

Data Report

Health Indicators in Adults and Adverse Childhood Experiences (ACEs)

◆ 2016 New Hampshire BRFSS ◆

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For more information

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Health Indicators in Adults and Adverse Childhood Experiences (ACEs)

Executive Summary

This report examines the relationship between health indicators in New Hampshire adults and their self-reported exposure to Adverse Childhood Experiences (ACEs), based on data collected in 2016 by the Behavioral Risk Factor Surveillance System (BRFSS). Questions on seven adverse childhood experiences (ACEs) were added to the survey to assess childhood trauma in the form of abuse, neglect, and serious household challenges including witnessing violence between adults, living with someone with a drug or alcohol problem, living with someone with a mental illness, or living with someone who had been incarcerated. Associations between these childhood experiences in the past and current adult health behaviors or conditions are examined.

This New Hampshire-specific report shows that, similarly to national findings, adults who experience a range of negative health outcomes and/or engage in unhealthy behaviors often reported more ACEs than those who did not. Those who reported no unhealthy behaviors and/or better health outcomes more frequently reported zero ACEs.

For example, it was found that a larger percentage of adults reporting fair to poor general health had experienced ACEs (64%) than those reporting good to excellent general health (47%). Similarly regarding mental health, a larger proportion of those who reported a significant number of bad mental health days each month had experienced ACEs (76%) than those who reported zero bad mental health days (of whom 41% reported experiencing ACEs).

Among health-related behaviors, a larger percentage of adults who smoke cigarettes reported experiencing ACEs (66%) than the percentage among non-smokers (46%), and the percentage of heavy drinkers who experienced ACEs (61%) was larger than the percentage among those who do not engage in heavy drinking (49%).

Some chronic diseases likewise show associations with ACEs. A larger percentage of asthma sufferers report having ACEs (64%) compared with those who do not have asthma (46%). And the percentage of stroke patients who report ACEs (61%) is larger than the percentage among those who did not have a stroke (49%).

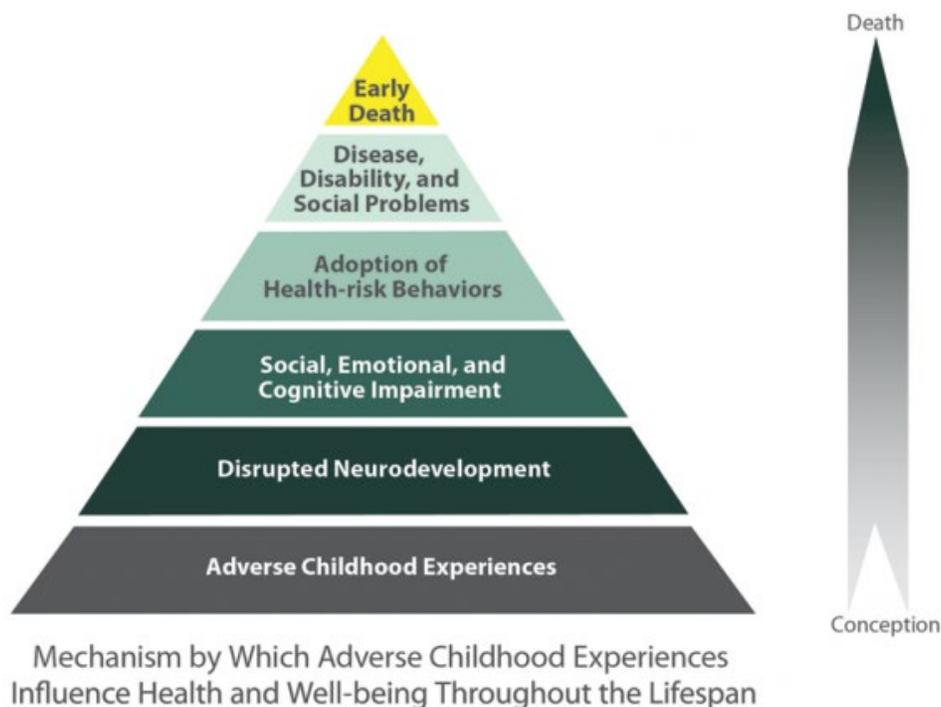
Further information on these and other associations between adult health and childhood trauma is presented in this report.

Because significant adversity during childhood can have a marked and lasting effect on well-being throughout life, the prevention of childhood trauma will result not only in healthier childhoods, but healthier adulthoods, as well. Early childhood programs must be supported to enhance their reach and their impact on the lives of NH children, which will in turn have a lasting positive effect on the well-being of the entire population.

Health Indicators in Adults and Adverse Childhood Experiences (ACEs)

Introduction

Adverse Childhood Experiences (ACEs) include a broad range of events that constitute childhood trauma. They include verbal, physical or sexual abuse as well as neglect or dysfunctional family conditions or events such as mental illness, substance abuse, domestic violence or incarceration. ACEs have been linked to adverse health outcomes in adulthood, including depression, substance abuse, cardiovascular disease, and premature mortality.^{1,2,3,4}



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¹ Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The adverse childhood experiences (ACE) study. *Am J Prev Med* 1998;14:245-58.

² Brown DW, Anda RF, Henning T, et al. Adverse childhood experiences and the risk of premature mortality. *Am J Prev Med* 2009;37:389-96.

³ Anda RF, Felitti VJ, Bremner JD, et al. The enduring effects of abuse and related experiences in childhood: a convergence of evidence from neurobiology and epidemiology. *Eur Arch Psychiatry Clin Neurosci* 2006;256:174-86.

⁴ Hillis SD, Anda RF, Dube SR, et al. The association between adverse childhood experiences and adolescent pregnancy, long-term psychosocial consequences, and fetal death. *Pediatrics*, 2004 Feb;113(2):320-7.

⁵ <https://www.cdc.gov/violenceprevention/acestudy/about.html> accessed June 1, 2018

To understand and address the impact of these childhood experiences on the New Hampshire (NH) population, the NH Department of Public Health Services (DPHS) used data from the Behavioral Risk Factor Surveillance System (BRFSS).

BRFSS is a national population-based survey; in New Hampshire it is administered yearly by the Division of Public Health, in the Department of Health and Human Services. BRFSS is a telephone-based survey that collects data from NH's adult population (age 18 and above) on health status, health-related risk behaviors, and chronic health conditions.

In 2016, NH customized the BRFSS survey with seven additional questions regarding Adverse Childhood Experiences (ACEs) that occurred before age 18; the questions were about:

Topic	Question detail
<ul style="list-style-type: none"> physical abuse 	- was ever hit, beaten, kicked or physically hurt by a parent or adult in the home
<ul style="list-style-type: none"> sexual abuse 	- was ever touched sexually by an adult or someone at least five years older
<ul style="list-style-type: none"> household substance abuse 	- lived with someone who was a problem drinker or alcoholic - lived with someone who used illegal street drugs or who abused prescription medications
<ul style="list-style-type: none"> household mental illness 	- lived with someone who was depressed, mentally ill, or suicidal
<ul style="list-style-type: none"> intimate partner violence 	- parents or adults in the home ever slapped, hit, kicked, punched or beat each other up
<ul style="list-style-type: none"> incarceration of a household member 	- lived with someone who served time or was sentenced to serve time in a prison, jail, or other correctional facility

The landmark Centers for Disease Control and Prevention (CDC)-Kaiser Permanente Adverse Childhood Experiences (ACE) Study referenced above and numerous subsequent study findings have repeatedly demonstrated that persons exposed to trauma and other adverse experiences in childhood face a dramatically increased, lifelong risk of physical and mental health problems. The NH results are consistent with these findings.

From the BRFSS data an ACE score was computed, comprised of the total sum of reported ACEs, representing cumulative childhood stress. ACE scores ranged from zero (no reported ACEs) to seven (representing a 'yes' answer to all seven of the ACEs questions).

This report shows that adults reporting adverse health outcomes and/or engaging in unhealthy behaviors had higher ACE scores (more cumulative childhood stress) than those who had better health outcomes or who did not engage in unhealthy behaviors; the latter groups (better outcomes/healthy behaviors) more frequently had an ACE score of zero.

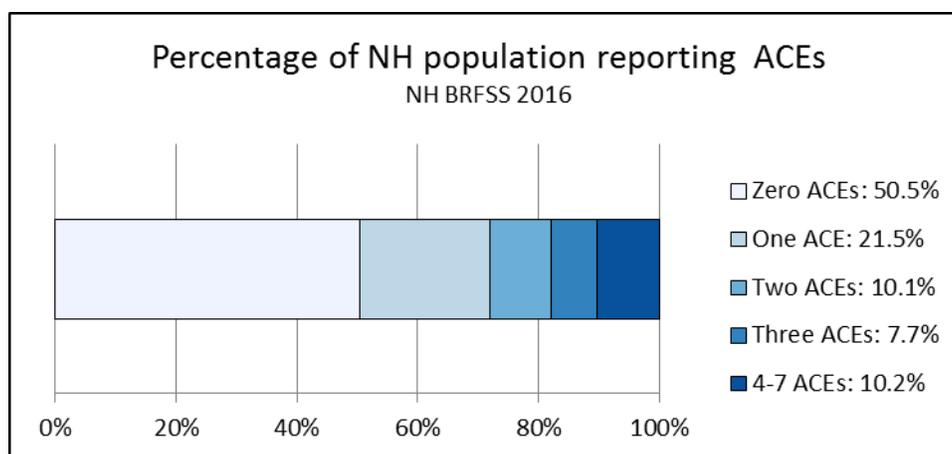
Examination of each individual ACE shows the same pattern. Persons who reported engaging in risky behavior and/or having a negative health outcome more frequently reported having experienced that individual ACE, than those who did not engage in risky behavior and/or who had a better health outcome. Similarly, those who reported no risky behavior and/or a better health outcome more frequently did not experience that individual ACE.

Age-adjusted frequencies are presented, since many health-related behaviors and conditions are related to age. Age-adjustment takes age into account; otherwise the survey results could be mainly age-related, and little or not related to ACEs. Post-stratification on age was done using the 2000 U.S. Standard Population on eight age groupings: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85 plus.

Crude as well as age-adjusted frequencies are presented in the second part of this report, Analysis of Individual ACEs.

The 2016 NH BRFSS sample consisted of 6420 respondents, of which 5731 completed the ACEs module consisting of seven questions on Adverse Childhood Experiences that occurred before the respondents were 18 years of age. The questions script is included at the end of this report.

This graphic represents the age-adjusted ACE profile of the NH population:



Survey respondents representing nearly half (49.5%) of the state population reported at least one ACE, ranging from one ACE among one of every five persons (21.5%), through four-seven ACEs, among one of every ten persons (10.2%).

The tables in the following section describe various population subgroups by the number of ACEs reported (i.e. ACE scores, representing cumulative stress). Results are provided as age-adjusted estimated population percentages, with the 95% confidence interval (i.e. 95% confidence that the true population value lies within that interval). Only quantifiable answers were utilized in the calculations of percentages; unknown, refused, or missing responses were excluded.

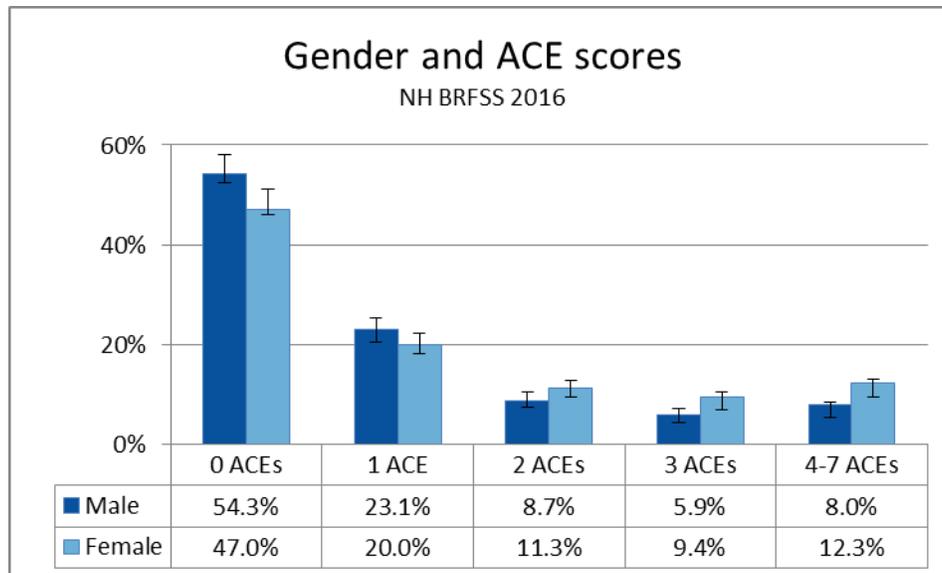
Analysis of the age-adjusted frequencies was done with SUDAAN version 11.0.1, with post-stratification of estimates by age. Analysis of the crude frequencies was done utilizing SAS 9.4 survey analysis procedures for complex survey design.

NB: Due to statistical unreliability, estimates are suppressed and represented by an asterisk (*) if the number of respondents is less than 10, if the denominator is less than 50, if the relative standard error is greater than 0.30, if the absolute confidence interval with is greater than or equal to 0.30, or if the relative confidence interval width (as defined in the National Center for Health Statistics Data Presentation – Standards for Proportions, in Vital and Health Statistics, Series 2, Number 175, August 2017) is greater than 130% of the point estimate.

ACE scores of population subgroups by socio-demographics (age adjusted)

Gender	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Male (n=2490)	54.3 (51.2 – 57.4)	23.1 (20.5 – 25.8)	8.7 (7.2 – 10.5)	5.9 (4.6 – 7.5)	8.0 (6.3 – 10.0)
Female (n=3175)	47.0 (44.0 – 49.9)	20.0 (17.8 – 22.5)	11.3 (9.6 – 13.4)	9.4 (7.5 – 11.6)	12.3 (10.3 – 14.6)

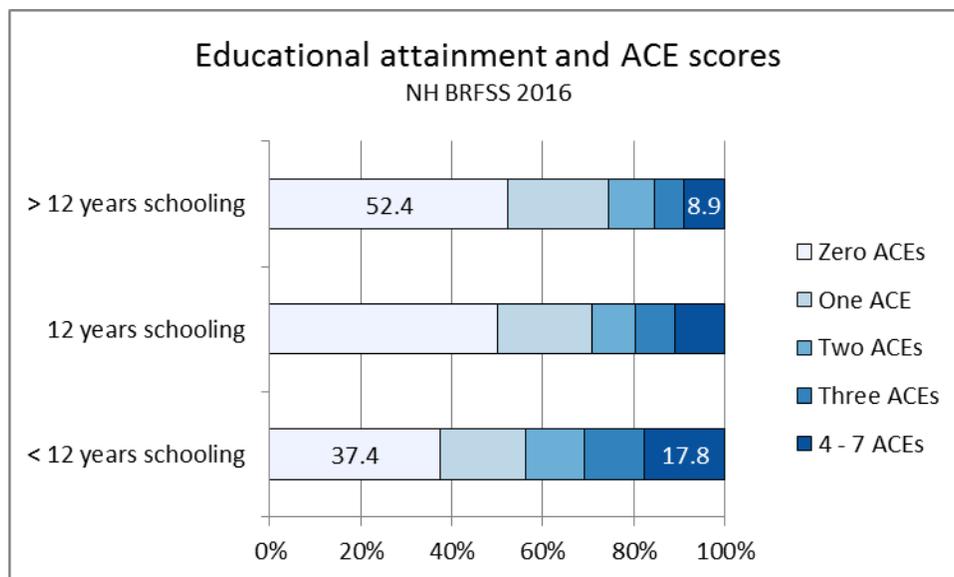
Men more frequently reported zero ACEs than women (54.3% vs. 47.0%), and women more frequently reported four-seven ACEs than men (12.3% vs. 8.0%). These differences are statistically significant at the 95% confidence level.



