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Research Article

Voting behavior and mortality risk in older adults: Evidence from the Wisconsin Longitudinal Study

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Abstract

Objectives: **Longitudinal studies have examined long-term health benefits of volunteering, with less attention to other forms of civic engagement, like voting. Prior research on voting has examined how health status predicts later voting behavior. This study examines the reverse: whether voting behavior predicts lower later mortality risk among older Americans.**

Methods: **Using data from the Wisconsin Longitudinal Study ($N = 7{,}708$ to 4,078; 54% female) and Catalist-verified voting records, we examine the mortality risk among older adults who voted in the U.S. 2008 presidential election. We control for socioeconomic status, demographics (including political affiliation), civic engagement, and health to assess associations between voting behavior and mortality risk 5 to 15 years later. We also conduct survival analyses for the 2004, 2008, and 2012 presidential elections through 2023.**

Results: **In fully adjusted models, older adult voters in 2008 (compared to nonvoters) had a 45%, 37%, and 29% lower mortality risk after 5, 10, and 15 years, respectively. Both in-person and remote voting were associated with reduced mortality risk across all periods. This effect was not moderated by financial resources or political affiliation. However, those in poorer health benefited more from voting 15 years later. Robustness checks found that mortality risk benefits were stronger in more recent elections (2008, 2012).**

Discussion: **These findings support voting as a potential social determinant of health. Voting is often promoted as a public health initiative enhancing community health, and it may also be associated with better health outcomes for voters. The results inform public health policy initiatives promoting voter participation, particularly among aging populations.**

Keywords: Civic engagement, Verified voting, Health, All-cause mortality, Survival analysis

In 2022, the American Medical Association passed a resolution declaring voting a social determinant of health (American Medical Association, 2022). According to Healthy People 2030:

> *Voting offers a chance for people to contribute to decisions that can affect their communities and directly or indirectly impact their health and well-being. Voting can also help people develop a sense of purpose and help them feel connected to their community. Strategies to increase voter participation can help more people benefit from civic participation and strengthen communities.* (Health.gov, 2024)

Can ensuring that individuals exercise their right to vote promote not only community well-being but also individual well-being? Voting can provide individuals with a sense of voice and agency, helping to foster a sense of self-efficacy (Hackett & Omoto, 2009), belonging (Bali et al., 2020), and social connectedness (Campbell, 2013). These factors are all well-established contributors to health and well-being (Holt-Lunstad et al., 2010; Maibach & Murphy, 1995; Ross, 2002), positioning voting as a potential social determinant of health.

Voting as civic engagement among older adults

Public interest in voter turnout has been especially strong during recent U.S. elections. As an act of civic engagement, voting is critical for democracy and represents the most common form of civic participation. As one vote cannot change the electoral

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outcome, instrumental reasons do not provide a sufficient argument for why individuals vote. Rather, the act of voting is ascribed for normative reasons such as fairness, mutual accountability, and expressive agency (Destri & Burelli, 2025). Thus, voting can arguably be seen as an altruistic act.

Contrary to the "disengagement" theory of aging, voter turnout does not decrease over the life course. Looking across multiple years, older voters typically vote at higher rates than other age groups (Pew Research Center, 2025). In addition, amongst older adults, it is possible that they may not live long enough to benefit directly from the outcomes of the collective vote, especially on issues such as those of climate change (Destri & Burelli, 2025).

Consequently, voting warrants investigation as a unique form of civic engagement. The potential long-term implications of voting on voters (especially older adults) remain relatively understudied. And although there is established research linking individuals' health with voting behavior (Mikko Mattila et al., 2017; Pacheco & Fletcher, 2015), as described below, very few studies have examined potential long-term health implications of voting, and none to our knowledge amongst older adults (Arah, 2008; Ballard et al., 2019; Wray-Lake et al., 2019). Thus, in the current study, we examine how voting in the 2008 presidential election was associated with older adults' mortality risk up to 15 years later.

Unlike other forms of civic engagement that may be costly and require specific skills or resources (e.g., volunteering), voting remains accessible and minimally demanding (Blais & Achen, 2019). With remote voting options expanding in recent decades in the United States, the costs of voting have been further reduced. This may be particularly crucial when examining potential health implications among older adult voters. Still, remote voting involves less physical activity and fewer opportunities for social interaction compared to in-person voting, potentially diminishing some of the associated health benefits. Thus, in the current study, we also assessed whether the potential health benefits to voters differ between these two voting modes.

Civic engagement and health

There is a robust body of literature on the health implications of civic engagement, especially volunteering (Ballard et al., 2019; Jenkinson et al., 2013; Konrath et al., 2012; Okun et al., 2013; Wray-Lake et al., 2019). Studies find that volunteers experience fewer physical limitations, better self-rated health, higher activity levels (Health and Retirement Study; Kim et al., 2020) and lower coronary disease rates (Swedish mid-to-older adults; Sundquist et al., 2006), compared to non-volunteers. Meta-analyses also find that volunteering predicts a lower later mortality risk among older adults (Jenkinson et al., 2013; Okun et al., 2013). A systematic review on civic engagement and mental health in young adults found that the type of civic engagement matters. Costly behaviors like political activism had mixed results, whereas voting and volunteering showed more positive results (Fenn et al., 2024).

Does health predict later voting behaviors?

Using self-reported measures, many cross-sectional studies have found that healthier and happier people are more likely to vote (e.g., Finnish data Mikko Mattila et al., 2017; General Social Survey data: Pacheco & Fletcher, 2015). However, cross-sectional data raise questions about whether good health promotes voting, whether voting promotes good health, or whether there are potential confounds. Longitudinal studies find that individuals' self-reported health in earlier years predicts their likelihood of voting in later years, both in younger adults (e.g., British Cohort Study and National Child Development Study: Gagné et al., 2020; ADD Health Study: Pacheco & Fletcher, 2015; NLSY and PSID data: Ojeda & Pacheco, 2019) and older adults (WLS data: Burden et al., 2017; Engelman et al., 2022). Healthier individuals are thus more likely to report voting in later years, compared to less healthy individuals.

Does voting behavior predict later health outcomes?

