



# The relationship between health and political ideology begins in childhood

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## ABSTRACT

We investigate whether childhood health status influences adult political ideology and whether health at subsequent life-stages, adolescent personality traits, or adolescent academic aptitude mediate this relationship. Using a national longitudinal cohort sample, we found that better health among children under age 10 was positively related to conservative political ideology among adults over age 64. Children with excellent health compared to very poor health were 16 percentage points *more* likely to report having a *conservative* political ideology in adulthood. Children with excellent health compared to very poor health were 13 percentage points *less* likely to report having a *liberal* political ideology in adulthood. Adults who had excellent health as children were 30 percentage points more likely to report conservative ideology than liberal ideology. However, the difference in ideological position for adults who had very poor childhood health was negligible. That is, the health and ideology relationship is being driven by those who were healthier early in life, after controlling for family income and material wealth. No evidence was found for mediation by adolescent health, adult health, adolescent personality traits, or adolescent academic aptitude. The magnitude of the coefficient for childhood health was substantively and statistically equivalent across race and sex. We discuss the possibility that, instead of being mediated, childhood health may actually be a mediator bridging social, environmental, and policy contexts with political ideology. We also discuss the potential of social policy to influence health, which influences ideology (and voting participation), which eventually circles back to influence social policy. It is important to understand the nexus of political life and population health since disparities in voice and power can exacerbate health disparities.

## 1. Introduction

Life-course studies have advanced our understanding of childhood factors with long reaching influence on a diverse array of adult outcomes. Poor childhood health, for example, compounds over time contributing to comparatively worse health status in adulthood, independent of childhood family socioeconomic status, adult socioeconomic status, and health behaviors (Goosby, Cheadle, & McDade, 2016; Haas, 2007). Childhood health also predicts a variety of non-health, adult outcomes including education, income, employment, welfare receipt, relationships, and parenthood (Goodman, Joyce, & Smith, 2011; Haas, Glymour, & Berkman, 2011; Langeveld et al., 2003). Indeed, the formation of our adolescent and adult identities is, in part, related to our childhood health (Madan-Swain et al., 2000; Steinberg, 2020). In this study, we examine childhood health as a determinant of adult political

ideology.

Political ideology is a shared interpretation of the social world which generates a corresponding vision of how the world should be and falls along a continuum from conservative to liberal (Graham, Haidt, & Nosek, 2009; Jost, Federico, & Napier, 2009; Jost, Glaser, Kruglanski, & Sulloway, 2003; Schwartz et al., 2014). Political ideology is also a predictor of health, health behaviors, and longevity (Kannan, Brown, Kunitz, & Chapman, 2019; Kannan & Veazie, 2018; Subramanian, Huijts, & Perkins, 2009). However, in these studies, ideology and health were measured entirely in adulthood. Political attitudes become increasingly crystallized with age and tend demonstrate stability over several decades (Sears & Brown, 2013; Sears & Funk, 1999). By adulthood, political ideology is already developed. We posit that health experienced early in life may actually precede and influence ideological development well before adulthood.

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While political ideology is partly heritable and partly transmitted by family, decades of research indicate that the impressionable formative years for political socialization begin early in life during childhood (Alwin, Cohen, & Newcomb, 1991; Neundorf & Smets, 2017; Sears & Brown, 2013). That is, adult political ideology is particularly influenced by personal circumstances and experiences that occur in childhood. For example, one-month old children who receive egalitarian parenting are more likely to develop liberal political ideology at 18-years. Whereas, authoritarian parenting predicts conservative political ideology at 18- and 26-years (Fraleay, Griffin, Belsky, & Roisman, 2012; Wegemer & Vandell, 2020). Having more childhood friends is related to conservative adult ideology (De Neve, 2015). And, a childhood social context that provides variety in experience and perspective is related to liberal political ideology in adulthood (Settle, Dawes, Christakis, & Fowler, 2010).

Hardship during childhood (e.g., stress; verbal, physical, and sexual trauma; feeling unsafe in school; and feeling unsafe in one's neighborhood) contributes to liberal political ideology in later years (De Neve, 2015; Ojeda, 2018; Thornhill & Fincher, 2007). Poor childhood health is a hardship that delays the fulfillment of culturally expected, age-specific, developmental milestones in personal autonomy, psychosexual development, and social development. Achievement of these milestones is necessary for social adjustment throughout the life-course and failure can contribute to being perceived as "othered" (Stam, Hartman, Deurloo, Groothoff, & Grootenhuys, 2006; Steinberg, 2020). As a hardship, poor childhood health could engender a liberal ideology in adulthood.

### 1.1. Life-course approach

A life-course approach emphasizes time and timing. With a life-course perspective, researchers study the long-term influence of an exposure that occurs relatively early in life on an outcome at subsequent life-stages (Kuh, Ben-Shlomo, Lynch, Hallqvist, & Power, 2003). Life-course models consider the temporal ordering of exposures, along with mediators. While political socialization begins early in life, some revision occurs throughout the life-course. Childhood health could be an early life catalyst for ideological development. Or, since childhood health contributes to future health status and personal characteristics, it could sustain ideological revision by these later-life attributes. In this study, we examine the link between childhood health and health at subsequent life-stages as well as the link between childhood health and adolescent characteristics as potential mediating paths to adult political ideology.