Education	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
>12 years education (n=3896)	52.4 (49.8 – 54.9)	22.2 (20.2 – 24.4)	10.0 (8.5 – 11.6)	6.6 (5.4 – 8.0)	8.9 (7.3 – 10.7)
12 years education (n=1508)	50.1 (46.0 – 54.1)	20.7 (17.6 – 24.2)	9.5 (7.5 – 12.0)	8.6 (6.4 – 11.5)	11.1 (8.7 – 14.0)
<12 years education (n=261)	37.4 (28.4 – 47.4)	18.7 (12.1 – 27.6)	13.0 (7.7 – 21.2)	13.1 (6.9 – 23.4)	17.8 (11.6 – 26.2)

These three levels of educational attainment have distinct ACE profiles, with the highest education subgroup having the lowest ACE scores and more than half of those persons (52.4%) reporting zero ACEs. In comparison, 37.4% of those in the lowest educational attainment subgroup reported zero ACEs.

Those with the lowest educational attainment had the highest ACE scores and 17.8% of them reported four-seven ACEs, compared to 8.9% of those with the highest educational attainment.



Employment Status	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Not in labor force (n=2548)	53.5 (50.1 – 56.9)	19.2 (16.6 – 22.0)	9.8 (8.0 – 11.9)	8.4 (6.3 – 11.0)	9.1 (7.4 – 11.3)
Out of work (n=199)	46.1 (35.6 – 57.0)	15.1 (9.4 – 23.5)	(*)	10.8 (6.1 – 18.4)	13.0 (7.5 – 21.5)
Employed (n=2892)	49.2 (46.4 – 52.0)	23.3 (21.0 – 25.7)	9.8 (8.3 – 11.5)	7.2 (5.7 – 8.9)	10.6 (8.8 – 12.7)

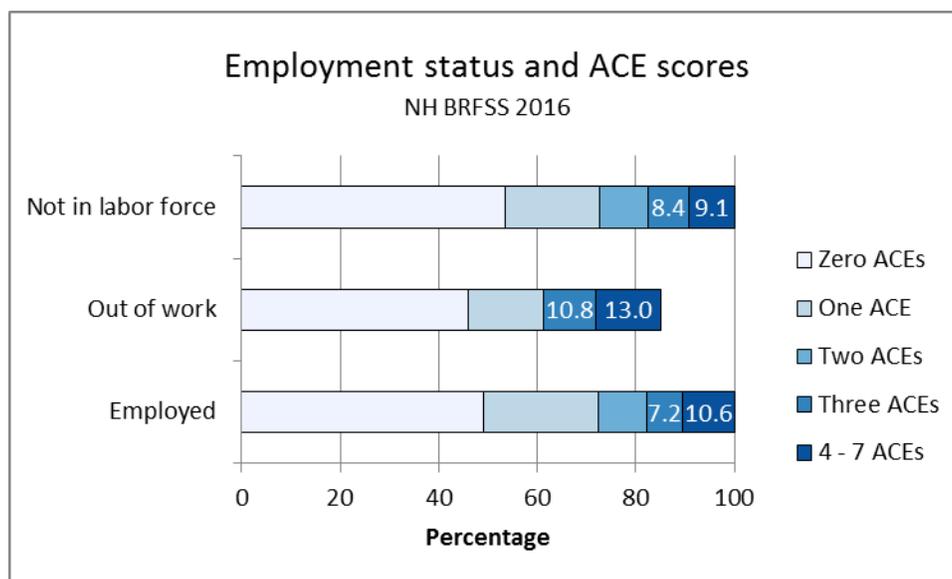
Employment status shows slight differences in ACE scores; the most salient observation is that the out-of-work subgroup has a larger proportion of its members reporting three or more ACEs than the other two subgroups (23.8% vs. 17.5% or 17.8%).

The three subgroups were constituted by grouping respondents' occupations, as follows:

Not in labor force: student, homemaker, retired, or unable to work

Out of work: out of work for more than one year, or for less than one year

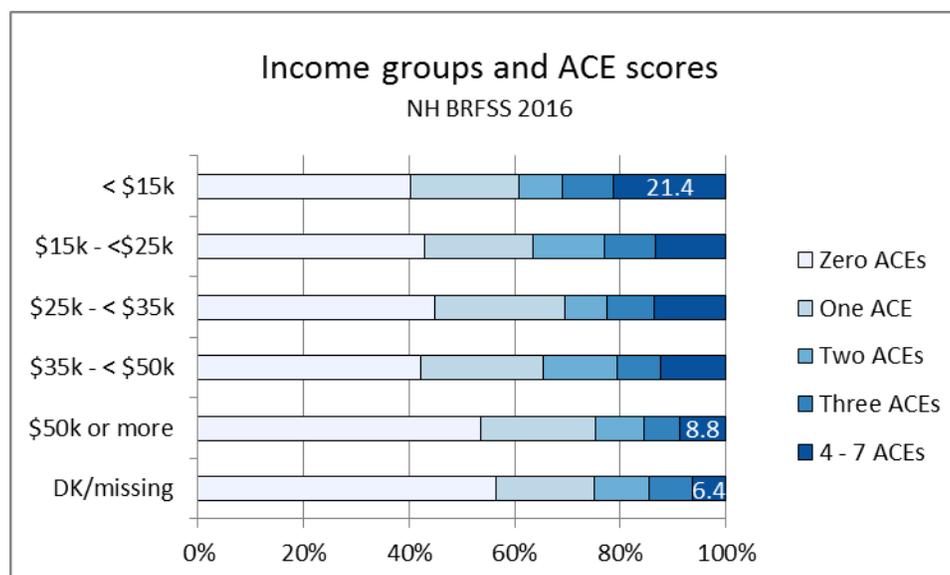
Employed: employed for wages, or self-employed



NB: the Out-of-work subgroup had insufficient numbers reporting two ACEs to include that segment on the data table or the graphic; in the absence of this segment, the reportable total for this subgroup is less than 100%.

Income groups	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
<\$15,000 (n=346)	40.2 (30.5 – 50.8)	20.7 (13.5 – 30.3)	8.1 (5.4 – 11.9)	9.6 (5.1 – 17.4)	21.4 (14.6 – 30.3)
\$15,000 - <\$25,000 (n=648)	42.9 (36.8 – 49.2)	20.6 (15.7 – 26.6)	13.5 (10.0 – 18.0)	9.7 (6.3 – 14.6)	13.2 (9.0 – 19.1)
\$25,000 - <\$35,000 (n=469)	44.9 (38.0 – 52.0)	24.8 (18.0 – 33.0)	7.8 (5.1 – 11.8)	8.9 (5.2 – 14.7)	13.7 (9.2 – 19.8)
\$35,000 - <\$50,000 (n=687)	42.3 (36.8 – 47.9)	23.2 (18.8 – 28.3)	13.9 (10.0 – 19.0)	8.4 (5.5 – 12.5)	12.3 (8.2 – 18.0)
\$50,000 or more (n=2556)	53.7 (50.6 – 56.7)	21.8 (19.4 – 24.3)	9.1 (7.5 – 11.0)	6.7 (5.3 – 8.5)	8.8 (7.0 – 10.9)
Don't know/not sure/ missing (n=959)	56.4 (50.6 – 62.0)	18.6 (14.7 – 23.3)	10.5 (7.3 – 14.9)	8.0 (4.6 – 13.8)	6.4 (4.3 – 9.6)

ACE profiles improve as reported income increases; among the highest income group, fewer than 9% reported four-seven ACEs, compared to over 21% among the lowest income group. Those who did not report their income (Don't Know/missing) had the best ACE profile (highest percentage with zero ACEs and lowest percentage with four-seven ACEs).



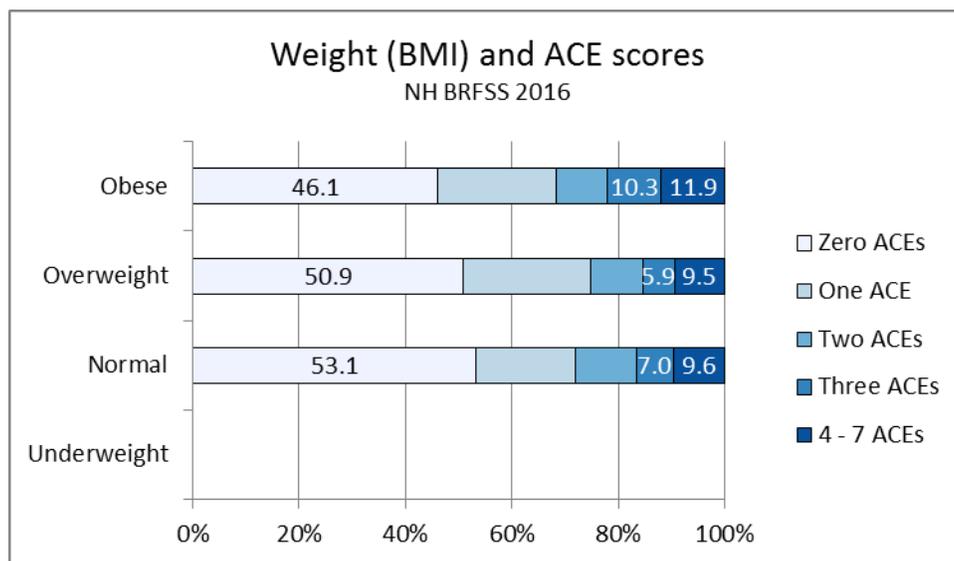
**ACE scores of population subgroups
by health characteristics or behaviors (age adjusted)**

Weight Status (BMI)	Zero ACEs % (95% CI)	One ACE % (95% CI)	Two ACEs % (95% CI)	Three ACEs % (95% CI)	4 to 7 ACEs % (95% CI)
Obese (n=1501)	46.1 (42.0 – 50.3)	22.3 (19.2 – 25.7)	9.4 (7.7 – 11.6)	10.3 (7.6 – 13.7)	11.9 (9.3 – 15.0)
Overweight (n=1997)	50.9 (47.3 – 54.4)	24.0 (21.1 – 27.2)	9.8 (7.9 – 12.0)	5.9 (4.4 – 7.8)	9.5 (7.3 – 12.2)
Normal weight (n=1736)	53.1 (49.1 – 57.0)	18.8 (16.0 – 21.9)	11.5 (9.2 – 14.5)	7.0 (5.1 – 9.6)	9.6 (7.4 – 12.3)
Underweight (n=87)	(*)	(*)	(*)	(*)	(*)

The underweight subgroup had insufficient numbers in all segments to report the ACE profile.

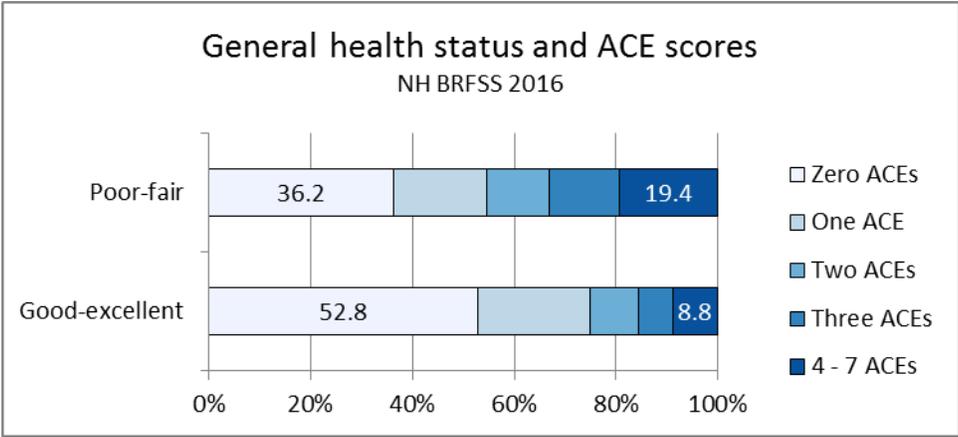
The other BMI subgroups showed a small (non-significant) but progressive increase in the percentage who reported zero ACEs, from the Obese (46.1%) to the Overweight (50.9%) to the Normal (53.1%) subgroups.

The percentage who reported three ACEs or four-seven ACEs is similar for both the Normal (total 16.6%) and the Overweight (total 15.4%) subgroups, while the Obese subgroup had 22.2% reporting three or four-seven ACEs.



General Health	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Poor to fair health (n=892)	36.2 (31.4 – 41.3)	18.3 (14.3 – 23.2)	12.3 (9.5 – 15.7)	13.8 (10.1 – 18.6)	19.4 (15.3 – 24.3)
Good, very good, or excellent health (n=4763)	52.8 (50.4 – 55.1)	22.0 (20.2 – 24.0)	9.7 (8.4 – 11.2)	6.7 (5.5 – 8.1)	8.8 (7.4 – 10.4)

There are marked differences in the ACE profiles of those who reported poor-fair health, compared to those who reported good-excellent health, with over 50% the healthier subgroup reporting zero ACEs and fewer than 10% of them reporting four-seven ACEs, compared to under 40% with zero ACEs and nearly 20% with four-seven ACEs, respectively, among those in the less healthy subgroup.

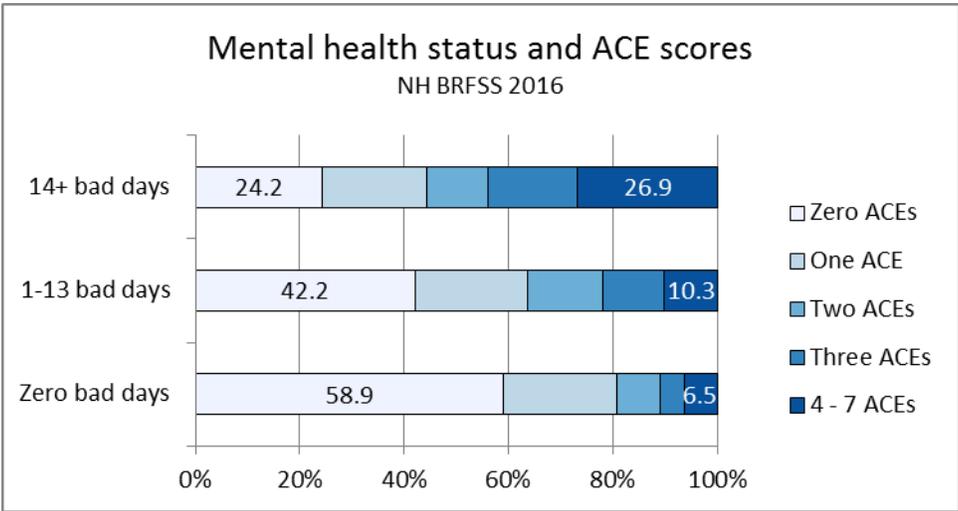


Mental Health	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)				
14+ bad mental health days (n=600)	24.2 (19.1 – 30.2)	20.1 (15.3 – 26.0)	11.8 (8.8 – 15.7)	17.0 (12.2 – 23.1)	26.9 (21.2 – 33.4)
1-13 bad mental health days (n=1074)	42.2 (37.5 – 47.0)	21.3 (17.9 – 25.2)	14.6 (11.6 – 18.2)	11.6 (8.4 – 15.6)	10.3 (8.0 – 13.2)
Zero bad mental health days (n=3922)	58.9 (56.3 – 61.4)	21.9 (19.8 – 24.1)	8.2 (6.8 – 9.8)	4.5 (3.6 – 5.7)	6.5 (5.2 – 8.2)

Mental health status is divided into three subgroups, with zero bad mental health days, 1-13 bad days, and 14 or more bad days. Fourteen or more bad mental health days is the threshold for the definition of “frequent mental distress,” which is predictive of medical disease and health services utilization (Measuring Healthy Days, Population Assessment of Health-Related Quality of Life; US DHHS/CDC; November 2000).

Just over 24% of those who had 14 or more bad mental health days reported zero ACEs, and almost 27% reported four-seven ACEs.

