

## Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work

**eTable 1.** Distribution of Potential Confounds of Cannabis Use Among Wave 1 NESARC Respondents With and Without Cannabis Use

Potential confounds	Cannabis Use (N=1279)		No Cannabis Use (N=33364)		Odds Ratio (95% CI)
	% /mean	S.E.	% /mean	S.E.	
Childhood					
Family history of SUD (alcohol and drug only)	55.5	1.7	38.9	0.6	2.0 (1.7-2.2)
Disturbed family environment	48.6	1.7	27.8	0.4	2.5 (2.2-2.8)
Childhood parental loss	37.2	1.7	22.5	0.4	2.0 (1.8-2.4)
Early adolescence					
Low self-esteem	16.8	1.4	10.9	0.3	1.7 (1.4-2.0)
Early-onset anxiety (excluding PTSD)	20.1	1.7	9.6	0.3	2.4 (1.9-2.9)
Social deviance	2.1	0.1	0.5	0.0	1.4 (1.3-1.4)
Late adolescence					
Education years	13.6	0.1	13.8	0.1	1.0 (0.96-0.999)
Trauma past year	10.9	1.1	3.7	0.2	3.2 (2.5-4.1)
Axis I comorbidity	1.1	0.1	0.3	0.0	2.2 (2.1-2.3)
Axis II comorbidity	0.8	0.1	0.2	0.0	1.8 (1.7-1.9)
Adulthood					
Ever divorced	22.4	1.5	31.1	0.5	0.6 (0.5-0.8)
History of alcohol use disorder (lifetime but before 12 month)	66.4	1.8	27.8	0.7	5.1 (4.4-6.0)
History of other drug use disorder (lifetime but before 12 month)	31.1	1.8	4.0	0.2	10.9 (9.2-13.0)
History of nicotine dependence (lifetime but before 12 month)	46.1	1.9	15.3	0.4	4.7 (4.1-5.5)
Social deviance	6.3	0.2	1.7	0.0	1.3 (1.3-1.3)
Sociodemographics					
Age	29.9	0.4	45.7	0.2	0.9 (0.9-0.9)
Male	66.4	1.6	47.1	0.4	2.2 (1.9-2.6)
Non-White	29.0	1.9	29.1	1.6	1.0 (0.9-1.2)

**eTable 2.** Description of Cannabis Use Among Wave 1 Respondents Overall (n=34,653) and Respondents With Any Past Year Cannabis Use (n=1,279)

Characteristic	N (Percentage)
Total sample*	34,633 (100.00)
No past year cannabis use	33,364 (96.03)
Some past year use, but <1 use per month	480 (1.53)
≥1 use of cannabis per month in past year	789 (2.44)
Total sample with any past year cannabis use, wave 1	1,279 (100.00)
Cannabis use disorder, past year, wave 1	444 (36.05)
Cannabis dependence, past year, wave 1	99 (7.68)
Cannabis abuse (only), past year, wave 1	345 (28.37)
	Mean (SD)
Mean number of marijuana joints/day (n=1,279)	1.94 (2.31)
*Analysis limited to respondents with non-missing cannabis use frequency.	

**eTable 3.** Past Year Frequency of Cannabis Use (Wave 1) and Unadjusted and Adjusted Odds of Prevalent Psychiatric Disorders (Wave 2)

	<b>Cannabis Use Frequency</b>	<b>Cannabis Use Frequency</b>
Prevalent Wave 2 Psychiatric Disorders	Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
<b>Any Axis I Disorder</b>	2.8 (2.5-3.1)	1.6 (1.4-1.8)
<b>Any Substance Use Disorder</b>	3.5 (3.2-3.8)	1.9 (1.7-2.1)
Any Alcohol Use Disorder	3.0 (2.8-3.3)	1.7 (1.5-1.8)
Alcohol Abuse	2.2 (2.0-2.5)	1.4 (1.2-1.6)
Alcohol Dependence	3.1 (2.8-3.4)	1.5 (1.3-1.7)
Any Cannabis Use Disorder	7.3 (6.4-8.2)	4.3 (3.6-5.2)
Cannabis Abuse	7.0 (6.2-8.0)	4.2 (3.5-5.0)
Cannabis Dependence	6.1 (4.6-8.1)	3.6 (2.3-5.8)
Any Other Drug Use Disorder	3.9 (3.3-4.6)	1.8 (1.4-2.2)
Drug Abuse	3.7 (3.0-4.5)	1.7 (1.3-2.2)
Drug Dependence	4.0 (3.2-5.0)	1.8 (1.3-2.4)
Nicotine Dependence	2.3 (2.1-2.5)	1.3 (1.2-1.4)
<b>Any Mood Disorder</b>	1.5 (1.4-1.7)	0.9 (0.8-1.0)
Major Depression	1.1 (0.9-1.2)	0.8 (0.7-1.0)
Bipolar I	2.1 (1.8-2.4)	1.0 (0.8-1.2)
Bipolar II	1.8 (1.3-2.3)	0.9 (0.7-1.3)
Bipolar	2.0 (1.8-2.3)	1.0 (0.8-1.2)
Dysthymia	1.1 (0.7-1.6)	0.8 (0.5-1.2)
<b>Any Anxiety Disorder (excluding PTSD)</b>	1.5 (1.3-1.6)	1.0 (0.9-1.1)
Panic disorder	1.6 (1.3-1.9)	0.9 (0.7-1.1)
Social Anxiety Disorder	1.8 (1.5-2.2)	1.1 (0.8-1.4)
Specific Phobia	1.3 (1.2-1.5)	0.9 (0.8-1.1)
Generalized Anxiety Disorder	1.4 (1.2-1.7)	1.0 (0.8-1.2)

