

Supporting Information

Table S1. CRAFFT scores at all assessments for the cross-sectional cohort, illustrated by grade and sex^{1 2}

Baseline Assessment #1 (3,244 students in January/February 2014)														
	Grade 6 (mean age 11.3, n=435)		Grade 7 (mean age 12.3, n=412)		Grade 8 (mean age 13.3, n=389)		Grade 9 (mean age 14.3, n=523)		Grade 10 (mean age 15.3, n=572)		Grade 11 (mean age 16.4, n=493)		Grade 12 (mean age 17.4, n=420)	
CRAFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2	1	1	2	2	3	3	12	14	19	15	30	18	27	36
3			2	1	2	2	16	15	10	14	12	26	11	17
4					1	1	7	9	12	7	15	10	11	13
5					1	1	5	1	3	7	4	4	5	5
6									2	2	1		2	1
Totals	2 (0.5%)		7 (1.7%)		15 (3.9%)		80 (15.3%)		91 (15.9%)		120 (24.3%)		128 (30.5%)	
Assessment #2 (3,228 students in May/June 2014)														
	Grade 6 (mean age 11.3, n=434)		Grade 7 (mean age 12.3, n=433)		Grade 8 (mean age 13.3, n=428)		Grade 9 (mean age 14.3, n=523)		Grade 10 (mean age 15.3, n=563)		Grade 11 (mean age 16.4, n=477)		Grade 12 (mean age 17.4, n=370)	
CRAFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2			1	3	3	10	8	14	17	26	22	27	20	26
3				2	2	4	11	9	10	11	11	13	11	22
4		1	1				7	7	4	7	16	11	7	10
5				1	1		3	1	4	3	3	6	9	8
6					1		2	1	2	1	1		2	
Totals	1 (0.2%)		7 (1.6%)		21 (4.9%)		63 (12.0%)		87 (15.5%)		110 (24.6%)		115 (31.1%)	
Assessment #3 (4,855 students in September/October 2014)														

	Grade 6 (mean age 11.3, n=711)		Grade 7 (mean age 12.3, n=712)		Grade 8 (mean age 13.3, n=632)		Grade 9 (mean age 14.3, n=722)		Grade 10 (mean age 15.3, n=667)		Grade 11 (mean age 16.4, n=737)		Grade 12 (mean age 17.4, n=664)	
CRAFFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2				2	1	3	3	2	14	12	19	20	22	27
3				2	1		3	4	7	6	12	23	14	17
4							1	2	5	7	10	3	18	12
5							2	5	4	2	3	10	6	8
6					1				2	2	1		1	1
Totals	0 (0.0%)		4 (0.6%)		6 (1.5%)		22 (3.0%)		61 (10.7%)		101 (20.5%)		126 (19.0%)	
Assessment # 4 (4,496 students in May/June 2015)														
	Grade 6 (mean age 11.3, n=719)		Grade 7 (mean age 12.3, n=700)		Grade 8 (mean age 13.3, n=623)		Grade 9 (mean age 14.3, n=669)		Grade 10 (mean age 15.3, n=620)		Grade 11 (mean age 16.4, n=653)		Grade 12 (mean age 17.4, n=512)	
CRAFFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2					2	4	3	4	11	8	19	23	19	19
3					2	1	2	4	9	11	9	17	16	16
4							2	1	5	11	11	10	9	12
5								1	2	1	6	6	4	8
6					1						3		1	
Totals	0 (0.0%)		0 (0.0%)		10 (1.6%)		17 (2.5%)		59 (9.5%)		95 (14.5%)		104 (20.3%)	

¹ Male = M; Female = F

² Totals indicate the number of males and females combined per grade; the percentage reflects the total number students at risk of a substance use disorder divided by the number of students participating in the assessment, per grade

Table S2. Changes in substance misuse scores by individual grade for students at risk of substance use disorder in cross-sectional cohort^{1,2,3,4}