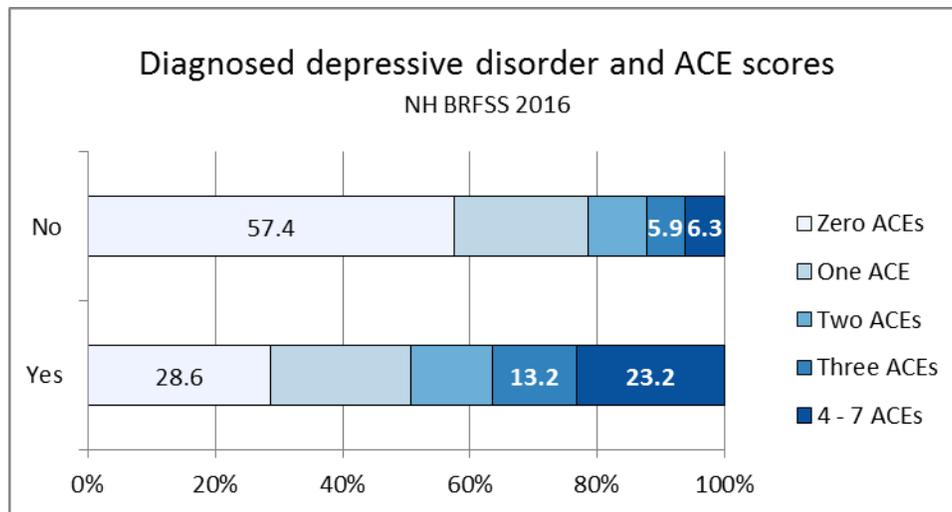
In contrast, among those who reported zero bad mental health days, nearly 60% reported zero ACEs, and 6.5% reported four-seven ACEs.



Depression	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)				
Never told they had a depressive disorder (n=4447)	57.4 (55.0 – 59.7)	21.2 (19.3 – 23.2)	9.2 (7.9 – 10.8)	5.9 (4.8 – 7.3)	6.3 (5.1 – 7.7)
Yes, told they had a depressive disorder (n=1190)	28.6 (24.3 – 33.2)	22.0 (18.2 – 26.3)	13.0 (10.4 – 16.1)	13.2 (10.0 – 17.2)	23.2 (19.3 – 27.7)

Among persons who were diagnosed with a depressive disorder, fewer than 30% reported zero ACEs, over 13% reported three ACEs, and over 23% reported four-seven ACEs.

Among persons who did not have a depressive disorder diagnosis, nearly 60% reported zero ACEs, fewer than 6% reported three ACEs, and just over 6% reported four-seven ACEs.

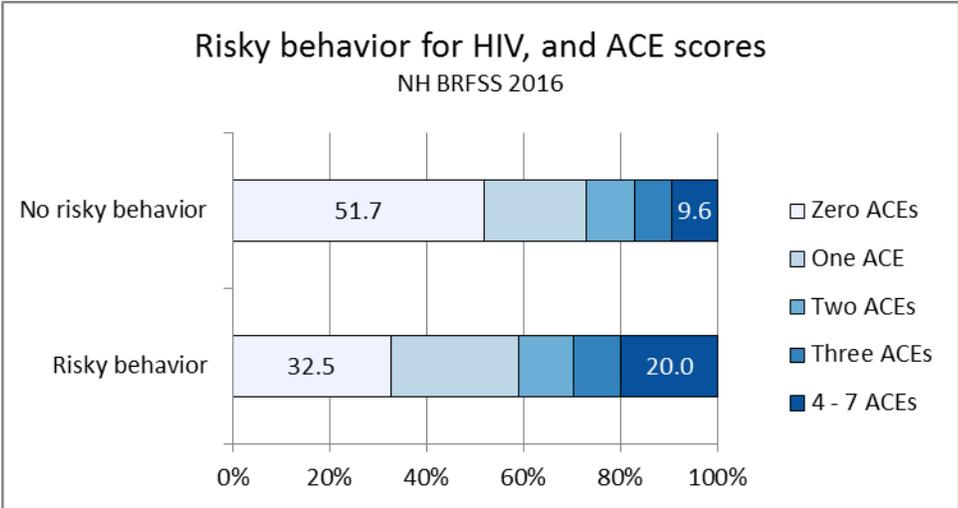


Risky behavior for HIV	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Did not engage in risky behavior in past year (n=5503)	51.7 (49.6 – 53.9)	21.2 (19.5 – 23.0)	9.9 (8.7 – 11.3)	7.5 (6.3 – 9.0)	9.6 (8.3 – 11.1)
Did engage in risky behavior in the past year (risk for HIV) (n=151)	32.5 (22.9 – 43.9)	26.4 (17.4 – 38.0)	11.3 (6.3 – 19.5)	9.8 (5.4 – 17.0)	20.0 (12.7 – 30.0)

Risky behavior for HIV in the past year was defined as: (1) use of intravenous drugs; (2) receiving treatment for a sexually transmitted or venereal disease; (3) giving or receiving money or drugs in exchange for sex; (4) having anal sex without a condom; or (5) having four or more sex partners in the past year. Respondents were asked if any one of these situations applies to them.

Among those who engaged in risky behavior, nearly one-third (32.5%) reported zero ACEs, compared to slightly over half (51.7%) of those who did not engage in risky behavior.

At the other end of the spectrum, among those who engaged in risky behavior, 1 in 5 (20%) reported four-seven ACEs, while this was reported by only 1 in 10 (9.6%) of those who did not engage in risky behavior.

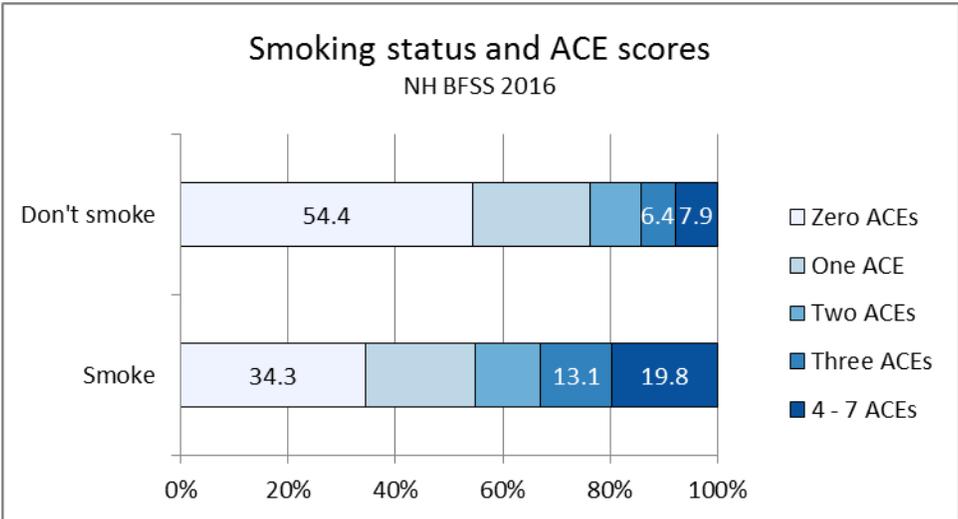


Smoking status	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Not a current cigarette smoker (n=4858)	54.4 (52.0 – 56.6)	21.8 (19.9 – 23.7)	9.6 (8.4 – 11.0)	6.4 (5.3 – 7.8)	7.9 (6.6 – 9.3)
Current cigarette smoker (n=764)	34.4 (29.3 – 39.9)	20.4 (16.1 – 25.4)	12.3 (9.1 – 16.4)	13.1 (9.5 – 17.9)	19.8 (15.6 – 24.9)

Approximately 1 in 3 smokers (34.4%) reported zero ACEs, compared to approximately 1 in 2 (54.4%) non-smokers. Smokers are those who reported smoking every day or some days.

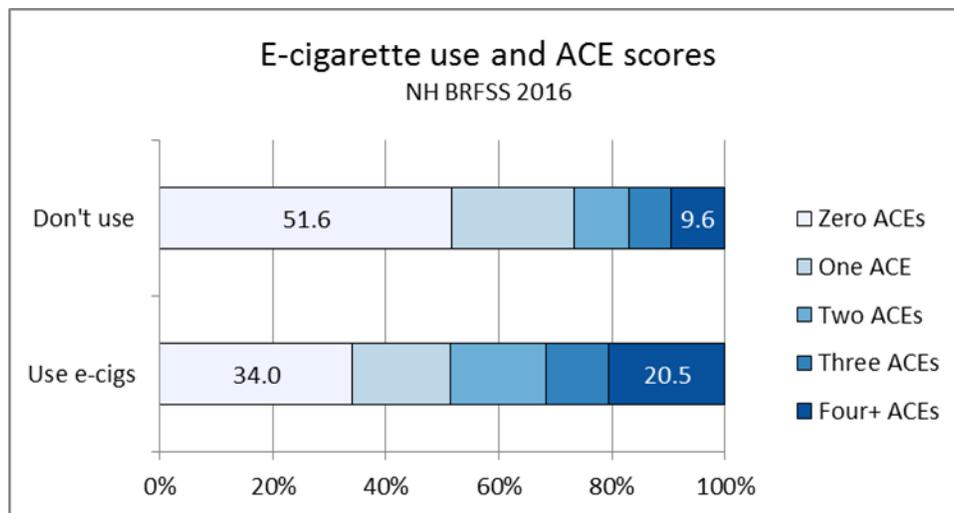
Nearly 1 in 8 smokers (13.1%) reported three ACEs, while approximately 1 in 16 non-smokers (6.4%) reported three ACEs.

And approximately 1 in 5 smokers (19.8%) reported four-seven ACEs, compared to approximately 1 in 12 (7.9%) non-smokers.



E-cigarettes	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Not using e-cigarettes (n=5498)	51.6 (49.5 – 53.8)	21.8 (20.1 – 23.7)	9.7 (8.5 – 11.0)	7.3 (6.1 – 8.7)	9.6 (8.3 – 11.0)
Currently using e-cigarettes (n=162)	34.0 (24.6 – 45.0)	17.4 (10.8 – 26.8)	17.0 (10.0 – 27.3)	11.1 (6.1 – 19.3)	20.5 (12.6 – 31.7)

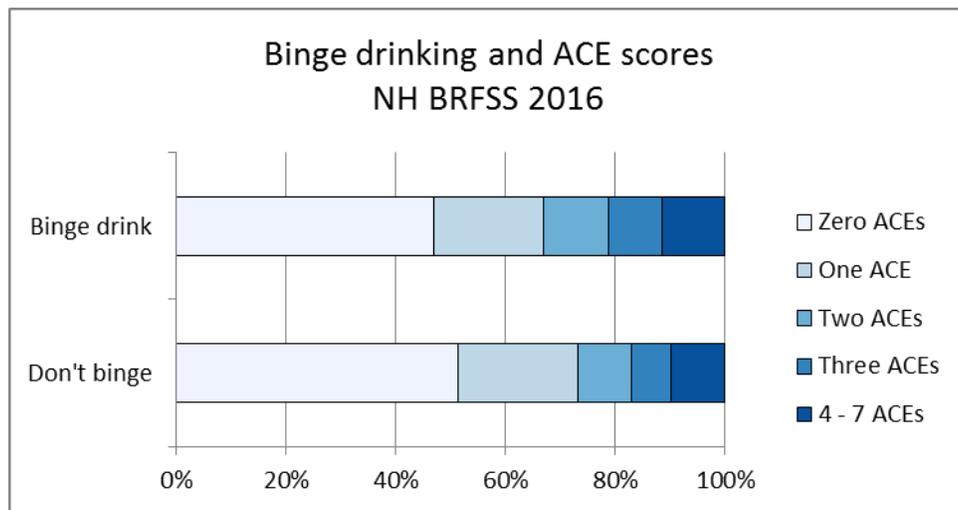
The number persons who reported using e-cigarettes (either every day or some days) is relatively small but reportable. And as is the case with tobacco smokers, users of e-cigarettes less frequently reported zero ACEs than non-users (34.0% vs. 51.6%), and more frequently reported four-seven ACEs than non-users (20.5% vs. 9.6%).



Binge drinking	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Binge drinking in past 30 days (n=658) (men: 5+ drinks on one occasion) (women: 4+ drinks on one occasion)	47.0 (41.4 – 52.7)	20.0 (15.8 – 24.9)	11.8 (8.7 – 15.7)	9.7 (6.7 – 13.9)	11.5 (8.1 – 16.0)
No binge drinking (n=4921)	51.4 (49.1 – 53.8)	21.8 (19.9 – 23.7)	9.7 (8.4 – 11.2)	7.2 (5.9 – 8.6)	9.9 (8.5 – 11.6)

Binge drinking has a gender-specific definition. For men, binge drinking consists of having five or more drinks on one occasion, and for women four or more drinks on one occasion. A drink includes all types of alcoholic beverages.

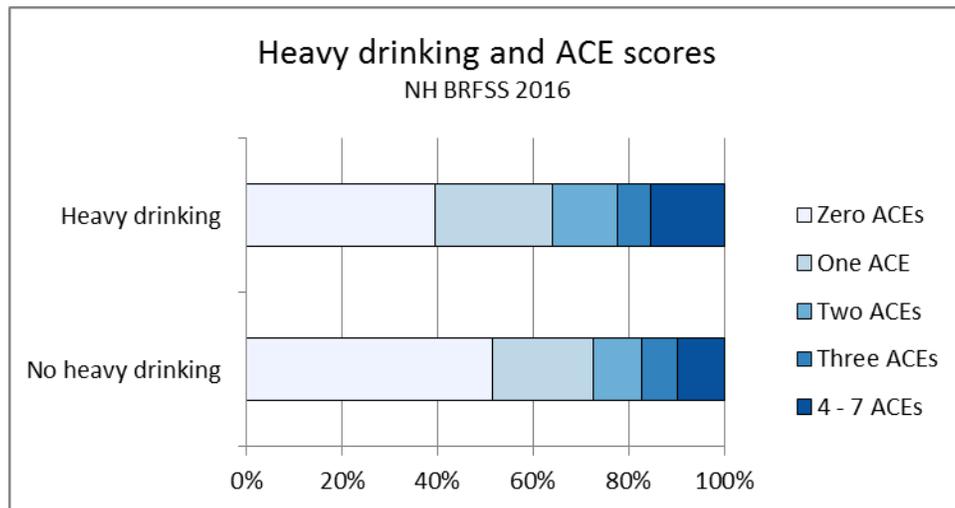
The ACE profiles of those who reported binge drinking (both genders combined), and of those who did not, were not statistically different from each other at the 95% confidence level.



Heavy drinking	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Heavy drinking in past 30 days (n=395) (>14 drinks/week, for men) (> 7 drinks/week, for women)	39.4 (32.4 – 46.8)	24.6 (18.4 – 32.2)	13.4 (8.8 – 19.9)	7.1 (4.3 – 11.5)	15.4 (9.8 – 23.5)
No heavy drinking (n=5173)	51.5 (49.2 – 53.7)	21.1 (19.4 – 23.0)	9.9 (8.6 – 11.3)	7.6 (6.4 – 9.1)	9.9 (8.5 – 11.5)

Heavy drinking also has a gender-specific definition. For men, heavy drinking consists of having 14 or more drinks per week, and for women seven or more drinks per week. One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor.

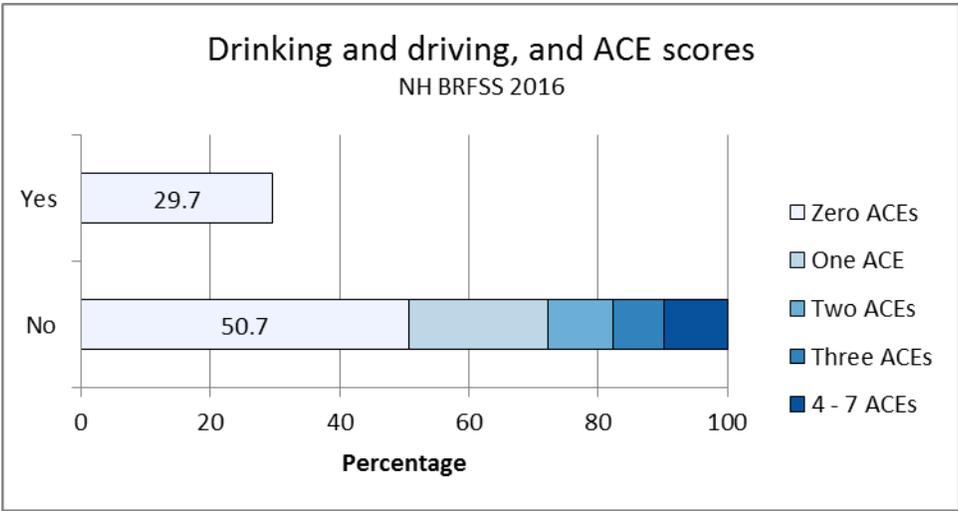
Among those who reported heavy drinking (both genders combined), 39.4% reported zero ACEs, while among those who reported no heavy drinking, 51.5% reported zero ACEs. These differences are not statistically significant at the 95% confidence level.



