Bilaga till rapport

Att förebygga missbruk av alkohol,
droger och spel hos barn och unga
nr 245 (2016)

Appendix 1 Included articles/Bilaga 1 Tabellverk av ingående studier

Table 5.1 School based drug prevention programs.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participant Attendance rate Drop-out rate	Outcome (95% CI)	Applicability Comments
Furr-Holden et al 2004 [1] USA	*Study design* Cluster RCT, classroom level *Aim* *Setting* 27 1st grade classes in 9 urban primary schools in one public school area in a mid-Atlantic state *Population* n=678 children (50% female), mean age 6.2 years >85% Afro-Americans, 97% consented *Follow-up time* 7 years	*Intervention* Curricular enhancements, GBG, supplementary strategies for children not performing adequately *Extent* 1 year *Strategy* Classroom management *Prevention level* Universal *Number of participants:* n=192 *Attendance rate* *Drop-out rate at follow-up* 16.6% for the whole sample	*Comparison* CAU *Number of participants:* n=178 *Attendance rate* NA *Drop-out rate at follow-up* 16.6% for the whole sample	*Initiation of drug use, RR vs CAU* Tobacco RR 0.53 (0.33–0.85); p=0.008 Alcohol without permission* RR 0.95 (0.58–1.54); ns Marijuana RR 0.68 (0.34–1.33); ns Other illegal drugs RR 0.32 (0.11–0.96); p=0.042 *Univariate regression model; the others are multivariate	*Implemented by* Regular teachers, trained for 60 hours and certified *Fidelity* Ensured and adequate *Comments*
Kellam et al 2008 [2] USA	*Study design* Long term follow-up of cluster RCT, classroom level, matched for SES, size of school and ethnicity *Aim*	*Intervention* GBG *Extent* 2 years *Strategy*	*Comparison* CAU in internal (GBG-school) and external control *Number of participants:* n=169 from 6 classes in 6 schools	*Lifetime drug abuse/dependence disorders (CIDI-UM) (unadjusted)* GBG: 12% Internal CAU: 21% p=0.03*	*Implemented by* Regular teachers. GBG teachers received 40 hours training followed by supportive mentoring during the first year.

Test whether GBG protects children from more at risk over the life course *Setting* Schools in 5 large urban areas with poor to low middle SES within Baltimore Cit. Schools were randomised to GBG, ML or CAU. Within GBG schools classes were randomized to GBG or CAU *Population* n=1 196 1st grade children from 19 schools with 41 classrooms in 2 cohorts n=922 participated in GBG or external control *Follow-up time* At age 19–21 years	Classroom management to reduce early disruptive behavior *Prevention level* Universal *Number of participants:* n=238 from 8 classes in 6 schools *Attendance rate* *Drop-out rate* 23%	n=515 from 11 classrooms from 6 schools that served as external control *Attendance rate* *Drop-out rate* 25%	*Adjusted for classroom effects* Log OR 0.999, p=0.035 *Lifetime alcohol abuse/dependence disorders (CIDI-UM, unadjusted)* GBG: 13% Internal CAU: 20% p=0.08 Similar for males and females *Lifetime regular smoking (>10 cigarettes/day)* GBG: 6% Internal CAU: 10% p=0.15*	A comparable time was spent with CAU-teachers to balance the amount of attention given *Fidelity* For the second cohort the 1st grade teachers received less mentoring and monitoring. Focus was on training the new 2nd grade teachers *Comments* The external control group was introduced to check for risk of contamination in the GBG-schools but comparisons were primarily between GBG and internal control. ML data is not shown here *Planned analyses showed that results were significant for boys but not girls and more pronounced for high risk males

					Results in the second cohort were similar but with smaller effects for drugs, no effects for alcohol, non-significant effects for smoking
Van Lier et al 2009 [3] The Netherlands	*Design* RCT, classes randomised *Setting* Elementary schools in Rotterdam and Amsterdam *Population* Children from 13 elementary schools were recruited in 1999, n=744 children eligible, parental consent attained for n=666 (mean age 6.9 years) *Time to follow-up* 3 years?	*Intervention* Good Behavior Game intervention (GBG) *Extent* Implemented during grades 2 and 3 over a 2 year period, introduction phase: GBG played for 3 times per week for 10 minutes and then expanded in time, settings and behavior targeted *Strategy* Classroom based, aims at reducing disruptive behavior *Number of participants* ? *Drop-out rate* ?	*Comparison* Assessment only *Number of participants* ? *Drop-out rate* ?		*Implemented by* Trained teachers *Fidelity* NR *Comments*
Faggiano et al 2010 [4] Europe (the EU-Dap study)	*Design* Cluster RCT, school level, stratified for SES *Aim* *Setting* 323 junior high schools in a city each in Austria, Belgium, Germany, Greece,	*Intervention* Unplugged I1: basic I2: I1 + parent I3: I1 + peer *Extent* I1:12 weekly sessions, 1 hour each (knowledge and attitudes, normative beliefs, intrapersonal skills), exercise on goal setting	*Comparison* CAU *Number of participants* n=3 532 from 65 schools *Drop-out rate at 18 months follow-up* C: 22.8%	*Smoking past 30 days* POR: 0.94 (0.80–1.11) *Daily smoking past 30 days* POR: 0.92 (0.73–1.16)	*Implemented by* Class teachers after 2.5 day training *Fidelity* Ensured *Comments* 55% of classes implemented all sessions; 77%

				Drunkenness past 30 days POR: 0.80 (0.67–0.97)	implemented at least 6 sessions. Less than 5% failed to implement any part
	Italy, Spain, Sweden were eligible *Population* Students 12–14 years from 170 schools *Time to follow-up* 12 and 18 months past baseline	I2: I1 + 3 parent workshops I3: I1 + 7 meetings conducted by 2 students, selected by their class-mates *Strategy* Combined social influence and life skills *Number of participants* I1: n=1 190 from 26 schools I2: n=1 164 from 27 schools I3: n=1 193 from 25 schools *Attendance rate for I1* On average each session was delivered to 78% of the target population *Drop-out rate at 18 months follow-up* I1: 20.5% I2: 16.5% I3: 26% (includes unmatched questionnaires and drop out)		*Drunkenness past 30 days* POR: 0.80 (0.67–0.97) *Frequent drunkenness past 30 days* POR: 0.62 (0.47–0.81) *Any cannabis past 30 days* POR: 0.83 (0.65–1.05) *Frequent cannabis past 30 days* POR: 0.74 (0.53–1.00) (Intervention arms were pooled) The NNT to prevent one additional event ranged from 26 to 46	The degree of implementation of the peer program was low; 71% did not conduct any meetings while 70% of schools implemented all parent seminars
Gahbrelik et al 2012 [5] The Czech Republic	*Design* Cluster RCT, stratified for number of residents in the school area *Setting* 6th grade classes from 80 representative schools from 3 regions in the Czech republic	*Intervention* Adaptation of Unplugged, basic version *Extent* 12 sessions, 45 minutes each, delivered during 1 school year *Strategy* Combined social influence and life skills *Number of participants*	*Comparison* CAU *Number of participants* n=852 from 34 schools (5 schools withdrew consent before baseline measurement) *Drop-out rate at 2 years follow-up*	*Any smoking past 30 days* OR 0.75 (0.59–0.95) *Daily smoking past 30 days* OR 0.60 (0.38–0.96) *Any drunkenness past 30 days*	*Implemented by* Regular teachers who had been trained for 12 hours *Fidelity* Ensured, all sessions given in all schools

	Population 1 874 students (mean age 11.4 years, 50% females) participated in the baseline measurement *Time to follow-up* 1 and 2 years	n=1 022 students from 40 schools *Attendance rate* Few did not attend *Drop-out rate at 2 years follow-up* 10.6%	1.5%	OR 0.94 (0.75−1.17) *Frequent drunkenness past 30 days* OR 0.80 (0.54−1.19) *Any cannabis past 30 days* OR: 0.56 (0.35−0.88) *Frequent cannabis past 30 days* OR: 0.56 (0.31−1.02) *Lifetime any drug use* OR: 0.77 (0.58−1.02) All results are adjusted NNT to prevent one additional event ranged from 16 (any smoking) to 42 (frequent cannabis)	
Ringwalt et al 2009 [6] USA Ringwalt et al 2010 [7] USA	*Design* Cluster RCT, blocked by school district *Aim* Effectiveness trial *Setting* All public schools in the USA that included grades 6 through 8, enrolled at least 100 students in grade 6 and	*Intervention* Project ALERT *Extent* 2 years, 11 weekly sessions in 6th grade and 3 weekly booster sessions in 7th grade, each 45 minutes *Strategy* *Number of participants*	*Comparison* CAU *Number of participants* n=3 045 (50.1% female, 49.1% Caucasian) *Drop-out rate at follow-up* ?	*Posttest* Cigarettes, past 30 days OR 1.31 Alcohol, past 30 days OR 1.32 Marijuana, past 30 days OR 1.16	*Implemented by* Teachers and one counsellor *Fidelity* Ensured. At least 97.4% of the lessons were taught *Comments* No adverse events or negative side

	did not use an evidence based substance-use prevention program (40 schools were eligible) *Population* n=7 742 students from 34 schools in 11 states, in 2 cohorts. n=6 040 received consent *Time to follow-up* Posttest after 2 years, 1 year later	n=2 983 (51.4% female, 53.3% Caucasian) *Attendance rate* NR *Drop-out rate at follow-up* *?*		*Inhalants, past 30 days* OR 1.37 *Cigarettes, lifetime use* OR 1.44 *Alcohol, lifetime use* OR 0,99 *Marijuana, lifetime use* OR=1.37 *Inhalants, lifetime use* OR=1.34 No significant effects, neither at posttest or 1 year later	effects were reported. The program was delivered to students one year younger than it was developed for
Sloboda et al 2009 [8] USA	*Design* Cluster RCT, school district level, stratified for SES *Aim* Effectiveness trial *Setting* Public high-schools and their feeder middle schools, one cluster per school district in 6 metropolitan areas *Population*	*Intervention* TCYL (Take Charge of Your Life) *Extent* 10 sessions in 7th grade and 7 booster sessions in 9th grade *Strategy* Normative beliefs, life-skills, constructivist active learning *Number of participants* n=10 028 (55.5% female), mean age 12.4 years, 33% Caucasian *Drop-out rate*	*Comparison* CAU (evidence-based programs were offered through the No Child Left Behind Act) *Number of participants* n=7 292 (56.3% female), mean age 12.5 years, 39% Caucasian *Drop-out rate* 1 year: 36.9% 2 years: 45.1%	*Smoking, past 30 days (2 years)* Risk ratio 1.21 (1.05–1.37) *Alcohol use, past 30 days* Risk ratio 1.09 (1.01–1.18) *Got drunk, past 30 days* Risk ratio 1.10 (0.98–1.22)	*Implemented by* Police officers from the D.A.R.E. network, trained six 3-day sessions for 7th grade curriculum and three 3-day sessions for the boosters *Fidelity* All lesson were taught with an average content coverage of 74%

	34 000 students in 7th grade from 83 school districts, 72% consented *Time to follow-up* 1 and 2 years post-intervention (10th and 11th grade)	1 year: 39.6% 2 years: 49.2%		*Marijuana use, past 30 days* Risk ratio 0.94 (0.83−1.06) *Alcohol use, past 12 months* Risk ratio 1.04 (0.98−1.10) *Got drunk, past 12 months* Risk ratio 1.05 (0.96−1.14) *Marijuana use, past 12 months* Risk ratio 1.03 (0.94−1.12) *Binge drinking, 14 days* Risk ratio 1.14 (1.01−1.27)	and the appropriate instructional activity for 55.5% of the time *Comments* Post hoc analyses showed that the iatrogenic effects were significant for nonusers at baseline and for white students. The only beneficial effect was on marijuana for those that used the drug at baseline
Eisen et al 2003 [9] USA	*Design* Cluster RCT, pair-matched on 6th grade prevalence of recent drug use *Aim* *Setting* Random selection of 4 out of 10 largest metropolitan areas in the US (Los Angeles, Washington, Detroit, Wayne county). Self-selection of schools from districts with at	*Intervention* Condensed version of Lions Quest Skills for Adolescence (SFA) *Extent* 40 sessions during one school-year (35–45 minutes each), whereof 8 were considered "key" sessions *Strategy* Social influence, knowledge, skills *Number of participants*	*Comparison* CAU (including DARE and local teacher-devised classroom curricula) *Number of participants* *Drop-out rate*	*Difference in past 30-day use (%, adjusted)* *Cigarettes:* 0.98 (–0.66–2.63) *Alcohol* –0.33 (–3,01–2,35) *Marijuana* –2.47 (–4.70– (–0.23)) p=0.03 *Other illicit drugs*	*Implemented by* Teachers selected by their principal to deliver SFA attended a 3-day workshop conducted by certified trainers. *Fidelity* Mean=32.7 of 40 sessions (80%)

				0.09 (–1.55–1.48)	
	least 4 middle schools, n=34 middle schools *Population* 71% of the eligible 6th grade students consented, n=7 426 (52% F), Caucasian 25%, mean age 11 years *Time to follow-up* 1 year post-intervention	*Drop-out rate* 23% for the whole sample, no differential attrition			
Botvin et al 1990 [10] USA Botvin et al 1995 [11] USA	*Design* Cluster RCT, stratified for smoking prevalence, oversampling of control schools *Aim* Efficacy and effectiveness of a prevention program *Setting* 7th grade in 56 junior high schools, situated in middle-class suburban and rural areas in 3 areas of New York State *Population* n=5 954 students that participated in 7th grade *Time to follow-up* 3 years post-intervention	*Intervention:* I1: LST where teachers had support from staff I2: LST where teachers had training by videotape only *Extent* 15 sessions in 7th grade plus boosters: 10 sessions in 8th grade and 5 in 9th grade. Homework assignments *Strategy* Education and skills training based on social influences *Number of participants* I1: n=1 128 from 18 schools I2: n=1 327 from 16 schools *Drop-out rate at follow-up* 40% for the whole sample	*Comparison* CAU *Number of participants* n=1 142 from 22 schools	*Prevalence substance use, 30-days (mean SE))* Cigarettes: E1: 0.27 (0.02)* E2: 0.26 (0.02)** C: 0.33 (0.02) Alcohol E1: 0.61 (0.03) E2: 0.57 (0.03) C: 0.60 (0.02) Drunkenness E1: 0.34 (0.02)* E2: 0.33 (0.03)** C: 0.40 (0.02) Marijuana E1: 0.13 (0.02) E2: 0.13 (0.02) C: 0.14 (0.02) * p<0.05 ** p<0.01 One-tailed tests	*Implemented by* Teachers selected by the school *Fidelity* *Comments* Not ITT, no differential attrition
Botvin et al 2003	*Design*	*Intervention:* LST	*Comparison* Assessment only		*Implemented by* Teachers