	Baseline Assessment #1 (B) (n=3,244) Year 1	3-month Assessment #2 (A2) (n=3,228) Year 1	7-month Assessment #3 (A3) (n=4,856) Year 2	15-month Assessment #4 (A4) (n=4,496) Year 2
GRADE 6				
Mean Substance Use Score (\pm SD)	2.50 (\pm 0.71) (95%CI = 1.52 – 3.48)	4.00 (\pm 0)	n/a	n/a
Risk of Substance Use Disorder (n)	2	1	0	0
GRADE 7				
Mean Substance Use Score (\pm SD)	2.43 (\pm 0.53) (95%CI = 2.04 – 2.82)	2.86 (\pm 1.21) (95%CI = 1.96 – 3.76)	2.50 (\pm 0.58) (95%CI = 1.93 – 3.07)	n/a
Risk of Substance Use Disorder (n)	7	7	4	0***+++ B – A4 ϕ =0.104 A2 – A4 ϕ =0.104
GRADE 8				
Mean Substance Use Score (\pm SD)	2.93 (\pm 1.10) (95%CI = 2.37 – 3.49)	2.62 (\pm 1.07) (95%CI = 2.16 – 3.08)	3.13 (\pm 1.25) (95%CI = 2.26 – 4.00)	2.58 (\pm 1.16) (95%CI = 1.92 – 3.24)
Risk of Substance Use Disorder (n)	15	21	8	12
GRADE 9				
Mean Substance Use Score (\pm SD)	3.03 (\pm 0.91) (95%CI = 2.83 – 3.23)	3.14 (\pm 1.12) (95%CI = 2.86 – 3.42)	3.58 (\pm 1.18) (95%CI = 3.10 – 4.06)	2.88 (\pm 0.93) (95%CI = 2.42 – 3.34)
Risk of Substance Use Disorder (n)	79	62	23	16***+++

				B – A4 $\phi=0.233$ A2 – A4 $\phi=0.190$
GRADE 10				
Mean Substance Use Score (\pm SD)	3.19 (\pm 1.18) (95%CI = 2.95 – 3.43)	2.93 (\pm 1.14) (95%CI = 2.69 – 3.17)	3.23 (\pm 1.29) (95%CI = 2.91 – 3.55)	3.07 (\pm 0.94) (95%CI = 2.83 – 3.31)
Risk of Substance Use Disorder (n)	90	86	63	59
GRADE 11				
Mean Substance Use Score (\pm SD)	2.97 (\pm 0.98) (95%CI = 2.79 – 3.15)	2.97 (\pm 1.04) (95%CI = 2.77 – 3.17)	3.30 (\pm 1.06) (95%CI = 3.09 – 3.51)	3.22 (\pm 1.15) (95%CI = 2.99 – 3.45)
Risk of Substance Use Disorder (n)	119	109	100	96***+++ B – A4 $\phi=0.120$ A2 – A4 $\phi=0.104$
GRADE 12				
Mean Substance Use Score (\pm SD)	2.92 (\pm 1.10) (95%CI = 2.73 – 3.11)	3.10 (\pm 1.14) (95%CI = 2.89 – 3.31)	3.13 (\pm 1.10) (95%CI = 2.94 – 3.32)	3.07 (\pm 1.07) (95%CI = 2.86 – 3.28)
Risk of Substance Use Disorder (n)	127	114	126	104***+++ B – A4 $\phi=0.114$ A2 – A4 $\phi=0.120$

¹ Decreased scores show improvement

² Note that scores for risk of substance misuse varied from 2 – 6

³ Statistical significance is set at $\alpha=0.002$ after application of Bonferroni correction to account for multiple comparisons

⁴ Effect size for Chi-square is depicted by ϕ (Phi Coefficient): 0.1 (small), 0.3 (medium), 0.5 (large)

***p<0.001 when comparing Assessment #1 and Assessment #4

+++ p<0.001 when comparing Assessment #2 and Assessment #4

Table S3. CRAFFT scores at all assessments for the longitudinal cohort, illustrated by grade and sex^{1,2,3}