Drinking and driving	<u>Zero ACEs</u> % (95% CI)	<u>One ACE</u> % (95% CI)	<u>Two ACEs</u> % (95% CI)	<u>Three ACEs</u> % (95% CI)	<u>4 to 7 ACEs</u> % (95% CI)
Did drink and drive in past 30 days (n=61)	29.7 (17.0 – 46.5)	(*)	(*)	(*)	(*)
Did not drink and drive (n=3448)	50.7 (48.0 – 53.4)	21.6 (19.5 – 23.9)	10.1 (8.5 – 11.9)	7.8 (6.3 – 9.5)	9.8 (8.1 – 11.8)

Drinking and driving was reported by only 61 respondents; 29.7% of these reported zero ACEs; the other ACE scores had insufficient numbers to report.

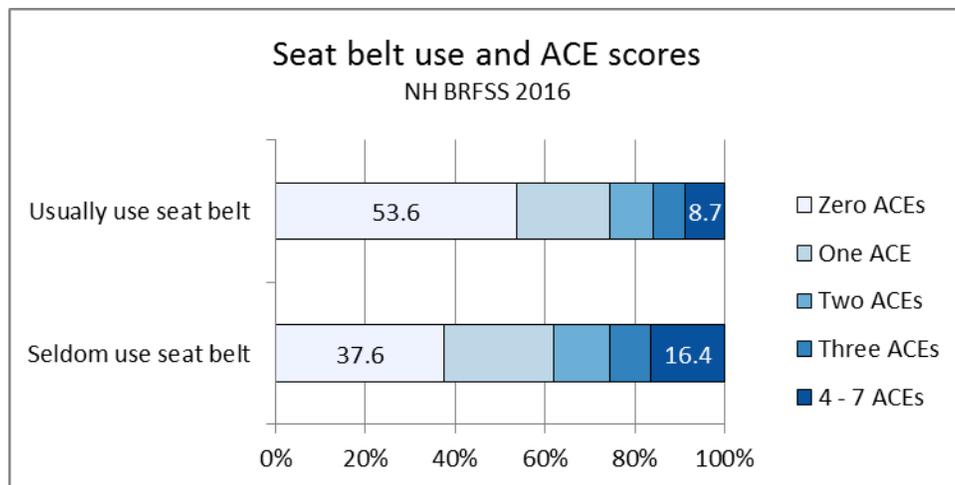
Among those who reported that they did not drink and drive, approximately half (50.7%) reported zero ACEs.



Use of seat belt	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Usually use a seatbelt (n=4766)	53.6 (51.3 – 55.9)	20.9 (19.1 – 22.8)	9.5 (8.3 – 10.9)	7.3 (6.1 – 8.8)	8.7 (7.4 – 10.3)
Seldom or never use seatbelt (n=891)	37.6 (32.6 – 42.8)	24.3 (19.7 – 29.5)	12.6 (9.4 – 16.6)	9.1 (6.1 – 13.5)	16.4 (12.6 – 21.1)

Among regular users of seatbelts, 53.6 % reported zero ACEs, compared to 37.6% of those who seldom or never used seatbelts.

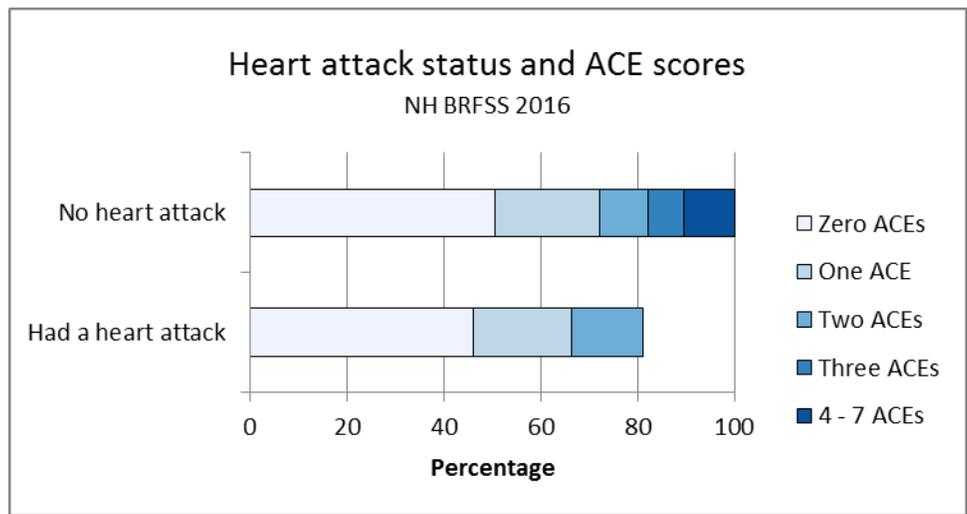
Also among seatbelt users, 8.7% reported four-seven ACEs, while this percentage was almost twice as high (16.4%) among those who seldom or never used seatbelts.



**ACE scores of population subgroups
by chronic disease status (age adjusted)**

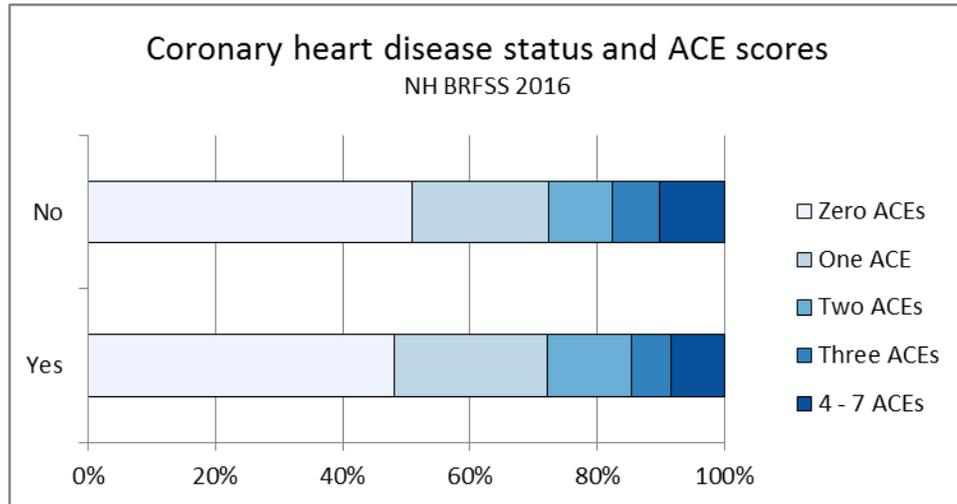
Heart attack status	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had a heart attack (n=5291)	50.7 (48.5 – 52.9)	21.6 (19.8 – 23.4)	9.9 (8.7 – 11.3)	7.5 (6.3 – 9.0)	10.3 (8.9 – 11.8)
Yes, were told they had a heart attack (n=343)	46.1 (38.5 – 53.9)	20.4 (14.9 – 27.2)	14.6 (10.3 – 20.3)	(*)	(*)

There is not a large difference in the ACE profiles of persons who had a heart attack compared to those who did not have a heart attack. The number of heart attack patients is not large, so in this subgroup the numbers who reported three ACEs and four-seven ACEs are unreliable and therefore suppressed.



Coronary heart disease	<u>Zero ACEs</u> % (95% CI)	<u>One ACE</u> % (95% CI)	<u>Two ACEs</u> % (95% CI)	<u>Three ACEs</u> % (95% CI)	<u>4 to 7 ACEs</u> % (95% CI)
Never told they had angina or coronary heart disease (n=5274)	50.7 (48.5–52.9)	21.5 (19.7 – 23.3)	9.9 (8.7 – 11.3)	7.7 (6.5 – 9.2)	10.2 (8.8 – 11.8)
Yes, were told they had angina or coronary heart disease (n=349)	48.1 (41.0 – 55.2)	24.0 (18.7 – 30.4)	13.1 (9.0 – 18.8)	6.2 (3.4 – 11.2)	8.5 (4.6 – 15.3)

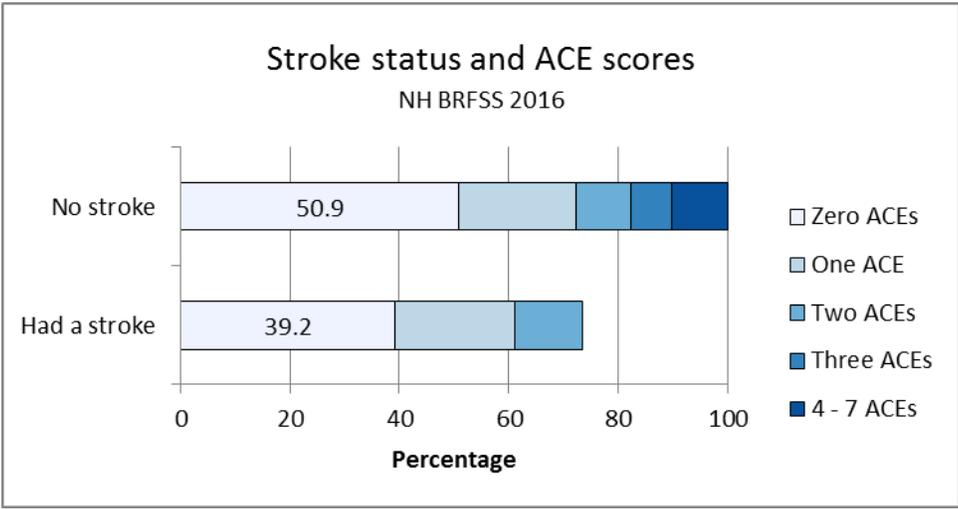
As in the case of heart attack, the ACE profiles of persons who did and who did not report having coronary heart disease are similar.



Stroke status	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had a stroke (n=5485)	50.9 (48.7 – 53.1)	21.5 (19.7 – 23.3)	10.0 (8.8 – 11.4)	7.5 (6.3 – 8.9)	10.1 (8.8 – 11.6)
Yes, were told they had a stroke (n=187)	39.2 (29.1 – 50.3)	21.9 (13.8 – 32.9)	12.4 (7.1 – 20.6)	(*)	(*)

The number of persons reporting that they had a stroke is relatively small (187), and within this subgroup, the numbers reporting three ACEs and four-seven ACEs are unreliable and suppressed.

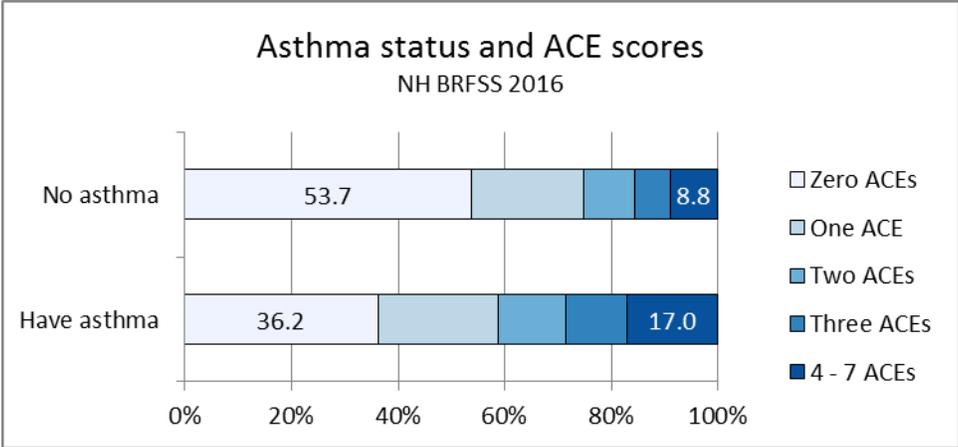
However, 39.2% of those who had a stroke reported zero ACEs, compared to 50.9% of those who did not have a stroke (NB: this difference is not statistically significant at the 95% confidence level).



Asthma	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had asthma (n=4781)	53.7 (51.3 – 56.0)	21.2 (19.4 – 23.2)	9.4 (8.2 – 10.9)	6.9 (5.7 – 8.2)	8.8 (7.4 – 10.3)
Yes, were told they had asthma (n=862)	36.2 (31.2 – 41.5)	22.7 (18.5 – 27.5)	12.6 (9.5 – 16.4)	11.5 (7.9 – 16.6)	17.0 (13.2 – 21.7)

Among persons who have asthma, 36.2% reported zero ACEs, compared to 53.7% of those who do not have asthma.

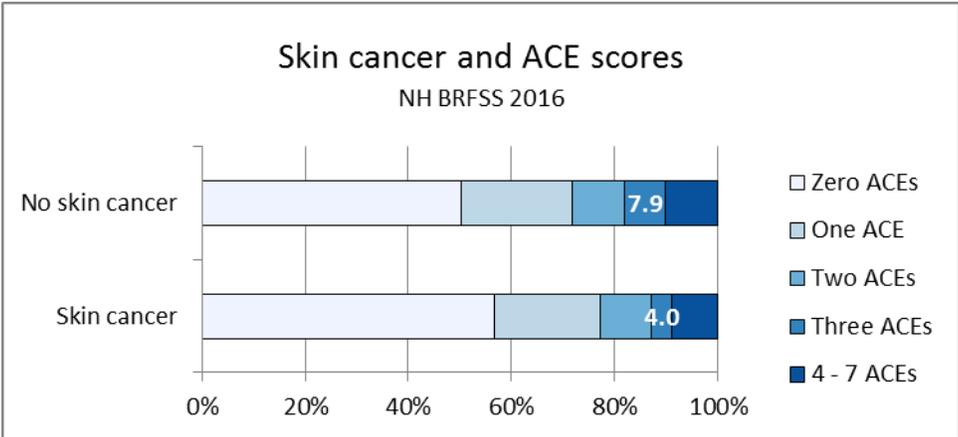
Only 8.8% of those without asthma reported four-seven ACEs, while persons with asthma reported four-seven ACEs nearly twice as frequently (17.0%).



Skin cancer	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had skin cancer (n=5037)	50.2 (47.9 – 52.4)	21.6 (19.8 – 23.5)	10.1 (8.9 – 11.5)	7.9 (6.7 – 9.4)	10.3 (8.9 – 11.8)
Yes, were told they had skin cancer (n=603)	56.8 (50.5 – 62.9)	20.5 (16.1 – 25.8)	9.7 (7.1 – 13.1)	4.0 (2.2 – 6.9)	9.0 (5.2 – 15.1)

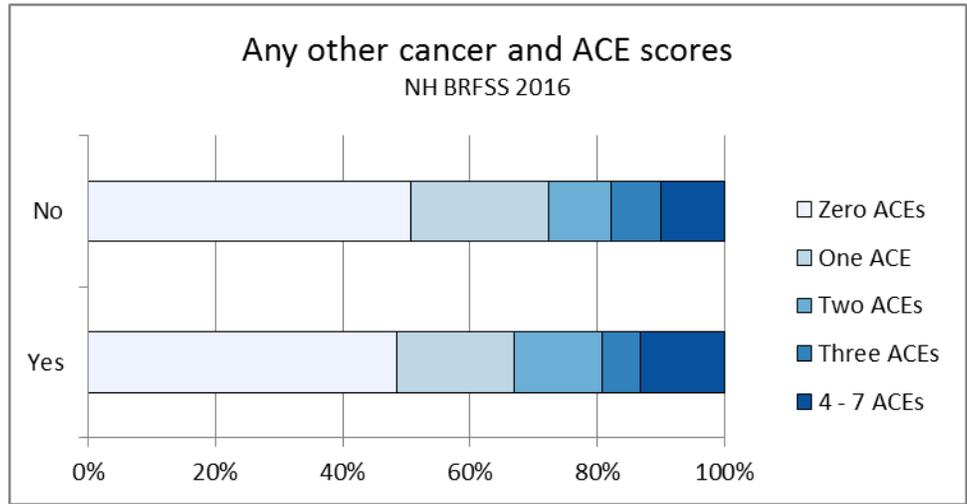
The ACE profiles of persons with and without skin cancer are similar.

The only difference of note between the two subgroups is in the numbers who reported three ACEs: 4.0% among those with skin cancer, and 7.9% among those who do not have skin cancer (NB: this is not a statistically significant difference at the 95% confidence level).