Odds Ratios and Adjusted Odds Ratios represent average effects of a one level increase in three level Wave 1 cannabis use frequency variable. CI denotes confidence interval.

**eTable 4.** Past Year Cannabis Use Frequency (Wave 1) and Unadjusted and Adjusted Ratios of Incident Psychiatric Disorders (Wave 2)

	<b>Cannabis Use Frequency</b>	<b>Cannabis Use Frequency</b>
Incident Wave 2 Psychiatric Disorder	Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)
<b>Any Axis I Disorder</b>	8.1 (6.1-10.8)	2.7 (1.9-3.7)
<b>Any Substance Use Disorder</b>	9.5 (7.5-12.1)	3.4 (2.6-4.6)
Any Alcohol Use Disorder	4.0 (3.4-4.6)	1.7 (1.4-2.1)
Alcohol Abuse	2.2 (2.0-2.6)	1.3 (1.1-1.5)
Alcohol Dependence	2.6 (2.2-3.0)	1.4 (1.2-1.7)
Any Cannabis Use Disorder	8.8 (7.4-10.5)	4.5 (3.5-5.7)
Cannabis Abuse	6.6 (5.4-7.9)	3.6 (2.9-4.7)
Cannabis Dependence	5.8 (4.5-7.5)	3.2 (2.0-5.0)
Any Other Drug Use Disorder	4.2 (3.6-5.0)	1.6 (1.2-2.1)
Drug Abuse	4.0 (3.4-4.9)	1.8 (1.5-2.4)
Drug Dependence	3.8 (3.1-4.7)	1.7 (1.3-2.3)
Nicotine Dependence	1.9 (1.6-2.3)	1.4 (1.2-1.7)
<b>Any Mood Disorder</b>	1.6 (1.4-1.8)	1.0 (0.8-1.1)
Major Depression	0.9 (0.7-1.1)	0.8 (0.7-1.03)
Bipolar I	2.0 (1.7-2.5)	1.2 (0.9-1.5)
Bipolar II	1.7 (1.2-2.3)	1.0 (0.7-1.4)
Bipolar	2.0 (1.7-2.4)	1.1 (0.9-1.4)
Dysthymia	1.3 (0.9-1.9)	1.1 (0.7-1.6)
<b>Any Anxiety Disorder (excluding PTSD)</b>	1.4 (1.2-1.6)	0.9 (0.8-1.1)
Panic disorder	1.4 (1.2-1.8)	1.0 (0.8-1.2)
Social Anxiety Disorder	1.8 (1.5-2.2)	1.2 (0.96-1.5)
Specific Phobia	1.2 (0.98-1.4)	0.9 (0.7-1.04)
Generalized Anxiety Disorder	1.3 (1.1-1.6)	1.0 (0.8-1.2)

Odds Ratios and Adjusted Odds Ratios represent average effects of a one level increase in three level Wave 1 cannabis use frequency variable. CI denotes confidence interval.

**eTable 5.** Percentage of NESARC Respondents With Any Prevalent Mental Disorder at Wave 2 by Level of Wave 1 Self-reported Cannabis Use

Number of joints per day at Wave 1	Any mental disorder at Wave 2 (%)
0 (n=33364)	31
1 (n=811)	66.6
2 (n=211)	79.1
3 (n=91)	80.7
4 (n=41)	86.2
5 (n=36)	84.7
6+ (n=57)	82.2

Results presented as row percentages

**eTable 6.** Balance of Potential Confounders of Propensity Score Matched Wave 1 NESARC Respondents With and Without Cannabis Use