Baseline Assessment #1 (1,884 students in January/February 2014)														
	Grade 6 (mean age 11.3, n=322)		Grade 7 (mean age 12.3, n=319)		Grade 8 (mean age 13.3, n=300)		Grade 9 (mean age 14.3, n=349)		Grade 10 (mean age 15.3, n=356)		Grade 11 (mean age 16.4, n=234)		Grade 12 (mean age 17.4, n=4)	
CRAFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2	1		1		2	3	9	9	7	12	15	8		1
3			2	1	2	2	11	4	5	6	4	11		
4					1	1	2	4	7	3	1	5		
5					1		4		2	3	1	2		
6										1				
Totals	1 (0.3%)		4 (1.3%)		12 (4.0%)		43 (12.3%)		46 (12.9%)		47 (20.1%)		1 (25.0%)	
Assessment #2 (1,884 students in May/June 2014)														
	Grade 6 (mean age 11.3, n=322)		Grade 7 (mean age 12.3, n=319)		Grade 8 (mean age 13.3, n=300)		Grade 9 (mean age 14.3, n=349)		Grade 10 (mean age 15.3, n=356)		Grade 11 (mean age 16.4, n=234)		Grade 12 (mean age 17.4, n=4)	
CRAFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2						1		3	4	7	6	8		
3							2	1	7	3	6	3		1
4									5	2	2	6		
5							1		3		3	2		
6														
Totals					1 (0.3%)		7 (2.0%)		31 (8.7%)		36 (15.4%)		1 (25.0%)	
Assessment #3 (1,884 students in September/October 2014)														

	Grade 6 (mean age 11.3, n=1)		Grade 7 (mean age 12.3, n=322)		Grade 8 (mean age 13.3, n=318)		Grade 9 (mean age 14.3, n=300)		Grade 10 (mean age 15.3, n=348)		Grade 11 (mean age 16.4, n=354)		Grade 12 (mean age 17.4, n=241)	
CRAFFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2					1				5	3	4	4	4	8
3								2	5	4	8	8	5	5
4								2	3	1	3		4	4
5							2		2	1	2	3		2
6									1	1	1			1
Totals					1 (0.3%)		6 (2.0%)		26 (7.5%)		33 (9.3%)		33 (13.7%)	
Assessment # 4 (1,884 students in May/June 2015)														
	Grade 6 (mean age 11.3, n=0)		Grade 7 (mean age 12.3, n=322)		Grade 8 (mean age 13.3, n=319)		Grade 9 (mean age 14.3, n=301)		Grade 10 (mean age 15.3, n=348)		Grade 11 (mean age 16.4, n=354)		Grade 12 (mean age 17.4, n=240)	
CRAFFT Score	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2							1	1	7	2	2	4	5	8
3					1	1		2	2	3	3	6	4	4
4							2		3	3	6	3	4	5
5									3	1	3	3	1	4
6											2			
Totals					2 (0.6%)		6 (2.0%)		24 (6.9%)		32 (9.0%)		35 (14.6%)	

¹ Male = M; Female = F

² Totals indicate the number of males and females combined per grade; the percentage reflects the total number students at risk of a substance use disorder divided by the number of students participating in the assessment, per grade

³ Although data is evident for Grade 12 in Assessments #1 and #2, and for Grade 6 in Assessments #3 and #4, these students would not have all 4 Assessments because of a shift in Grade from Year 1 to Year 2

Table S4. Changes in substance misuse scores by individual grade for students at risk of substance use disorder in longitudinal cohort ^{1,2,3,4,5}