[12] USA	Randomised trial, randomised at school level *Setting* Elementary schools in USA *Population* 20 suburban elementary schools randomly assigned, n=1 954 pretest, 4th and 5th graders *Time to follow-up* 1 year	*Extent* The prevention program consisted of 24 classes (30–45minutes each) taught over 3 years with 8 classes per year *Strategy* Social resistance skills and general personal and social competence skills *Number of participants* 9 schools, n=426 *Drop-out rate at follow-up* In total: 4.4%	*Number of participants* 11 schools, n=664 *Drop-out rate* NR		*Fidelity* Ensured *Comments*
Botvin et al 2001 [13] USA	*Study design* Blocked randomised design *Setting* New York *Population* 29 New York city schools, n=5 222 7th graders participated (mean age 12.9) *Time to follow-up* 1 year	*Intervention* Drug abuse prevention, school based *Extent* 15 sessions in 7th grade and 10 booster sessions in 8th grade *Strategy* Drug refusal skills, antidrug norms, personal self-management skills, and general social skills *Number of participants* 16 schools, n=2 144 *Drop-out rate at follow-up* NR	*Comparison* ? *Number of participants* 13 schools, n=1477 *Drop-out rate at follow-up* NR		*Implemented by* Classroom teacher *Fidelity* Ensured *Comments*
Botvin et al 2001 [14] USA	*Study design* Block randomized design *Setting* New York *Population*	*Intervention* Life Skills Training *Extent* 15 sessions in 7th grade and 10 booster sessions in 8th grade	*Comparison* Substance use curriculum normally in place in New York City schools *Number of participants* 13 schools, n=1 328		*Implemented by* Regular classroom teachers *Fidelity* Ensured

	Students from 29 schools, n=3 041 completed surveys in 7th 8th and 9th grade (a large proportion of economically disadvantage youth) *Time to follow-up* 1 and 2 year	*Strategy* Cognitive behavioural skills *Number of participants* 16 schools, n=1 713 *Drop-out rate at follow-up* 58% completed both follow-ups	*Drop-out rate at follow-up* 58% completed both follow-ups		*Comments* The results of this study are important because they show that this prevention approach produces prevention effects on problematic levels of alcohol use with inner-city, minority youth that last for 2 years after the initial year of the prevention program
Forman et al 1990 [15] USA	*Study design* Schools randomly assigned *Setting* A 7-school district, 2-county, south eastern metropolitan area, USA *Population* 30 schools, 327 students began the program, 279 high risk secondary school students completed 20-hour training group and pre- and posttreatment assessment *Time to follow-up* 1 year	*Intervention* Based on LST Coping Skills School Intervention and Coping Skills School Plus Parent Intervention *Extent* A 10-session, small-group training experience conducted once a week, 2 hours during school day, 2 hours booster sessions 1 year later *Strategy* Coping skills training *Number of participants* 20 schools, n=1 77 *Drop-out rate at follow-up* In total: 28%	*Comparison* Comparison control. Students attended a structured group that provided attention and focused on self-awareness and building a cohesive support group *Number of participants* 10 schools, n=102 *Drop-out rate at follow-up* NR		*Implemented by* Teachers and professional staff *Fidelity* Ensured *Comments*
Spoth et al 2002 [16] USA	*Study design* Cluster RCT *Aim*	*Intervention* LST *Extent*	*Comparison* Minimal-contact *Number of participants*	*Relative reduction in new users at 5.5 year follow-up* Cigarettes: 21.4%	*Implemented by* In partnership with the university

		15 sessions, 40–45 minutes	n=222	Alcohol: 2.0% Marijuana: 23.1%	*Fidelity* ensured
	Setting 36 randomly selected rural schools in 22 contiguous schools in a Midwestern state *Population* All 7th grade students were invited (47% female, 96% Caucasian) *Time to follow-up* 1 year post test, 5.5 years past baseline	*Strategy* Life skills training *Number of participants* n=576 *Drop-out rate at follow-up* 34.3%	*Drop-out rate at follow-up* 29.8%		*Comments*
Resnicow et al 2008 [17] South Africa	*Design* Cluster RCT, schools with predominantly "colored" students were oversampled, stratification based on ethnicity, school size and SES *Aim* Comparing the effectiveness of 2 strategies to prevent smoking *Setting* Public schools in 2 provinces of South Africa with >100 students in grade 8 and close to project offices, n=39 *Population* n=5 685 students in grade 8 whereof n=5 266 completed the baseline survey	*Intervention* I1: KEEP LEFT I2: LST Both adapted for South Africa *Extent* Eight units each for 7th and 8th grades for both programs *Strategy* I1: Harm minimisation I2: Skills training based on social influences *Number of participants* I1: n=1 974 I2: n=1 701 *Drop-out rate at follow-up* I1: 40% I2: 36.6%	*Comparison* CAU *Number of participants* n=1 569 *Drop-out rate at follow-up* 35.5%	*Difference in prevalence substance use, 30-days (follow-up-baseline)* Cigarettes I1: 0.03 I2: 0.03 C: 0.06 Binge-drinking I1: 0.10 I2: 0.07 C: 0.08 Marijuana I1: 0.01 I2: 0.02 C: 0.03 All results ns	*Implemented by* Life orientation teachers trained in a 3-day workshop *Fidelity* >80% of students received at least 75% of the planned lessons *Comments* Non-significant differences for smoking where I1 was more effective for males and I2 was more effective for females

	(49.5% female, 9.9% Caucasian, mean age 14.1 years) *Time to follow-up* Post-test after 2 years				
Luna Adame et al 2013 [18] Spain	*Study design* Experimental design, schools randomly assigned *Setting* Granada, Spain *Population* 28 schools, n=1 048 students (10–14 years) volunteered *Time to follow-up* 1 year	*Intervention* LST *Extent* 21 one-hour sessions in the first year and 12 one-hour sessions in the second year *Strategy* Based on providing adolescents with a wide range of skills to successfully meet the challenges they face *Number of participants* 14 schools, n=482 *Drop-out rate at follow-up* 21.6%	*Comparison* Assessment only, no health education or preventive sessions *Number of participants* 14 schools, n=566 *Drop-out rate at follow-up* 23.7%		*Implemented by* Trained university psychology students *Fidelity* NR *Comments* Interestingly, our results suggest that the contents of the program might have stimulated the participants' curiosity to try smoking, although this experimentation did not result in an increase in regular smoking
Dent et al 2001 [19] USA	*Study design* Experimental design, schools and classes randomly selected *Setting* Los Angles *Population* n=1 208 students enrolled at 3 LA public senior high	*Intervention* TND, Project Towards No Drug Abuse *Extent* 9 sessions of three 50-minute sessions per week for 3 weeks *Strategy* A motivation-skills-decision-making model	*Comparison* Standard care *Number of participants* 13 schools *Drop-out rate at follow-up* NR		*Implemented by* Project staff health educators *Fidelity* NR *Comments*

	schools participated (14–17 years) *Time to follow-up* 1 year	*Number of participants* 13 schools *Drop-out rate at follow-up* In total: 37%			
Sussman et al 2003 [20] USA	*Study design* Schools randomly assigned with school as the assignment unit *Setting* Southern California *Population* n=1 037 students were consented and surveyed at pretest from 18 high schools (14–19 years) *Time to follow-up* 2 year	*Intervention* TND *Extent* 12 session program *Strategy* *Number of participants* ? *Drop-out rate at follow-up* 55%	*Comparison* Standard care with surveys at pretest, immediate posttest, 1-year follow-up and 2 year follow-up *Number of participants* ? *Drop-out rate at follow-up* 43%		*Implemented by* Skilled health educators or self-administered *Fidelity* NR *Comments* The most consistent program effects found in the present project were obtained for hard drug use
Sun et al 2006 [21] USA	*Study design* Experimental design, randomised blocking procedures *Setting* South California alternative high school system during 1994–1999 *Population* 21 schools, n=1 867 eligible, n=1 578 baseline *Time to follow-up* Up to 5 year	*Intervention* TND *Extent* 9 sessions *Strategy* Health motivation-social skills-decision-making curriculum *Number of participants* 14 schools, n=571 (Class), n=533 (SAC) n=1 104 (total) *Drop-out rate at follow-up* 43% (Class) and 47% (SAC) after 5 years	*Comparison* Standard care *Number of participants* 7 schools, n=474 *Drop-out rate at follow-up* 51% after 5 years		*Implemented by* ? *Fidelity* NR *Comments*
Valente et al	*Study design*	*Intervention*	*Comparison*		*Implemented by*

2007 [22] USA	RCT using class room level assignment *Setting* Southern California *Population* Contacted 25 high schools, n=1 493 students invited, n=938 baseline surveys administered, (mean age 16.3) in 75 classes from 14 alternative high schools participated *Time to follow-up* 1 year	TND *Extent* TND and TND Network are both 12-session programs delivered over a 3–4-week period. The curricula were delivered to 47 classes over a 9-month period to at least 840 students *Strategy* Social influence *Number of participants* TND regular: 22 classes, n=296 TND Networked: 25 classes, n=351 *Drop-out rate at follow-up* TND: 38.5% Network: 36.2%	*Number of participants* 28 classes, n=238 *Drop-out rate at follow-up* 43.3%		Health educators *Fidelity* NR *Comments*
Sun et al 2008 [23] USA	*Design* Cluster RCT, school district level, schools blocked for drug use prevalence, ethnicity, achievement scores and school type and size *Aim* Evaluate component effects of a program *Setting* Convenience sample of 9 school districts from 2 counties in southern California. 1 regular and 1 continuation school per district were included	*Intervention* I1: normative belief correction I2: TND (I1 + skills training) *Extent* 12 sessions during 4 weeks (Tuesday–Thursday) *Strategy* Cognitive misperception correction and behavior skills instruction *Number of participants* 4 classrooms per teacher, i.e 8 classrooms were randomly selected I1: n=767 I2: n=688 *Drop-out rate at follow-up* I1: 26.5%	*Comparison* CAU *Number of participants* 4 classrooms with a health teacher, n=609 *Drop-out rate at follow-up* 27%	*Substance use, last 30 days* Cigarettes I1: OR 1.35 (0.93–1.95) I2: OR 0.91 (0.6–1.37) Alcohol I1: 0.98 (0.63–1.5) I2: 1.03 (0.66–1.58) Marijuana I1: OR 1.01 (0.5–2) I2: OR 1.23 (0.62–2.44) Hard drugs I1: OR 1.05 (0.44–2.49)	*Implemented by* Project staff cooperated with school to select a health teacher for training and implementation and a second teacher in whose classrooms the program would be implemented by project health educators. Teachers and project health educators were trained for 1.5 days by the program developers *Fidelity*

	Population n=2 734 students (13–19 years, mean age 15.3 years, 47.9% females, 18.2% Caucasian and 62% Hispanic) consented and filled in pretest questionnaires (70% of total) *Time to follow-up* 1 year past baseline	I2: 28.9%		I2: OR 1.20 (0.5–2.83)	*Comments* Continuation schools have high-risk students and were under represented in the comparison group, 19% vs app 29% in the intervention groups
Rohrbach et al 2010 [24] USA	*Design* Cluster RCT, schools blocked by size, ethnicity, proportion free lunch and drug prevalence *Aim* Effectiveness and evaluation of teacher training *Setting* 65 high schools from 14 school districts across the US (convenience sample) *Population* 3 751 students consented (86% of total) and 3 346 participated in pretest. Age: 13–20 years (mean 14.8 years) 53.4% females, 41.1% Caucasian, 28.7% Hispanic *Time to follow-up* 1 year past baseline	*Intervention* I1: TND, implementation support I2: TND, without implementation support *Extent* 12 sessions, 45 minutes each during 4 weeks *Strategy* Instruction, correction of misperceptions *Number of participants* I1: n=1 366 from 22 schools I2: n=1 093 from 21 schools *Drop-out rate at follow-up* I1: 20.6% I2: 29.4%	*Comparison* CAU *Number of participants* C: n=887 *Drop-out rate at follow-up* 23.2%	*Substance use, past 30 days* Cigarettes I1+I2: OR 1.00 (0.74–1.34) Alcohol I1+I2: OR 1.01 (0.80–1.26) Marijuana I1+I2: OR 0.77 (0.57–1.04) Hard drugs I1+I2: OR 0.72 (0.47–1.09) (OR <1 indicated positive effects of the program)	*Implemented by* A health teacher, selected by the school administrator and project staff I1: one-day workshop conducted by certified TND trainers + 2 coaching sessions, web based support and technical assistance I2: workshop as for I1 *Fidelity* *Comments* For non-users at baseline the effect of the program on hard drugs use was 0.61 (0.39–0.96)

Bond et al 2004 [25] Australia	*Design* Cluster RCT, school level *Aim* Efficacy of a health promotion program to reduce risky behaviors *Setting* 26 high schools from 16 school districts in Melbourne and regional Victoria *Population* All students in 8th grade (13–14 years), n=2 678 participated in baseline survey (74% of eligible), 53% female *Time to follow-up* 2 and 4 years past baseline	*Intervention* The Gatehouse project: A school based adolescent health team was established. Teaching, implementation support via a liaison team *Extent* The curriculum was 10 weeks in 8th grade and additional resources in 9th grade (not described) *Strategy* Promoting social inclusion, curriculum focused on problem-solving *Number of participants* n=1 343 *Drop-out rate at follow-up* 13.8% at 2 year 28.1% at 4 year	*Comparison* CAU *Number of participants* n=1 335 *Drop-out rate at follow-up* Not properly reported	*Substance use, past 30 days* (2 year follow-up): Tobacco AOR 0.91 (0.67–1.24) Alcohol AOR 0.96 (0.69–1.33) Marijuana past 6 months AOR 0.81 (0.57–1.16)	*Implemented by* Schools with support from the researchers, average 40 hours per school each year *Fidelity* Median number of lessons was 20 during 8th grade
Newton et al 2009 [26] Australia	*Design* Cluster RCT *Aim* Efficacy of a program *Setting* 10 independent high schools in Sydney metropolitan area (convenience sample) *Population* 1 296 students, 73% consented, mean age 13.08 years, 40% females, predominantly higher SES	*Intervention* Climate Schools: Alcohol and Cannabis, internet delivered and embedded in the health curriculum *Extent* 2 modules, six 40-minutes each. Modules were given 6 months apart. Each lesson included a 15–20 min cartoon on Internet followed by 20 min class activities *Strategy* Harm minimization, social influence approach	*Comparison* Health curriculum as usual: a variety of education based on harm minimization and social influences but not internet delivered *Number of participants* n=367 *Drop-out rate at follow-up* 22%	*Average weekly consumption of alcohol at follow-up compared to baseline* I: –0.88 standard drinks C: 2.67 standard drinks $p<0.05$ *Binge drinking, past 3 months* I: 0.32 C: 0.23 ns	*Implemented by* Teachers *Fidelity* NR

