical care for patients with heart disease and for the general population," said Rosman. "Being more aware of the potential stress of a presidential election could be helpful for many people."

This is a retrospective observational study, therefore, the results cannot demonstrate a direct cause-and-effect relationship between election stress and arrhythmias. Researchers also did not have information on the actual votes of people in the study. However, they note that in North Carolina, 92% of registered Republicans and 94% of registered Democrats voted with their party in the 2016 presidential election.

The investigators are currently conducting a similar study about stress and cardiac events surrounding the 2020 U.S. presidential election, this time with data from a national sample of adults rather than from adults only in one state.

In a separate study, being presented by a different research group at the American Heart Association's EPI conference, (Presentation #063-Racial/Ethnic Differences In Blood Pressure Around The Time Of The 2016 United States General Election—Andrew Hwang et al.) researchers analyzed blood pressure readings collected from nationwide samples of U.S. adults by the National Health and Nutrition Examination Survey (NHANES). Blood pressure measures in the six months prior to the 2016 U.S. presidential election (May 2016 to October 2016) were

compared with blood pressure measures of a separate randomly selected group of participants about a year into the new presidency (November 2017 to April 2018). Blood pressure readings among non-Hispanic white adults (1,060 people in the pre-election period and 676 post-election), non-Hispanic Black adults (720 pre-election and 564 post-election) and Mexican American adults (223 pre-election and 468 post-election) were examined separately.

Among their findings:

- Systolic blood pressure (the top number in a blood pressure measurement) rose significantly among Mexican American participants (average of 118.0 mm Hg pre-election vs. 121.7 mm Hg post-election).
- Diastolic blood pressure (the bottom number in a blood pressure measure) increased significantly among Mexican American participants (average of 69.5 mm Hg pre-election vs. 72.6 mm Hg post-election) and non-Hispanic Black Americans (average of 72.2 mm Hg pre-election vs. 74.9 mm Hg post-election).
- No other population groups had significant changes in blood pressure measures.
- No significant increases in blood pressure were observed in any racial or ethnic group that did not have previously existing hypertension.

"We were surprised to find that blood pressure significantly increased among non-Hispanic Black adults and Mexican American adults who already had recorded high blood pressures, while no significant increases were observed in any group that did not have hypertension before the study period," said lead author of the study Andrew Y. Hwang, Pharm.D., assistant professor of clinical science in the Fred Wilson School of Pharmacy at High Point University in High Point, North Carolina. "We had expected to see some changes among those who did

not have [high blood pressure](#) before the election. However, it appears that existing hypertension may have a large influence on blood pressure fluctuations related to stress."

Hwang noted that if confirmed, the results suggest that patients with hypertension may be at higher risk for blood pressure elevations related to election stress.

"Close monitoring and follow-up with a primary care professional may be necessary to ensure blood pressure is managed during the election season," he said.

The study has several limitations, including that it is based on samples of people at two different time periods, not on measurements taken before and after the election on the same people. In addition, the designated pre-election control period for this analysis (standard months for NHANES examinations) included most of the contentious period in the months prior to the 2016 presidential election, so stress-related blood [pressure](#) increases might have already occurred in those closely following the campaign. The researchers also did not have information about the political party affiliation of study participants.

"Additional research is needed to confirm these findings in larger studies. And future studies should investigate patient-specific factors that may aggravate or protect individuals from adverse health outcomes related to stress," Hwang said.

More information: Lindsey Rosman et al. Arrhythmia Risk During the 2016 US Presidential Election: The Cost of Stressful Politics. *Journal of the American Heart Association* Originally published 20 May 2021 doi.org/10.1161/JAHA.120.020559.

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