Fewer studies have investigated how voting behavior predicts later health outcomes. Only three known longitudinal studies have examined how voting behavior predicts later health outcomes (Arah, 2008; Ballard et al., 2019; Wray-Lake et al., 2019). Unlike the current study, which uses objective data (verified voting records), these were all based on self-reported voting. One study examined the relationship between self-reported civic engagement (including voting behavior) in early young adulthood (ages 18–27) and mental and physical health 5–6 years later (ADD Health Study: Ballard et al., 2019). Young adults who reported voting at one time point had reduced depression and risky health behaviors several years later, even after adjusting for potential confounds. However, there was no relationship between voting and physical health indicators such as metabolic risk (e.g., blood pressure) in this young population.

Similarly, a sequential cohort study found that self-reported voters had better later subjective health outcomes than non-voters, after adjusting for confounds (NCDS British data: Arah, 2008). Finally, a study that tracked teens until their early 30s found that not only did teen mental health predict later self-reported voting in young adulthood (ages 18–27), but voting in young adulthood predicted mental health several years later (ADD Health Study: Wray-Lake et al., 2019). This suggests a potential virtuous cycle between voting and at least mental health.

Is the association between voting and health moderated by resources or political affiliation?

Research indicates that voting behavior differs by resources. Specifically, those with higher financial resources (e.g., education; Nelson, 2023) and who are in better health (Pacheco & Fletcher, 2015) are more likely to vote. Thus, it is possible that

the nature of the civic engagement-mortality risk connection might also vary by resources. As a result, we use moderator analyses to test the hypotheses that voting may be differentially associated with mortality risk for people with different levels of financial resources or with different baseline health.

Using the asset-based theoretical framework for volunteering proposed by Benenson and Stagg (2016), we examine whether financial resources moderate the relationship between voting and mortality, highlighting whether the voluntary act of voting is associated with different outcomes for people with different levels of financial resources. In addition, we test whether political orientation may moderate the association between voting and mortality, in case people with more conservative or more liberal political beliefs are more likely to experience the potential health benefits of voting. This would be particularly important to examine in case there are greater health benefits of voting for a winning presidential candidate.

Why might voting predict better later health?

Since voting is also a voluntary act of civic engagement, mechanisms identified in the volunteering literature may provide insights for voting behaviors. Unlike volunteering, which frequently yields tangible and observable outcomes and yields some direct benefits to volunteers (Handy et al., 2000), there are few, if any, direct tangible benefits for individual voters. Hence, voting may be construed as an altruistic and public-spirited voluntary action by voters, with motives that are clearly not self-oriented (e.g., Fowler, 2006), but normative. This is especially true for older adults, since they may not see themselves as accruing the long-term benefits of the electoral outcome.

Similar to volunteering, voting may provide voters with indirect benefits, including a sense of community and belonging by participating in activities with others who share common goals, which creates a sense of shared purpose and identity (Blais & Achen, 2019). By voting, individuals exercise the rights of symbolic significance, providing intrinsic satisfaction (Jones & Hudson, 2000), social connectedness (Reilly, 2017), social interactions (Campbell, 2013; McClurg, 2003), and ultimately, a sense of belongingness in one's community (Anderson, 2009). These factors (e.g., purpose, social connectedness, and belongingness) predict beneficial health outcomes in their own right (Cohen et al., 2016; Holt-Lunstad et al., 2010), which may help explain why voting may be linked to better health. The mechanisms at play may be like those that explain why volunteering offers numerous benefits to volunteers, particularly among older adults (Okun et al., 2013).

For example, research has indicated that volunteers' motives predict the beneficial impacts of volunteering, particularly on subsequent mortality risk (Konrath et al., 2012). Researchers find that older adult volunteers have a lower mortality risk compared to non-volunteers, but only when their motivations are other-oriented. Voting as a voluntary act may fit within the other-oriented dimension. In addition, a recent study provided evidence of a possible mechanism for decreased mortality risk among volunteers, especially among older adults and retirees (Kim et al., 2025). Compared to non-volunteers, volunteers showed decelerated epigenetic aging across multiple DNA methylation measures, which may account for decreased mortality rates among volunteers. Perhaps a similar mechanism is at play amongst voters.

The current study

We examine the relationship between older adults' objectively verified voting behaviors in the 2008 presidential election and their mortality risk after 5, 10, and 15 years. This is the first known study that does not rely on self-reported behaviors for its dependent or independent variables but instead uses objective measures: the WLS includes verified records of voting behaviors from Catalist and verified records of mortality from the National Death Index (NDI). This reduces potential self-report biases in providing evidence for potential long-term implications associated with voting. Based on previous civic engagement (including voting) research, we expect that voting will be associated with a reduced mortality risk, even when controlling for variables that are known to predict both voting and physical health (Supplementary Table 1—see online supplementary material).

Method

Ethics statement

We conducted a secondary data analysis of a publicly available de-identified data set, with no participant interactions, and thus did not require Institutional Review Board review.

Sample

The Wisconsin Longitudinal Study (WLS) began with 10,317 surveying Wisconsin high school graduates starting in 1957, representing predominantly White, non-Hispanic graduates across the United States. Despite some attrition (mainly due to mortality), the WLS has a higher retention rate than many longitudinal surveys (Herd, 2018), with a 92.5% retention rate on phone or mail surveys by the 2004–2006 wave (https://researchers.wls.wisc.edu). We used covariates from the 2004–2006 wave of the WLS survey, Catalist-verified objective presidential election voting records from 2008, and mortality status data in 2013, 2018, and 2023 (WLS, 2024) when participants were 84 years old on average. Since the data set includes objective measures of voting based on public records through Catalist, it thereby avoids overstating and other problems with self-report (Bernstein et al., 2001). The data set also includes verified mortality data from the NDI.