#### 1.1.1. Paths through adolescent and adult health

Childhood health has a large positive relationship to health at subsequent life-stages (Goosby et al., 2016; Haas, 2007). In a *chain of risk* life-course model childhood health contributes to adolescent health which in turn contributes to adult health — and, it is adult health alone that determines concurrent adult ideology. That is, the contribution of childhood health to adult ideology functions entirely through adolescent and, ultimately, adult health. Adult health's influence on adult ideology, however, may be conditioned on childhood health status. That is, the lifelong imprint of health in childhood could moderate the mediating effect of adult health status. In an *accumulation* life-course model, each life-stage independently contributes to adult ideology, providing a cumulative impact. In a *sensitive period* life-course model, health at a single life-stage, singularly, contributes to variation in adult ideology. Since the impressionable formative years for political socialization begin early in life, and childhood health has an enduring effect on social identity (Madan-Swain et al., 2000; Steinberg, 2020), childhood may be a sensitive period that entirely accounts for the influence health has on adult ideology.

#### 1.1.2. Paths through adolescent personality traits and academic aptitude

People are drawn to ideologies that resonate with their own

psychological needs, values, and interests (Graham et al., 2009; Jost et al., 2003, 2009; Schwartz et al., 2014). The appeal of liberal or conservative ideology is, in part, motivated social cognition (Jost & Amodio, 2012; Jost et al., 2003). For example, high need for cognition (the tendency to engage in and enjoy thinking) and low need for cognitive closure (desire to quickly come to a conclusion, rather than continuing to learn new information) are required for academic achievement and are related to liberal political ideology (Deppe et al., 2015; Jost et al., 2003; Sargent, 2004). Since childhood health promotes academic aptitude (Spernak, Schottenbauer, Ramey, & Ramey, 2006), healthy children may demonstrate liberal ideology in adulthood. We test whether or not adolescent academic aptitude mediates the relationship between childhood health and adult ideology.

Theoretically and empirically, liberal and conservative ideology are associated with personality traits (Carney, Jost, Gosling, & Potter, 2008; Jost et al., 2003; Jost, Nosek, & Gosling, 2008). And, personality is relatively stable from adolescence to adulthood (Roberts, Caspi, & Moffitt, 2001). We test whether or not adolescent personality traits mediate the relationship between childhood health and adult ideology. The personality traits of Vigor, Sociability, Maturity, Impulsivity, and Tidiness are examined.

Healthy children are more likely than unhealthy children to exhibit Vigor (high-energy) in adolescence (Eddy & Cruz, 2007). And, Vigor aligns with conservatives' higher propensity toward happiness (Taylor, Funk, & Craighill, 2006), life-satisfaction (Schlenker, Chambers, & Le, 2012), and meaning and purpose in life (Newman, Schwarz, Graham, & Stone, 2019). Thus, through Vigor, healthy children may demonstrate conservative ideology in adulthood.

Having had more energy and, thus, the capacity to work hard and be productive, adolescents who were healthy as children may also exhibit higher levels of Maturity (hard-working, responsible, productive, dependable, and goal-oriented). Maturity aligns with conservatives' strong work ethic, anti-leisure, and achievement striving (Furnham, 1990; Jost et al., 2003; McHoskey, 1994; Mudrack, 1997) — and, endorsement of sentiments like, "The worst part about being sick is that work does not get done" (Furnham, 1990). Thus, through Maturity, healthy children may demonstrate conservative ideology in adulthood.

Children with poor health report more social anxiety, experience more social adjustment problems, and have fewer friends than their healthy peers (Cadman, Boyle, Szatmari, & Offord, 1987; Vannatta, Zeller, Noll, & Koontz, 1998). Thus, poor childhood health is less likely to be associated with Sociability (outgoingness, the tendency to enjoy being with people, and desire for social interaction). Sociability aligns with conservatives' strong motivation toward relational ties (Graham et al., 2009; Jost, Ledgerwood, & Hardin, 2008). Thus, through Sociability, healthy children may demonstrate conservative ideology in adulthood.

Risk-taking (particularly "trying out" risky behavior) is a major developmental cue in the passage from youth to adulthood. Children with poor health display less risk behavior because they are unable to, they are under greater adult supervision, and/or because they are aware of their greater vulnerability (Stam et al., 2006; Steinberg, 2020). Thus, poor childhood health is less likely to be associated with Impulsivity (recklessness, quick decisions, and quick action). Impulsivity aligns with liberals' risk-taking, sensation-seeking, and novelty-seeking (Carney et al., 2008; Jost et al., 2003). Thus, through Impulsivity, healthy children may demonstrate liberal ideology in adulthood.

Finally, unhealthy children may have had more chaos and disruption in their lives compared to healthy children. Healthy children also likely had the energy to invest in cleaning and organizing, whereas unhealthy children may have come to accept and even become accustomed to a degree of disorderliness. Thus, healthy children may be more inclined toward Tidiness (neat, clean, orderly, and organized). Tidiness aligns with the characterization of conservatives as clean, organized, and orderly (Carney et al., 2008; Schwartz et al., 2014), thus, through the tidiness personality trait, healthy children may demonstrate

conservative ideology in adulthood.