Other cancer	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had any other type of cancer (n=5024)	50.6 (48.3 – 52.9)	21.8 (20.0 – 23.7)	9.8 (8.6 – 11.2)	7.8 (6.5 – 9.3)	10.0 (8.6 – 11.5)
Yes, were told they had any other type of cancer (n=624)	48.5 (42.5 – 54.6)	18.4 (14.6 – 22.9)	13.9 (9.8 – 19.4)	6.0 (3.8 – 9.4)	13.2 (8.0 – 20.9)

As with skin cancer, those who reported the diagnosis or not of any other cancer had similar ACE profiles.

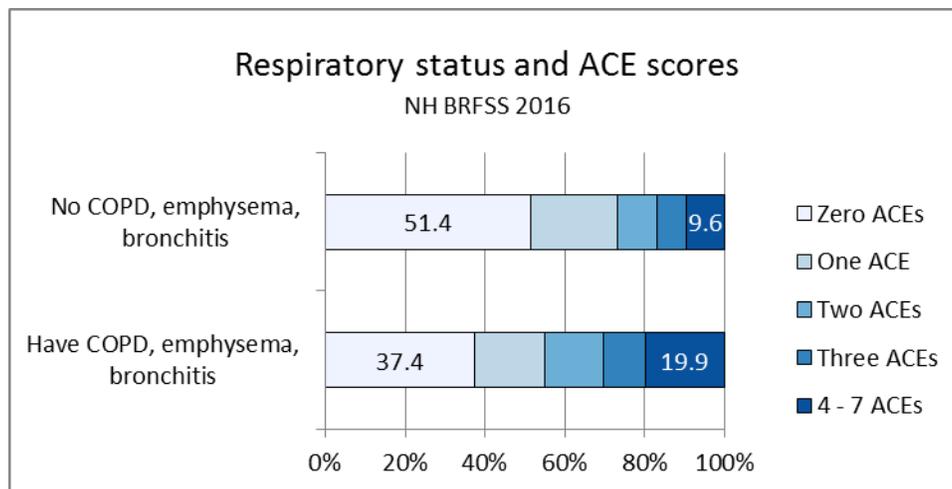


Respiratory illness	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had COPD, emphysema, or chronic bronchitis (n=5136)	51.4 (49.1 – 53.6)	21.8 (20.0 – 23.7)	9.8 (8.6 – 11.2)	7.4 (6.2 – 8.9)	9.6 (8.2 – 11.1)
Yes, were told they had COPD, emphysema, or chronic bronchitis (n=495)	37.4 (31.4 – 43.9)	17.5 (12.8 – 23.4)	14.7 (10.3 – 20.5)	10.5 (6.2 – 17.3)	19.9 (14.4 – 26.8)

Respondents were asked if they had any respiratory illnesses, namely chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis.

Among those who reported having any of these conditions, approximately 1 in 3 (37.4%) reported zero ACEs and 1 in 5 (19.9%) reported four-seven ACEs.

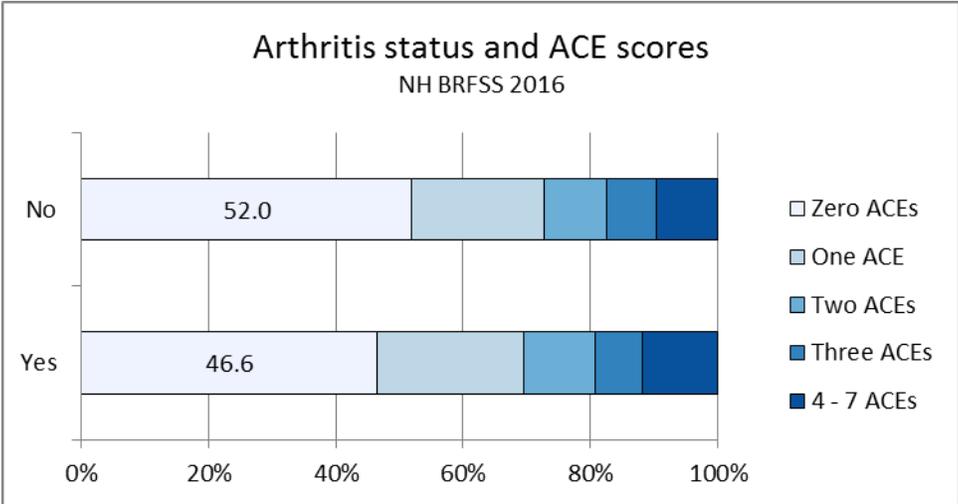
In contrast, among those who did not have any of these conditions, approximately 1 in 2 (51.4%) reported zero ACEs, and 1 in 10 (9.6%) reported four-seven ACEs.



Arthritis	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had some form of arthritis (n=3495)	52.0 (49.3 – 54.6)	20.9 (18.8 – 23.1)	9.8 (8.3 – 11.4)	7.8 (6.3 – 9.5)	9.7 (8.1 – 11.5)
Yes, were told they had some form of arthritis (n=2141)	46.6 (43.4 – 49.9)	23.0 (20.2 – 26.0)	11.2 (9.2 – 13.5)	7.4 (5.8 – 9.3)	11.9 (9.5 – 14.8)

The ACE profiles of those who have arthritis and those who do not have arthritis were similar.

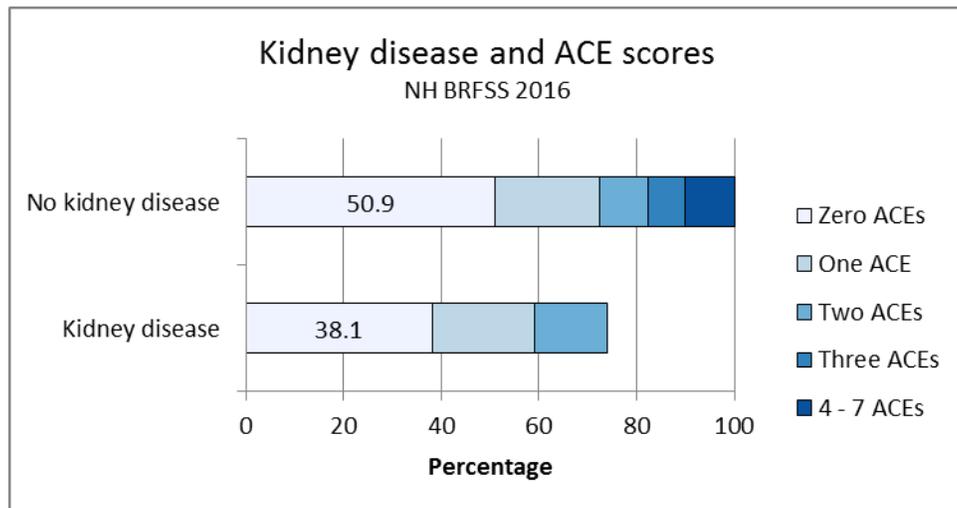
One small difference was in the reporting of zero ACEs, among 46.6% of arthritis sufferers, and among 52.0% of who do not have arthritis (NB: not a statistically significant difference at the 95% confidence level).



Kidney disease	<u>Zero ACEs</u>	<u>One ACE</u>	<u>Two ACEs</u>	<u>Three ACEs</u>	<u>4 to 7 ACEs</u>
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had kidney disease (excluding kidney stones, bladder infection, or incontinence) (n=5448)	50.9 (48.7 – 53.1)	21.6 (19.8 – 23.4)	9.9 (8.7 – 11.2)	7.6 (6.4 – 9.0)	10.0 (8.7 – 11.5)
Yes, told they had kidney disease (excluding kidney stones, bladder infection, or incontinence) (n=196)	38.1 (27.5 – 50.0)	20.9 (14.3 – 29.6)	15.1 (8.4 – 25.5)	(*)	(*)

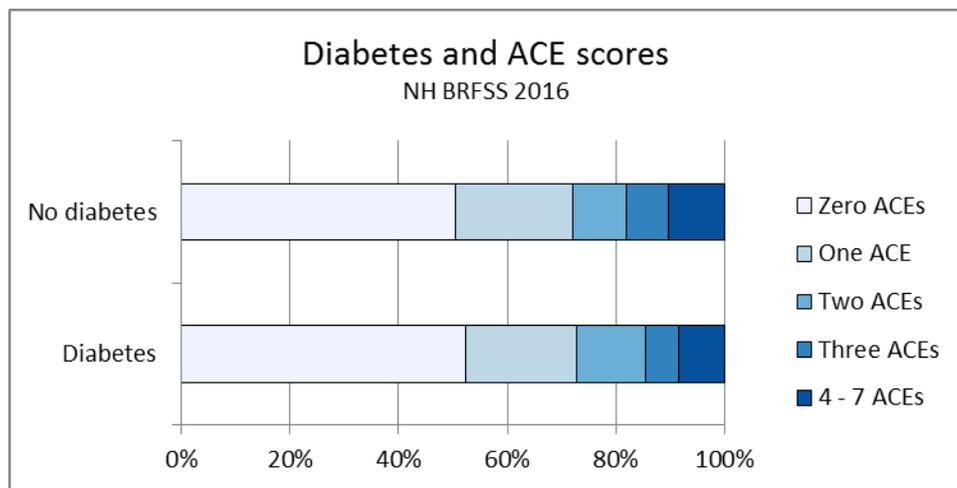
Kidney disease was reported by a small number of respondents (196), and consequently the numbers reporting three ACEs and four-seven ACEs were unreliable and therefore suppressed.

Among those with kidney disease, 38.1% reported zero ACEs, compared with 50.9% of those with no kidney disease (NB: not a statistically significant difference at the 95% confidence level).



Diabetes	Zero ACEs	One ACE	Two ACEs	Three ACEs	4 to 7 ACEs
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Never told they had diabetes (n=4945)	50.4 (48.1 – 52.6)	21.6 (19.8 – 23.6)	9.9 (8.6 – 11.3)	7.8 (6.5 – 9.3)	10.3 (8.9 – 12.0)
Yes, were told they had diabetes (n=715)	52.4 (47.1 – 57.6)	20.4 (16.8 – 24.6)	12.6 (9.5 – 16.6)	6.1 (4.3 – 8.7)	8.5 (5.4 – 13.2)

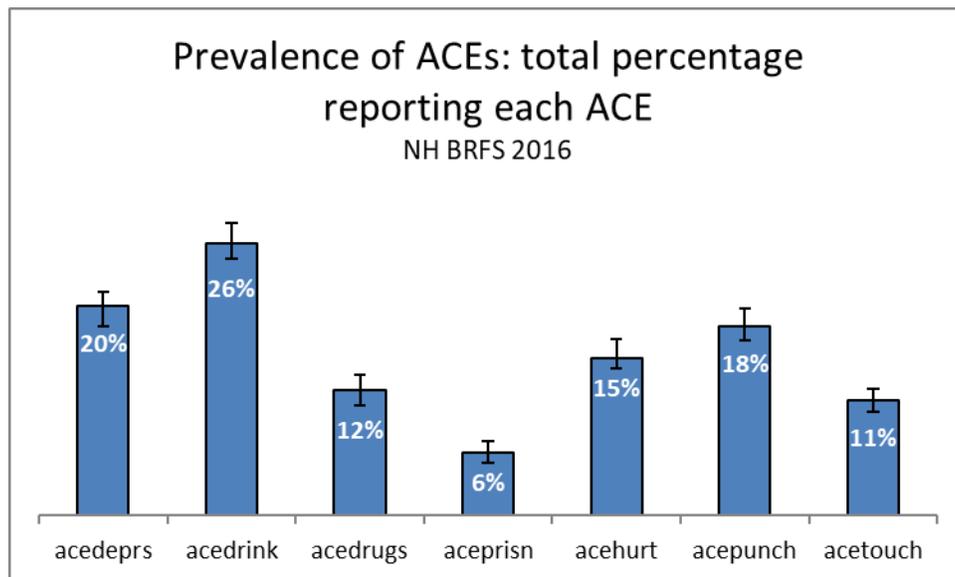
The ACE profiles of persons with and without diabetes were similar.



Analysis of Individual ACEs

Each ACE question was also analyzed separately from the grouped analysis (ACE scores) reported in the preceding section of this report. The following graphic shows the total percentage of respondents who reported each of the seven individual ACEs, and the following pages show the percentages reporting each individual ACE, stratified by population subgroups.

The most frequently reported individual ACEs are: living with someone who was a problem drinker or alcoholic (26%), followed by living with someone who was depressed, mentally ill or suicidal (20%).



acedeprs = lived with someone who was depressed, mentally ill, or suicidal

acedrink = lived with someone who was a problem drinker or alcoholic

acedrugs = lived with someone who used illegal street drugs or who abused prescription medications

aceprism = lived with someone who served time or was sentenced to serve time in a prison, jail, or other correctional facility

acehurt = was ever hit, beaten, kicked or physically hurt by a parent or adult in the home

acepunch = parents or adults in the home ever slapped, hit, kicked, punched or beat each other up

acetouch = was ever touched sexually by an adult or someone at least five years older

Household mental illness – before 18 years of age, lived with someone who was depressed, mentally ill, or suicidal

ACEDEPRS : A total of 910 respondents reported “Yes” to having this Adverse Childhood Experience; 4758 reported “No.” The age-adjusted population frequencies are 21.5% “Yes” and 78.5% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2500)	16.1	13.8 – 18.6	14.8	12.8 – 16.9
Female (n=3168)	26.6	23.8 – 29.6	24.3	21.8 – 26.8
<12 years education (n= 256)	25.6	17.5 – 35.8	24.3	15.7 – 32.8
12 years education (n=1504)	20.1	16.9 – 23.8	18.1	15.2 – 21.1
>12 years education (n=3908)	21.5	19.3 – 23.9	19.8	17.8 – 21.8
Employed (n=2903)	22.5	20.1 – 25.2	20.9	18.6 – 23.1
Out of work (n=194)	28.3	18.7 – 40.3	28.1	17.5 – 38.7
Not in labor force (n=2545)	18.3	15.6 – 21.3	16.6	14.3 – 18.9
Income <\$15,000 (n=341)	27.2	19.3 – 36.8	25.6	17.9 – 33.2
Income \$15,000 - <\$25,000 (n=644)	25.9	20.1 – 32.7	23.7	18.2 – 29.3
Income \$25,000 - <\$35,000 (n=470)	28.4	21.7 – 36.3	25.7	19.2 – 32.1
Income \$35,000 - <\$50,000 (n=685)	25.4	20.0 – 31.7	22.9	17.8 – 28.0
Income \$50,000 or more (n=2559)	18.8	16.4 – 21.5	17.3	15.2 – 19.5
Don't know/not sure/missing (n=969)	19.5	14.9 – 25.1	17.8	13.2 – 22.4
Health status and health-related behaviors				
Underweight (n=88)	(*)	(*)	(*)	(*)
Normal weight (n=1728)	22.0	18.6 – 25.8	20.3	17.1 – 23.4
Overweight (n=1991)	18.8	16.0 – 22.0	17.1	14.5 – 19.7
Obese (n=1492)	23.6	20.2 – 27.4	22.1	19.0 – 25.2
General health is good or better (n=4777)	20.0	18.0 – 22.1	18.4	16.6 – 20.2
General health is fair or poor (n=881)	31.1	26.1 – 36.6	27.7	23.2 – 32.2
Zero bad mental health days (n=3943)	14.7	12.7 – 16.9	13.6	11.8 – 15.3
1-13 bad mental health days (n=1071)	26.5	22.6 – 30.8	25.1	21.5 – 28.8
14+ bad mental health days (n=590)	45.7	39.0 – 52.6	43.0	36.7 – 49.3
Told they had depression (n=1165)	41.9	37.1 – 46.9	40.1	35.7 – 44.5
Never told they had depression (n=4476)	15.3	13.4 – 17.3	13.8	12.2 – 15.4
Risky behavior for HIV in past year (n=149)	34.3	24.6 – 45.5	32.7	22.5 – 42.9
No risky behavior for HIV (n=5509)	20.7	18.8 – 22.7	19.0	17.3 – 20.7
Is a current smoker (n=752)	30.9	25.8 – 36.6	29.5	24.4 – 34.5
Not a current smoker (n=4874)	19.3	17.4 – 21.4	17.7	16.0 – 19.4
Currently using e-cigarettes (n=157)	40.7	30.0 – 52.3	39.8	28.7 – 50.9
Not using e-cigarettes (n=5506)	20.2	18.4 – 22.1	18.5	16.9 – 20.1
Binge drinking in past month (n=655)	25.6	20.7 – 31.2	24.8	19.8 – 29.8
No binge drinking (n=4925)	20.4	18.5 – 22.5	18.6	16.9 – 20.3
Heavy drinking in past month (n=389)	26.8	20.0 – 35.1	24.9	18.2 – 31.6
No heavy drinking (n=5179)	20.8	18.9 – 22.9	19.1	17.4 – 20.8