Of the 10,317 original respondents, 1,742 had died by 2008, leaving 8,575 living respondents. Of those, 867 had missing voting records, leaving 7,708 respondents. Thus, our eligible sample for raw data analyses included 7,708 respondents (46.3% male; 79.1% married in 2004–2006 wave), with reduced sample sizes depending upon which covariates were included in analyses

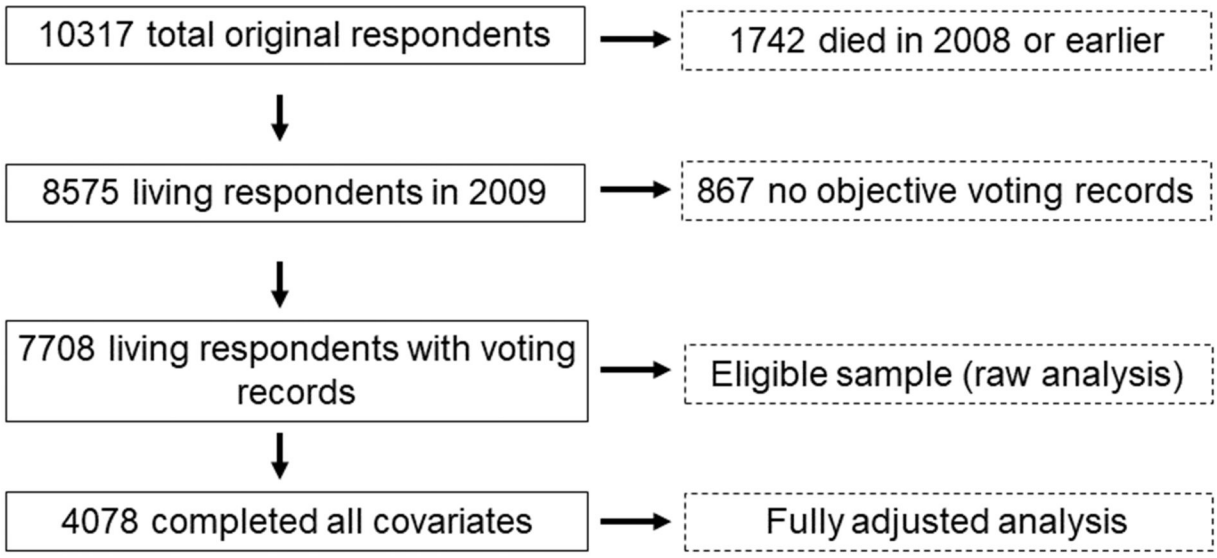

Figure 1 Eligible sample of included respondents.

Table 1 Descriptive statistics for the eligible sample.

Variables	*N*	%	Mean (*SD*)
Predictor variables			
Objective voting in 2008	7,708	88.6	
Self-reported voting in 2008 (assessed 2010–2012 WLS wave)	4,912	91.7	
Outcome variables			
Died in the next 5 years (2013)	7,708	7.9	
Died in the next 10 years (2018)	7,708	19.8	
Died in the next 15 years (2023)	7,708	37.0	
Covariates (most assessed 2004–2006 WLS wave)			
SES covariates			
High school IQ (assessed in high school)	7,708		101.14 (14.76)
Parent SES (assessed in high school)	7,708		16.26 (11.23)
Education (number of years)	6,658		13.73 (2.32)
Log net worth	6,965		4.92 (1.80)
Employment status: Employed	7,046	44.2	
Demographic covariates			
Age in years	7,708		65.14 (0.50)
Gender: Male	7,708	46.3	
Marital status: Married	7,033	79.1	
Political affiliation (1 = extremely liberal, 4 = moderate/middle of the road, 7 = extremely conservative)	5,899		4.51 (1.29)
Civic engagement covariates			
Civic involvement sum	6,118		4.12 (3.16)
Volunteer in past 10 years: Yes	5,051	57.9	
Health covariates			
Health Utilities Index	6,651		0.83 (.20)
Number of functional limitations	6,196		1.78 (2.19)
Ever smoked regularly: Yes	6,178	11.5	
Ever drink alcohol: Yes	5,623	75.2	

Note. SES = socioeconomic status; WLS = Wisconsin Longitudinal Study.

Table 2 Relationship between objective voting behavior and mortality status 5 years later (2013).

Variables	Analysis 1: Raw	Analysis 2: SES	Analysis 3: Demographics	Analysis 4: Civic engagement	Analysis 5: Health	Analysis 6: All controls
A. Objective voting propensity						
Objective voting in 2008 (1 = yes)	−0.72***	−0.75***	−0.65***	−0.74***	−0.61***	−0.60***
With SES covariates						
High school IQ		−0.002				0.002
Parent SES		0.01*				0.01*
Education (number of years)		−0.08**				−0.06
Log net worth		−0.09**				−0.11*
Employment status (1 = employed, 0 = not)		−0.24*				−0.29*
With demographic covariates						
Age			−0.05			−0.08
Gender (1 = male, 0 = female)			0.41***			0.68***
Marital status (1 = married, 0 = not)			−0.25*			−0.22
Political affiliation (1 = extremely liberal, 7 = extremely conservative)			−0.04			−0.03
With civic engagement covariates						
Civic involvement sum				−0.05*		−0.04
Volunteer in past 10 years (1 = yes)				−0.29*		−0.13
With health covariates						
Health Utilities Index					−0.85**	−0.60~
Number of functional limitations					0.13***	0.16***
Ever smoked regularly (1 = yes)					0.57***	0.48**
Ever drink alcohol (1 = yes)					−0.19	−0.17
Sample size	7,708	6,556	5,881	4,419	5,515	4,078
B. Objective voting mode						
Objective remote voting in 2008	−0.74***	−0.71***	−0.68***	−0.67***	−0.62***	−0.55**
Objective in-person voting in 2008 (1 = yes)	−0.72***	−0.76***	−0.64***	−0.78***	−0.61***	−0.62***
With SES covariates						
High school IQ		−0.002				0.002
Parent SES		0.01*				0.01*
Education (number of years)		−0.08**				−0.06
Log net worth		−0.09**				−0.11*
Employment status		−0.24*				−0.29*
With demographic covariates						
Age			−0.05			−0.08
Gender			0.41***			0.68***
Marital status			−0.25*			−0.22
Political affiliation			−0.04			−0.03
With civic engagement covariates						
Civic involvement sum				−0.05*		−0.04
Volunteer in past 10 years				−0.30*		−0.13
With health covariates						
Health Utilities Index					−0.85**	−0.57~
Number of functional limitations					0.13***	0.15***
Ever smoked regularly					0.57***	0.47**
Ever drink alcohol					−0.19	−0.17
Sample size	7,708	6,556	5,881	4,419	5,515	4,078

Note. SES = socioeconomic status.
~$p < .10$, *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

(Tables 2–4), as low as 4,078 for individuals with complete data on all variables (Analysis 6; see Figure 1). Please see Table 1 for descriptive statistics.

Respondents with all covariates available were younger, more likely to be female and married, had higher high school IQ, parental socioeconomic status (SES), education, and net worth,

Table 3 Relationship between objective voting behavior and mortality status 10 years later (2018).