Childhood health likely begins to influence personality traits and academic aptitude in childhood itself. Personality is relatively stable from childhood to adolescence to adulthood (De Fruyt et al., 2006; Roberts et al., 2001). And, studies show that personality in nursery school children is related to adult political ideology (Block & Block, 2006). Since childhood is the impressionable formative years for political socialization, these associations are likely forming early and persisting through time.

### 1.2. The present study

Previous studies found that US adolescents (13- to 18-year-olds) with excellent compared to poor health were 4 percentage points more likely to identify with the Republican Party in the US 8-years later in young adulthood (Pacheco & Fletcher, 2015). We contribute to this burgeoning literature in four ways. First, we measure health in childhood when political socialization is most influential (Sears & Brown, 2013; Sears & Funk, 1999). Second, we examine whether the relationship endures over the life-course into older adulthood. We use a longitudinal cohort design extending previous analyses to a trajectory of roughly 60 years. Third, we examine life-course paths mediated by health, personality traits, and academics. Finally, while the previous studies examined the association of health with political party, we focus on political ideology. Ideology structures people's political belief systems (Ellis & Stimson, 2009), has been shown to explain a substantial portion (85%) of the statistical variance in self-reported voting behavior (Jost, 2006), is increasingly associated with electoral behavior independent of party identification (Baker, Perry, & Whitehead, 2020), and more meaningfully and significantly predicts stances on policy issues (Robinson & Fleishman, 1988). Ideology also informs a variety of aspects of people's daily lives and preferences (Carney et al., 2008; Jost, Nosek, & Gosling, 2008).

## 2. Methods

### 2.1. Sample

We use data from the longitudinal cohort study, Project Talent. The first Project Talent survey was conducted in 1960 (PT60) with a stratified random probability sample of 5% of all US high school students, grades 9–12 ( $n = 377,016$ ). PT60 measured American high school students' academic knowledge, background information, and personal characteristics using a battery of tests administered over school two-days. Follow-up studies were conducted in the 1960s, 1970s, and 2010s. This study utilizes the 2012 follow-up survey (PTPS12) ( $n = 1952$ ). After a 10% random subsample of the original PT60 students was generated, PTPS12 participants were then randomly selected from that subsample. And, a 78% response rate was obtained from the mail survey. In 2012, PTPS12 participants were ages 64–73.

### 2.2. Outcome

PTPS12 contained a seven-category political ideology item: "We hear a lot of talk these days about liberals and conservatives. Where would you place yourself on this scale?" (1 = Extremely Liberal, 2 = Liberal, 3 = Slightly Liberal, 4 = Moderate/Middle of the Road, 5 = Slightly Conservative, 6 = Conservative, 7 = Extremely Conservative). This measure of ideology has been widely used by political scientists and major US national surveys to capture an individual's political belief system.

### 2.3. Exposure

The exposure of interest is childhood health. PT60 used a precursor of the SF-1 to retrospectively measure childhood health: "Which one of the following best describes your usual health before you were ten years

old?" (Responses: 6 = Excellent, 5 = Very Good, 4 = Good, 3 = Average, 2 = Poor, 1 = Very Poor). Although retrospective, prior work finds such self-rated health status reports reliable, even when taken at far later points in the lifespan (Haas, 2007). Rationale for using this single item self-rated health measure is its strong association with mortality (independent of functional status, depression, and co-morbidities) and because of its high correlation with medically determined health conditions.

### 2.4. Covariates

PT60 covariates include age, race, sex, and a standardized family socio-economic composite index which included: total family income; the value of the students' home if owned by their family; ownership of high-value possessions (automatic clothes washer/dryer, telephone, electric dishwasher, television, electric or gas refrigerator, radio, vacuum cleaner, phonograph, freezer, typewriter, student's own room, and student's own study desk); highest education-level of mother; highest education-level of father; occupational status of father; and, the number of books in the home. PTPS12 covariates include income-level, highest education-level attained, retirement status, and living with a significant other.

### 2.5. Mediators

#### 2.5.1. Adolescent and adult health status

Adolescent health status was collected in the PT60: "Which one of the following best describes your usual health in the last three years?" (6 = Excellent, 5 = Very Good, 4 = Good, 3 = Average, 2 = Poor, 1 = Very Poor). Adult health was collected with the SF-1 in the PTPS12: "In general, would you say your health is excellent, very good, good, fair, or poor?" (5 = Excellent, 4 = Very Good, 3 = Good, 2 = Fair, 1 = Poor).

#### 2.5.2. Adolescent personality traits

The PT60 Project Talent Personality Inventory is reflective of the contemporary leading personality inventories of the time. The scales showed good construct and predictive validity; very high test-retest reliability: Vigor (0.91), Sociability (0.92), Impulsivity (0.79), Maturity (0.89), and Tidiness (0.93); and good internal consistency reliability (with the exception of impulsivity), Cronbach  $\alpha$ : Vigor (0.89), Sociability (0.84), Impulsivity (0.67), Maturity (0.93), and Tidiness (0.88) (Pozzebon et al., 2013). The scales differ in number of items: Vigor (7), Sociability (12), Impulsivity (9), Maturity (24), and Tidiness (11). Scores reflect how many scale items describe the participant extremely or quite well and were standardized to a mean of 0 and standard deviation of 1.