Variables used in propensity score	Cannabis Use (N=1254)		No Cannabis Use (N=1254)		Odds Ratio (95% CI)
	% /mean	S.E.	% /mean	S.E.	
Childhood					
Family history of SUD (alcohol and drug only)	55.3	1.7	54.6	1.8	1.0 (0.9-1.2)
Disturbed family environment	48.3	1.7	50.8	1.8	0.9 (0.8-1.1)
Childhood parental loss	37.3	1.7	40.0	1.7	0.9 (0.7-1.1)
Early adolescence					
Low self-esteem	17.2	1.4	17.6	1.2	1.0 (0.8-1.3)
Early-onset anxiety (excluding PTSD)	20.5	1.7	20.1	1.5	1.0 (0.8-1.3)
Social deviance	2.2	0.1	2.0	0.1	1.0 (0.99-1.1)
Late adolescence					
Education years	13.6	0.1	13.7	0.1	1.0 (0.95-1.02)
Trauma past year	10.9	1.1	10.0	1.1	1.1 (0.8-1.5)
Axis I comorbidity	1.1	0.1	1.0	0.1	1.1 (0.98-1.1)
Axis II comorbidity	0.8	0.1	0.7	0.0	1.1 (0.99-1.2)
Adulthood					
Ever divorced	22.2	1.5	25.5	1.6	0.8 (0.7-1.1)
History of alcohol use disorder (lifetime but before 12 month)	66.1	1.8	68.7	1.9	0.9 (0.7-1.1)
History of other drug use disorder (lifetime but before 12 month)	31.2	1.8	29.5	1.9	1.1 (0.9-1.4)
History of nicotine dependence (lifetime but before 12 month)	46.3	1.9	44.8	2.0	1.1 (0.9-1.3)
Social deviance	6.3	0.2	5.8	0.2	1.0 (1.001-1.04)
Sociodemographic characteristics					
Age	29.8	0.4	30.5	0.4	1.0 (0.98-1.004)
Male	66.2	1.7	66.9	1.6	1.0 (0.8-1.2)
Non-White	28.7	1.9	28.0	2.2	1.0 (0.8-1.3)

**eTable 7.** Past Year Cannabis Use Frequency (Wave 1) and Odds Ratios of Prevalent Psychiatric Disorders (Wave 2) Among Propensity Matched Samples

	<b>Cannabis Use Frequency</b>
Past Year Wave 2 Disorders	Odds Ratio (95% CI)
<b>Any Axis I Disorder</b>	1.5 (1.3-1.7)
<b>Any Substance Use Disorder</b>	1.7 (1.5-1.9)
Any Alcohol Use Disorder	1.6 (1.4-1.7)
Alcohol Abuse	1.3 (1.2-1.6)
Alcohol Dependence	1.5 (1.3-1.8)
Any Cannabis Use Disorder	3.3 (2.7-4.1)
Cannabis Abuse	3.1 (2.5-3.9)
Cannabis Dependence	3.2 (2.1-5.0)
Any Other Drug Use Disorder	1.6 (1.3-2.1)
Drug Abuse	1.5 (1.1-2.1)
Drug Dependence	1.8 (1.3-2.6)
Nicotine Dependence	1.3 (1.2-1.5)
<b>Any Mood Disorder</b>	1.0 (0.9-1.2)
Major Depression	0.9 (0.7-1.1)
Bipolar I	1.3 (1.0-1.6)
Bipolar II	0.9 (0.6-1.3)
Bipolar	1.2 (1.0-1.4)
Dysthymia	0.9 (0.6-1.3)
<b>Any Anxiety Disorder (excluding PTSD)</b>	1.1 (0.9-1.2)
Panic disorder	1.1 (0.9-1.5)
Social Anxiety Disorder	1.3 (1.0-1.6)
Specific Phobia	1.1 (0.9-1.2)
Generalized Anxiety Disorder	1.1 (0.8-1.4)

Odds Ratios represent average effects of a one level increase in three level Wave 1 cannabis use frequency variable. CI denotes confidence interval.



**eTable 8.** Past Year Cannabis Use Frequency (Wave 1) and Odds Ratios of Incident Psychiatric Disorders (Wave 2) Among Propensity Matched Samples

	<b>Cannabis Use Frequency</b>
<b>Incident Psychiatric Disorders</b>	Odds Ratio (95% CI)
<b>Any Axis I Disorder</b>	2.2 (1.7-2.9)
<b>Any Substance Use Disorder</b>	2.8 (2.3-3.5)
Any Alcohol Use Disorder	1.5 (1.2-1.8)
Alcohol Abuse	1.3 (1.1-1.5)
Alcohol Dependence	1.4 (1.1-1.7)
Any Cannabis Use Disorder	4.2 (3.2-5.5)
Cannabis Abuse	3.1 (2.3-4.2)
Cannabis Dependence	3.5 (2.3-5.4)
Any Other Drug Use Disorder	1.6 (1.2-2.0)
Drug Abuse	1.5 (1.2-2.0)
Drug Dependence	1.7 (1.2-2.5)
Nicotine Dependence	1.5 (1.2-1.9)
<b>Any Mood Disorder</b>	1.1 (0.9-1.3)
Major Depression	0.7 (0.6-1.0)
Bipolar I	1.3 (1.0-1.8)
Bipolar II	1.1 (0.7-1.6)
Bipolar	1.3 (0.9-1.7)
Dysthymia	1.3 (0.9-1.9)
<b>Any Anxiety Disorder (excluding PTSD)</b>	1.0 (0.9-1.2)
Panic disorder	1.2 (0.9-1.6)
Social Anxiety Disorder	1.4 (1.1-1.8)
Specific Phobia	1.0 (0.8-1.2)
Generalized Anxiety Disorder	1.0 (0.8-1.3)

Odds Ratios represent average effects of a one level increase in three level Wave 1 cannabis use frequency variable. CI denotes confidence interval.