Drinking and driving (n=61)	(*)	(*)	(*)	(*)
No drinking and driving (n=3448)	22.0	19.7 – 24.6	20.0	17.8 – 22.1
Usually use a seatbelt (n=4785)	20.5	18.5 – 22.6	18.8	17.0 – 20.6
Usually don't use a seatbelt (n=875)	25.6	20.9 – 30.9	23.6	19.1 – 28.2
Chronic diseases				
Heart attack (n=343)	20.4	13.4 – 29.8	19.4	12.5 – 26.4
No heart attack (n=5295)	21.5	19.6 – 23.5	19.7	18.0 – 21.4
Coronary heart disease (n=346)	13.9	8.8 – 21.1	13.2	8.0 – 18.4
No coronary heart disease (n=5283)	21.7	19.8 – 23.8	20.0	18.2 – 21.7
Stroke (n=187)	21.2	12.4 – 33.8	22.2	13.0 – 31.4
No stroke (n=5460)	21.5	19.6 – 23.5	19.6	17.9 – 21.3
Asthma (n=848)	30.3	25.4 – 35.8	28.3	23.6 – 33.0
No asthma (n=4798)	19.5	17.6 – 21.6	17.9	16.2 – 19.7
Skin cancer (n=604)	16.6	11.9 – 22.6	15.4	11.3 – 19.5
No skin cancer (n=5039)	21.8	19.8 – 23.8	20.0	18.2 – 21.7
Any other cancer (n=624)	25.2	19.0 – 32.6	20.6	15.4 – 25.8
No other cancer (n=5028)	21.2	19.3 – 23.3	19.6	17.9 – 21.4
COPD, emphysema, bronchitis. (n=488)	24.9	18.9 – 31.9	22.9	17.5 – 28.4
No COPD (n=5147)	21.1	19.2 – 23.2	19.4	17.6 – 21.1
Arthritis (n=2133)	20.8	17.9 – 24.0	19.1	16.6 – 21.6
No arthritis (n=3505)	21.7	19.4 – 24.1	19.9	17.8 – 22.0
Kidney disease (n=197)	23.5	13.8 – 37.1	21.4	11.8 – 31.0
No kidney disease (n=5450)	21.4	19.5 – 23.4	19.6	17.9 – 21.3
Diabetes (n=717)	14.5	10.6 – 19.6	13.7	10.0 – 17.4
No diabetes (n=4945)	22.1	20.1 – 24.2	20.3	18.5 – 22.1

Household substance abuse – before 18 years of age, lived with someone who was a problem drinker or alcoholic

ACEDRINK: A total of 1398 respondents reported “Yes” to having this Adverse Childhood Experience; 4294 reported “No.” The age-adjusted population frequencies are 27.1% “Yes” and 72.9% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2501)	22.7	20.1 – 25.5	22.2	19.8 – 24.5
Female (n=3191)	31.2	28.4 – 34.1	30.0	27.5 – 32.5
<12 years education (n= 257)	42.1	32.5 – 52.3	39.7	30.5 – 48.8
12 years education (n=1513)	28.1	24.5 – 32.0	27.1	23.8 – 30.4
>12 years education (n=3922)	24.7	22.5 – 27.1	24.1	22.2 – 26.1
Employed (n=2912)	26.7	24.2 – 29.4	26.0	23.7 – 28.3
Out of work (n=201)	27.8	19.7 – 37.6	27.7	19.4 – 36.0
Not in labor force (n=2552)	27.8	24.6 – 31.2	26.5	23.8 – 29.3
Income <\$15,000 (n=346)	39.3	29.9 – 49.6	38.8	29.9 – 47.7
Income \$15,000 - <\$25,000 (n=649)	34.7	28.5 – 41.4	34.6	28.7 – 40.4
Income \$25,000 - <\$35,000 (n=470)	26.7	20.6 – 33.9	25.0	19.3 – 30.7
Income \$35,000 - <\$50,000 (n=686)	31.3	25.8 – 37.2	29.6	24.7 – 34.5
Income \$50,000 or more (n=2561)	24.5	21.9 – 27.3	23.8	21.5 – 26.1
Don't know/not sure/missing (n=980)	24.7	19.6 – 30.7	23.6	18.8 – 28.4
Health status and health-related behaviors				
Underweight (n=88)	(*)	(*)	(*)	(*)
Normal weight (n=1741)	25.8	22.4 – 29.4	24.7	21.6 – 27.8
Overweight (n=1998)	25.4	22.3 – 28.8	24.7	21.8 – 27.5
Obese (n=1498)	30.0	26.3 – 34.0	29.5	26.2 – 32.9
General health is good or better (n=4793)	25.0	22.9 – 27.1	24.2	22.3 – 26.0
General health is fair or poor (n=889)	40.5	35.2 – 46.1	38.8	33.9 – 43.6
Zero bad mental health days (n=3944)	21.4	19.3 – 23.6	20.8	19.0 – 22.7
1-13 bad mental health days (n=1077)	32.4	28.0 – 37.1	32.2	28.0 – 36.3
14+ bad mental health days (n=602)	45.8	39.1 – 52.6	44.7	38.5 – 51.0
Told they had depression (n=1186)	39.6	34.8 – 44.5	39.3	34.9 – 43.6
Never told they had depression (n=4478)	23.2	21.2 – 25.4	22.4	20.6 – 24.2
Risky behavior for HIV in past year (n=153)	34.4	24.9 – 45.3	33.6	23.7 – 43.6
No risky behavior for HIV (n=5528)	26.5	24.5 – 28.6	25.7	24.0 – 27.5
Is a current smoker (n=760)	39.7	34.2 – 45.6	39.2	33.9 – 44.5
Not a current smoker (n=4889)	24.1	22.1 – 26.2	23.4	21.7 – 25.2
Currently using e-cigarettes (n=161)	34.9	25.2 – 46.1	34.8	24.6 – 45.1
Not using e-cigarettes (n=5525)	26.4	24.5 – 28.5	25.6	23.9 – 27.3
Binge drinking in past month (n=659)	29.2	24.1 – 34.9	28.8	23.7 – 33.9
No binge drinking (n=4946)	26.5	24.4 – 28.7	25.6	23.8 – 27.5
Heavy drinking in past month (n=391)	32.3	25.0 – 40.5	31.3	24.3 – 38.2
No heavy drinking (n=5201)	26.7	24.7 – 28.8	25.8	24.0 – 27.6

Drinking and driving (n=61)	(*)	(*)	(*)	(*)
No drinking and driving (n=3459)	25.8	23.4 – 28.3	24.8	22.7 – 26.9
Usually use a seatbelt (n=4797)	24.9	22.9 – 27.0	24.3	22.5 – 26.1
Usually don't use a seatbelt (n=887)	36.3	31.0 – 42.0	34.7	29.6 – 39.7
Chronic diseases				
Heart attack (n=342)	28.7	21.4 – 37.4	28.0	21.2 – 34.8
No heart attack (n=5319)	27.0	25.0 – 29.1	26.1	24.3 – 27.9
Coronary heart disease (n=349)	26.1	20.0 – 33.1	24.3	18.6 – 30.1
No coronary heart disease (n=5302)	27.0	25.0 – 29.1	26.2	24.4 – 28.0
Stroke (n=186)	35.8	24.8 – 48.5	35.8	25.8 – 45.8
No stroke (n=5485)	26.9	24.9 – 29.0	26.0	24.2 – 27.7
Asthma (n=861)	35.7	30.4 – 41.3	34.9	30.0 – 39.9
No asthma (n=4808)	25.3	23.2 – 27.4	24.5	22.7 – 26.3
Skin cancer (n=601)	23.0	17.7 – 29.2	21.8	17.3 – 26.2
No skin cancer (n=5066)	27.3	25.2 – 29.4	26.5	24.6 – 28.3
Any other cancer (n=625)	30.0	23.7 – 37.2	26.9	21.5 – 32.3
No other cancer (n=5050)	26.9	24.9 – 29.0	26.2	24.3 – 28.0
COPD, emphysema, bronchitis (n=493)	40.7	33.7 – 48.1	39.4	33.2 – 45.6
No COPD (n=5166)	26.1	24.1 – 28.3	25.2	23.4 – 27.0
Arthritis (n=2144)	29.1	26.0 – 32.3	27.9	25.3 – 30.6
No arthritis (n=3518)	26.4	24.1 – 29.0	25.5	23.3 – 27.7
Kidney disease (n=198)	37.1	26.1 – 49.6	36.0	26.0 – 46.1
No kidney disease (n=5474)	26.8	24.8 – 28.8	25.9	24.1 – 27.7
Diabetes (n=717)	27.0	22.3 – 32.2	26.9	22.5 – 31.3
No diabetes (n=4969)	27.1	25.0 – 29.3	26.1	24.3 – 28.0

Household substance abuse – before 18 years of age, lived with someone who used illegal street drugs or who abused prescription medications

ACEDRUGS: A total of 449 respondents reported “Yes” to having this Adverse Childhood Experience; 5246 reported “No.” The age-adjusted population frequencies are 13.4% “Yes” and 86.6% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2500)	11.0	9.1 – 13.3	10.0	8.2 – 11.7
Female (n=3195)	15.7	13.3 – 18.4	13.7	11.5 – 16.0
<12 years education (n= 256)	25.3	17.2 – 35.6	23.1	14.8 – 31.4
12 years education (n=1512)	14.8	11.8 – 18.4	13.0	10.1 – 15.8
>12 years education (n=3927)	11.3	9.6 – 13.3	10.1	8.6 – 11.6
Employed (n=2910)	14.9	12.8 – 17.4	13.5	11.5 – 15.5
Out of work (n=200)	18.0	10.4 – 29.3	17.7	8.4 – 27.1
Not in labor force (n=2558)	9.8	7.9 – 12.2	8.5	6.8 – 10.2
Income <\$15,000 (n=343)	20.5	13.7 – 29.6	20.5	13.0 – 28.0
Income \$15,000 - <\$25,000 (n=647)	15.4	10.8 – 21.5	13.5	8.9 – 18.1
Income \$25,000 - <\$35,000 (n=471)	16.5	11.2 – 23.6	13.8	8.7 – 19.0
Income \$35,000 - <\$50,000 (n=687)	13.1	9.1 – 18.5	10.9	7.0 – 14.8
Income \$50,000 or more (n=2564)	12.4	10.3 – 14.9	11.2	9.2 – 13.2
Don't know/not sure/missing (n=983)	12.2	8.2 – 17.7	10.6	6.7 – 14.5
Health status and health-related behaviors				
Underweight (n=87)	(*)	(*)	(*)	(*)
Normal weight (n=1737)	14.1	11.3 – 17.6	12.4	9.7 – 15.1
Overweight (n=2002)	12.2	9.8 – 15.1	11.1	8.8 – 13.5
Obese (n=1496)	13.8	10.8 – 17.6	12.4	9.5 – 15.2
General health is good or better (n=4798)	12.9	11.2 – 14.8	11.4	9.8 – 13.0
General health is fair or poor (n=888)	17.0	13.1 – 21.7	15.3	11.6 – 19.0
Zero bad mental health days (n=3953)	10.1	8.4 – 12.0	8.7	7.2 – 10.3
1-13 bad mental health days (n=1074)	15.0	11.6 – 19.3	13.9	10.5 – 17.3
14+ bad mental health days (n=598)	27.1	21.3 – 33.6	25.3	19.7 – 30.9
Told they had depression (n=1185)	24.2	19.9 – 29.2	22.4	18.2 – 26.6
Never told they had depression (n=4482)	10.1	8.5 – 11.8	8.8	7.5 – 10.2
Risky behavior for HIV in past year (n=151)	26.3	17.9 – 37.0	24.7	15.8 – 33.6
No risky behavior for HIV (n=5533)	12.6	11.1 – 14.4	11.3	9.8 – 12.7
Is a current smoker (n=757)	24.4	19.5 – 30.0	23.3	18.4 – 28.2
Not a current smoker (n=4894)	10.8	9.3 – 12.6	9.5	8.2 – 10.9
Currently using e-cigarettes (n=162)	28.8	19.1 – 40.8	28.1	17.3 – 38.9
Not using e-cigarettes (n=5528)	12.5	10.9 – 14.2	11.1	9.7 – 12.4
Binge drinking in past month (n=659)	15.6	11.6 – 20.6	15.4	11.2 – 19.5
No binge drinking (n=4946)	12.8	11.2 – 14.8	11.2	9.7 – 12.7
Heavy drinking in past month (n=393)	17.5	11.5 – 25.7	16.3	10.1 – 22.5
No heavy drinking (n=5200)	13.0	11.4 – 14.9	11.5	10.0 – 13.0

Drinking and driving (n=60)	(*)	(*)	(*)	(*)
No drinking and driving (n=3464)	13.4	11.4 – 15.6	11.7	9.9 – 13.6
Usually use a seatbelt (n=4799)	11.5	9.9 – 13.3	10.1	8.7 – 11.5
Usually don't use a seatbelt (n=888)	21.7	17.1 – 27.2	19.9	15.4 – 24.5
Chronic diseases				
Heart attack (n=344)	9.2	5.3 – 15.5	9.1	4.5 – 13.7
No heart attack (n=5321)	13.6	11.9 – 15.4	12.0	10.5 – 13.5
Coronary heart disease (n=348)	(*)	(*)	7.0	3.0 – 11.0
No coronary heart disease (n=5305)	13.6	12.0 – 15.4	12.1	10.6 – 13.6
Stroke (n=188)	(*)	(*)	15.4	7.1 – 23.8
No stroke (n=5486)	13.3	11.7 – 15.1	11.8	10.3 – 13.3
Asthma (n=862)	21.1	16.4 – 26.8	19.6	14.9 – 24.2
No asthma (n=4812)	11.8	10.2 – 13.6	10.4	9.0 – 11.9
Skin cancer (n=604)	(*)	(*)	5.5	2.5 – 8.5
No skin cancer (n=5066)	13.8	12.2 – 15.7	12.4	10.9 – 14.0
Any other cancer (n=621)	8.9	5.4 – 14.1	7.9	4.7 – 11.2
No other cancer (n=5057)	13.8	12.1 – 15.7	12.3	10.7 – 13.8
COPD, emphysema, bronchitis. (n=494)	19.1	13.1 – 27.0	17.6	11.8 – 23.5
No COPD (n=5169)	13.0	11.4 – 14.9	11.5	10.0 – 13.0
Arthritis (n=2151)	11.5	9.1 – 14.3	9.7	7.7 – 11.7
No arthritis (n=3515)	14.1	12.2 – 16.3	12.8	11.0 – 14.7
Kidney disease (n=197)	(*)	(*)	(*)	(*)
No kidney disease (n=5477)	13.4	11.8 – 15.2	11.9	10.5 – 13.4
Diabetes (n=715)	6.5	4.4 – 9.6	6.4	4.0 – 8.8
No diabetes (n=4974)	14.0	12.3 – 15.9	12.5	10.9 – 14.1

Incarcerated household member – before 18 years of age, lived with someone who served time or was sentenced to serve time in a prison, jail, or other correctional facility