	Baseline Assessment #1 (B) (n=1,884) Year 1	3-month Assessment #2 (A2) (n=1,884) Year 1		7-month Assessment #3 (A3) (n=1,884) Year 2	15-month Assessment #4 (A4) (n=1,884) Year 2
GRADE 6 (n=1)			GRADE 7 (n=1)		
Mean Substance Use Score (±SD)	2.00 (±0)	1.00 (±0)		1.00 (±0)	0 (±0)
Risk of Substance Use Disorder (n)	1	0		0	0
GRADE 7 (n=4)			GRADE 8 (n=4)		
Mean Substance Use Score (±SD)	2.75 (±0.50) (95%CI = 2.26 – 3.24)	0.75 (±0.96) (95%CI = 0.19 – 1.69)		0.75 (±0.96) (95%CI = -0.19 – 1.69)	1.50 (±1.73) (95%CI = -0.20 – 3.20)
Risk of Substance Use Disorder (n)	4	1		1	2
GRADE 8 (n=12)			GRADE 9 (n=12)		
Mean Substance Use Score (±SD)	2.92 (±1.00) (95%CI = 2.35 – 3.49)	1.92 (±1.44) (95%CI = 1.11 – 2.73)		2.42 (±1.93) (95%CI = 1.33 – 3.51)	1.58 (±1.62) (95%CI = 0.66 – 2.50)
Risk of Substance Use Disorder (n)	12	7		7	6
GRADE 9 (n=43)			GRADE 10 (n=43)		
Mean Substance Use Score	2.91 (±0.97) (95%CI = 2.62 –	1.93 (±1.58) (95%CI = 1.45 –		2.19 (±1.74) (95%CI = 1.66 –	1.95 (±1.69)***

	Baseline Assessment #1 (B) (n=1,884) Year 1	3-month Assessment #2 (A2) (n=1,884) Year 1		7-month Assessment #3 (A3) (n=1,884) Year 2	15-month Assessment #4 (A4) (n=1,884) Year 2
(±SD)	3.20)	2.41)		2.72)	(95%CI = 1.44 – 2.46) r = 0.343
Risk of Substance Use Disorder (n)	42	24		26	24***
GRADE 10 (n=45)			GRADE 11 (n=45)		
Mean Substance Use Score (±SD)	3.09 (±1.13) (95%CI = 2.76 – 3.42)	2.50 (±1.44) (95%CI = 2.08 – 2.92)		2.54 (±1.44) (95%CI = 2.12 – 2.96)	2.74 (±1.73) (95%CI = 2.23 – 3.25)
Risk of Substance Use Disorder (n)	45	35		33	32***
Grade 11 (n=46)			Grade 12 (n=46)		
Mean Substance Use Score (±SD)	2.77 (±0.91) (95%CI = 2.51 – 3.03)	2.13 (±1.36) (95%CI = 1.74 – 2.52)		2.40 (±1.41) (95%CI = 1.99 – 2.81)	2.47 (±1.56) (95%CI = 2.02 – 2.92)
Risk of Substance Use Disorder (n)	46	33		33	35
Grade 12 (n=1)			Grade 12 (n=1)		
Mean Substance Use Score (±SD)	2.00 (±0)	3.00 (±0)		1.00 (±0)	1.00 (±0)
Risk of Substance Used Disorder (n)	1	1		0	0

¹Decreased scores show improvement

² Note that scores for risk of substance misuse varied from 2 – 6

³ Shift from Year 1 to Year 2 indicates an increase in Grade (i.e. Grade 6 in Year 1 shifts to Grade 7 in Year 2)

⁴ Statistical significance is set at $\alpha=0.002$ after application of Bonferroni correction to account for multiple comparisons

⁵ Effect size for Wilcoxon Sign Ranked Test is depicted by r (Pearson r Coefficient): 0.1 (small), 0.3 (medium), 0.5 (large)

*** $p<0.001$ when comparing Assessment #1 and Assessment #4

Table S5. Changes in substance misuse scores for students in the longitudinal cohort at risk of a substance use disorder and were in the Top 10% ^{1 2 3}

	Baseline Assessment #1 Year 1	3-month Assessment #2 Year 1	7-month Assessment #3 Year 2	15-month Assessment #4 Year 2
Students who Participated in the Intervention (n=5) Mean Substance Use Score (\pm SD)	2.60 (\pm 0.89) (95% CI = 1.82 – 3.38)	2.20 (\pm 0.84) (95% CI = 1.46 – 2.94)	3.20 (\pm 0.45) (95% CI = 2.81 – 3.59)	2.00 (\pm 2.12) (95% CI = 0.14 – 3.86)
Students who Did Not Participate in the Intervention (n=30) Mean Substance Use Score (\pm SD)	3.07 (\pm 1.01) (95% CI = 2.71 – 3.43)	2.40 (\pm 1.16) (95% CI = 1.98 – 2.82)	3.20 (\pm 1.40) (95% CI = 2.70 – 3.70)	2.93 (\pm 1.62) (95% CI = 2.35 – 3.51)