	Time to follow-up 6 months	*Number of participants* n=397 *Drop-out rate at follow-up* 14%		*Frequency in cannabis use at follow-up compared to baseline* I: –0.06 times/week C: 0.20 times/week p <0.05	
Bodin et al 2011 [27] Sweden	*Design* RCT, stratified by school and randomised in blocks of 2 *Aim* Independent evaluation of a program *Setting* 28 schools in Stockholm, Gothenburg and Malmö *Population* All students, 14 years old. n=128 students fulfilled selection criteria *Selection criteria* Self-reported need for additional adult contacts, no experience with illicit drugs, delinquency or acts of violence, no ongoing contacts with psychiatry or social services *Time to follow-up* Approx 400 days after baseline measurement	*Intervention* Mentor Foundation Mentoring program based on Big Brother Big Sister *Extent* Meetings at least every 2nd week for 2–4 hours during 1 year *Strategy* Trusting and empathic relationships with adults promote social-emotional and cognitive development *Number of participants* n=65 *Attention rate* 33 had an average of 11.7 meetings with their mentor, 27 discontinued the mentoring program, 5 did not start *Drop-out rate at follow-up* 3%	*Comparison* Phone calls from research staff on frequency and quality of contacts with non-parental adults *Extent* 5 minutes every 2nd month during the follow-up year *Number of participants* n=63 *Drop-out rate at follow-up* 3%	*Substance use (DUDIT-E)* Tobacco past 6 months 1.74 (0.71–4.24) Drunk past 30 days OR 1.05 (0.48–2.27) No alcohol OR 0.90 (0.40–2.04) Illicit drug use, lifetime OR 1.68 (0.25–11.09 <9	*Implemented by* Voluntary mentors recruited from companies and higher compulsory schools. They were trained for 2 days and offered supervision by a program director or psychologist *Fidelity* NR *Comments* Underpowered study due to time constraints (sample size of n=200 was required)
Smith et al [28]	*Study design*	*Intervention*	*Comparison* NR		*Implemented by* Therapists

2004 USA	A one-day antecedent analysis and an extended school-based double-blind medication trial *Setting* An outpatient clinic at Gonzaga University and in a classroom *Population* An 11-year-old male diagnosed with Attention Deficit Hyperactive Disorder (ADHD) by his physician *Time to follow-up* ?	Teacher checklists used over 15 days and a one-day antecedent analysis *Extent* Clinical sessions 10 minutes, within the school setting, a 3-week (i.e., 15 school days) drug trial was conducted *Strategy* *Number of participants* n=1 *Drop-out rate at follow-up* ?	*Number of participants* ? *Drop-out rate at follow-up* ?		*Fidelity* NR *Comments* The one-day trial provided results similar to the outcomes obtained during the school-based evaluation
Brown et al 2005 [29] USA	*Study design* Schools matched on risk factors and assigned randomly *Setting* A public elementary school north of Seattle, Washington *Population* 10 public schools (high risk), which comprised 959 first- and second-grade students, families were recruited into the longitudinal study. n=1 938 parents, n=1 239 eligible students, final sample n=959 students (mean age 7.7) *Time to follow-up*	*Intervention* The raising children healthy project (RHC) on reducing alcohol, marijuana and cigarette use *Extent* Volunteer activities after school twice a week grade 4–6, annual summer camps, multiple-session parenting workshops during grades 1–8. Intervention contacts (lasting 30 minutes or more for students, or 60 minutes or more for families) *Strategy* Social development model (SDM) *Number of participants* 5 schools *Drop-out rate at follow-up* ?	*Comparison* *Number of participants* 5 schools *Drop-out rate at follow-up* ?		*Implemented by* Implementation of the intervention was coordinated by RHC-employed school–home coordinators (SHCs) who were former elementary school teachers or education specialists with experience in providing services to parents and families *Fidelity* Ensured *Comments*

	4 years (?)				
Malmberg et al 2014 [30] The Netherlands	*Study design* Randomised cluster trial, randomisation at school level *Setting* The Netherlands *Population* 123 eligible secondary schools, 23 schools agreed to participate, n=3 784 randomised, n=3 542 first-grade students took part in the study (11–15 years) *Time to follow-up* 2 years	*Intervention* 'Healthy School and Drugs' prevention programme on adolescents' substance use *Extent* An e-learning module over 2 years and parental participation, regulation and monitoring and counselling *Strategy* TRA and SCT *Number of participants* e-learning: 7 schools, n=1 330 integral condition: 9 schools, n=1 195 *Drop-out rate at follow-up* e-learning: 38% integral: 31%	*Comparison* 'Business-as-usual' activities, but no substance-related interventions *Number of participants* 7 schools, n=1 259 *Drop-out rate at follow-up* 45%		*Implemented by* ? *Fidelity* NR *Comments* Remarkably, even though not significant, there is a negative trend with respect to the influence of the HSD programme on incidence of tobacco use
D' Amico et al 2002 [31] USA	*Study design* Longitudinal, adolescents randomly assigned *Setting* Mid-sized suburban high school *Population* High school students, n=300 completed baseline assessment, n=251 returned at post-test, n=184 returned for follow-up (14–19 years) *Time to follow-up* 6 months	*Intervention* An abbreviated version of Drug Abuse and Resistance Education (DARE-A) compared to a new Risk Skills Training Program (RSTP) *Extent* The RSTP consists of one 50-minute interactive group session. DARE-A took approximately 50 minutes *Strategy* Motivational techniques, increasing knowledge and understanding of the deleterious effects of substance use *Number of participants*	*Comparison* Assessment only *Number of participants* n=150 *Drop-out rate at follow-up* NR		*Implemented by* DARE-A was led by a certified DARE instructor (a police officer) *Fidelity* Ensured *Comments*

		RSTP: n=75 DARE-A: n=75 *Drop-out rate at follow-up* In total: 38.7%			
Ennett et al 1994 [32] USA	*Study design* ? *Setting* Illinois *Population* 18 pairs of elementary schools that were stratified by metropolitan status (i.e., urban, suburban, and rural). 6 pair each of schools assigned randomly and 6 non randomly, n=1 803 students in pretest, n=1 334 included in analysis *Time to follow-up* 1 and 2 years	*Intervention* DARE *Extent* Self-administered questionnaire 35 min, 17 lessons offered once a week for 45–60 minutes *Strategy* A social influence approach *Number of participants* NR *Drop-out rate at follow-up* The overall attrition rate was 26% when respondents not present for one or more of the 4 data collection waves are considered. 12% of the initial sample was not followed-up at Wave 4	*Comparison* Assessment only *Number of participants* NR *Drop-out rate at follow-up* NR		*Implemented by* NR *Fidelity* NR *Comments*
Perry et al 2003 [33] USA	*Study design* RCT *Setting* Schools and neighborhoods, primarily in Minneapolis - St Paul *Population* All 7th grade students in 24 schools in the academic year 1999–2000. n=6 728 eligible, n=6 237 surveyed at baseline	*Intervention* Middle and Junior High School DARE and DARE Plus Programs *Extent* Implemented during 2 years (7th and 8th grade) DARE: 10 sessions DARE plus: 4-session program once a week for 4 weeks, theatre production, neighbourhood action teams *Strategy* Character building and citizenship skills	*Comparison* Delayed program control *Number of participants* n=1 790 *Drop-out rate at follow-up* NR		*Implemented by* Trained police officers, trained teachers and community leaders *Fidelity* NR *Comments* Peer parental, and community components significantly

	Time to follow-up 2 years	*Number of participants* DARE: n=2 226 DARE plus: 2 221 *Drop-out rate at follow-up* In total: 16%			enhance the effect of DARE curriculum for boys, who are at a higher risk of drug use and violence
Snow et al 1992 [34] USA	*Study design* *Setting* public schools of two southern New England towns during the academic years 1980-81 and 1981-82 *Population* The initial sixth grade sample for the ADM Program consisted of 1,360 students enrolled in the public schools *Time to follow-up* 2 year	*Intervention* Adolescent Decision Making Program to prevent substance use *Extent* *Strategy* SCT *Number of participants* n=680 *Drop-out rate at follow-up* 19.9%	*Comparison* Assessment only *Number of participants* n=680 *Drop-out rate at follow-up* 22.1%		*Implemented by* NR *Fidelity* NR *Comments* It is critical to examine both pro-gram and attrition effects when evaluating the impact of a preventive intervention at follow-up.
Ellickson et al 1990 [35] USA	*Study design* Experimental design, schools randomly assigned *Setting* Communities in California and Oregon, 1984–86 *Population* The entire seventh-grade cohort of 30 junior high schools drawn from eight communities, n=6 527 at baseline	*Intervention* Project ALERT *Extent* An 8-session curriculum plus 3 booster lessons when they reached 8th grade *Strategy* Social influence model *Number of participants* 20 schools *Drop-out rate at follow-up*	*Comparison* Assessment only, "Business as usual" *Number of participants* 10 schools *Drop-out rate at follow-up* NR		*Implemented by* Adult health educator assisted by teen leaders *Fidelity* Ensured *Comments*

		In total: 40%			
	Time to follow-up 3, 12 and 15 months				
Ellickson et al 2003 [36] USA	*Study design* Experimental design, schools randomly assigned *Setting* Midwestern schools and communities *Population* students from 55 South Dakota middle schools randomly assigned, n=5 412 enrolled, n=4 689 completed baseline, n=4 276 in the complete analysis *Time to follow-up* 18 months	*Intervention* Project ALERT *Extent* Treatment group students received 11 lessons in 7th grade and 3 more in 8th grade *Strategy* The health belief model, social learning model and self-efficacy theory of behavior change *Number of participants* 34 schools, n=2553 *Drop-out rate at follow-up* 8.3%	*Comparison* Assessment only, "Business as usual" *Number of participants* 21 schools, n=1 723 *Drop-out rate at follow-up* 9.2%		*Implemented by* Trained teachers *Fidelity* NR *Comments* Particularly noteworthy is the revised Project ALERT's positive impact on baseline cigarette experimenters and smokers, as well as the highest-risk early drinkers
Longshore et al 2006 [37] USA	*Study design* Randomised trial *Setting* South Dakota *Population* 9th grade students, 45 high schools and their middle-school feeder(s), n=4689 completed baseline, n=4015 comprised the analytic sample *Time to follow-up* 1 or 2 years?	*Intervention* Project ALERT *Extent* ALERT: 8 lessons in 7th grade and 5 lessons in 8th grade ALERT plus: added 5 booster lessons in 9th grade and 5 in 10th grade *Strategy* The health belief model, self-efficacy theory and social influence theory *Number of participants* ALERT: n=1379 Plus: n=1023 *Drop-out rate at follow-up*	*Comparison* Assessment only, "Business as usual" *Number of participants* n=1 613 *Drop-out rate at follow-up* NR		*Implemented by* ? *Fidelity* NR *Comments* Attrition was neither negligible nor random

		In total: 13.1% missed 9th grade survey			
St Pierre et al 2005 [38] USA	*Study design* Randomised, 2-cohort longitudinal evaluation *Setting* Pennsylvania middle schools *Population* Participants were 2 consecutive student cohorts at 8 Pennsylvania middle schools, n=1 649 7th graders completed questionnaire *Time to follow-up* 1 year	*Intervention* Project ALERT *Extent* 2 year *Strategy* *Number of participants* NR *Drop-out rate at follow-up* In total 72.5% completed all 5 waves	*Comparison* Assessment only *Number of participants* NR *Drop-out rate at follow-up* NR		*Implemented by* Outside program leaders employed by Cooperative Extension. *Fidelity* Not ensured *Comments*
Roberts et al 2011 [39] Australia	*Study design* Cluster RCT, schools matched on size, SES and number 6th grade students *Aim* Reduce use of tobacco and alcohol in teenagers *Setting* 63 government primary schools in a Western Australia school district *Population* n=3 288 students whereof n=2 333 consented (61.5%) *Follow-up time* 12 months	*Intervention* Aussie Optimism Program comprising modules for students (OTS, Optimistic thinking skills and SLS, Social life skills) and parents (Parents and Families Program) I1:The student intervention was given by teachers with coaching I2: The intervention was given by teachers without coaching *Extent* SLS: 10 weekly modules in grade 6, 60 minutes each OTS: 10 weekly modules in grade 7, 60 minutes each Parents: Booklet and 5 newsletters sent home to families in the second half of grade 7 *Prevention level*	*Comparison* Regular Health Education lessons, 1 hour weekly addressing self-management and interpersonal skills *Number of participants:* n=640 children in 21 schools *Attendance rate* *Drop-out rate at follow up* 16%	*Risk of smoking last 30 days* I2 vs C: OR 1.59; p=0.013 *Risk of alcohol use last 30 days* I2 vs C: OR .16; p=0.042 Other contrasts were not significant and not reported	*Implemented by* n=317 6th and 7th grade teachers after 16 hours training. Program developers trained school psychologists and specialist teachers to train classroom teachers Teachers in the coaching condition additionally received four 1 hour coaching annually *Fidelity* Ensured

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		Universal *Number of participants:* I1: n=807 students in 20 schools I2: n=864 students in 20 schools *Attendance rate* *Drop-out rate at follow up* I1:40% I2: 20%			*Comments* Not ITT
Spoth et al 2002 [16] USA Spoth et al 2008 [40] USA	*Study design* Cluster RCT *Aim* *Setting* 36 randomly selected rural schools in 22 contiguous school districts in a Midwestern state *Population* All 7th grade students were invited (47% females, 96% Caucasian) *Follow-up time* 1 year post test, 5.5 year past baseline	*Intervention* LST + SFP 10–14 *Extent* LST: 15 sessions in class + 5 booster sessions a year later SPF 10–14: 7 weekly sessions in the evening during second semester 7th grade Each session included 1 hour separately and 1 hour joint child and parents.4 booster sessions were offered 1 year later *Prevention level* Universal *Number of participants* n=549 *Attendance rate* n=129 families in 22 groups in 12 schools participated; 90% attending >50% of sessions *Drop-out rate* 17.5% at one year follow-up	*Comparison* Minimal contact including a brochure *Number of participants* n=494 *Drop-out rate* 15.8%	*Relative reduction in new users at one year follow up* Cigarettes: 275% Alcohol: 30.0% Marijuana: 48.1% *Relative reduction in new users at 5,5 year follow-up* Cigarettes: 12.3% Alcohol: 2.5% Marijuana: 23.1%	*Implemented by* In partnership with the university *Fidelity* ensured *Comments*