Variables	Analysis 1: Raw	Analysis 2: SES	Analysis 3: Demographics	Analysis 4: Civic engagement	Analysis 5: Health	Analysis 6: All controls
A. Objective voting propensity						
Objective voting in 2008 (1 = yes)	−0.66***	−0.64***	−0.58***	−0.61***	−0.52***	−0.46***
With SES covariates						
High school IQ		−0.003				0.002
Parent SES		0.01~				0.01~
Education (number of years)		−0.05**				−0.04~
Log net worth		−0.10***				−0.10**
Employment status (1 = employed, 0 = not)		−0.19**				−0.14
With demographic covariates						
Age			0.09			0.11
Gender (1 = male, 0 = female)			0.49***			0.73***
Marital status (1 = married, 0 = not)			−0.40***			−0.34***
Political affiliation (1 = extremely liberal, 7 = extremely conservative)			−0.01			0.001
With civic engagement covariates						
Civic involvement sum				0.00		0.002
Volunteer in past 10 years (1 = yes)				−0.38***		−0.18*
With health covariates						
Health Utilities Index					−0.86***	−0.59*
Number of functional limitations					0.11***	0.15***
Ever smoked regularly (1 = yes)					0.79***	0.72***
Ever drink alcohol (1 = yes)					−0.35***	−0.38***
Sample size	7,708	6,556	5,881	4,419	5,515	4,078
B. Objective voting mode						
Objective remote voting in 2008	−0.65***	−0.60***	−0.56***	−0.56***	−0.51***	−0.42**
Objective in-person voting in 2008	−0.67***	−0.65***	−0.59***	−0.63***	−0.52***	−0.49***
With SES covariates						
High school IQ		−0.003				0.002
Parent SES		0.01~				0.01~
Education (number of years)		−0.05**				−0.04~
Log net worth		−0.10***				−0.10**
Employment status		−0.19**				−0.14
With demographic covariates						
Age			0.09			0.11
Gender			0.49***			0.73***
Marital status			−0.40***			−0.34***
Political affiliation			−0.01			0.002
With civic engagement covariates						
Civic involvement sum				0.00		0.002
Volunteer in past 10 years				−0.39***		−0.18*
With health covariates						
Health Utilities Index					−0.86***	−0.59*
Number of functional limitations					0.11***	0.15***
Ever smoked regularly					0.79***	0.72***
Ever drink alcohol					−0.35***	−0.39***
Sample size	7,708	6,556	5,881	4,419	5,515	4,078

Note. SES = socioeconomic status.
~$p < .10$, *$p \leq .05$, **$p \leq .01$ ***$p \leq .001$.

Table 4 Relationship between objective voting behavior and mortality status 15 years later (2023).

Variables	Analysis 1: Raw	Analysis 2: SES	Analysis 3: Demographics	Analysis 4: Civic engagement	Analysis 5: Health	Analysis 6: All controls
A. Objective voting propensity						
Objective voting in 2008 (1 = yes)	−0.55***	−0.53***	−0.45***	−0.49***	−0.45***	−0.34**
With SES covariates						
High school IQ		−0.003				−0.001
Parent SES		0.001				0.01
Education (number of years)		−0.05***				−0.04*
Log net worth		−0.06**				−0.07*
Employment status (1 = employed, 0 = not)		−0.09~				−0.07
With demographic covariates						
Age			0.11~			0.11
Gender (1 = male, 0 = female)			0.53***			0.72***
Marital status (1 = married, 0 = not)			−0.28***			−0.20*
Political affiliation (1 = extremely liberal, 7 = extremely conservative)			0.01			0.03
With civic engagement covariates						
Civic involvement sum				−0.001		0.001
Volunteer in past 10 years (1 = yes)				−0.35***		−0.17*
With health covariates						
Health Utilities Index					−0.72***	−0.41*
Number of functional limitations					0.11***	0.15***
Ever smoked regularly (1 = yes)					0.89***	0.89***
Ever drink alcohol (1 = yes)					−0.36***	−0.37***
Sample size	7,708	6,556	5,881	4,419	5,515	4,078
B. Objective voting mode						
Objective remote voting in 2008	−0.56***	−0.50***	−0.46***	−0.45***	−0.46***	−0.30*
Objective in-person voting in 2008	−0.55***	−0.54***	−0.45***	−0.50***	−0.45***	−0.36**
With SES covariates						
High school IQ		−0.003				−0.001
Parent SES		0.001				0.01
Education (number of years)		−0.05***				−0.04*
Log net worth		−0.06**				−0.07*
Employment status		−0.09~				−0.07
With demographic covariates						
Age			0.11~			0.11
Gender			0.53***			0.72***
Marital status			−0.28***			−0.20*
Political affiliation			0.01			0.03
With civic engagement covariates						
Civic involvement sum				−0.001		0.001
Volunteer in past 10 years				−0.35***		−0.17*
With health covariates						
Health Utilities Index					−0.72***	−0.41*
Number of functional limitations					0.11***	0.15***
Ever smoked regularly					0.89***	0.89***
Ever drink alcohol					−0.35***	−0.37***
Sample size	7,708	6,556	5,881	4,419	5,515	4,078

Note. SES = socioeconomic status.
~$p < .10$, *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

more likely to be civically involved and volunteer, and were in better health, compared to those who were missing covariates (Supplementary Table 1—see online supplementary material). Thus, it makes sense to run separate models to minimize loss of sample size and potential bias within the analyses (see Data analysis strategy).

Outcome variable: Mortality status

Using mortality status data from NDI records, we created three mortality status variables (1 = died, 0 = still alive), indicating respondents who died in the 5 years after 2008 voting (from 2009 to 2013), in the 10 years after voting (from 2009 to 2018), or in the 15 years after voting (from 2009 to 2023; Figure 2).

Predictor variable: Objectively verified voting behavior

The Catalist voting records (1 = voted, 0 = did not vote) included objectively verified data from presidential elections in 2008 (88.6% of eligible respondents voted). We note that voter turnout rates we report here were higher than the 2008 U.S. average of 63.6% (Census.gov). However, older adults (ages 65–74) with at least a high school education voted at a higher rate in 2008 (80.0%; Census.gov), with even higher rates in Wisconsin (+7.6 percentage points; Census.gov). Additionally, WLS respondents were mostly White and 73% were married in the 2010–2012 wave, both of which predicted higher 2008 presidential election voting rates (by 2.5 and 6.3 percentage points, respectively; Census.gov).