#### 2.5.3. Adolescent academic aptitude

PT60 included tests of vocabulary, English language mastery, reading comprehension, logical reasoning, creative problem solving, math concepts, math reasoning, elementary algebra, fractions, percents, basic geometry, and square roots. Combined, these elements comprised PT60's general academic aptitude composite with 829 total possible points. We standardized this score. These academic tests were developed using past research and experience in test construction. After detailing test specifications, items were constructed and piloted in a group of schools. Statistical analysis of the pilot test items led to decisions regarding which items to maintain and how to improve items if necessary (for more information on sources and processes see (Flanagan, 1962)).

### 2.6. Analysis

Key variables are summarized. Childhood, adolescent, and adult health were first estimated in separate models using multivariate linear regression that included all covariates, but without any mediators, to establish baseline relationships with adult political ideology. Next, we

fit a standard linear path model from childhood health to adult political ideology through adolescent and adult health using Stata’s SEM command and report standard path coefficients. We conducted Sobel-Goodman tests of mediation. We also tested for moderated mediation of adult health by childhood health (i.e., conditional indirect effect in which childhood health moderates the adult health mediator).

Similarly, we fit a standardized linear path model through adolescent personality traits and academic aptitude. Standard path coefficients are reported, along with multiple mediation test results. Paths show direct relationships from childhood health to adolescent attributes as well as from those adolescent attributes to adult political ideology. Indirect effects were calculated for mediated relationships.

After model specification tests ensured that the proportionality assumption was met, we ran a multivariate ordered logistic regression model with childhood health predicting adult political ideology that included all covariates. From this analysis, we generated a graph depicting probabilities (with confidence intervals) for liberal (slightly liberal, liberal, extremely liberal) and conservative (slightly conservative, conservative, extremely conservative) adult ideology at each self-reported childhood health status.

We test for differences in the effect size for childhood health when comparing white vs non-white race and when comparing male vs female sex. We also test for attenuation of childhood health effect size when including or excluding adult socioeconomic variables, income and education, individually and together. For all analyses, we used all available data from PT60 and PTSP12. Observations with missing values for variables relevant to each regression analysis were deleted. Counts (n) for each path model and regression analysis are provided.

### 3. Results

Summary characteristics are presented in Table 1. Frequencies of and

**Table 1**  
Sample summary statistics.

Variable	Frequency -or- [Range], Mean, Std.Dev.
Age in 2012	[64–73], 67.7, 1.3
Female	51%
White	89%
Family SES Composite Index <sup>a</sup>	[66–122], 98.6, 9.6
Academic Aptitude <sup>a</sup>	[24–798], 517.2, 115.4
Personality Trait <sup>a</sup>	
Vigor	[0–7], 3.8, 2.2
Sociability	[0–12], 6.7, 2.9
Maturity	[0–24], 11.4, 5.3
Impulsivity	[0–8], 2.0, 1.6
Tidiness	[0–11], 5.7, 2.8
Income	
< \$10 K	3%
\$10 K - \$49.9 K	38%
\$50 K - \$99.9 K	37%
\$100 K - \$149.9 K	13%
> \$150 K	8%
Education	
< High School diploma	2%
High School diploma	48%
Associates degree	10%
Bachelor’s degree	20%
Master’s degree	13%
PhD or Professional degree	7%
Retired	63%
Living Together	75%
Political Ideology	
Extremely Liberal	3%
Liberal	12%
Slightly Liberal	8%
Moderate	31%
Slightly Conservative	12%
Conservative	28%
Extremely Conservative	5%

<sup>a</sup> Unstandardized.

correlations across health at each life-stage are presented in Table 2. Correlations across personality and academic mediators are presented in Table 3. The sample was 64–73 years, predominantly white (89%), and half female (51%). The unstandardized family socioeconomic index ranged from 66 to 122 with a mean of 99. By 2012, 40% were college educated; 38% earned between \$10,000 and \$50,000; 37% earned between \$50,000 and \$100,000; 68% were retired, and 75% lived with a significant other. Over one-fifth were liberal, approximately one-third moderate, and 45% conservative. Childhood and adolescent health were moderately correlated ( $r = 0.56$ ); however, both had a low degree of correlation with adult health status. The highest correlated personality traits were Maturity/Tidiness ( $r = 0.61$ ), Vigor/Maturity, and Vigor/Sociability ( $r = 0.50$ ). Academic aptitude was most highly correlated with Maturity ( $r = 0.30$ ).

Regressing adult political ideology on each health status, in separate models, and controlling for all covariates, the baseline coefficients were: childhood health (coeff = 0.11,  $p \leq 0.001$ , CI = 0.05,0.17,  $n = 1641$ ), adolescent health (coeff = 0.10,  $p = 0.013$ , CI = 0.02,0.17,  $n = 1641$ ), and adult health (coeff = 0.06,  $p = 0.105$ , CI = -0.01,0.14,  $n = 1641$ ). Fig. 1 shows a path model from childhood health to adult political ideology through adolescent and adult health. Childhood health is positively associated with adolescent health (coeff = 0.45,  $p \leq 0.001$ , 95%CI = 0.43,0.49,  $n = 1641$ ). And, adolescent health is positively associated with adult health (coeff = 0.14,  $p \leq 0.001$ , 95%CI = 0.09,0.18,  $n = 1641$ ). There is no theoretical or empirical relationship between childhood and adult health independent of adolescent health and this path is not depicted.