Table 6.1 Specific alcohol prevention programs.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Extent Number of participants Drop-out rate	Comparison Number of participants Attendance rate Drop-out rate	Outcome	Implemented by Fidelity Comments
Vogl et al 2009 [41] Australia	*Study design* Cluster RCT *Aim* *Setting* Convenience sample of 16 schools which had participated in the development of the program or with a previous relationship with the researchers *Population* n=1 992 whereof 1 466 students consented, 8th grade, mean age 13 years (41% females) *Follow-up time* 6 and 12 months	*Intervention* CLIMATE alcohol course *Extent* 6 lessons, 40 minutes each. A lesson was broken into a 15–20 minutes computer based lesson and various class activities for students and teacher *Number of participants* n=611 (55% females) *Strategy* Social influence for harm minimisation *Attendance rate* NR *Drop-out rate at 12 month follow-up* 26.2%	*Comparison* Alcohol education programs as usual *Extent* Usually more extensive than 6 lessons *Number of participants* n=855 (31% females) *Attendance rate* NR *Drop-out rate at 12 months follow-up* 31.4%	*Weekly alcohol consumption past 3 months at 12 months follow-up* Girls: females=6.330 95% CI 0.39–3.17 p=0.012 Boys: no significant differences *Heavy drinking past 3 months* Girls: females=7.18 95% CI 0.16–1.06 times/3 months p=0.0076 Boys: no significant differences	*Implemented by* Teachers and computer. Teachers were provided with a manual but no additional training. *Fidelity* Ensured in both conditions
D'Amico et al 2012 [42] USA	*Design* Cluster RCT, matched pairs *Aim* *Setting*	*Intervention* CHOICE *Extent* 5 sessions delivered after school hours once weekly, 30 minutes each *Strategy*	*Comparison* CAU *Number of participants* n=7 271 from 8 schools *Drop-out rate at follow-up*	*Alcohol use past 30 days* OR=0.81 p=0.20 *Heavy drinking past 30 days* OR 0.78	*Implemented by* CHOICE facilitators, bachelor and masters-level project staff, trained for 30 hours and supervised weekly *Fidelity*

	16 middle schools in three school districts in southern California. Recruitment through flyers and presentations at schools *Population* 14 979 6th, 7th and 8th grade students whereof 71% got parental permission. n=8 932 students participated in the baseline measurements *Time to follow-up* 6–7 months	Normative information, MI approach to present the curriculum *Number of participants* n=7 708 from 8 schools *Attendance rate* n=703 (15% of those that had consented) Mean number of sessions: 3.0; 1/3 of participants attended all sessions *Drop-out rate at follow-up* 11.2%	12.2%	*Lifetime alcohol use* OR 0.70	Ensured (90%) *Comments* Attendance rate influenced the resistance self-efficacy but no other outcomes
McBride et al 2003 [43] Australia	*Design* A quasi-experimental research design with randomly selected and allocated groups *Setting* Metropolitan, government secondary schools in Perth, Western Australia *Population* Students at 14 schools n=2 343 *Time to follow-up* 8, 20 and 32 months	*Intervention* The School Health and Alcohol Harm Reduction Project (SHAHRP study) aimed to reduce alcohol-related harm *Extent* The evidence-based intervention, a curriculum programme with an explicit harm minimisation goal, was conducted in 2 phases (phase 1: 40–60 minutes, phase 2: 12 activities over 5–7 weeks) over a 2- year period *Strategy* *Number of participants* n=1 111 *Attendance rate* Attrition over the 32-month period was 24.1%	*Comparison* Students participated in regular alcohol education classes during the second phase of the study *Number of participants* n=1 232 *Drop-out rate at follow-up* NR		*Implemented by* Trained teachers *Fidelity* *Comments* The current findings raise doubt about the claim in the literature that young people have limited capability to process harm reduction messages

		Drop-out rate at follow-up Surveys excluded in all: 45 surveys (2%) at first follow-up; 49 surveys (2.2%) at second follow-up; and 44 surveys (2.1%) at final follow-up			
Peleg et al 2001 [44] Israel	*Design* The schools were chosen from a roster of all schools in the south of Israel. Schools were allocated to the study to be as equal as possible *Setting* High schools in southern Israel *Population* 1 000 10th grade students *Time to follow-up* 1 and 2 years	*Intervention* a Brief Alcohol Abuse Prevention Program *Extent* Conducted over 3 days and included dissemination of information, workshops, lectures by guest experts, and activity areas *Strategy* Based on Botvin's social skills theory *Number of participants* n=507 *Attendance rate* 76% follow-up rate at 2 years *Drop-out rate at follow-up* NR	*Comparison* 3 control schools *Number of participants* n=493 *Drop-out rate at follow-up* NR		*Implemented by* Trained staff of the high schools and the Psychological Counseling Service in Israel. *Fidelity* *Comments*
Koning et al 2009, 2011 [45,46] The Netherlands	*Study design* Cluster RCT *Aim* Reduce heavy drinking in 1st and 2nd year high school students *Setting* Random selection of 80 Dutch public secondary schools *Population*	*Intervention* I1: SI based on the alcohol module of HSD I2: PI based on ÖPP I3: I1+I2 *Intensity and duration* I1: web based, 4 lessons 1st year and a booster session 2nd year I2: During the first parent meeting 1st and 2nd year, 20 minutes information, meeting on rules, information leaflet sent home as a reminder	*Comparison* CAU *Number of participants:* n=935 *Attendance rate* NA *Drop-out rate at follow up* 15.5%	Analyses were based on n=2 937 students that were not heavy drinkers at baseline *Heavy weekly drinking at 2 years follow-up* SI: OR 0.85 (95% CI 0.56–1.29) PI: OR 1.13 (95% CI 0.73–1.73)	*Implemented by* I1: Trained teachers I2: Expert on alcohol and trained mentors for the classes *Fidelity* 50% of schools with PI did not try to reach consensus on rules for adolescent drinking. Otherwise adequate

				SI+PI: 0.80 (95% CI 0.48–1.32) *Weekly drinking* SI: OR 0.92 (95% CI 0.71–1.19) PI: OR 0.86 (95% CI 0.63–1.16) SI+PI: OR 0.71 (95% CI 0.53–0.94) *3 years follow up* Results were maintained	*Comments*
n=3 490 1st year high school students, 49% females, mean age 12.7 years *Inclusion criteria* At least 100 1st year students,<25% immigrants *Follow up time* 2 years and 3 years	*Theoretical underpinning* I1: attitude and refusal skills *Prevention level* Universal *Number of participants* I1: n=942				
Morgenstern et al 2009 [47] Germany	*Design* RCT *Aim* *Setting* All 106 secondary schools in three districts surrounding Hamburg, Germany, were invited *Population* n=1 686 students in 7th grade from 30 schools consented and participated in the baseline measurement (90%) *Follow-up* 1 year after baseline	*Intervention* Alcohol education for students and parents on use and consequences *Intensity and duration* Students: 4 sessions and a booklet Parents: booklet Scheduled for 3 months *Strategy* Social norms and social influences *Number of participants* n=839 students from 16 schools *Attendance rate* NR *Drop-out rate* 10%	*Comparison* CAU *Number of participants* n=847 students from 14 schools *Attendance rate* NA *Drop-out rate* 11.3%	*Alcohol use past month at follow-up (mean on 5 point scale)* I: 0.89 C: 0.98 p=0.419 *Life-time alcohol use* Adjusted OR 0.90 (0.67–1.21) p=0.494 *Life-time binge drinking* Adjusted OR 0.74 (0.57–0.97) p=0.031 *Life-time drunkenness* Adjusted OR 0.77 (0.52–1.12) p=0.171	*Implemented by* Regular teachers, trained in a 3-hour workshop *Fidelity* NR *Comments* Significant attrition-condition interaction for life-time drunkenness and binge drinking (higher drop-out rate in the comparison group) Significant differences in baseline: more smoking, alcohol use in the environment and more rebelliousness in the intervention group

Bodin et al 2011a [27] Sweden	*Design* A randomised trial, Youth were stratified by school and randomized in blocks of two (mentoring-control or control-mentoring) *Setting* Stockholm, Gothenburg, and Malmö city areas *Population* Recruitment took place in 28 schools, 14 year olds, n=157 assessed for eligibility, n=128 randomized *Follow-up* 12 month	*Intervention* A psychosocial, adult-to-youth mentoring program aiming to prevent substance use in low-risk youth *Intensity and duration* paper-and-pencil questionnaires, web-based follow-up *Number of participants* n=65 *Attendance rate* 96.9% *Drop-out rate* 4.6%	*Comparison* The control group were contacted by research staff for 5-minutes phone-calls every second month during the follow-up year *Number of participants* n=63 *Attendance rate* *Drop-out rate* 3.2%		*Implemented by* Trained Mentors *Fidelity* *Comments* A relatively low statistical power and a low program dosage preclude any definite conclusions about program effectiveness.
Pettersson et al 2011 [48] Sweden	*Design* Quasi-experimental design *Setting* Värmland county *Population* 6 schools, located in 3 municipalities. All adolescents who started in school year 7 during autumn 2004 (n=795) and their parents were target sample, school year 8 n=789, school year 9 n=798. N=509	*Intervention* "Strong and Clear" (Stark och klar), a parental program aiming to prevent underage drinking *Intensity and duration* 13 activities during the 3 years of secondary school (parent meetings, family dialogues, friend meetings, and family meeting) *Strategy* *Attendance rate* *Number of participants* n=509 *Drop-out rate*	*Comparison* No control group, but parents who were not participating in the program and their children worked as the comparison group *Number of participants* n=305 *Attendance rate* *Drop-out rate* NR		*Implemented by* A non-governmental organisation *Fidelity* *Comments* Not RCT

	dyads of parents and children *Follow-up* 15 and 27 months	Parents School year 8: 46% School year 9: 54% Adolescents: School year 8: 16% School year 9: 21%			
Koutakis et al 2008 [49] Sweden	*Design* Quasi-experimental using matched controls with a pre–post, intention-to-treat design *Setting* Schools located in inner city, public housing and small town areas *Population* Used data from the Social Medicine Unit of the County Hospital who surveyed all 9th graders in Örebro County (n=3 094) to select schools *Follow-up* 1.5 and 2.5 year	*Intervention* A parent-targeted intervention: the Örebro Prevention Program to reduce alcohol use *Intensity and duration* Parents received information by mail and during parent meetings in schools *Strategy* Urging parents to: (i) maintain strict attitudes against youth alcohol use and (ii) encourage their youth's involvement in adult-led, organised activities *Number of participants* Youth: n=393 Parents: n=339 *Attendance rate* *Drop-out rate* Youth 8th grade: 2.8% 9th grade: –3.82% Parents 8th grade: 6.8% 9th grade: –8.3%	*Comparison* Matched control schools, assessment only *Number of participants* Youth: 418 Parents: 312 *Attendance rate* *Drop-out rate* Youth 8th grade: 7.66% 9th grade: –0.7% Parents 8th grade:14.1% 9th grade: –9.3%		*Implemented by* Project workers, teachers *Fidelity* *Comments* It is an empirical question whether this programme would work in countries with weak restrictions on youth drinking
Bodin et al 2011b [50] Sweden	*Design* Clusterrandomised trial, with schools assigned	*Intervention* Örebro prevention programme (ÖPP), that aims to reduce youth drinking by changing parental behaviour.	*Comparison* *Number of participants* 20 schools		*Implemented by* 34 experienced ÖPP presenters, of whom 23 (68%) were also

randomly to the ÖPP or no intervention *Setting* Forty municipal schools in 13 counties in Sweden *Population* Sent out invite to 716 schools, 40 schools volunteered. n=1 752 students in the 7th grade and 1 314 parents were assessed at baseline *Follow-up* 12 and 30 months	*Intensity and duration* parent–teacher meetings with power points, *Strategy* *Number of participants* 20 schools Students: n=893 *Attendance rate* NR *Drop-out rate* 12 month: 6.5% 30 month: 10.6%	Students: n=859 Parents: n=682 *Attendance rate* *Drop-out rate* 12 month: 9.4% 30 month: 12.7%		authorized ÖPP trainers *Fidelity* *Comments*

Table 6.2 Specific programs tobacco.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Extent Strategy Number of participants Drop-out rate	Comparison Number of participants Drop-out rate	Outcome	Implemented by Fidelity Comments
Andrews et al 2013 [51] USA	*Study design* RCT, stratified for size of school, SES *Aim* Delay or prevent the initiation of tobacco use among children or early adolescents *Setting* 5th grade in 47 elementary and 26 middle schools in three counties in Western Oregon *Population* NR *Inclusion criteria* NA *Follow-up time* 1 and 2 years	*Intervention* Click City Tobacco, interactive computer-based program in the classroom to change the intention to want to smoke *Intensity and duration* 8 sessions in 5th grade and 2 booster in 6th grade *Theoretical underpinning* Norms and beliefs, risk of consequences *Prevention level* Universal *Number of participants* 1 168 students from 24 elementary schools and 13 middle schools *Attendance rate* NR *Drop-out rate at follow-up* 32% at 1 year 35% at 2 years	*Comparison* CAU *Number of participants:* n=1 154 students from 23 elementary and 13 middle schools *Attendance rate* NA *Drop-out rate at follow-up* 24.1% at 1 year 30% at 2 years	*Intention to smoke at 1 year follow-up* Cohen's d: 0.08 (p<0.05) *Willingness to smoke at 1 year follow-up* Cohen's d: 0.10 (p<0.05) *Intention to smoke at 2 year follow-up* Cohen's d: 0.08 (p<0.05) *Willingness to smoke at 2 year follow-up* Cohen's d: 0.15 (p<0.01) *Started smoking at 2 year follow-up* I: 3.9% C: 2.6% ns	*Implemented by* Teachers, assisted by the research staff *Fidelity* *Comments* Attrition at 2 year follow-up was related to having tried smoking at baseline and to come from a smoking family Mediator analysis showed that ClickCity was most effective at changing intentions and willingness to smoke for those who had already tried smoking