The WLS includes high-quality, objectively verified voting behavior, and we report voter turnout rates consistent with other researchers who used this data set (e.g., Engelman et al., 2022). Catalist also recorded whether voting occurred in person or remotely (mail-in, early, or absentee). Thus, for each presidential election year, we also created two variables: voted in-person (1 = yes, 0 = no), and voted remotely (1 = yes, 0 = no), to examine whether the mode of voting mattered.

Control variables

We controlled for variables associated with voting (Smets & Van Ham, 2013) and/or mortality to test the robustness of the associations. Such covariates included in case resources or physical/mental robustness were associated with voting behavior or mortality status. Supplementary Table 2 (see online supplementary material) summarizes the research that justifies the inclusion of the following variables. Unless specified otherwise, all covariates were from the 2004–2006 wave, and included:

- *SES covariates*: High school IQ (Henmon–Nelson test), parent SES (father and mother education, average parental income; assessed in high school), education (number of years), net worth (logged), and employment status (1 = employed, 0 = not).
- *Demographic covariates:* Age, gender (1 = male, 0 = female), marital status (1 = married, 0 = not), and political affiliation (1 = extremely liberal, 4 = moderate/middle of the road, and 7 = extremely conservative).
- *Civic engagement covariates*: Sum of 19 different civic involvement activities (e.g., places of worship, labor unions, veterans' organizations, fraternal lodges, business or civic groups, community centers, nationality-based organizations, sports teams, country clubs, etc.), and whether volunteered in the past 10 years (1 = yes, 0 = no).

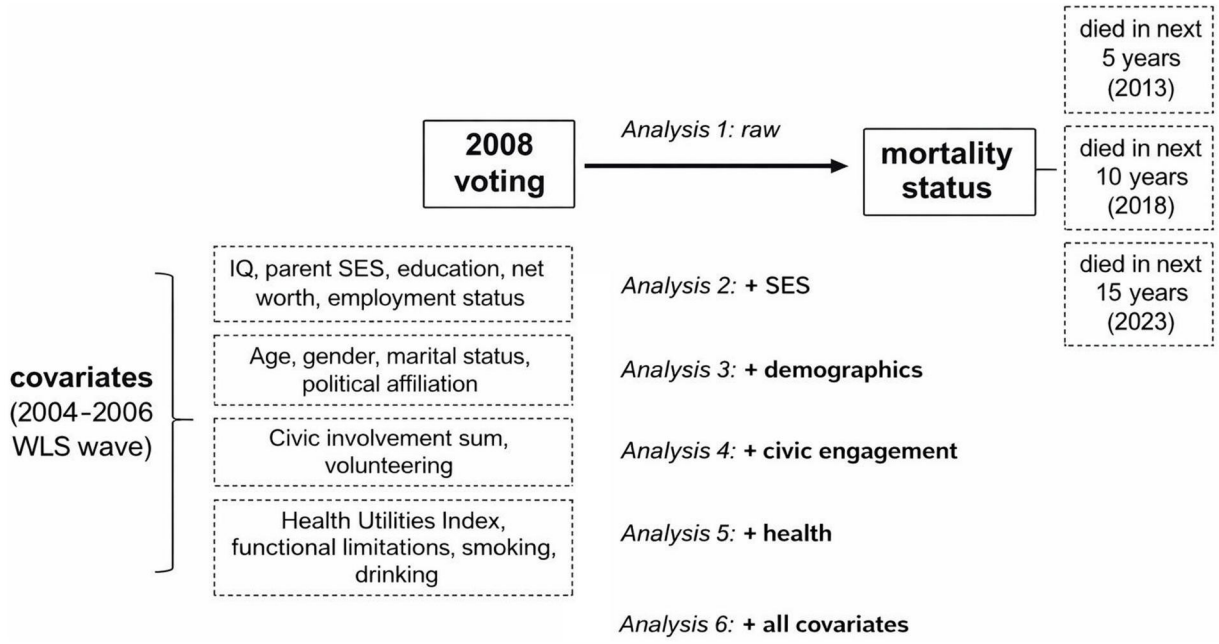

Figure 2 Data analysis diagram.

- *Health covariates:* The Health Utilities Index (HUI) measures several types of health including vision, hearing, speech, ambulation, hand dexterity, emotional well-being, cognitive functioning (memory), and pain frequency. Although it's self-report, it correlates with objective health outcomes (Horsman et al., 2003). The number of functional limitations consists of the sum of 10 limitations in activities such as climbing stairs, carrying objects, standing, sitting, and reaching. We also included smoking history (1 = smoked regularly at some point in life, 0 = did not) and drinking status (1 = drinks alcohol, 0 = does not).

Data analysis strategy

When conducting statistical analyses, we only included individuals who were alive in the year of voting. We separately examined the association between 2008 voting behavior and mortality risk in the next 5 years (until 2013), 10 years (until 2018), and 15 years (until 2023) using six binary logistic regression analyses for each mortality year (Figure 2). We conducted these analyses in groups to maximize the sample size and minimize the risk of bias from listwise deletion.

Beginning with the full eligible sample ($N = 7{,}708$), Analysis 1 examined the raw relationship between 2008 voting behavior and later mortality risk. We then examined the results while controlling for blocks of covariates in separate models to maximize sample size at each step and assess how the relationship between voting and mortality risk changed with different types of covariates. Thus, Analysis 2 controlled for SES variables only ($n = 6{,}556$), Analysis 3 controlled for demographic variables only ($n = 5{,}881$), Analysis 4 controlled for civic engagement variables only ($n = 4{,}419$), Analysis 5 controlled for health variables only ($n = 5{,}515$), and Analysis 6 consisted of the fully adjusted model, with all covariates ($n = 4{,}078$).

We then examined the potential moderating role of financial resources, health resources, and political affiliation in separate regression models. We first standardized all variables: financial resources (education, log net worth), health resources (HUI, number of functional limitations), and political affiliation. We then averaged the standardized financial resources and health resources variables. Next, we multiplied 2008 voting behavior by financial resources, health resources, and political affiliation to create interaction terms.

For each moderator analysis, Block 1 included the main effects of voting and one moderator, Block 2 included their interaction, and Block 3 included all covariates as described above (excluding relevant moderator variables). Data were analyzed using SPSS Statistics 31.