In this path model, childhood health remained significantly and positively associated with adult conservative ideology (coeff = 0.09,  $p = 0.015$ , 95%CI = 0.02,0.17,  $n = 1641$ ); however, neither adolescent nor adult health had a statistically significant association with adult ideology. Sobel-Goodman test for mediation indicates that the relationship between childhood health and adult ideology is not mediated by adolescent health (estimated indirect effect = 0.013,  $p = 0.530$ ), nor is adolescent health mediated by adult health (estimated indirect effect = 0.005,  $p = 0.246$ ) (MacKinnon, Warsi, & Dwyer, 1995). Additionally no significance was found when we tested for moderated mediation between childhood health and adult health (Preacher, Rucker, & Hayes, 2007). The effect size for the childhood health path coefficient shows virtually no substantive and no statistically significant difference when comparing white and non-white race and when comparing male and female sex. The effect size also shows virtually no change and no statistically significant difference when including or excluding adult income and adult education individually or simultaneously.

Fig. 2 shows a path model from childhood health to adult political ideology through adolescent personality and academic aptitude. Childhood health is associated with all six personality traits, most notably with adolescent vigor, but is not associated with academic aptitude.

**Table 2**  
Health Status at each Life-Stage and Correlation Matrix across Life-Stages.

	Childhood	Adolescent	Older Adult
<i>Survey Year</i>	1960	1960	2012
<b>Excellent</b>	30%	34%	18%
<b>Very Good</b>	35%	39%	38%
<b>Good</b>	18%	17%	29%
<b>Average (“Fair” in 2012)</b>	12%	8%	13%
<b>Poor</b>	4%	2%	3%
<b>Very Poor<sup>a</sup></b>	1%	0.12%	
<u>Correlation Matrix:</u>			
<u>Health</u>	<u>Childhood</u>	<u>Adolescent</u>	<u>Older Adult</u>
Childhood	1		
Adolescent	0.56***	1	
Older Adult	0.12***	0.17***	1

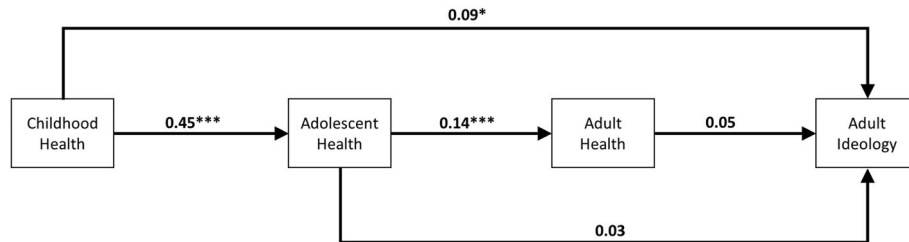
\*\*\* $p \leq 0.001$ .

<sup>a</sup> Very poor was not given as a response choice in 2012.

**Table 3**  
Correlation matrix for adolescent attributes.

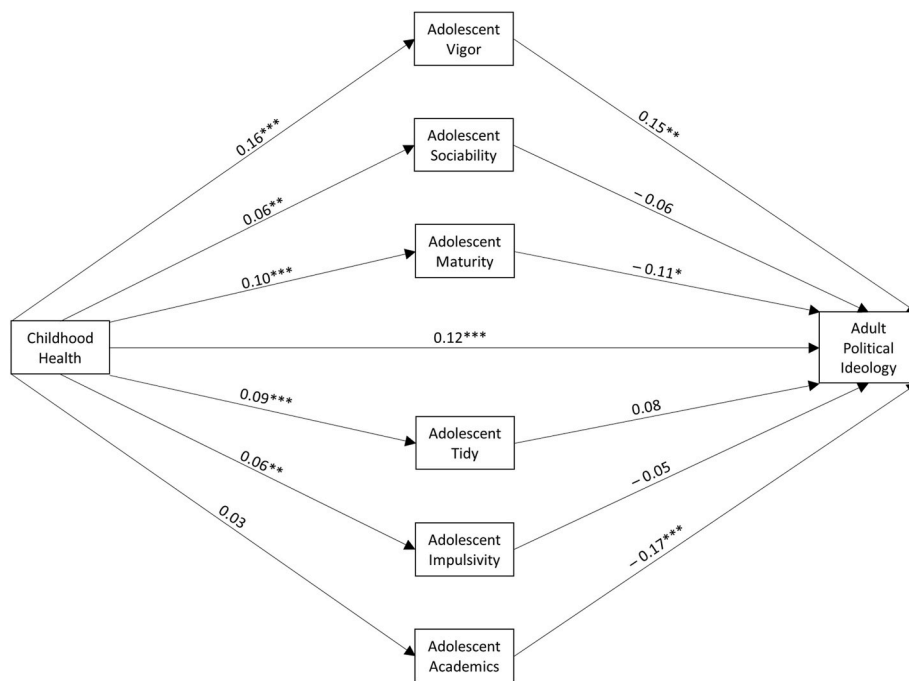
	Vigor	Sociability	Maturity	Impulsivity	Tidiness	Academics
Vigor	1					
Sociability	0.50***	1				
Maturity	0.50***	0.37***	1			
Impulsivity	0.24***	0.26***	0.21***	1		
Tidiness	0.38***	0.37***	0.61***	0.12***	1	
Academics	0.15***	0.10***	0.30***	0.07**	0.11***	1

\*\*p ≤ 0.01, \*\*\*p ≤ 0.001.