Balvig et al 2011 [52] Denmark	*Study design* RCT, allocation by authors drawing lots *Aim* Prevent smoking with a secondary aim to find out whether the program had effect on other misperceptions *Setting* n=22 classes (10 5th grade, 12 6th grade) from 8 schools in the municipality of Ringsted *Population* Students 11–13 years *Inclusion criteria* *Follow-up time* 1 year	*Intervention* Information and group discussions on normative misperceptions and actual smoking habits for the class. Students made a class contract with strategies to retain the new insights *Intensity and duration* 1 occasion, 4 hours, in the classroom *Theoretical underpinning* Social norms and beliefs *Prevention level* Universal *Number of participants* n=216 from 12 classes *Attendance rate* NR *Drop-out rate at follow up* 12% (students that had changed school or class)	*Comparison* CAU *Number of participants* n=174 from 10 classes *Attendance rate* NR *Drop-out rate at follow up* 7% (students that had changed school or class)	*Smoking daily or at parties* I: 2.6% C: 5% p=0.554	*Implemented by* External instructor, a law student who was also a teenage soccer coach *Fidelity* Ensured *Comments* 4 schools contained both intervention and control classes
Dalum et al 2012 [53] Denmark	*Study design* cluster RCT, school-level, blocked *Aim* Smoking cessation *Setting* All 15 counties in Denmark were invited to participate by enrolling 2	*Intervention* "Open events" centrally at the school offering eg CO-measurement, counselling, self-help material and referral to a web based smoking cessation program *Intensity and duration* Once a week during 4 weeks	*Comparison* Waiting-list *Number of participants:* n=505 smokers *Attendance rate* NA *Drop-out rate at follow-up*	*Smoking cessation at 1 year follow-up (self report)* I: 7.5% C: 7.1% Adjusted OR: 075 (95% CI 0.31–1.82)	*Implemented by* *Fidelity* *Comments* Reach of intervention (counselling or written material according to student report) varied between 33 and 82% between schools

	continuation schools each. Classes were limited to commercial or social and health education *Population* n=6 950 students in 22 schools from 11 counties *Inclusion criteria* Age 15–21 years, smoking *Follow-up time* 1 year	*Theoretical underpinning* Prochaska, Social cognitive theory, Self-Regulation Theory *Prevention level* Universal *Number of participants* n=642 smokers *Attendance rate* ≥30% received counselling at least once *Drop-out rate at follow up* High, according to authors			
Gansky et al 2005 [54] USA	*Design* Cluster RCT, colleges stratified for prevalence of spit tobacco *Aim* Efficacy *Setting* Random sample of Californian colleges with varsity baseball teams; 52 (60%) participated *Population* Male baseball athletes; n=1 970 were eligible; n=1 585 participated (84% <20 years; 70% Caucasian) *Time to follow-up*	*Intervention* Trainer directed *Extent* Oral cancer screening with feedback and brief counselling, trainer support for cessation (1 meeting and 3 group booster sessions) and a peer-led educational team meeting, 50–60 minutes *Strategy* Skills training and social influence *Number of participants* n=285 spit tobacco users n=417 non-users *Drop-out rate at follow-up* 21,3%	*Comparison* No intervention (see comments) *Number of participants* n=352 spit tobacco users n=531 non-users *Drop-out rate at follow-up* 21.2%	*Initiation of spit tobacco use, past 30 days* OR 0.58 (0.35–0.99) *Cessation of spit tobacco use* OR 0.94 (0.70–1.27)*	*Implemented by* Trainers and dental hygienists that were trained for 3 hours by the research staff on a video conference *Fidelity* *Attendance rate* 55–68% for the various parts of the intervention *Comments* An unexpected percentage of control group trainers gave advice, counselling and provided cessation material

	1 year				
Armstrong et al 1990 [55] USA	*Design* Cluster (cluster by school) RCT	*Intervention* Educational program based on the social consequences curriculum developed by the University of Minnesota	*Comparison* No intervention	*Non-smoking in the previous 12 months* Smoking increased in all groups	*Implemented by* Teachers and peers, after training
	Aim Efficacy		*Number of participants* n=781, 366 girls and 415 boys	Girls	*Fidelity*
	Setting 45 primary schools in Nedlands, Australia	*Extent* 5 classroom sessions comprising information and discussions on prevalence and physiological effects of smoking, social influences on smoking behavior and development of arguments for non-smoking	*Drop-out rate at follow-up* 35%	Effect sizes, adjusted differences (controls are referent): I 1: –6.6% (–15.6–2.4) year 1 and –6.6% (–17.3–4.0) year 2	*Comments* Randomisation of schools stratified by class size and regional location. Analyses done with no regard to correlated data within clusters. Effect sizes given stratified for sex and intervention group. P-tests of differences between interventions groups and controls given for combined intervention groups vs control in girls, but separated by intervention group
	Population 7th graders (modal age 12 years), n=2 366			I 2: –7.8% (–17.1–1.5) year 1 and –8.1% (–18.9–2.7). Combined intervention groups (I 1+1 2) vs control: p=0.04 year 1 and 0.03 year 2	
	Time to follow-up In this report: 1 and 2 years from end of program (in 1983)				
		Strategy Social influence			
		Number of participants I 1 (teacher led sessions): n=828, 424 girls and 404 boys I 2 (peer-led sessions): n=757, 368 girls and 389 boys		Boys: I 1: –12.8% (–21.1–4.6) year 1 and –2.8% (–11.2–5.6) year 2 I 2: 4.9% (–4.7–14.5) year 1 and 6.4% (–3.6–16.4) year 2. Combined intervention groups vs control: ns both years	
		Drop-out rate at follow-up 18% year 1 and 36% year 2			

				I 1 vs control: p=0.002 year 1 and 0.009 year 2. I 2 vs control: ns both years	
Dijkstra et al 1999 [56] The Netherlands	*Design* Cluster (cluster by school) RCT

Aim Efficacy

Setting Schools in 15 of 20 health districts in the Netherlands, 52 schools

Population 8th grade students (at baseline), n≈4 800

Time to follow-up 6 months, 1 year and 1.5 years | *Intervention* I 1: Social influence program (SI) I 2: Social influence program plus decision making (SIDM) Within I 1 and I 2, schools were randomised to booster or no booster

Extent Social influence: 5 peer and teacher led weekly classes comprising activities and homework assignments on smoking, consequences of smoking, tobacco addiction and quitting smoking Decision making: Student manual on decision making. Booster: 3 magazines, developed for the program and distributed to students

Strategy Social influence and decision making

Number of participants I 1: 51 school classes 1 2: 64 school classes Both nested in 32 schools of which half were randomly assigned to booster | *Comparison* No intervention

Number of participants 20 schools

Drop-out rate at follow-up "No significant interactions between pre-test smoking and treatment condition with respect to attrition." 0% at class and school level | *Smoking (occasional, weekly or daily smoker)* At 6 months (stratified for prior smoking due to interaction) I 1: Pre-test non-smokers OR 0.54 (0.35–0.83), pre-test smokers, ns I 2: Pre-test non-smokers OR 0.63 (0.44–0.92), pre-test smokers, ns At 1 year I 1, no booster; ns, I 1 plus booster; OR 0.44 (0.30–0.65) I 2, no booster; OR 0.62 (0.45–0.86); I 1 plus booster; ns At 1.5 years I 1, no booster; n.s., I 1 plus booster; OR 0.62 (0.45–0.87) I 2, no booster; ns, I 2 plus booster; ns | *Implemented by* Trained teachers and class room peers (non- smokers)

Fidelity Use of single program activities varied from 78 to 91% among teachers

Comments Analyses performed in logistic regressions adjusted for pre-treatment measures of attitude, social norms, pressure, perceived behavior, self-efficacy and intention as captured in baseline survey |

		Drop-out rate at follow-up Interventions and control: 15.9% at 6 months, 24.3% at 1 year and 35.7% at 1.5 years. 0% at class and school level			
de Vries et al 2006 [57] The Netherlands	*Design* Cluster (cluster by region) RCT in 4 of 6 countries and non-randomised CCT in 2 countries *Aim* Efficacy *Setting* Students from 205 schools in 6 EU countries *Population* Adolescent and non-smoking students nested within schools, community, regions and country (n=19 034) *Time to follow-up* 2 years and 2.5 years	*Intervention* The European Smoking prevention Framework Approach (ESFA), a class room based program *Extent* 3 year program. Year 1: teacher led information on social influence and training in refusal skills. Year 2 and 3: continued class room education plus other interventions at individual level, parental level and out of school *Strategy* Social influence *Number of participants* Overall (intervention and control): n=19 034 *Drop-out rate at follow-up* 44.6% at 2 years and 52.3% at 2.5 years	*Comparison* *Number of participants* See under intervention *Drop-out rate at follow-up* 44.2% at 1.5 years and 50.2% at 2.5 years	*Non-smokers turning ever smokers* <u>Year 2, intervention vs control</u> Overall: ns Country level: All countries except Portugal ns Portugal; OR 0.73 (0.57–0.94) <u>Year 2.5</u> Overall: ns Country level: all countries except Portugal ns Portugal; OR 0.62 (0.48–0.80) *Non-smokers turning weekly smokers* <u>Year 2, intervention vs control</u> Overall: n. <u>Year 2.5</u> Overall: OR 0.89 (0.80–0.90) Country level: All countries except the Netherlands and Portugal ns	*Implemented by* Trained teachers *Fidelity* Teacher training, the range of school lessons on refusal skills offered and parent involvement differed between countries. Delays in European funding hindered implementation of the program *Comments* Only data from responders with <10% missing values, and no missing values on outcome variables were included in the analyses (56.5% of the original sample). Analyses in multilevel models (individual, school, region and country), adjusted for demography, attitude, self-efficacy and intention at baseline. The overall high drop-out rate varied greatly between countries, and there were differences in drop-out between comparison groups between countries. Weekly smokers increased more in

				The Netherlands OR 1.28 (1.01–1.63) and Portugal; OR 0.56 (0.37–0.84)	the intervention group at last follow-up in the Netherlands
Elder et al 1993 [58] USA	*Design* Cluster (cluster by school) RCT *Aim* Efficacy *Setting* 22 high schools in the San Diego area, California *Population* 7th and 8th grade high school students, n=3 655. Average age was 12 at baseline *Time to follow-up* 3 years (at the end of program)	*Intervention* Students Helping Others to Understand Tobacco (SHOUT) *Extent* A 3 year program: Classroom training in refusal skills and anti-tobacco information (18 lessons over 2 years). Distribution of newsletters with tobacco related information and individually tailored booster telephone calls five times in the last year *Strategy* *Number of participants* 1 174 completers *Drop-out rate at follow-up* 27% at last follow-up	*Comparison* No intervention *Number of participants* 1 494 completers *Drop-out rate at follow-up* 27% at last follow-up	*Prevalence of any tobacco use in the past month* I: 13.2% C: 19.8% I vs C, individual level: OR 0.72 (p<0.001) I vs C, school level: OR 0.71 (p<0.05) *Prevalence of any tobacco use in the past week* I vs C, individual level: OR 0.71 (p<0.001) I vs C, school level: OR 0.66 (p<0.05)	*Implemented by* >100 volunteer college students, who, after 15 hours training, served as classroom group leaders, and managed newsletter distribution and booster telephone calls for college credits *Fidelity* *Comments* Only data from 2 668 completers of year 3 were analysed (73% of the original sample). Results for school level were weighted for school size
García et al 2005 [59] Spain	*Design* Cluster (cluster by classroom) RCT *Aim* Efficacy *Setting* Secondary school	*Intervention* A program to promote health and prevent smoking in students *Extent* *Strategy* *Number of participants*	*Comparison* No intervention *Number of participants* n=73 *Drop-out rate at follow-up* Not stated	*Experimented with smoking* <u>At 4 months</u> I vs C: ns <u>At 1 year</u> I vs C: ns *Daily smoker* <u>At 4 months</u> I vs C: ns <u>At 1 year</u>	*Implemented by* *Fidelity* *Comments* Data drawn from abstract only

				I vs C: ns	
	Population Secondary school students, n=232 *Time to follow-up* 4 months and 1 year	n=159 *Drop-out rate at follow-up* Not stated			
Laniado et al 1993 [60] Mexico	*Design* RCT *Aim* Efficacy *Setting* 6 elementary schools in Tijuana, Mexico *Population* Elementary school students, n=168 *Time to follow-up* 10 months	*Intervention* Prevention program with emphasis on peer pressure resistance skills to avoid smoking *Extent* *Strategy* Peer pressure resistance *Number of participants* n=94 *Drop-out rate at follow-up* Not given	*Comparison* No intervention *Number of participants* n=74 *Drop-out rate at follow-up* Not given	*Experimented with tobacco during follow-up* I: 8.1% C: 20% I vs C: p<0.05 *Quit smoking during follow-up* I: 72% C: 34.78% I vs C: p<0.01	*Implemented by* *Fidelity* *Comments* Data drawn from abstract only. No information in abstract on whether baseline data on smoking was controlled for in analyses
Gorini et al 2014 [61] Italy	*Design* Cluster (cluster by school) RCT *Aim* Efficacy *Setting* 20 secondary schools in Reggio Emilia, Italy *Population* Students attending the first class of secondary school (n=2 129 students within 20 schools)	*Intervention* The Luoghi di Prevention Grounds (LdP) *Extent* LdP comprised 4 components: A 4 session "Smoking Prevention Path" education program on tobacco, given by trained instructors. A classroom, 2 hour session. A peer-led life skills intervention and the enforcement of smoking policies and regulation at school *Strategy*	*Comparison* No intervention *Number of participants* n=814 students nested within 6 schools *Drop-out rate at follow-up* 20% students, 0% schools	*Smoking in the past 30 days* I vs C: OR ns* AOR a. ns** AOR b. 0.69 (0.50–0.95)*** *20 or more days of cigarette smoking in the past month (daily smoking)* I vs C: OR 0.65 (0.45–0.94)* AOR a. ns**	*Implemented by* Trained instructors at a community health centre and peer students *Fidelity* Fidelity to the program varied from 78.9% to 100% for different program activities for individual students and classes within schools *Comments* Schools were matched on type of school and size, and