Results

Objective voting behavior and mortality status 5 years later

Voting propensity

As shown in Table 2A, the raw relationship between voting and mortality risk in 2013 was significant, such that older adults who voted in the 2008 presidential election had a 51.5% reduced mortality risk after 5 years, $\beta = -0.72$, $p < .001$, OR = 0.49 [0.39, 0.60]. This was robust to all covariate blocks (SES, demographics, civic engagement, health), $ps < .001$. In the fully adjusted model, 2008 voting was associated with a 45% lower mortality risk after 5 years, $\beta = -0.60$, $p < .001$, OR = 0.55 [0.39, 0.78].

Voting mode

Both voting modes (in-person, remote) were associated with significant reductions in mortality risk in the raw relationship (Table 2B). Specifically, voting remotely in the 2008 presidential election predicted a 52.3% reduced mortality risk, $\beta = -0.74$, $p < .001$, OR = 0.48 [0.37, 0.61], and voting in-person predicted a 51.2% reduced risk, $\beta = -0.72$, $p < .001$, OR = 0.49 [0.39, 0.61] after 5 years. These were robust to all covariate blocks (SES, demographics, civic engagement, health), $ps < .001$, including the fully adjusted model (remote: $\beta = -0.55$, $p = .007$, OR = 0.58 [0.39, 0.86]; in person: $\beta = -0.62$, $p < .001$, OR = 0.54 [0.37, 0.78]). Specifically, remote voting was associated with a 42% reduced mortality risk, and in-person voting was associated with a 46% reduced mortality risk, after 5 years.

Objective voting behavior and mortality status 10 years later

Voting propensity

As shown in Table 3A, in the raw relationship, older adults who voted in the 2008 presidential election had a 48.5% reduced mortality risk after 10 years, by 2018, $\beta = -0.66$, $p < .001$, OR = 0.52 [0.44, 0.60]. This was robust to all analysis specifications, including the fully adjusted model, $\beta = -0.46$, $p < .001$, OR = 0.63 [0.49, 0.82], in which voting was associated with a 37.1% reduced mortality risk after 10 years.

Voting mode

Both voting modes (in-person, remote) were associated with significant reductions in mortality risk in the raw relationship 10 years later (Table 3B). Specifically, voting remotely in the 2008 presidential election predicted a 47.7% reduced mortality risk, $\beta = -0.65$, $p < .001$, OR = 0.52 [0.44, 0.63], and voting in-person predicted a 48.8% reduced risk, $\beta = -0.67$, $p < .001$, OR = 0.51 [0.44, 0.60], after 10 years.

Remote voting was robust to all analysis specifications, with a 34% reduced mortality risk after 10 years in the fully adjusted model, $\beta = -0.42$, $p = .005$, OR = 0.66 [0.49, 0.88]. In-person voting was also robust to all analysis specifications, with a 38.5% reduced mortality risk after 10 years in the fully adjusted model, $\beta = -0.49$, $p < .001$, OR = 0.62 [0.47, 0.80].

Objective voting behavior and mortality status 15 years later

Voting propensity

As shown in Table 4A, in the raw relationship, older adults who voted in the 2008 presidential election had a 42.5% reduction in mortality risk after 15 years, by 2023, $\beta = -0.55$, $p < .001$, OR = 0.58 [0.50, 0.66]. This was robust across all analysis

specifications, including the fully adjusted model, $\beta = -0.34$, $p = .004$, OR = 0.71 [0.57, 0.90], in which voting was associated with a 28.8% reduced mortality risk after 15 years.

Voting mode

Both voting modes (in-person, remote) were associated with significant reductions in mortality risk in the raw relationship (Table 4B). Specifically, voting remotely in the 2008 presidential election predicted a 43% reduced mortality risk, $\beta = -0.56$, $p < .001$, OR = 0.57 [0.49, 0.67], and voting in-person predicted a 42.3% reduced risk, $\beta = -0.55$, $p < .001$, OR = 0.58 [0.50, 0.67] after 15 years.

Both voting modes were also robust across all analysis specifications, including the fully adjusted model (remote: $\beta = -0.30$, $p = .021$, OR = 0.74 [0.57, 0.96]; in person: $\beta = -0.36$, $p = .003$, OR = 0.70 [0.55, 0.89]). Specifically, after adjusting for all covariates, remote voting was associated with a 26% reduced mortality risk, and in-person voting was associated with a 30% reduced mortality risk, after 15 years.

Testing potential moderators

We next examined whether the relationship between objective voting behavior and mortality risk is different for people with different levels of financial resources, health resources, or different political affiliations. As shown in Table 5, although financial resources predicted later mortality risk, there was no significant interaction between financial resources and 2008 voting at any time point.

Health also predicted later mortality risk, and the interaction between health and 2008 voting was only significant in 2023, 15 years later, $\beta = 0.33$, $p = .018$ (fully adjusted). This may be because health concerns may increase as people age. We split the file by 2004 health resources, and found that in fully adjusted models, only those who started with poorer health experienced a lower mortality risk in 2023, $\beta = -0.54$, $p < .001$, OR = 0.58 [0.43, 0.79]. For those who started in better health, voting was not associated with 2023 mortality risk, presumably because their risk was already lower, $\beta = -0.11$, $p = 0.57$, OR = 0.90 [0.62, 1.30]. Neither political affiliation in itself nor the interaction between voting and political affiliation was a significant predictor of mortality risk.

Self-reported voting behavior and later mortality status

As in prior research (Burden et al., 2017), we also tested the relationship between 2008 self-reported voting behavior and later mortality status as an alternative model specification. We found that in fully adjusted models, self-reported 2008 presidential voting was unrelated to mortality risk 5 and 15 years later, $ps > .05$ (Supplementary Tables 3 and 5—see online supplementary material). Yet, in fully adjusted models (Supplementary Table 4—see online supplementary material), self-reported 2008 voting was associated with a 32% reduced mortality risk 10 years later, $\beta = -0.39$, $p = .019$, OR = 0.68 [0.49, 0.94]. However, self-reported 2008 voting was assessed during the 2010–2012 WLS wave, which introduces potential memory and reporting errors, as well as the typical potential for social desirability and over-reporting in self-report responses. Although objective voting behavior is a better measure for these reasons, we report these results in the Supplementary Material for full transparency.

Robustness check: Survival analyses for the 2008 presidential election

As a first robustness check, we used Cox proportional hazards survival analysis to examine whether voting in the 2008 presidential elections was associated with mortality risk until 2023, the last full year of available mortality data. Time-to-mortality was coded in years from baseline (2009 = 1 year) to the year of mortality (up to 2023), with those who were still alive censored at 2023. We ran raw and fully adjusted models.