**Fig. 1.** Life-Course Pathway Model through Adolescent and Adult Health (n = 1641). Note: Path from childhood health to adolescent health omits adult covariates. Other models include all covariates discussed.

\*p ≤ 0.05, \*\*p ≤ 0.01, \*\*\*p ≤ 0.001.



**Fig. 2.** Life-Course Pathway Model through Adolescent Attributes (n = 1496). Note: Paths from childhood health to adolescent attributes omit adult covariates. Full path model includes all covariates discussed. \*\*\*p ≤ 0.001, \*\*p ≤ 0.01, \*p ≤ 0.05.

Vigor is positively associated with adult conservative ideology, while maturity and academic aptitude are negatively related to adult conservative ideology (or, positively related to adult liberal ideology). Childhood health remained significantly and positively associated with adult conservative ideology (coeff = 0.12, p = 0.001, 95%CI = 0.05,0.18, n = 1496) in this path model after simultaneously including adolescent personality and academic characteristics.

Table 4 presents indirect effects from multiple mediation analysis. Only vigor and maturity personality traits were significant mediators (determined using the bias corrected confidence intervals). The proportion of the total effect (direct effect + total indirect effect) mediated by vigor and maturity is 0.16 and -0.08, respectively. However,

possibly due to the opposing effects of these variables on adult ideology, on the whole, personality traits and academic aptitude did not demonstrate statistically significant mediation of childhood health (i.e., insignificant total indirect effect on adult political ideology).

Finally, Fig. 3 shows the predicted probability of adult liberal or conservative ideology derived from multivariate ordered logistic regression of childhood health controlling for all covariates. The odds ratio for childhood health was OR = 1.15 (p ≤ 0.001, 95%CI = 1.07,1.24, n = 1641). Since neither adolescent nor adult health were shown to have an independent association with adult political ideology, probabilities at these life-stages are not shown. Personality traits and academic aptitude were not shown to be mediators, and these variables

**Table 4**  
Multiple mediation test for adolescent attributes.

	Indirect Effect Coefficient	Bootstrap <sup>†</sup> Standard Error	p-value	Bias Corrected 95% Confidence Interval	Proportion of Total Effect Mediated
<b>Personality Trait</b>					
Vigor	0.02	0.008	0.004	0.01, 0.04	0.16
Sociability	-0.004	0.003	0.284	-0.01, 0.001	-
Maturity	-0.01	0.006	0.055	-0.02, -0.002	-0.08
Impulsivity	-0.003	0.003	0.418	-0.01, 0.001	-
Tidy	0.01	0.005	0.153	-0.001, 0.02	-
Academic Aptitude	-0.005	0.004	0.174	-0.01, 0.001	-
Total Indirect Effect	0.008	0.008	0.334	-0.008, 0.02	-

Note: Paths from childhood health to adolescent attributes omit adult covariates. Full path model includes all covariates discussed.  
† 5000 replications.

were not included in this model.

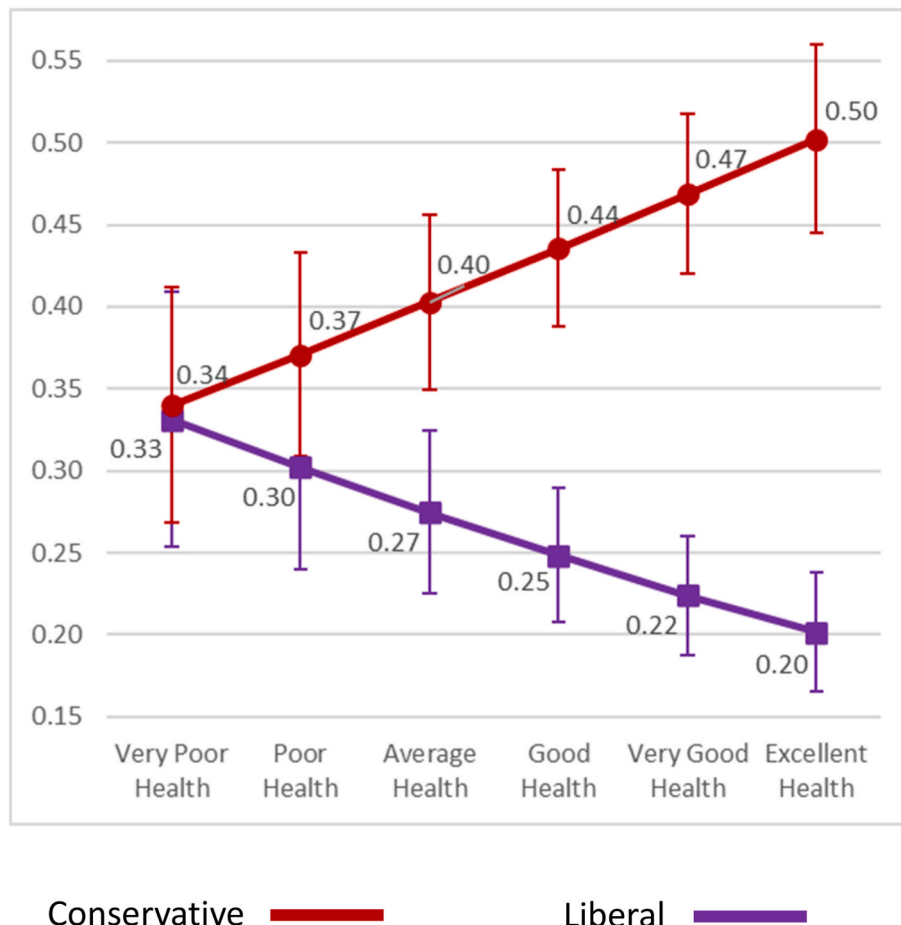
Children with excellent health compared to very poor health were 16 percentage points *more* likely to report having a conservative political ideology in adulthood. Children with excellent health compared to very poor health were 13 percentage points *less* likely to report having a