				AOR b. 0.54 (0.40–0.72)***	randomisation occurred within matched pairs.
	Time to follow-up 18 months (6 months after the end of program)	*Number of participants* n=832 students nested within 7 schools		*1–19 days of cigarette use in the past month (frequent smoking)* I vs C: OR ns* AOR a. ns** AOR b. ns***	3 schools allocated to the control arm chose to implement the LdP. These schools, and their matched schools allocated to the intervention group, were excluded from the analyses.
		Drop-out rate at follow-up 23.6% students, 0% schools		*Bivariate **Adjusted for sex, type of school, smoking at baseline ***Matched on propensity score for probability of being assigned to a study arm. Objective: to produce comparison groups with comparable baseline data	Analyses were performed in hierarchical logistic regression models where "school" was entered as a random effect
Jösendahl et al 1998 [62] Norway	*Design* Cluster (cluster by school) RCT *Aim* Efficacy *Setting* 99 secondary schools in Norway *Population*	*Intervention* School based smoking prevention project *Extent* 8 classroom sessions throughout 1 school year. Themes were: personal freedom, freedom of choice, from addiction and own decisions, social skills training and consequences of smoking. Parents were involved and	*Comparison* No intervention *Number of participants* n=1 088 *Drop-out rate at follow-up* Not given	*Smoking status at follow-up, change of proportion non-smokers from baseline to follow-up* I: 1.9% C: 8.3% I vs C: p<0.01* *Pearsons' chi², no control of baseline rates	*Implemented by* The Norwegian Cancer Society via teachers, trained for the task. *Fidelity* *Comments* The original sample of 4 441 students in 99 schools were randomised to 1 of 4 conditions (3 arms with different levels of

	7th grade students, n=4 441 *Time to follow-up* 6 months	given information about the project and on smoking. No-smoking contracts were signed by students and parents *Strategy* Social influence *Number of participants* n=1 126 *Drop-out rate at follow-up* Not given			intervention and 1 control arm). Only 1 intervention arm (the most intensive level of intervention) and the control arm were compared in this report
Jösendahl et al 2005 [63] Norway	*Design* Cluster (cluster by school) RCT *Aim* Efficacy *Setting* 99 secondary schools in Norway *Population* 7th grade students of approximately 13 years of age, n=4 441 *Time to follow-up* 6 months, 1.5 years and 2.5 years	*Intervention* BE smoke FREE, a program developed by the Norwegian Cancer Society I 1: Full program 1 2: Program, minus trained teacher 1 3: Program, minus parent involvement *Extent* See Jösendahl 1998. Additionally: 5 class room sessions in the 8th and 6 in the 9th grade. All activities were designed to ensure active participation in all students *Strategy* Social influence *Number of participants* I 1: n=1 125 *Drop-out rate at last follow-up*	*Comparison* No intervention *Number of participants* n=1 092 *Drop-out rate at last follow-up* 5.8%	*Daily smoking* I 1 vs C FU 1: OR 0.31 (0.14–0.69) FU 2: OR 0.57 (0.34–0.97) FU 3: OR 0.69 (0.48–0.99) *Weekly smoking* I 1 vs C FU 1: OR 0.32 (0.17–0.59) FU 2: OR 0.53 (0.36–0.77) FU 3: OR 0.65 (0.46–0.91) *Any smoking* I 1 vs C FU 1: OR 0.47 (0.29–0.77) FU 2: OR 0.51 (0.36–0.71) FU 3: OR 0.74 (0.55–0.98)	*Implemented by* Teachers and other school staff, trained for the task *Fidelity* *Comments* The original sample of 4 441 students in 99 schools were randomised to 1 of 4 conditions (3 arms with different levels of intervention and 1 control arm). Only 1 intervention arm (the most intensive level of intervention) and the control arm were compared in this report. Analyses were performed in hierarchical logistic regression models where "class room" was entered as a random effect, and with adjustment for sex and smoking habits at baseline

		I 1: 13.2%			
Lotrean et al 2010 [64] Romania	*Design* Cluster (cluster by school) RCT *Aim* Efficacy *Setting* 20 junior high schools in the city of Cluj-Napoca, Romania *Population* Junior high school students, ages 13–14, n=1 196 *Time to follow-up* Approximately 10 months, 6 months after the end of program	*Intervention* An adaption of a Dutch prevention program (see Dijkstra 1999[56]) *Extent* 5 weekly 45 minute peer-led sessions consisting of video presentations and activities in small groups. Among subjects: Reasons for smoking, effects and consequences of smoking, peer pressure and refusal skills *Strategy* Social influence *Number of participants* n=523 (at follow-up) students, nested within 27 classes and 10 schools *Drop-out rate at follow-up* 11%	*Comparison* No intervention *Number of participants* n=548 students (at follow-up), nested within 28 classes and 10 schools *Drop-out rate at follow-up* 9.8%	*Started smoking regularly by follow-up* I: 4.5% C: 9.5% C vs I: OR 2.23 (1.29–3.85)	*Implemented by* Peer-led activities, supported by teachers *Fidelity* *Comments* Analyses included students who were non-smokers at baseline only. Analyses were performed in multivariable logistic regression models were a number of factors were initially entered and, and then dropped by stepwise backward deletion. The final model run is not stated. Correlation within clusters were tested in a multilevel linear regression model, but effects of the program not tested in that model
Campbell et al 2008 [65] UK	*Design* Cluster (cluster by school) RCT. Stratification by country, type of school and mixed/single sex *Aim* Efficacy *Setting* 59 of 66 randomly selected secondary	*Intervention* A Stop Smoking In Schools Trial (ASSIST) *Extent* 10-week intervention period with formal conversations about smoking throughout the school day, initiated by peer supporters and involving other students *Strategy*	*Comparison* No intervention *Number of participants* 97% of 5 358 eligible students participated *Drop-out rate at follow-up* At student level: NA School level: 1 school (and replaced by another school from the school base)	*Prevalence of smoking in the past week* I vs C: 1st follow-up: ns 2nd follow-up: OR 0.77 (0.59–0.99) 3rd follow-up: ns *Prevalence of smoking in the past week in high risk students*	*Implemented by* By their peers nominated peer supporters, trained for the task *Fidelity* *Comments* Analyses performed in a random effects logistic regression model, with school entered as a random effect and adjustment for

	schools (from a base of a 113 interested schools) in West England and Wales, UK *Population* Students in secondary school, n=11 043, nested within 59 schools *Time to follow-up* 0, 1 and 2 years after end of program	Diffusion of innovation theory *Number of participants* 95% of 5 372 eligible students participated *Drop-out rate at follow-up* At student level: NA School level: 1 school (and replaced by another school from the school base)		1st follow-up: ns 2nd follow-up: OR 0.75 (0.56–0.99) 3rd follow-up: ns	school level stratification factors and baseline smoking behaviour
Perry et al 2009 [66] India	*Design* RCT, schools within each city were matched according to type of school and coeducation (gender separated or not) *Aim* Efficacy of a multicomponent program to prevent smoking *Setting* 16 schools in Delhi and 16 in Chennai *Population* All students in grades 6 and 8 were invited, n=12 484 *Time to follow-up* 2 years after baseline (posttest)	*Intervention* MYTRI *Extent* 4 months per school year: 7 peer-led classroom activities the 1st year and 6 the 2nd year. Peer led health activities outside the classroom e.g. competition between schools. 6 posters in schools, corresponding to classroom activities Parent component: 6 postcards *Strategy* Social cognitive theory *Number of participants* n=6 365, that completed at least 1 survey *Drop-out rate at follow-up* 16% for the whole sample	*Comparison* Delayed intervention *Number of participants* n=7 698 *Drop-out rate at follow-up* 16% for the full sample	*Any tobacco use, past 30 days (linear rate of change)* I: –0.59 (–1.63 to 0.45) C: 0.94 (–0.10 to 1.98) p<0.04	*Implemented by* Cooperation between University of Texas (US) and a NGO for health information to youth MYTRI was implemented by field staff, teachers and peer leaders *Fidelity* Ensured and adequate *Comments* MYTRI was more successful in reducing tobacco use among girls and 6th graders than among boys and 8th graders
Buller et al 2008	*Design*	*Intervention*	*Comparison*		*Implemented by*

[67] Australia, USA	Group-randomised pretest-posttest controlled trials. School as the unit of randomisation *Setting* Australia (Victoria and South Australia) and US (Colorado and New Mexico) *Population* Children in grades 9 through 6. 25 schools in Australia, 21 schools in US, (Australia n=2 077, US n=1 234) *Time to follow-up* 30 days	Consider This, a Tailored, Internet Delivered Smoking Prevention Program for Adolescents *Extent* 73 online activities in schools computer labs *Strategy* Social Cognitive Theory with focus on social influences *Number of participants* Australia: n=754 US: n=640 Total: n=1 394 *Drop-out rate at follow-up* Australia total: 18.8% did not complete both pretest and posttest 26% completed at least 90% of the activities US total: 17.3% did not complete both pretest and posttest. 24.8% completed at least 90% of the activities	Students in control schools received standard health education *Number of participants* Australia: n=756 US: n=364 Total: n=1 120 Drop-out rate at follow-up ??		Trained research staff, program progression was controlled by the teachers who distributed passwords *Fidelity* NR *Comments* Implementation remains the major challenge to delivering interventions via the Internet, both for health educators and researchers
Johnson et al 2009 [68] USA	*Design* Randomised controlled cohort study, randomised at school level *Setting* South central Louisiana *Population*	*Intervention* The Acadiana Coalition of Teens against Tobacco (ACTT) *Extent* An annual School-Based Media Campaign, 1–2 activities per month (media	*Comparison* Assessment only? *Number of participants* 10 schools 9th grade: n=2 575 12th grade: n=1 573 *Drop-out rate at follow-up*		*Implemented by* *Fidelity* Evaluated by observation and a checklist of key components *Comments*

	Students enrolled in 9th grade and who completed the ACTT health habits survey (n=4 763), 22 schools, passive consent from parents *Time to follow-up* 4 years	contest, quiz) implemented in the mail hallway during lunch and to classrooms only for the cohorts *Strategy* *Number of participants* 10 schools 9th grade: n=1 884 12th grade: n=1 070 *Drop-out rate at follow-up* From 9th to 12th grade: 43.21%	From 9th to 12th grade: 38.91%		
Murray et al 1992 [69] USA	*Design* The 4 group comparison study is randomised, the 2 state comparison study is not randomised (cross-sectional) *Setting* Minnesota and Wisconsin *Population* 2 state comparison study: from 1986−1990 43−46 sampling units randomly selected, 9th graders surveyed, n=3 600 students surveyed in each state each year 4 group comparison study: n=8 992 students 6th grade enrolled and	*Intervention* The Minnesota-Wisconsin Adolescent Tobacco-Use Research Project. Four group comparison study: The Minnesota Smoking Prevention Program (MSPP), The Smoke Free Generation program (SFG), Minnesota Department of Education Guidelines (MDEG) *Extent:* MSPP: a 6-lesson curriculum SFG: 3-lesson curriculum MDEG: written guidelines and a work shop *Strategy* Social influence model *Number of participants* MSPP: n=1 632 SFG: n=1 694 MDEG: n=2 018	*Comparison* Existing curriculum, assessment only *Number of participants* n=1 836 eligible *Drop-out rate at follow-up* 1990: 18.9%		*Implemented by* Trained teachers *Fidelity* NR *Comments*

	eligible, n=8 271 participated *Time to follow-up* 5 years	Total: n=5 344 *Drop-out rate at follow-up* MSPP 90: 22.4% SFG 90: 20.2% MDEG: 90: 18.6%			
Nutbeam et al 1993 [70] USA	*Design* Cluster randomised controlled trial *Setting* Wales and England *Population* All first year pupils in the schools were included and assessed on 3 occasions (4 538 before teaching (1988), 3 930 immediately after teaching (1989), 3 786 at 1 year follow-up (1990)) *Time to follow-up* 1 year	*Intervention* 2 school based education project in delaying onset of smoking behavior and improving health knowledge, beliefs, and values *Extent* *Strategy* Changes in knowledge, attitude and beliefs *Number of participants* FSE: 10 schools, n=1 127 SAM: 9 schools, n=1 021 FSE/SAM: 10 schools, n=1 161 Total: n=3 309 *Drop-out rate at follow-up* FSE: 19% SAM: 16% FSE/SAM: 15% Overall: 94% participated in at least 1 follow-up study	*Comparison* No intervention, assessment only *Number of participants* 10 schools, n=1 229 *Drop-out rate at follow-up* 17%		*Implemented by* Classroom teachers *Fidelity* NR *Comments*
Severson et al	*Design*	*Intervention*	*Comparison*		*Implemented by*

| 1991
[71]
USA | Randomly assigned schools

Setting
US middle and high school

Population
A total of 2 552 students in 13 middle schools and 9 high schools began the study and 1 768 were assessed at 1-year follow-up

Time to follow-up
1 year | A school-based tobacco (SD and cigarette smoking prevention/cessation program

Extent
7 session program taught over 23 weeks

Strategy
Refusal skills training

Number of participants
In total:
Middle school: n=1 434
High school: n=1 118

Drop-out rate at follow-up
Middle: 22.4%
High: 36.8% | Assessment only

Number of participants
??

Drop-out rate at follow-up
Middle: 25.2%
High: 40.5% | | Classroom teachers or same age peer leaders

Fidelity
NR

Comments |
| Torre et al 2010
[72]
Italy | *Design*
RCT

Setting
Cassino, Pontecorvo and Capodirige

Population
Grade 9 students (14–15 years) 15 classes enrolled n=308 randomised.
Grade 4–6 students (9–11 years) 24 classes=534 randomised

Time to follow-up
2 years | *Intervention*
S school-based programme to prevent tobacco use in children and adolescents

Extent
Health facts and the effect of smoking, refusal skills training to deal with the social pressures to smoke, a questionnaire. 5 appointments

Strategy
Cognitive and behavioral aspects

Number of participants
Children trial: n=242
Adolescent trial: n=162 | *Comparison*
Assessment only (?)