ACEPRISM: A total of 219 respondents reported “Yes” to having this Adverse Childhood Experience; 5492 reported “No.” The age-adjusted population frequencies are 6.9% “Yes” and 93.1% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2506)	7.6	5.9 – 9.8	6.7	5.0 – 8.3
Female (n=3205)	6.2	4.8 – 8.1	5.4	4.1 – 6.7
<12 years education (n= 256)	16.3	10.3 – 25.0	14.6	8.1 – 21.0
12 years education (n=1518)	9.0	6.7 – 12.1	7.7	5.4 – 9.9
>12 years education (n=3937)	4.8	3.7 – 6.2	4.2	3.2 – 5.2
Employed (n=2920)	7.3	5.8 – 9.2	6.5	5.0 – 8.0
Out of work (n=200)	11.2	6.5 – 18.8	10.6	5.1 – 16.2
Not in labor force (n=2564)	5.6	4.0 – 7.7	4.7	3.3 – 6.0
Income <\$15,000 (n=346)	18.2	11.3 – 28.1	16.5	9.2 – 23.8
Income \$15,000 - <\$25,000 (n=650)	8.3	5.3 – 12.6	7.5	4.5 – 10.5
Income \$25,000 - <\$35,000 (n=472)	9.2	5.5 – 14.9	7.8	4.0 – 11.6
Income \$35,000 - <\$50,000 (n=689)	9.1	5.7 – 14.2	7.6	4.1 – 11.0
Income \$50,000 or more (n=2568)	5.3	3.8 – 7.2	4.6	3.2 – 6.0
Don't know/not sure/missing (n=986)	5.4	3.3 – 8.7	4.4	2.3 – 6.6
Health status and health-related behaviors				
Underweight (n=88)	(*)	(*)	(*)	(*)
Normal weight (n=1743)	7.0	5.1 – 9.7	6.0	4.1 – 7.9
Overweight (n=2005)	5.3	3.8 – 7.4	4.7	3.2 – 6.2
Obese (n=1502)	8.3	5.9 – 11.4	7.3	5.0 – 9.5
General health is good or better (n=4808)	6.1	5.0 – 7.6	5.3	4.2 – 6.4
General health is fair or poor (n=893)	12.0	8.6 – 16.6	10.3	7.2 – 13.5
Zero bad mental health days (n=3958)	4.7	3.5 – 6.3	4.0	2.9 – 5.2
1-13 bad mental health days (n=1081)	8.0	5.8 – 10.9	7.1	5.0 – 9.3
14+ bad mental health days (n=602)	15.6	11.3 – 21.3	13.9	9.6 – 18.2
Told they had depression (n=1190)	13.8	10.7 – 17.7	12.6	9.6 – 15.5
Never told they had depression (n=4493)	4.9	3.8 – 6.3	4.2	3.1 – 5.2
Risky behavior for HIV in past year (n=152)	23.8	15.4 – 34.8	22.1	12.9 – 31.2
No risky behavior for HIV (n=5547)	5.8	4.7 – 7.0	5.1	4.1 – 6.0
Is a current smoker (n=760)	17.8	13.8 – 22.6	16.6	12.5 – 20.7
Not a current smoker (n=4907)	4.3	3.3 – 5.6	3.7	2.8 – 4.6
Currently using e-cigarettes (n=162)	14.3	8.1 – 23.9	13.8	6.1 – 21.4
Not using e-cigarettes (n=5543)	6.5	5.3 – 7.8	5.6	4.6 – 6.6
Binge drinking in past month (n=659)	9.4	6.5 – 13.3	8.6	5.5 – 11.8
No binge drinking (n=4962)	6.4	5.2 – 7.9	5.6	4.5 – 6.7
Heavy drinking in past month (n=394)	9.7	5.6 – 16.2	8.2	3.7 – 12.6
No heavy drinking (n=5215)	6.8	5.6 – 8.2	5.9	4.8 – 7.0

Drinking and driving (n=59)	(*)	(*)	(*)	(*)
No drinking and driving (n=3475)	6.5	5.1 – 8.2	5.5	4.2 – 6.8
Usually use a seatbelt (n=4813)	4.9	3.9 – 6.1	4.2	3.3 – 5.0
Usually don't use a seatbelt (n=890)	15.6	11.7 – 20.5	14.2	10.3 – 18.2
Chronic diseases				
Heart attack (n=346)	(*)	(*)	9.3	3.9 – 14.7
No heart attack (n=5335)	6.8	5.6 – 8.2	5.9	4.8 – 6.9
Coronary heart disease (n=350)	(*)	(*)	(*)	(*)
No coronary heart disease (n=5320)	6.9	5.8 – 8.4	6.0	4.9 – 7.1
Stroke (n=189)	(*)	(*)	(*)	(*)
No stroke (n=5501)	6.8	5.6 – 8.1	5.9	4.8 – 6.9
Asthma (n=864)	10.3	7.1 – 14.7	9.6	6.2 – 13.0
No asthma (n=4824)	6.2	5.0 – 7.6	5.3	4.2 – 6.3
Skin cancer (n=606)	(*)	(*)	(*)	(*)
No skin cancer (n=5080)	7.2	6.0 – 8.6	6.3	5.2 – 7.4
Any other cancer (n=628)	(*)	(*)	(*)	(*)
No other cancer (n=5066)	7.0	5.8 – 8.5	6.2	5.0 – 7.3
COPD, emphysema, bronchitis (n=494)	11.6	7.0 – 18.8	9.2	5.2 – 13.2
No COPD (n=5183)	6.6	5.4 – 8.0	5.7	4.7 – 6.8
Arthritis (n=2156)	6.6	4.8 – 8.9	5.4	3.9 – 6.9
No arthritis (n=3525)	7.0	5.6 – 8.7	6.2	4.9 – 7.5
Kidney disease (n=199)	(*)	(*)	(*)	(*)
No kidney disease (n=5491)	6.9	5.7 – 8.3	6.0	4.9 – 7.0
Diabetes (n=718)	3.9	2.3 – 6.5	3.7	1.8 – 5.5
No diabetes (n=4987)	7.2	6.0 – 8.7	6.3	5.1 – 7.4

Physical abuse – before 18 years of age, ever been hit, beaten, kicked or physically hurt by a parent or adult in the home

ACEHURT: A total of 826 respondents reported “Yes” to having this Adverse Childhood Experience one or more times; 4837 reported “No.” The age-adjusted population frequencies are 15.8% “Yes” and 84.2% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2488)	15.0	12.9 – 17.4	14.7	12.8 – 16.6
Female (n=3175)	16.5	14.4 – 18.9	16.1	14.1 – 18.0
<12 years education (n= 257)	25.6	18.2 – 34.8	23.6	16.3 – 31.0
12 years education (n=1498)	16.8	14.1 – 19.9	16.7	14.1 – 19.2
>12 years education (n=3908)	14.1	12.3 – 16.0	13.8	12.2 – 15.4
Employed (n=2896)	15.9	13.9 – 18.1	15.6	13.7 – 17.4
Out of work (n=196)	19.7	12.3 – 30.0	18.9	11.1 – 26.6
Not in labor force (n=2544)	15.1	12.9 – 17.7	14.8	12.8 – 16.8
Income <\$15,000 (n=340)	22.5	15.8 – 30.9	24.1	16.8 – 31.5
Income \$15,000 - <\$25,000 (n=641)	20.4	15.7 – 26.1	21.1	16.3 – 25.9
Income \$25,000 - <\$35,000 (n=464)	16.9	12.1 – 23.2	15.3	10.8 – 19.9
Income \$35,000 - <\$50,000 (n=687)	20.7	15.6 – 26.8	19.0	14.3 – 23.7
Income \$50,000 or more (n=2554)	14.4	12.4 – 16.6	14.1	12.3 – 15.9
Don't know/not sure/missing (n=977)	11.7	8.5 – 16.0	11.3	8.1 – 14.4
Health status and health-related behaviors				
Underweight (n=87)	(*)	(*)	(*)	(*)
Normal weight (n=1727)	14.7	12.1 – 17.7	14.0	11.6 – 16.4
Overweight (n=1992)	14.4	12.0 – 17.0	13.9	11.8 – 16.0
Obese (n=1492)	18.8	15.8 – 22.3	19.1	16.2 – 22.0
General health is good or better (n=4772)	13.9	12.3 – 15.6	13.6	12.2 – 15.0
General health is fair or poor (n=881)	27.8	23.1 – 33.0	26.6	22.4 – 30.8
Zero bad mental health days (n=3929)	12.4	10.7 – 14.2	12.3	10.8 – 13.7
1-13 bad mental health days (n=1074)	17.9	14.8 – 21.4	17.9	14.9 – 20.9
14+ bad mental health days (n=597)	28.6	23.0 – 35.0	27.8	22.3 – 33.2
Told they had depression (n=1177)	27.4	23.3 – 32.0	26.9	23.0 – 30.7
Never told they had depression (n=4460)	12.3	10.8 – 13.9	12.1	10.8 – 13.4
Risky behavior for HIV in past year (n=153)	19.8	12.5 – 30.0	19.1	11.2 – 27.1
No risky behavior for HIV (n=5499)	15.5	14.0 – 17.2	15.2	13.8 – 16.6
Is a current smoker (n=754)	23.4	18.9 – 28.5	22.6	18.2 – 26.9
Not a current smoker (n=4866)	14.0	12.5 – 15.6	13.9	12.5 – 15.3
Currently using e-cigarettes (n=162)	19.1	12.6 – 28.0	18.1	11.2 – 25.1
Not using e-cigarettes (n=5496)	15.4	13.9 – 17.1	15.1	13.7 – 16.5
Binge drinking in past month (n=657)	16.8	12.9 – 21.4	16.5	12.6 – 20.4
No binge drinking (n=4918)	15.5	13.9 – 17.3	15.2	13.7 – 16.6
Heavy drinking in past month (n=390)	16.5	11.8 – 22.6	15.9	11.1 – 20.8
No heavy drinking (n=5173)	16.0	14.4 – 17.7	15.6	14.1 – 17.0

Drinking and driving (n=60)	(*)	(*)	(*)	(*)
No drinking and driving (n=3444)	14.9	13.0 – 17.0	14.3	12.6 – 15.9
Usually use a seatbelt (n=4771)	14.9	13.3 – 16.6	14.6	13.1 – 16.0
Usually don't use a seatbelt (n=884)	19.7	15.7 – 24.4	19.1	15.3 – 23.0
Chronic diseases				
Heart attack (n=341)	17.7	12.7 – 24.1	18.6	13.2 – 24.0
No heart attack (n=5295)	15.7	14.1 – 17.4	15.2	13.8 – 16.6
Coronary heart disease (n=345)	20.4	14.7 – 27.4	20.0	14.4 – 25.6
No coronary heart disease (n=5277)	15.5	14.0 – 17.2	15.1	13.7 – 16.5
Stroke (n=184)	26.9	15.8 – 42.0	24.5	14.4 – 34.6
No stroke (n=5459)	15.5	14.0 – 17.2	15.1	13.8 – 16.5
Asthma (n=853)	23.7	19.3 – 28.7	22.8	18.7 – 27.0
No asthma (n=4787)	14.0	12.5 – 15.8	13.9	12.5 – 15.3
Skin cancer (n=600)	17.1	12.4 – 23.1	15.8	11.6 – 19.9
No skin cancer (n=5039)	15.7	14.1 – 17.4	15.4	13.9 – 16.8
Any other cancer (n=620)	18.6	12.9 – 26.2	16.3	11.4 – 21.3
No other cancer (n=5027)	15.5	14.0 – 17.2	15.3	13.9 – 16.7
COPD, emphysema, bronchitis (n=488)	26.5	20.3 – 33.9	25.2	19.7 – 30.7
No COPD (n=5144)	15.1	13.6 – 16.8	14.7	13.3 – 16.1
Arthritis (n=2137)	18.7	16.1 – 21.7	18.0	15.7 – 20.4
No arthritis (n=3497)	14.8	13.0 – 16.8	14.4	12.7 – 16.0
Kidney disease (n=197)	25.6	15.5 – 39.1	24.1	14.2 – 33.9
No kidney disease (n=5447)	15.5	14.0 – 17.1	15.1	13.7 – 16.5
Diabetes (n=714)	18.2	14.2 – 23.0	18.0	14.2 – 21.8
No diabetes (n=4944)	15.6	14.0 – 17.3	15.1	13.7 – 16.6

Intimate partner violence – before 18 years of age, parents or adults in the home ever slapped, hit, kicked, punched or beat each other up

ACEPUNCH: A total of 937 respondents reported “Yes” to having this Adverse Childhood Experience one or more times; 4734 reported “No.” The age-adjusted population frequencies are 18.9% “Yes” and 81.1% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2490)	18.7	16.4 – 21.2	18.1	16.0 – 20.2
Female (n=3181)	19.2	16.7 – 21.9	18.4	16.2 – 20.6
<12 years education (n= 256)	32.8	23.8 – 43.1	30.5	21.7 – 39.3
12 years education (n=1503)	19.2	16.2 – 22.6	18.4	15.5 – 21.2
>12 years education (n=3912)	17.1	15.2 – 19.2	16.8	15.0 – 18.5
Employed (n=2900)	18.3	16.1 – 20.7	17.7	15.6 – 19.7
Out of work (n=197)	22.5	15.1 – 32.2	21.7	14.2 – 29.1
Not in labor force (n=2547)	19.9	17.2 – 22.9	19.1	16.7 – 21.5
Income <\$15,000 (n=341)	26.5	19.3 – 35.3	28.1	20.4 – 35.9
Income \$15,000 - <\$25,000 (n=642)	24.7	19.3 – 30.9	23.8	18.6 – 29.0
Income \$25,000 - <\$35,000 (n=467)	24.9	18.6 – 32.5	23.2	17.1 – 29.2
Income \$35,000 - <\$50,000 (n=686)	20.9	16.1 – 26.8	19.6	15.1 – 24.0
Income \$50,000 or more (n=2560)	16.5	14.3 – 19.0	16.0	13.9 – 18.0
Don't know/not sure/missing (n=975)	16.9	12.6 – 22.4	16.2	12.1 – 20.4
Health status and health-related behaviors				
Underweight (n=87)	(*)	(*)	(*)	(*)
Normal weight (n=1730)	16.8	13.9 – 20.2	16.1	13.4 – 18.9
Overweight (n=1995)	19.2	16.4 – 22.3	18.4	15.9 – 20.9
Obese (n=1496)	22.4	18.9 – 26.2	21.9	18.8 – 25.1
General health is good or better (n=4779)	16.9	15.1 – 18.9	16.3	14.6 – 17.9
General health is fair or poor (n=883)	31.9	27.0 – 37.2	30.8	26.3 – 35.2
Zero bad mental health days (n=3937)	13.2	11.5 – 15.1	12.9	11.4 – 14.5
1-13 bad mental health days (n=1076)	23.5	19.6 – 27.9	23.2	19.5 – 26.9
14+ bad mental health days (n=595)	38.9	32.5 – 45.7	38.1	32.0 – 44.2
Told they had depression (n=1170)	34.8	30.2 – 39.7	34.0	29.7 – 38.3
Never told they had depression (n=4476)	14.3	12.6 – 16.1	13.9	12.4 – 15.4
Risky behavior for HIV in past year (n=153)	26.3	17.7 – 37.2	25.5	16.4 – 34.7
No risky behavior for HIV (n=5509)	18.4	16.7 – 20.3	17.9	16.3 – 19.4
Is a current smoker (n=754)	32.1	26.8 – 37.9	31.0	25.9 – 36.1
Not a current smoker (n=4873)	15.8	14.1 – 17.5	15.5	14.0 – 17.0
Currently using e-cigarettes (n=160)	26.0	17.3 – 37.1	25.5	15.9 – 35.0
Not using e-cigarettes (n=5506)	18.5	16.8 – 20.3	17.9	16.4 – 19.4
Binge drinking in past month (n=659)	21.0	16.7 – 25.9	20.7	16.4 – 24.9
No binge drinking (n=4928)	18.4	16.6 – 20.4	17.8	16.2 – 19.4
Heavy drinking in past month (n=393)	25.1	18.4 – 33.2	23.6	17.1 – 30.0
No heavy drinking (n=5182)	18.5	16.8 – 20.4	18.0	16.4 – 19.6