¹ Decreased scores show improvement

² Note that scores for risk of substance misuse varied from 2 – 6

³ Shift from Year 1 to Year 2 indicates an increase in Grade (i.e. Grade 6 in Year 1 shifts to Grade 7 in Year 2)

Table S6. Changes in substance misuse scores for students in the longitudinal cohort at risk of a substance use disorder and were not in the Top 10%^{1,2,3,4,5}

	Baseline Assessment #1 (n=119) Year 1	3-month Assessment #2 (n=119) Year 1	7-month Assessment #3 (n=119) Year 2	15-month Assessment #4 (n=119) Year 2
Mean Substance Use Score (\pm SD)	2.88 (\pm 1.00) (95% CI = 2.70 – 3.06)	2.07 (\pm 1.55) (95% CI = 1.79 – 2.35)	2.08 (\pm 1.54) (95% CI = 1.80 – 2.36)	2.15 (\pm1.66)*** (95% CI = 1.85 – 2.45) r = 0.283

¹ Decreased scores show improvement

² Note that scores for risk of substance misuse varied from 2 – 6

³ Shift from Year 1 to Year 2 indicates an increase in Grade (i.e. Grade 6 in Year 1 shifts to Grade 7 in Year 2)

⁴ Statistical significance is set at $\alpha=0.02$ after application of Bonferroni correction to account for multiple comparisons

⁵ Effect size for Wilcoxon Signed Rank Test is depicted by r (Pearson r Coefficient): 0.1 (small), 0.3 (medium), 0.5 (large)

*** p<0.001 when comparing Assessment #1 and Assessment #4

Table S7. Changes in substance misuse scores for students in the longitudinal cohort in Grades 6 – 8 who were at risk of a substance use disorder and were in the Top 10% ^{1,2,3}

	Baseline Assessment #1 Year 1	3-month Assessment #2 Year 1	7-month Assessment #3 Year 2	15-month Assessment #4 Year 2
Students who Participated in the Intervention (n=2)				
Mean Substance Use Score (\pm SD)	2.50 (\pm 0.71) (95%CI = 1.52 – 3.48)	1.50 (\pm 0.71) (95%CI = 0.52 – 2.48)	3.00 (\pm 0)	1.00 (\pm 1.41) (95%CI = -0.95 – 2.95)
Students who Did Not participate in the Intervention (n=4)				
Mean Substance Use Score (\pm SD)	3.50 (\pm 1.29) (95%CI = 2.24 – 4.76)	2.25 (\pm 1.50) (95% CI = 0.78 – 3.72)	3.50 (\pm 1.29) (95%CI = 2.24 – 4.76)	2.25 (\pm 1.71) (95%CI = 0.57 – 3.93)

¹ Decreased scores show improvement

² Note that scores for risk of substance misuse varied from 2 – 6

³ Shift from Year 1 to Year 2 indicates an increase in Grade (i.e. Grade 6 in Year 1 shifts to Grade 7 in Year 2)

Table S8. Changes in substance misuse scores for students in longitudinal cohort in Grades 6 – 8 who were at risk of a substance use disorder and were not in the Top 10%^{1,2,3}

	Baseline Assessment #1 (n=10) Year 1	3-month Assessment #2 (n=10) Year 1	7-month Assessment #3 (n=10) Year 2	15-month Assessment #4 (n=10) Year 2
Mean Substance Use Score (\pm SD)	2.70 (\pm 0.67) (95% CI = 2.28 – 3.12)	1.40 (\pm 1.51) (95% CI = 0.46 – 2.34)	1.20 (\pm 1.81) (95% CI = 0.08 – 2.32)	1.40 (\pm 1.65) (95% CI = 0.38 – 2.42)

¹ Decreased scores show improvement

² Note that scores for risk of substance misuse varied from 2 – 6

³ Shift from Year 1 to Year 2 indicates an increase in Grade (i.e. Grade 6 in Year 1 shifts to Grade 7 in Year 2)