Number of participants
Children trial: n=292
Adolescent trial: n=146

Drop-out rate at follow-up
Children: 0%
Adolescent: 1.4% | | *Implemented by*
Trained school teachers

Fidelity
NR

Comments |

		Drop-out rate at follow-up Children: 1.2% Adolescent: 1.2%			
Unger et al 2004 [73] USA	*Design* Schools were randomised *Setting* Ethnically diverse middle schools in Southern California *Population* 6th grade students, n=2 775 invited, 2 131 with parental consent, n=1 970 completed 6th grade survey, n=1 571 completed 7th grade survey *Time to follow-up* 1 year	*Intervention* Project FLAVOR: a Multicultural, School-Based Smoking Prevention Curriculum for Adolescents *Extent* 8 weekly classroom sessions *Strategy* *Number of participants* 8 schools, n=1 040 *Drop-out rate at follow-up* 16.83%	*Comparison* Standard curriculum *Number of participants* 8 schools, n=930 *Drop-out rate at follow-up* 16.77%		*Implemented by* Health educators *Fidelity* NR *Comments* The low prevalence of smoking initiation between sixth and seventh grade also limited the power to detect significant program effects on initiation
Crone et al 2003 [74] The Netherlands	*Design* Group randomised controlled trial *Setting* 26 Dutch schools that provided junior secondary education *Population* First grade students (average age 13), 18 schools willing to participate, n=2 562 completed baseline *Time to follow-up*	*Intervention* Antismoking intervention *Extent* 3 lessons on knowledge, attitudes, and social influence, followed by a class agreement not to start or to stop smoking for 5 months and a class based competition *Strategy* *Number of participants* 14 schools, n=1 444 *Drop-out rate at follow-up*	*Comparison* Normal drug prevention program *Number of participants* 12 schools, n=1 118 *Drop-out rate at follow-up* 63.9%		*Implemented by* The National Institute against Smoking (Stivoro) and the National Institute on Mental Health and Addiction (Trimbos Institute) *Fidelity* NR *Comments*

	1 year	62.8%			
Gatta et al 1991 [75] Italy	*Design* Randomised trial *Setting* Milan *Population* Out of 165 Milan state schools, 163 accepted the intervention program, children age 9 and 10 *Time to follow-up* 4 years	*Intervention* Primary school education against smoking *Extent* A single day lesion with posters after *Strategy* Focused on simple notions of physiology and pathology of the human respiratory tract and on the harmful effects of cigarette smoking *Number of participants* n=8 549 *Drop-out rate at follow-up* A total of 10 317 questionnaire were analysed	*Comparison* ? *Number of participants* n=8 897 *Drop-out rate at follow-up* ??		*Implemented by* Trained teachers *Fidelity* NR *Comments*
Johnson et al 2005 [76] USA	*Design* Longitudinal school-based experimental trial, randomly selected by schools *Setting* Ethnically diverse Southern California middle schools *Population* 36 district invited, 26 agreed, 68 schools agreed, 33 met criteria. Students in 24 middle	*Intervention* Multicutural school-based smoking prevention curriculum. Project FLAVOR (multicultural) and Project CHIPS (standard) *Extent* 2 curricula with 8 classroom activities *Strategy* Social influence models of prevention *Number of participants* FLAVOR: n=1 050	*Comparison* Assessment and usual curricula *Number of participants* n=1 162 *Drop-out rate at follow-up* 23.3%		*Implemented by* Trained health educator *Fidelity* NR *Comments*

	schools (n=3 157 6th graders) participated *Time to follow-up* 2 year	CHIPS: n=945 Total: 1 995 *Drop-out rate at follow-up* FLAVOR: 22.9% CHIPS: 23.3%			
Park et al 2010 [77] USA	*Design* A school-based multi-stage, stratified cluster sampling design *Setting* California *Population* 180 high schools from 12 geographic strata assigned, 156 schools participated in 2003–2004, a random subsample of 65 schools invited in 2005–2006, 57 schools agreed, n=16 833 students participated in the 2 surveys *Time to follow-up* 1–2 year	*Intervention* In-school tobacco use prevention education (TUPE) activities *Extent* ?? *Strategy* *Number of participants* Overall, average student enrolment size in participating high schools was 2 358, 57 schools, n=16 833 *Drop-out rate at follow-up* 8 schools lost to follow-up (14%)	*Comparison* No comparison group *Number of participants* *Drop-out rate at follow-up*		*Implemented by* *Fidelity* NR *Comments*
Howard et al 1996 [78]	*Design* Pretest-posttest control group design, quasi-experimental study. Stratified random sampling technique	*Intervention* A cardiovascular risk reduction program for the classroom *Extent*	*Comparison* Assessment only *Number of participants* n=47 *Drop-out rate at follow-up*		*Implemented by* NR *Fidelity* NR *Comments*

	Setting	Five 40 minutes sessions in modular format, knowledge test, self-reported health habits, physical measurement	NR		
	Population 4th through 6th graders (9–12 years), n=98				
		Strategy			
	Time to follow-up 1 year	*Number of participants* n=51			
		Drop-out rate at follow-up NR			
De Vries et al 1994 [79] The Netherlands	*Design* Nested cohort design with subjects nested within classes and classes within schools	*Intervention* A social influence smoking prevention approach	*Comparison* Assessment only		*Implemented by* Peers
		Extent Program implementation took place during November and December 1986, five lesions, each 45 minutes, given weekly in 8th grade	*Number of participants* 3 vocational: n=217 3 high schools: n=384 Total: 601		*Fidelity* NR
	Population 8th grade Dutch vocational and high school students				*Comments*
			Drop-out rate at follow-up 14.3%		
	Time to follow-up 12 months	*Strategy* A social influence approach			
		Number of participants 3 vocational: n=343 5 high schools: n=585 Total: 928			
		Drop-out rate at follow-up 14.3%			
Prokhorov et al 1994 [80] Russia	*Design* Randomised trial	*Intervention* Randomised antismoking trial of schoolchildren in Moscow, Russia: 1982–1989	*Comparison* NR		*Implemented by* Students themselves, teachers and school medical personnel (doctors and
	Setting Russia, Moscow		*Number of participants* n=1 962		nurses) and family (parents,
		Extent			

	Population From a total of 64 schools a cluster sample of 9 schools was selected, all 4th graders enrolled *Time to follow-up* 7 years	Questionnaires every year, annual survey campaign for max 4 months, classroom sessions, slide shows, films, printed material, individual talks *Strategy* *Number of participants* n=1 129 *Drop-out rate at follow-up* NR	*Drop-out rate at follow-up* NR		relatives and/or grandparents) *Fidelity* NR *Comments*
Hort et al 1995 [81] Germany	*Design* *Setting* Dusseldorf, secondary schools ("Hauptschulen") *Population* 6th grade students, n=878 (mean age 13) *Time to follow-up* 2 years	*Intervention* School intervention study of cigarette smoking *Extent* 15 sessions over 1 years, including role-plays, repeated the second year *Strategy* *Number of participants* 9 schools, n=475 *Drop-out rate at follow-up* In total: 28.2%	*Comparison* No intervention but they could get a medical lecture for a small compensation, other than that free to teach what they wanted *Number of participants* 10 schools, n=403 *Drop-out rate at follow-up*		*Implemented by* School teachers and physicians *Fidelity* NR *Comments*
Hedman et al 2010 [82] Sweden	*Design* Geographic areas were randomised into Intervention groups *Setting* Schools in Sweden *Population*	*Intervention* A brief motivational interview and an adapted school lecture *Extent* Lectures: 40 minutes interactive session in school MI: one-on-one interview 10 minutes	*Comparison* *Number of participants* n=120 (107 participants) *Drop-out rate at follow-up* NR		*Implemented by* Dental health professionals *Fidelity* NR *Comments*

	Patients born in 1989 and 1992 who were judged by the dental personnel as potentially at risk for dental diseases. 12 and 15 years old n=382, received invitation n=301 *Time to follow-up* 1 year??	*Strategy* *Number of participants* Lecture group: n=120 (n=91 participants) MI group: n=142 (n=103 particpants) Total: n=262 (n=210) *Drop-out rate at follow-up* In total: 33%			
Norman et al 2008 [83] Canada	*Study design* 2-group RCT *Setting* 14 secondary schools in the Greater Toronto Area, Canada, grades 9 through 11 *Population:* 81 classes were sampled from 14 secondary schools, n=2 210 eligible, n=1 402 adolescents randomly assigned, 54% boys, 46% girls, 15% assessed as smokers at baseline *Follow-up time* 3 and 6 months	*Intervention* Web-assisted tobacco intervention, The Smoking Zine web site *Extent* Internet program with 4 components, first 3 delivered in a single 60 minutes class section followed by e-mails sent once per month after class *Strategy* *Number of participants* n=640 *Attendance rate* *Drop-out rate* 6 months: 12.7%	*Comparison* Participants evaluated the quality of Web sites offering different perspectives on climate change. *Number of participants* n=700 *Drop-out rate* 6 months: 8.3%	*Implemented by* Web-based *Fidelity* NR *Comments*	
Cameron et al 1999 [84] Canada	*Study design* Schools stratified by school risk score *Setting*	*Intervention* A Social Influences Smoking Prevention Program as a Function of Provider Type, Training Method, and School Risk	*Comparison* Usual care, CAU *Number of participants* NR	*Implemented by* Trained public health nurses and teachers *Fidelity*	

	100 elementary schools (80 urban, 20 rural) in southwestern Ontario, Canada *Population:* Approached 10 school boards and 5 health units, 100 schools participated, n=4 466 students grade 6, 7 and 8 *Follow-up time* 3 years	*Extent* An intensive half-day workshop and a self-directed learning kit for providers *Strategy* Resisting social influences *Number of participants* NR *Attendance rate* *Drop-out rate* In total: 11.1%	*Drop-out rate* NR	NR *Comments*	
Clark et al 2010 [85] USA	*Study design* RCT. Schools as the unit of assignment *Setting* 2 successive cohorts of alternative high schools in Washington *Population* 14 high schools n=2 871 students enrolled, n=2 464 returned parental consent form, n=2 249 were allowed to participate *Follow-up time* 1 year	*Intervention* SUCCESS, a selective and indicated substance use prevention program *Extent* Prevention program for small groups 6 to 8 weekly sessions, counseling, communication with parents and referrals to community agencies *Strategy* *Number of participants* n=735, 7 schools, mean age 16.8, 52% male, 48% female *Attendance rate* 89% *Drop-out rate* In total: 11%	*Comparison* CAU *Number of participants* n=955, 7 schools, mean age 16.6, 49% male, 51% female *Drop-out rate*	*Implemented by* Trained masters-level professional counselors *Fidelity* NR *Comments*	

Table 6.4 Programs directed at athletes.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome (95% CI)	Applicability Comments
Elliott et al 2004 [86] Elliott et al 2008 [87] USA	*Design* RCT, matched pairs based on size, SES and student demographics *Aim* Efficacy of a gender-specific substance and eating disorder prevention program *Setting* 18 public high schools from Oregon and Washington *Population* Female athletes, n=928 from 40 sports teams, mean age 15.4 years, 92% Caucasian *Time to follow-up* After graduation when students were >17 years	*Intervention* ATHENA *Extent* Delivered during sport season, eight 45-minute classroom sessions integrated to the usual practice activities. Learning clusters of 6 students with a group leader *Strategy* Harm reduction, skills training *Number of participants* n=457 from 9 schools. Follow-up surveys were sent to 368 students *Drop-out rate at follow-up* 45% (non-respondents to survey)	*Comparison* CAU *Number of participants* n=471 from 9 schools follow-up surveys were sent to n=389 students *Drop-out rate at follow-up* 49% (non-respondents to survey)	*Recent use* Cigarettes (20 cigarettes last year), OR 0.63 (0.33–1.22) Alcohol (6 times last 3 months), OR 0.55 (0.36–0.84) Marijuana (40 times last year), OR 0.26 (0.09–0.82)	*Implemented by* Group leaders for 70% of the ATHENA activities. The coach acted as a facilitator and time-keeper. Group leaders were trained for 90 minutes *Fidelity* 81% of content items per session
Goldberg et al 2000 [88] USA	*Design* CCT Schools randomly assigned *Setting* High schools in US *Population* All cohort were assessed before and after each football	*Intervention* ATLAS, The Adolescent Training and Learning to Avoid Steroids Program *Extent* Interactive classrooms (45 minutes) and exercise training sessions *Strategy*	*Comparison* Assessment and hand outs *Number of participants* 16 schools n=1 371 *Drop-out rate at follow-up* ?		*Implemented by* Peer educators and facilitated by coaches and strength trainers *Fidelity* Instruction materials were highly scripted to enhance program fidelity

	season, players from grades 9 through 12, 34 high schools agreed, n=3 207 students enrolled *Time to follow-up* Up to 1 year	Social Learning Theory, redirect the students' goal-directed behavior *Number of participants* 15 schools, n=1 145 *Drop-out rate at follow-up* 68.7%, n=1 291, n=700 in the control group, n=591 in the experimental group			

Table 6.5 Policies in school, including drug testing.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome, (95% CI)	Applicability Comments
Goldberg et al 2007 [89] USA	*Design* Cluster RCT, schools matched in pairs according to size *Aim* Efficacy of a drug testing program *Setting* 18 high schools within 150 miles from Portland; 7 were excluded due to protocol violation *Population* Random selection of athletes at the intervention schools for each drug assessment *Time to follow-up* Every 6th month up to 2 years	*Intervention* SATURN drug testing *Extent* 15 random visits for drug testing, approximately biweekly, Designed to assess half the total number of athletes per school *Strategy* Schools developed their own DAT policies *Number of participants* n=653 (43.1% females, mean age 15.6 years, 90% Caucasian) *Drop-out rate at follow-up* 1 year: 49% 2 years: 69.8%	*Comparison* Surveys only *Number of participants* n=743 (48.9% females, mean age 15.4 years, 91.2% Caucasian) *Drop-out rate at follow-up* 1 year: 45% 2 years: 66.5%	*Illicit drug use, past 30 days at 1 year FU (index scores 0–3)* I: 0.177 C: 0.168 ns *Illicit drug and alcohol use, past 30 days at 1 year follow-up* I: 0.572 C: 0.562 ns *Illicit drug use, past year* I: 0.447 C: 0.431 ns *Illicit drug and alcohol use, past year* I: 0.955 C: 1.092 p<0.05	*Implemented by* Study personnel under direction of certified doping control officers
James-Burdumy et al 2010 [90] USA	*Design* Cluster RCT *Aim* Efficacy and harm of a drug testing program	*Intervention* DAT *Extent* Minimum 50% of students, testing for 5 narcotic substances.	*Comparison* Delayed DAT *Number of participants* n=2 020	*% students reporting any substance use, past 6 months* Effect size: –0.12 p=0.255 *Any substance in the DAT program, past 6 months*	*Implemented by* Outside drug testing companies *Fidelity* *Comments*

	Setting 36 high schools in 7 states, primarily in the South and Midwest *Population* 10 980 students; n=5 230 consented *Time to follow-up* 1 year	Frequency of testing 4 x yearly to 6 times monthly *Strategy* *Number of participants* n=2 700 *Drop-out rate* 48%	*Drop-out rate at follow-up* 54%	Effect size: –0.15 p=0.146 *Any substance, past 30 days* Effect size: –0.15 p=0.126 *Any substance in the DAT program, past 30 days* Effect size: –0.21 p=0.045	