Drinking and driving (n=59)	(*)	(*)	(*)	(*)
No drinking and driving (n=3460)	18.4	16.3 – 20.7	17.7	15.8 – 19.6
Usually use a seatbelt (n=4777)	17.0	15.3 – 18.9	16.6	15.0 – 18.1
Usually don't use a seatbelt (n=887)	26.8	22.0 – 32.1	25.7	21.1 – 30.2
Chronic diseases				
Heart attack (n=341)	22.8	16.9 – 30.1	22.7	16.8 – 28.6
No heart attack (n=5300)	18.7	17.0 – 20.6	18.0	16.4 – 19.6
Coronary heart disease (n=347)	23.6	17.5 – 31.1	22.9	17.0 – 28.9
No coronary heart disease (n=5284)	18.6	16.9 – 20.5	17.9	16.4 – 19.5
Stroke (n=185)	28.7	17.4 – 43.5	26.4	16.3 – 36.5
No stroke (n=5467)	18.6	16.9 – 20.5	18.0	16.5 – 19.6
Asthma (n=859)	28.5	23.5 – 34.0	27.6	22.9 – 32.3
No asthma (n=4790)	16.8	15.1 – 18.7	16.4	14.8 – 18.0
Skin cancer (n=602)	17.2	13.1 – 22.3	16.9	12.9 – 20.9
No skin cancer (n=5045)	19.0	17.2 – 21.0	18.4	16.7 – 20.0
Any other cancer (n=622)	21.4	15.9 – 28.2	20.1	15.1 – 25.1
No other cancer (n=5032)	18.8	17.0 – 20.7	18.1	16.5 – 19.7
COPD, emphysema, bronchitis. (n=487)	33.7	27.1 – 41.0	33.4	27.3 – 39.6
No COPD (n=5152)	18.0	16.3 – 19.9	17.2	15.6 – 18.8
Arthritis (n=2131)	22.8	19.8 – 26.1	21.6	19.0 – 24.2
No arthritis (n=3511)	17.6	15.6 – 19.9	16.9	15.1 – 18.8
Kidney disease (n=196)	28.4	17.5 – 42.6	23.9	13.8 – 33.9
No kidney disease (n=5455)	18.6	16.9 – 20.4	18.0	16.5 – 19.6
Diabetes (n=712)	20.1	16.0 – 25.0	20.5	16.5 – 24.6
No diabetes (n=4953)	18.8	17.0 – 20.8	18.1	16.4 – 19.7

Sexual abuse – before 18 years of age, was touched sexually by an adult or someone at least five years older

ACETOUCH: A total of 665 respondents reported “Yes” to having this Adverse Childhood Experience one or more times; 4980 reported “No.” The age-adjusted population frequencies are 11.4% “Yes” and 88.6% “No.” The following table shows the percentage of Yes answers within population subgroups:

POPULATION subgroups	Age-adjusted rate		Crude rate	
	% yes	95% CI	% yes	95% CI
Socio-demographics				
Male (n=2494)	6.2	4.9 – 7.9	6.0	4.7 – 7.2
Female (n=3151)	16.3	14.2 – 18.6	15.8	13.9 – 17.6
<12 years education (n= 254)	12.0	7.4 – 18.9	11.7	6.6 – 16.8
12 years education (n=1502)	11.9	9.5 – 14.7	11.3	9.1 – 13.5
>12 years education (n=3889)	11.1	9.5 – 12.8	10.8	9.4 – 12.1
Employed (n=2892)	10.1	8.5 – 11.9	9.8	8.3 – 11.3
Out of work (n=199)	11.9	7.1 – 19.2	11.9	6.4 – 17.3
Not in labor force (n=2527)	14.1	11.8 – 16.7	13.1	11.2 – 15.1
Income <\$15,000 (n=340)	18.3	12.8 – 25.5	19.2	13.4 – 25.0
Income \$15,000 - <\$25,000 (n=641)	13.2	9.4 – 18.3	12.9	9.1 – 16.6
Income \$25,000 - <\$35,000 (n=463)	17.3	12.1 – 24.1	15.4	10.5 – 20.2
Income \$35,000 - <\$50,000 (n=682)	12.6	9.2 – 17.0	12.3	8.9 – 15.7
Income \$50,000 or more (n=2553)	10.0	8.3 – 12.1	9.7	8.1 – 11.3
Don't know/not sure/missing (n=966)	8.7	6.2 – 12.1	8.4	6.0 – 10.8
Health and health-related behaviors				
Underweight (n=87)	(*)	(*)	(*)	(*)
Normal weight (n=1728)	10.2	8.1 – 12.7	10.0	8.0 – 12.1
Overweight (n=1987)	11.4	9.3 – 14.1	10.7	8.7 – 12.7
Obese (n=1481)	12.1	9.8 – 14.8	12.4	10.2 – 14.6
General health is good or better (n=4761)	9.6	8.3 – 11.0	9.3	8.1 – 10.5
General health is fair or poor (n=874)	23.0	18.7 – 28.1	21.7	17.7 – 25.6
Zero bad mental health days (n=3925)	7.9	6.6 – 9.3	7.6	6.5 – 8.7
1-13 bad mental health days (n=1066)	11.4	9.0 – 14.3	11.7	9.2 – 14.1
14+ bad mental health days (n=587)	28.5	22.8 – 34.9	28.0	22.5 – 33.5
Told they had depression (n=1158)	23.3	19.5 – 27.5	23.5	19.9 – 27.1
Never told they had depression (n=4459)	7.7	6.6 – 9.1	7.4	6.3 – 8.4
Risky behavior for HIV in past year (n=150)	17.0	10.5 – 26.2	16.3	9.3 – 23.4
No risky behavior for HIV (n=5484)	11.0	9.7 – 12.4	10.7	9.5 – 11.8
Is a current smoker (n=750)	17.6	13.7 – 22.3	17.0	13.2 – 20.7
Not a current smoker (n=4853)	9.9	8.7 – 11.4	9.8	8.6 – 10.9
Currently using e-cigarettes (n=159)	20.2	12.5 – 31.0	19.1	10.5 – 27.6
Not using e-cigarettes (n=5480)	10.8	9.6 – 12.2	10.6	9.5 – 11.7
Binge drinking in past month (n=661)	10.3	7.3 – 14.3	10.4	7.2 – 13.5
No binge drinking (n=4897)	11.7	10.3 – 13.3	11.2	10.0 – 12.4
Heavy drinking in past month (n=393)	18.7	12.7 – 26.6	17.8	11.8 – 23.8
No heavy drinking (n=5153)	10.8	9.6 – 12.3	10.5	9.4 – 11.7

Drinking and driving (n=60)	(*)	(*)	(*)	(*)
No drinking and driving (n=3450)	11.6	9.9 – 13.5	11.1	9.7 – 12.6
Usually use a seatbelt (n=4756)	10.7	9.3 – 12.2	10.4	9.2 – 11.7
Usually don't use a seatbelt (n=881)	14.3	11.2 – 18.2	13.5	10.5 – 16.5
Chronic diseases				
Heart attack (n=340)	13.7	8.8 – 20.6	11.8	7.3 – 16.4
No heart attack (n=5276)	11.2	9.9 – 12.7	10.9	9.7 – 12.0
Coronary heart disease (n=344)	14.2	9.3 – 21.0	12.6	8.1 – 17.1
No coronary heart disease (n=5262)	11.2	9.9 – 12.7	10.9	9.7 – 12.1
Stroke (n=184)	29.0	17.8 – 43.7	25.2	15.3 – 35.1
No stroke (n=5441)	10.9	9.7 – 12.4	10.6	9.5 – 11.7
Asthma (n=848)	20.8	16.7 – 25.7	19.7	15.8 – 23.6
No asthma (n=4774)	9.4	8.1 – 10.8	9.3	8.2 – 10.4
Skin cancer (n=603)	11.3	8.1 – 15.5	10.7	7.5 – 13.9
No skin cancer (n=5017)	11.4	10.1 – 12.9	11.0	9.8 – 12.3
Any other cancer (n=617)	18.8	13.5 – 25.4	16.4	11.9 – 21.0
No other cancer (n=5011)	10.8	9.5 – 12.3	10.5	9.4 – 11.7
COPD, emphysema, bronchitis (n=484)	26.4	20.0 – 33.9	24.4	18.9 – 29.9
No COPD, etc. (n=5129)	10.5	9.2 – 11.9	10.1	8.9 – 11.2
Arthritis (n=2118)	16.9	14.4 – 19.7	15.9	13.7 – 18.0
No arthritis (n=3498)	9.5	8.1 – 11.2	9.1	7.7 – 10.4
Kidney disease (n=194)	19.7	12.3 – 29.9	18.8	11.5 – 26.0
No kidney disease (n=5431)	11.1	9.8 – 12.6	10.7	9.6 – 11.9
Diabetes (n=710)	13.3	9.8 – 17.8	13.3	9.9 – 16.7
No diabetes (n=4929)	11.2	9.9 – 12.7	10.8	9.6 – 12.0

Appendix

1. Scripts of survey questions

ACEs questions

Demographic, General Health, and Health Behavior questions

Chronic Disease questions

2. Glossary of terms used in this report

Script of ACEs questions

All questions refer to the time period before you were 18 years of age. Now, looking back before you were 18 years of age—

ACEDEPRS (Household mental illness)

Did you live with anyone who was depressed, mentally ill, or suicidal?

1 Yes 2 No

ACEDRINK (Household substance abuse)

Did you live with anyone who was a problem drinker or alcoholic?

1 Yes 2 No

ACEDRUGS (Household substance abuse)

Did you live with anyone who used illegal street drugs or who abused prescription medications?

1 Yes 2 No

ACEPRISN (Incarcerated household member)

Did you live with anyone who served time or was sentenced to serve time in a prison, jail, or other correctional facility?

1 Yes 2 No

ACEHURT (Physical abuse)

Before age 18, how often did a parent or adult in your home ever hit, beat, kick, or physically hurt you in any way? Do not include spanking. Would you say ...

1 Never
2 Once
3 More than once

ACEPUNCH (Intimate partner violence)

How often did your parents or adults in your home ever slap, hit, kick, punch or beat each other up? Would you say ...

1 Never
2 Once
3 More than once

ACETOUCH (Sexual abuse)

How often did anyone at least 5 years older than you or an adult, ever touch you sexually? Would you say ...

1 Never
2 Once
3 More than once

Script of Demographic, General Health and Health Behaviors questions

Education

What is the highest grade or year of school you completed?

BMI (calculated from answers to the following questions)

About how much do you weigh without shoes?

About how tall are you without shoes?

General health

Would you say that in general your health is:

Excellent – Very good – Good – Fair – or Poor

Mental health

Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?

Depressive disorder

Were you ever told you have a depressive disorder (including depression, major depression, dysthymia, or minor depression)?

HIV risky behavior

I am going to read you a list. When I am done, please tell me if any of the situations apply to you. You do not need to tell me which one.

You have used intravenous drugs in the past year

You have been treated for a sexually transmitted or venereal disease in the past year

You have given or received money or drugs in exchange for sex in the past year

You had anal sex without a condom in the past year

You had four or more sex partners in the past year

Do any of these situations apply to you?

Current smoker

Do you smoke cigarettes every day, some days, or not at all?

E-cigarettes

Do you now use e-cigarettes or other electronic “vaping” products every day, some days, or not at all?

Binge drinking

Considering all types of alcoholic beverages, how many times during the past 30 days did you have (5 for men / 4 for women) or more drinks on an occasion?

Heavy drinking

One drink is equivalent to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor. During the past 30 days, on the days when you drank, about how many drinks did you drink on the average?

Drink and drive

During the past 30 days, how many times have you driven when you've had perhaps too much to drink?

Use seatbelt

How often do you use seat belts when you drive or ride in a car? Would you say:

Always – Nearly always – Sometimes – Seldom – Never?

Script of Chronic Disease questions

Has a doctor, nurse, or other health professional EVER told you that you had any of the following:

Heart attack

...that you had a heart attack, also called a myocardial infarction?

Coronary heart disease

...that you had angina or coronary heart disease?

Stroke

...that you had a stroke?

Asthma

...that you had asthma?

Skin cancer

...that you had skin cancer?

Other cancer

...that you had any other types of cancer?

COPD

...that you have chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis?

Arthritis

...that you have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia?

Kidney disease

...that you have kidney disease?

Do NOT include kidney stones, bladder infection or incontinence

Diabetes

...that you have diabetes?

(excluding gestational diabetes, pre-diabetes or borderline diabetes)

ACE: Adverse Childhood Experience that occurred in the first 18 years of life. ACEs are categorized into three groups: abuse, neglect, and family/household challenges, each with multiple subcategories:

Abuse

- Emotional abuse: A parent, stepparent, or adult living in your home swore at you, insulted you, put you down, or acted in a way that made you afraid that you might be physically hurt.
- Physical abuse: A parent, stepparent, or adult living in your home pushed, grabbed, slapped, threw something at you, or hit you so hard that you had marks or were injured.
- Sexual abuse: An adult, relative, family friend, or stranger who was at least 5 years older than you ever touched or fondled your body in a sexual way, made you touch his/her body in a sexual way, attempted to have any type of sexual intercourse with you.

Household Challenges

- Mother treated violently: Your mother or stepmother was pushed, grabbed, slapped, had something thrown at her, kicked, bitten, hit with a fist, hit with something hard, repeatedly hit for over at least a few minutes, or ever threatened or hurt by a knife or gun by your father (or stepfather) or mother's boyfriend.
- Household substance abuse: A household member was a problem drinker or alcoholic or a household member used street drugs.
- Mental illness in household: A household member was depressed or mentally ill or a household member attempted suicide.
- Parental separation or divorce: Your parents were ever separated or divorced.
- Criminal household member: A household member went to prison.

Neglect

- Emotional neglect: Someone in your family helped you feel important or special, you felt loved, people in your family looked out for each other and felt close to each other, and your family was a source of strength and support.
- Physical neglect: There was someone to take care of you, protect you, and take you to the doctor if you needed it, you didn't have enough to eat, your parents were too drunk or too high to take care of you, and you had to wear dirty clothes.

Source: Centers for Disease Control and Prevention, Kaiser Permanente. The ACE Study Survey Data [Unpublished Data]. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2016.

ACE profile: the ordered distribution of ACE scores, showing the percentage reporting each score.

ACE score: the total number of ACEs experienced; in this report ACE scores are: 0, 1, 2, 3, or 4-7; the ACE score represents cumulative childhood stress or trauma.

Age-adjusted frequency or rate: a measure that controls for the effect of age on the crude frequency or rate (see the definition of crude frequency or rate, below). When health conditions are linked to age (e.g., higher age \Rightarrow more events or cases), the age of those who report a condition should be taken into

account ('controlled'), otherwise the condition could be mainly age-related, and little or not related to other factors being studied (in this report, ACEs). Age-adjustment was done by post-stratification using the 2000 U.S. Standard Population with eight age groupings: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85 plus. Age-adjustment permits the comparison of rates among populations with different age distributions and is recommended whenever age is a risk factor for a condition.

BRFSS: Behavioral Risk Factor Surveillance System; since 1990, New Hampshire has participated in this national telephone survey of adults, which includes standard demographic and health questions as well as select modules of interest to the participating states; in 2016, New Hampshire included a modified ACEs module which is the basis of this report. BRFSS data consists of a weighted sample.

CI (confidence interval): the range of values within which the study's point estimate falls, with a given level of certainty (often 95%). For example, a point estimate of 75% with a 95% CI of 72.5% - 78% indicates a 95% degree of certainty that the true population value (estimated at 75%) is in fact somewhere between 72.5% and 78%.

Crude frequency or rate: the number of persons who report a condition, out of the total number of persons assessed. Because BRFSS surveys a sample of the population, the data is weighted to make the crude frequency representative of the entire population of the state.

Population: the total number of persons; for BRFSS, the population consists of all non-institutionalized adults, age 18 years and older, residing in New Hampshire when the survey is administered.

Sample: the number of persons who are selected ('sampled') to provide information or data, and who represent the entire population from which they are selected, when sample weights are applied.

Significant difference: a difference that is unlikely to be due to random chance, but is probably a true difference; usually if the probability of obtaining the observed difference by chance is less than 5%, it is considered a significant difference; this is the standard applied in this report.

Subgroups: breakdown of the sample or population, according to some characteristic; for example, gender subgroups include males and females; in this report, the notation 'n=xxx' indicates the number of individuals in a subgroup.

Survey: Data collection from a portion (a 'sample') of a population, which is used to make inferences about the population; survey results are weighted and reported as estimated population values.

Weighting: the assignment of a number (a 'weight') to each survey respondent that is based on the number of individuals in the population who are similar to the respondent in age, gender, race, and other factors. These weights are applied to make the survey results representative of the entire population, and not just the sample.