In the raw survival model, voting in the 2008 presidential election was associated with a 36% lower mortality risk over the next 15 years, $\beta = -0.45$, $p < .001$, HR = 0.64 [0.58, 0.71]. In the fully adjusted survival model, 2008 voting was associated with a 26% lower mortality risk over the next 15 years, $\beta = -0.30$, $p < .001$, HR = 0.74 [0.63, 0.88]. See Figure 3 for the unadjusted Kaplan–Meier survival curves.

Robustness checks: Survival analyses for the 2004 and 2012 presidential elections

As further robustness checks, we examined whether voting in 2004 and 2012 was associated with mortality risk until 2023, using Cox proportional hazards survival analysis. Time-to-mortality was coded in years from baseline (2004 = 1 year; 2012 = 1 year) to the year of mortality (up to 2023), with those who were still alive censored in 2023. We ran raw and fully adjusted models.

In the raw survival models, voting in 2004 ($n = 7{,}941$) was associated with a 14% lower mortality risk over the next 19 years, $\beta = -0.15$, $p = .002$, HR = 0.86 [0.78, 0.94], and voting in 2012 ($n = 7{,}244$) was associated with a 40% lower mortality risk over the next 11 years, $\beta = -0.51$, $p < .001$, HR = 0.60 [0.54, 0.67].

In the 2004 fully adjusted survival model ($n = 4{,}192$), voting was no longer associated with mortality risk until 2023, $\beta = -0.04$, $p = .57$, HR = 0.96 [0.83, 1.11], which suggests that the initial relationship may be explained by covariates. In the 2012 fully adjusted survival model ($n = 3{,}865$), voting was associated with a 32% lower mortality risk until 2023, $\beta = -0.38$, $p < .001$, HR = 0.68 [0.58, 0.81], which means it is robust to covariates. See Supplementary Figure 1 (see online supplementary material) (2004) and Supplementary Figure 2 (see online supplementary material) (2012) for the unadjusted Kaplan–Meier survival curves.

Discussion

Using a longitudinal sample of American Midwestern older adults, voting in the 2008 presidential election was associated with a 45% lower mortality risk 5 years later, a 37% lower risk 10 years later, and a 29% lower risk 15 years later. This mortality benefit existed regardless of whether individuals voted in person or remotely. Moderator analyses further revealed that this mortality benefit was not moderated by individuals' financial

Table 5 Moderator analyses for objective voting propensity and mortality risk.

Variables	Block 1: Main effects (voting, moderator)	Block 2: Interaction between voting and moderator	Block 3: With all covariates
Financial resources			
Mortality status 5 years later			
Objective voting in 2008	−0.75***	−0.72***	−0.58**
Financial resources	−0.35***	−0.59*	0.50~
Interaction		−0.29	−0.20
Mortality status 10 years later			
Objective voting in 2008	−0.63***	−0.62***	−0.47***
Financial resources	−0.32***	−0.41*	−0.26
Interaction		0.10	−0.01
Mortality status 15 years later			
Objective voting in 2008	−0.48***	−0.49***	−0.35**
Financial resources	−0.28***	−0.50**	−0.34~
Interaction		0.23	0.14
Health resources			
Mortality status 5 years later			
Objective voting in 2008	−0.71***	−0.70***	−0.59**
Health resources	−0.48***	−0.48***	−0.47**
Interaction		0.01	0.04
Mortality status 10 years later			
Objective voting in 2008	−0.60***	−0.57***	−0.43**
Health resources	−0.45***	−0.55***	−0.56***
Interaction		0.11	0.15
Mortality status 15 years later			
Objective voting in 2008	−0.46***	−0.44***	−0.32**
Health resources	−0.41***	−0.66***	−0.71***
Interaction		0.28*	0.33*
Political affiliation			
Mortality status 5 years later			
Objective voting in 2008	−0.81***	−0.79***	−0.58**
Political affiliation	−0.02	−0.22	−0.26
Interaction		0.23	0.26
Mortality status 10 years later			
Objective voting in 2008	−0.68***	−0.68***	−0.46***
Political affiliation	0.02	−0.04	−0.04
Interaction		0.06	0.05
Mortality status 15 years later			
Objective voting in 2008	−0.53***	−0.53***	−0.34**
Political affiliation	0.06~	−0.04	−0.05
Interaction		0.11	0.09

Note. We conducted the full analysis (Analysis 6) only for moderator tests.
~$p < .10$, *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

resources or political affiliation. Older adults who voted, regardless of their wealth or political affiliation, experienced a significantly reduced mortality risk. However, those in poorer health benefited more from voting 15 years later. Survival analyses revealed that the effect of voting became stronger in more recent (2008, 2012) elections, compared to earlier ones (2004). We cannot determine whether the potential health effects of voting increase as respondents age (as in volunteering: Hui et al., 2020), or whether something specific to the 2004 election attenuated the effect. Yet, overall, our research contributes to the idea of a virtuous cycle between voting and health: prior research shows that healthier people are more likely to vote, and we find that voting may also have implications for better health.

Why might voting predict a lower mortality risk among older adults? Although our study did not determine mechanisms, our literature review identified several potential explanations that should be explored in future research. For example, consider one commonly cited explanation for voting: doing one's civic duty and the resulting utility voters gain from the voting act (Jones & Hudson, 2000). Is there a corresponding biological response to the act of voting that also promotes well-being? This