liberal political ideology in adulthood. The figure shows a fanning out from very poor to excellent childhood health. The probability of a liberal or conservative adult political ideology differed negligibly for those who had very poor childhood health. For adults who had excellent childhood health, the probability of a liberal or conservative adult political ideology differed by 30 percentage points.

**4. Discussion**

Political science research indicates that the impressionable formative years for political socialization begin early in life during childhood and that ideological expression can be influenced by childhood stimuli such as trauma, friendships, and new experiences. We show that one such early life contributor is health. We expand on recent evidence linking health to political partisanship. Party politics changes over time. We focused on ideology which more strongly relates to policy stances and political beliefs as well as conceptions of how the world operates and a variety of individual preferences (e.g., grammar, humor, art, room decorations) (Carney et al., 2008; Cichocka, Bilewicz, Jost, Marrouch, & Witkowska, 2016; Glasgow, Cartier, & Wilson, 1985; Jost, Nosek, & Gosling, 2008; Wilson, 1990; Wilson, Ausman, & Mathews, 1973). Ideology not only informs people’s electoral choices, but how they conduct their lives.

We show that the relationship between health and ideology begins in childhood. And, our results provide no evidence that childhood health is mediated by health at subsequent life-stages. Adolescent and adult health have no relation to adult political ideology independent of childhood health. Childhood is, thus, a sensitive period for the relationship between health and ideology.



**Fig. 3.** Predicted probabilities of Liberal or Conservative Adult Political Ideology at each level of Childhood Health (n = 1641).

We also show that the relationship between health and ideology endures over nearly six decades, potentially influencing a lifetime of electoral decisions. Thus, the impact of local physical, social, and policy environments on childhood health could have lasting implications for the ideological composition of those local electorates.

We proposed that adolescent personality and academics could mediate the health and ideology relationship. However, our findings do not show statistically significant mediation of childhood health through these adolescent characteristics as a whole. Nonetheless, the Vigor and Maturity personality traits individually served as mediators, although in opposing directions. Vigor was related to conservative ideology while Maturity was related to liberal ideology. Another explanation for the lack of mediation might also be that suggested by behavioral genetics research, which has shown that rather than personality contributing to ideology, both ideology and personality derive from a common underlying heritable latent factor (Hatemi & Verhulst, 2015; Verhulst, Eaves, & Hatemi, 2012). Similarly, since health is heritable, researchers have proposed that health may also partly derive from genetic factors giving rise to personality and ideology (Pacheco & Fletcher, 2015).

Adults who had excellent childhood health were 30 percentage points more likely to identify with conservative ideology than to identify with liberal ideology. However, the difference in ideological position for adults who had very poor childhood health was negligible. That is, the health and ideology relationship is being driven by those who began life with an advantaged health position, even controlling for early life family income and material wealth. From very poor to excellent childhood health, the probability of adult conservative ideology monotonically increases and liberal ideology monotonically decreases.

These results occur in the context of a longitudinal cohort analysis. Project Talent participants were high schoolers in 1960. The age range was ten years. Most participants were very close in age, within a four-year range, with fewer students in the younger and older tails. Students hailed from small rural towns and big cities and differed in their economic, cultural, and social backgrounds (American Institutes for Research (AIR) (2016). This cohort witnessed the same national and cultural events during childhood, adolescence, and young adulthood — school desegregation, civil rights, labor rights, Medicare/Medicaid, two wars, various protests, various assassinations, etc. The distribution of health levels and the distribution of ideological positions likely differs for this generation compared to recent generations. At a minimum, other generations are expected to differ in intercept and slope. Thus, we acknowledge the specificity of our study's findings to the Baby Boomer generation. We encourage the use of data from other generations in future studies to elucidate the health and ideology relationship under different social, economic, and cultural conditions.