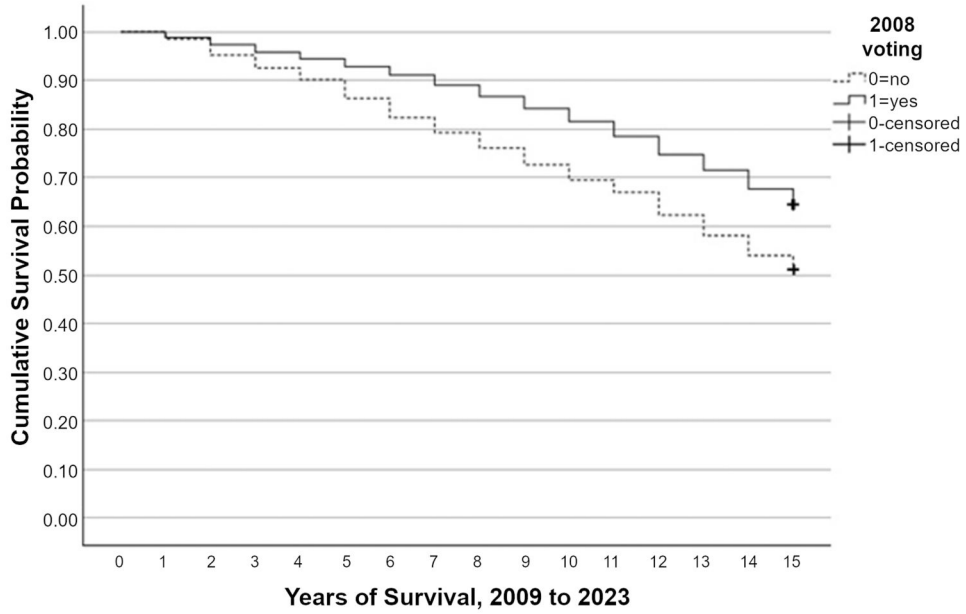

Figure 3 Unadjusted Kaplan–Meier survival curves for 2008 voters and nonvoters.

is not a far-fetched idea; we know that charitable giving and volunteering affect neurochemistry, for example, increasing neural reward centers and reducing stress hormones, which in turn benefits health (Bekkers et al., 2014; Harbaugh et al., 2007) and decelerates epigenetic aging, which may account for decreased mortality rates among volunteers (Kim et al., 2025). Since voting is a voluntary act that serves the public good with an altruistic motive, this motivation may play a role in mortality risk as with volunteering (Konrath et al., 2012) and may similarly influence neurochemistry (Murray, 2017).

Or perhaps voting, which is a social act, provides a sense of belonging and connection, as other social activities do, thus protecting our health (Holt-Lunstad et al., 2010). Although we can only speculate about potential mechanisms, we controlled for a variety of potential confounds, and the results remained robust to them. Thus, our study provides intriguing evidence of the link between objectively verified voting behaviors and lowered mortality risk, warranting further investigation.

From the earliest investigation into voting behavior by different disciplines (e.g., starting with rational choice theory in the late 1950s; Downs, 1957), there has been much debate among scholars from various disciplines about theoretical explanations for why people vote, with no single unambiguous explanation. Clearly, citizens do not cast their votes with the expectation of their single vote having an outsized influence on the overall presidential election results. Yet, voting is an accepted and normative behavior even in the United States, which has a largely individualistic culture. Voting is a mass-scale act of cooperation in which the group benefits as more individuals participate. Thus, social norms have also played a role in voting behavior by emphasizing the importance of being seen when voting (Dubner & Levitt, 2005). However, in our analysis, remote voters still experienced some reduction in mortality risk, suggesting that something inherent in the act of voting itself warrants further investigation. Perhaps voting is linked to a sense of purpose derived from fulfilling one's duty and helping the collective group. And if a single voting act connects numerous individuals through social ties (Campbell, 2013), then such connections may also lead to favorable health outcomes, as with other social connections, through neurophysiological processes (Eisenberger & Cole, 2012). Future research should explore the neurophysiological, social, and psychological processes underlying voting behaviors and their potential influence on later health outcomes.

Limitations and future research

We used a large data set with objectively verified voting and mortality data, finding, for the first time, that voting behavior predicts a later reduced mortality risk, thereby extending previous research based on self-report measures of voting and health.

Yet we recognize that this study has limitations, including limited generalizability as it relies on a sample of predominantly older White adults from Wisconsin. Yet the sample's homogeneity reduces the risk of error variance arising from regional and racial differences, thereby enhancing confidence in the internal validity of the models (Burden et al., 2017). We also note that the models with all covariates were biased toward respondents who were younger, women, and married, and those with more resources (financial and health) and civic engagement. Yet the effects were not moderated by financial resources, and health only moderated the 2023 mortality effects. Regardless, we recommend that future researchers examine whether voting predicts mortality risk in nationally representative samples of Americans and whether voting may be more beneficial for some groups compared to others.

Future researchers should also examine whether the health benefits of voting still exist in national contexts where voting is mandatory (e.g., Australia, Belgium, the Netherlands), compared with those where voting is voluntary. Some research suggests

that volunteering, when freely chosen, is associated with larger increases in later well-being compared to required volunteering (e.g., by parents, school, or court-ordered; Kim & Morgül, 2017). Thus, it is possible that voting may also be associated with fewer health benefits when compulsory.

Furthermore, different cultures or political contexts, such as collectivist cultures where voting behaviors may be more influenced by family, work, and peer pressure, may show different results than individualist cultures, such as the United States. In other cultures, results may also differ if voting is driven by patronage or undertaken in exchange for protection or favors. If voting is not voluntary but otherwise influenced by strong cultural norms, institutional rules, and historical contexts, it raises the question of whether similar benefits would accrue.

Moreover, future researchers may wish to investigate age-related or election-specific contextual effects and explore how developmental timing or political context could play a role in the relationship between civic engagement and health outcomes.

Another limitation is that the data we used are longitudinal, making it difficult to determine firm causal relationships. Although the longitudinal design strengthens causal inference by establishing temporal ordering, the observational nature of the data does limit the ability to draw well-founded causal conclusions. Confounding factors may overstate the associations found. For example, is there a genetic predisposition for both civic engagement (Fowler & Dawes, 2008) and longevity? Although randomized trials are not feasible or ethical, there are many factors that may drive voter turnout and mortality risk that are not captured in the data available. There are exciting potential directions for further research on this topic, such as examining the impact of extant get-out-the-vote initiatives.

Conclusion

Extensive research has established a strong connection between civic engagement and health outcomes. This cohort study examined a specific act of civic engagement, namely voting, revealing a significantly reduced mortality risk between 5 and 15 years later. Intriguingly, our findings indicate that both in-person and remote voting are associated with decreased mortality risk, suggesting that voting itself is more important than the method of voting. The potential long-lasting benefits of voting as individuals age make this information pertinent for promoting other public initiatives aimed at promoting voter turnout, a recommendation that is aligned with the American Medical Association (2022).

Supplementary material

Supplementary material is available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

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Conflicts of interest

The authors declare there is no conflict of interest.

Data availability

The Wisconsin Longitudinal Study (WLS) is publicly available, and data are available on the WLS website: https://researchers.wls.wisc.edu. Hypotheses were not preregistered.

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