In addition to being from one cohort, our sample was between 63 and 74 years of age. One concern with a sample of older adults is that of growing conservatism with age. However, studies have shown that ideology tends to be stable across the life-span (Sears & Brown, 2013; Sears & Funk, 1999) and that persons aging beyond young adulthood and middle age have tended to become more liberal in many respects (Glenn, 1974). Americans of this age group express a mix of conservative and liberal positions regarding trust in government, trust in big business and markets, support for social programs, and support for marginalized groups (Desilver, 2014). However, larger percentages hold consistently liberal or consistently conservative views (Desilver, 2014). Our findings may not hold across the globe in countries where economic and social conservatism are uncorrelated or even negatively correlated. Studies using data from other countries would illuminate more of the health and ideology relationship under different ideological dynamics. Another consideration with this age group is that of mortality selection over the nearly six decades between PT60 and PTPS12. While mortality is likely higher among unhealthy participants, still the distribution of health levels in PTPS12 was not heavily skewed toward healthy participants and showed a general decline of health with age. Furthermore,

frequencies at all levels of childhood and adolescent health are similar for the *total* PT60 sample and the PTPS12 sample.

Other limitations require consideration as well. Measurement of childhood health was retrospective, although made by adolescents only a few years older. Prior work suggests such reports are reliable, even taken at far later points in the lifespan (Haas, 2007). Our sample is largely white. Black and white Americans who were adolescents in the 1960s experienced their country and political power differently over the six decades captured in this longitudinal cohort study. However, we found that there was little substantive and no statistical difference between black participants, white participants, and the sample as a whole.

A major limitation is the lack of data over potentially important life stages during the lengthy period between high school and one's late 60s. While Project Talent follow-up surveys were conducted in the 1960s and 1970s, unfortunately, participants from those surveys have virtually no overlap with PTPS12. Thus, we are unable to conduct a detailed study of life-course paths or intervening experiences. This study is ideal, however, for examining links between a formative early period and later-life ideology. We are not aware of any other study analyzing the association between health and any political outcome over such a long time period.

## 5. Conclusion

Life-course science has illuminated the early social origins of adult health just as political science has demonstrated the early social origins of adult ideology. Childhood health may not only be linked to a wide range of adult health problems but also to adult ideological positions that inform social policies. The question of whether childhood health influences adult political ideology contributes to on-going conversations about the long-arm of childhood experiences. But this analysis also points to consequences for population health. Equity in children's health relies on social policy (e.g., family leave laws; Women, Infants, and Children program; Medicaid; food vouchers, child tax credits). If better childhood health relates to adult conservative political ideology, then this dynamic could have implications for the social policies that govern children's health as well as population health generally.

Voting occurs at substantially higher rates, independent of wealth and education, among healthier members of the American electorate (McGuire et al., 2021; Pacheco & Fletcher, 2015; Sund, Lahtinen, Wass, Mattila, & Martikainen, 2017). Politicians are said to disproportionately respond to the policy preferences of voters compared to non-voters (Griffin & Newman, 2005; Martin, 2003). In fact, congressional legislatures more closely align with the policy preferences of healthy constituents (Pacheco & Ojeda, 2020), suggesting that healthy citizens enjoy greater political clout and greater influence over policy outcomes. Both healthy citizens and those espousing conservative ideology are less likely to think that social policy is effective at improving public health (Lundell, Niederdeppe, & Clarke, 2013; Republican National Committee, 2012, p. 2012; Robert & Booske, 2011) and are less supportive of government involvement in healthcare (Lundell et al., 2013; Republican National Committee, 2012, p. 2012; Schur & Adya, 2013). And, state electorates that overrepresent healthy voters tend to spend less on public health and have less generous Medicaid programs (Pacheco, 2019, pp. 1–13). This misalignment between unhealthy constituencies and legislative policy has generated concern and calls for solutions among public health, medical professional, and public policy advocates since disparities in voice and power can exacerbate health disparities. (Bajaj, Martin, & Stanford, 2021; Shannon Firth (Washington Correspondent), 2022).

While this study examined mediators between childhood health and adult political ideology, it is possible that childhood health is the mediator or the moderated mediator. The experience of local economic, social, environmental, or policy exposure(s) that generate disparities in childhood health (e.g., air pollution in one's neighborhood, racism, area poverty, inaccessible or unsupportive healthcare systems) in combination with one's actual childhood health may be the path through which health contributes to ideology. For example, low birth weight babies

born in an environment made unhealthy or stressful by state policies may be more likely to adopt liberal ideology than all babies born in a healthy, stress-free environment or normal birth weight babies in the unhealthy, stressful environment. However, they may also be less likely to vote due to perceived government and policy indifference that created their unhealthy local environment (Michener, 2018). Having attempted to find mediators between childhood health and adult political ideology, examining whether childhood health is the mediator for another variable (or set of variables) is a good future direction for elucidating mechanistic explanations. Since the health and ideology relationship endures over many decades the iterative nature of social policy influencing health influencing ideology influencing social policy may be difficult, but nonetheless worthy, to tease out.

### Ethical statement

There was no need for IRB approval as publicly available, secondary data was used.

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### Author statement

Viji Diane Kannan, Conceptualization, Methodology, Formal analysis, Writing - Original Draft, Writing - Review & Editing.

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### Declaration of competing interest

We have no Conflicts of Interest.

### Data availability

The authors do not have permission to share data.

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