Table 7.1 Family programs group.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Extent Strategy Drop-out rate	Comparison Number of participants Drop-out rate	Outcome	Implemented by Fidelity Comments
Vermeulen-Smit et al 2013 [91] The Netherlands	*Study design* RCT *Aim* Prevent drinking *Setting* 33 primary schools from a random sample, in the Netherlands *Population* 892 students in 5th grade were invited; n=213 parent-youth dyads consented (50.7% females, mean age 11.3 years) *Time to follow-up* 12 months after baseline	*Intervention* In control: No alcohol! (based on Smoke-free Kids) *Intensity and duration* 5 magazines mailed monthly to the homes with information, games and assignments for the family *Strategy* Social cognitive theory *Number of participants* n=108, 46% females, mean age 11.3 years *Drop-out rate at follow-up* 6.6% for the whole sample	*Comparison* Standard parent alcohol brochure *Number of participants* n=105, 49% females, mean age 11.3 years *Drop-out rate at follow up* 6.6% of the whole sample	*Intention to drink at follow-up* b=–0.19 (less intention to drink) p=0.006	*Implemented by* *Fidelity* NR *Comments* No gender differences
Jackson et al 2006 [92] USA		*Intervention* Smoke Free Kids			
Hiemstra et al 2014 [93] USA		*Intervention* Smoke Free Kids			
Bauman et al 2001		*Intervention* Family Matters			

[94] USA					
Spoth et al 2001 [95] USA	*Study design* Cluster RCT, schools stratified on size and SES *Aim* Evaluate the effects of 2 programs in the Project Family prevention trial *Setting* 6th grade in 33 rural schools in 19 counties in a Midwestern state of the US *Population* n=1 309 eligible families; 51% consented, 96% of parents had at least high school education, 98.6% were Caucasian. Mean age of target child: 11.3 years (51% females) *Follow-up time* From 12 months posttest up to 72 months, final assessment at age 21 years	*Interventions* I1. PDFY I2. SFP 10–14 *Extent* PDFY: 4 weekly 2 hour sessions and 1 session for both parents and children SFP: 6 sessions, 1 hour each, for parents and children separately followed by 1 hour session together. Session 7 was 1 hour for the parents and children together *Prevention level* Universal *Number of participants* PDFY: n=221 families Group size average 10 families SFP: n=238 families. Group size 3–15 families *Attendance rate* PDFY: 93% attended 4–5 sessions PSF: 94% attending at least 5 sessions *Drop-out rate*	*Comparison* Minimal contact, 4 leaflets describing aspects of adolescent development *Number of participants* n=208 families *Attendance rate* NA *Drop-out rate*		*Implemented by* *Fidelity* Ensured *Comments*
Skärstrand et al 2013 [96] Sweden	*Study design* Cluster RCT, stratified for low or high SES *Aim*	*Intervention* Cultural adaptation of SFP 10–14 *Extent*	*Comparison* CAU; all schools had some sort of ATOD activity but no manual-based programme	*Lifetime consumption at 24 months* Smoking: OR 1.15 (0.59; 2.23) Drunkenness: OR 1.19 (0.71; 1.99)	*Implemented by* Youth sessions: class teacher assisted by a leader Parent sessions: leader

	Evaluate SFP 10–14 in Sweden *Setting* All elementary schools in Stockholm with grade 6–9 and not age-integrated classes (n=60). n=19 schools consented *Population* n=707 students in 6th grade; n=587 consented *Follow-up time* 24 and 48 months past pretest	Part 1: 6 separately held sessions for parents and youth and 1 joint session weekly in grade 6. Part 2: 4 separate sessions for parents and youth and 1 joint session weekly in grade 7 *Prevention level* Universal *Number of participants* n=371 from 15 classes (y% female) *Attendance rate* All youth attended Parents part 1: 47% Parents part 2: 27% *Drop-out rate from assessment* 24 months: 22% 48 months: 27%	*Number of participants:* n=216 (y% female) from 11 classes *Attendance rate* NA *Drop-out rate* 24 months: 18% 48 months: 23%	Illicit drugs: OR 1.07 (0.33; 3.52) *Lifetime consumption at 48 months* Smoking: OR 1.13 (0.57; 2.26) Drunkenness: OR 1.00 (0.55; 1.48) Illicit drugs: OR 0.77 (0.31; 1.91) *Drunkenness past 30 days at 24 months* OR 1.93 (0.98; 3.75) *At 48 months* OR 1.61 (0.94; 2.76)	Both teachers and leaders were trained by 2 certified SFP 10–14 trainers *Fidelity* Ensured *Comments* Parents' education level was higher in the SFP-group A gender effect was seen: boys in the SFP 10–14 group increased consumption significantly more than in the control group
Haggerty et al 2007 [97] USA	*Study design* RCT, stratified for race (EA or AA) and gender *Aim* *Setting* 8th grade in Seattle public schools *Population* Invitation letters were sent and 46% of families consented Mean age of student: 13,7 years	*Intervention* Parents Who Care (PWC) based on 117 min video in 18 sections plus a family workbook written at 8th grade reading level 1. group-format (G) 2. self-administered with weekly telephone support (SA) *Extent* 1. 7 weekly sessions, 2-2,5 hours each, for parents and adolescents both separately and together 2. the tasks had to be completed in 10 weeks	*Comparison* CAU *Nb participants:* n = 106 families *Drop-out rate*	*Initiation of drugs (proportions)* Cigarettes G: 12/84 SA: 8/73 C: 8/79 Alcohol G: 21/84 SA: 21/73 C: 24/79 Marijuana G: 22/84 SA: 18/73 C: 23/79 Other illicit drugs	*Implemented by* Two workshop leaders with prior experience and with 20 hours training *Fidelity* ensured *Comments*

	Follow up time 1 and 2 years	*Prevention level* universal *Nb participants:* 1. n = 118 families 2. n = 107 families *Attendance rate* 1. mean nb of sessions: 4,56 2. mean level of completion 81% *Drop-out rate* 8% for the whole sample		G: 5/84 SA: 5/73 C: 8/79 No significant differences between groups	
Haggerty et al 2008 [98] USA Catalano et al 1999 [99] USA	*Study design* RCT, oversampling to the intervention arm *Aim* Reduce parents' drug use and prevent offsprings' drug use *Setting* 2 methadone clinics in the Seattle area *Population* Parents who had been on methadone treatment >90 days and had children 3–14 years old. n=144 parents (75% females) in 130 families consented (78% of eligible). n=178 children, mean age 10.4 years *Follow-up time*	*Intervention* Focus on Families (FoF) parent skills training + home based case management services following a manual *Extent* 32 sessions, 90 minutes each, twice weekly + 5 hour introduction family retreat in groups of 6 to 10 families Children attended 12 sessions to provide families with the opportunity to practice in controlled environment Case management lasted for 9 months *Prevention level* Selective *Number of participants* n=75 families n=97 children	*Comparison* TAU *Number of participants* n=55 families n=81 children *Attendance rate* NR *Drop-out rate* NR	*Initiation of drug use at 12 months* Cigarettes I: 17% C: 21% Alcohol I: 29% C: 41% Marijuana I: 7% C: 9% *Diagnosis of SUD at 12 years follow-up* 59% of children met criteria for an SUD at some point in their life. Rates were similar for I and C *Diagnosis of SUD, gender analysis* Any substance, males: HR 0.53 (p=0.03) Alcohol, males:	*Implemented by* Trainers with master's level in social work *Fidelity* NR *Comments*

	6, 12 months, 12 years	*Attendance rate* 51% attended at least 50% of sessions, 13% did not attend at all *Drop-out rate adults* 6% at 6 months, 8% at 12 months for the whole sample		HR 0.50 (p=0.03) Marijuana, males: HR 0.51 (p=0.04) Any substance, females: HR 1.73 (p=0.15) Alcohol, females: HR 1.69 (p=0.30) Marijuana, females: HR 1.42 (p=0.44)	
Furr-Holden et al 2004 [1] USA	*Study design* RCT *Aim* *Setting* 27 grade 1 classes in 9 urban primary schools in 1 public school area in a mid-Atlantic state *Population* n=678 children, mean age 6.2 years, >85% Afro-Americans, around 50% females, 97% consented *Follow-up time* 7 years	*Intervention* Family-School Partnership with training for teachers in communication and partnership building, weekly home-school learning activities and workshops for parents (GBG was also evaluated, see table 4.1) *Extent* 7 weekly sessions for parents followed by 2 boosters half a year later *Prevention level* Universal *Number of participants* n=192 families *Attendance rate* NR *Drop-out rate* 17% for the whole sample	*Comparison* CAU *Number of participants* n=178 (internal control)	*Initiation of drug use, RR vs CAU* Tobacco RR 0.62 (0,40; 0.98); p=0.042 Alcohol without permission* RR 1.07 (0.67; 1.71) ns Marijuana RR 0.88 (0.47; 1.64), ns Other illegal drugs RR 0.63 (0.27; 1.51) ns *Univariate regression model; the others are multivariate	*Implemented by* Teacher and the school psychologist or social worker. Teachers were trained for 60 hours and certified *Fidelity* NR

Table 7.2 Computer based programs.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome, (95% CI)	Applicability Comments
Fang et al 2013 [100] USA Fang et al 2010 [101] USA	*Study design* RCT *Aim* Reduction of girls' substance use *Setting* Webb based, 19 states in the US *Population* Asian-American girls, 10–14 years and their mothers, recruited via advertising through social service agencies and via social network sites. n=206 mother-girl dyads expressed interest; 108 were eligible and consented *Follow-up time* 2 years	*Intervention* Webb based program with skill demonstration, guided rehearsal and feedback *Extent* 9 interactive sessions, 35–45 minutes each to be completed by girl and mother together + booster session *Prevention level* Universal *Number of participants* n=56 dyads, girl mean age 13 years *Attendance rate* 94.6% *Drop-out rate at follow-up measurement* 11%	*Comparison* Assessments only *Number of participants* n=52 dyads; girl mean age 13.1 years *Attendance rate* *Drop-out rate at follow-up* 17%	*Consumption last month* Alcohol: F=3.38; p=0.038 Eta^2=0.03 Cigarettes: F=1.80; p=0.171 Eta^2=0.20 Marijuana: F=3.24; p=0.043 Eta^2=0.03 Prescription drugs: F=3.15; p=0.47 Eta^2=0.03	*Implemented by* NA *Fidelity* Ensured *Comments* The study required English speaking and access to private computer
Schwinn et al 2010 [102] USA, Canada	*Study design* RCT *Aim* *Setting* Webb based, 42 states in the US and 4 in Canada	*Intervention* RealTeen via a secured website, comprising a homepage and sessions *Extent* 12 sessions app 25 minutes each; 1 introduction, 9 sessions	*Comparison* Assessments only *Number of participants* 118 *Drop-out rate* NR separately	*Consumption last month* Alcohol: F=4.00; p=0.05 Cohen's d=0.20 Cigarettes: F=0.06; p=0.82	*Implemented by* NA *Fidelity* NR *Comments*

	Population Girls 13–14 years, recruited via Kiwibox.com. n=450 girls expressed interest; n=236 girls were included, mean age: 14 years *Follow-up* 6 months	to improve personal, social and drug resistance skills and 2 summary sessions *Prevention level* Universal *Number of participants* n=118 *Attendance rate* n=3 completed 0 sessions and n=7 completed 1–12 sessions *Drop-out rate at follow-up* 9% for the whole sample		Marijuana F=5.92; p=0.02 Cohen's d=0.20 Poly drug use: F=6.85; p=0.01 Cohen's d=0.19	Completer analysis only
Schinke et al 2004 [103] Schwinn et al 2010 [102] USA	*Study design* Cluster RCT, stratified for ethnicity and geography *Aim* Reduce risk for alcohol use *Setting* 43 New York City, New Jersey, Delaware community agencies offering recreation, after school programs and social services *Population* n=514 youths, age 10–12 years, were recruited by advertisements at collaborating sites *Follow-up* 1, 2, 3 and 6 years	*Intervention* I1: Program delivered by CD-ROM, grounded in social cognitive theory n=? I2: I1 + parent intervention n=? *Extent* I1: 10 sessions, 45 minutes + 2 booster sessions 30 minutes each, the latter to be completed with the parents I2: For parents 30 minutes videotape and print materials, 2 newsletters, 2 hour workshop as booster *Prevention level* Universal	*Comparison* Assessments only *Number of participants* ? *Drop-out rate* 7% at 3 years	*Consumption last month at 3 years follow-up* Cigarettes	*Implemented by* NA *Fidelity* ?

		Attendance rate *>90% for youths* 67% of parents attended the workshop; 83% watched the videotape *Drop-out rate* I1: 8% at 3 years I2: 12% at 3 years Total drop-out rate 20% at 6 years follow-up			
Schinke et al 2009 [104] USA	*Study design* RCT *Aim* Reduce substance use in girls by improving mother-daughter relationships, build prevention skills and reduce risk factors *Setting* Computer-delivered; greater New York City *Population* Mother-daughter dyads with access to private computer and being English speaking. Recruited by advertisements in newspapers, radio, website, n=1 702 dyads expressed an interest, 916 dyads were included. Mean age of girls: 12.8 years *Follow-up time* 2 years	*Intervention* I1: Interactive program delivered by Internet or CD-ROM n=455 dyads *Extent* 9 sessions, 45 minutes each per week + 2 booster sessions per year *Prevention level* Universal *Attendance rate* *Drop-out rate* 10% as an average for intervention and control groups	*Comparison* Assessment only *Number of participants* n=458 dyads *Attendance rate* NR *Drop-out rate*	*Consumption last month at 2 years follow-up* Cigarettes: F=1.11 ns Alcohol F=5.20, p=0.006 Marijuana F=4.12; p=0.016 Prescription drugs F=3.58; p=0.03	*Implemented by* NA *Fidelity* Ensured *Comments*

Table 8.1 Programs delivered on other arenas than home and school.

Author Year Refernce Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Drop-out rate (%)	Comparison Number of participants Drop-out rate	Outcome (95% CI)	Applicability Comments
Stoddard et al [105] 2005 USA	*Study design* Cluster RCT *Aim* Pilot test of an intervention *Setting* 9 stores within a grocery chain in Boston metropolitan area *Population* 2 cross sectional samples of all employed teens 15–18 years *Time to follow-up* 12 months after baseline	*Intervention* SMART for prevention and cessation of smoking *Extent* Information on bulletin boards, games and peer-led discussions *Strategy* Peer-led methods based on social influences model *Number of participants* n=149, 53% females (baseline), n=108 at follow-up *Drop-out rate at follow-up* See comments	*Comparison* No intervention *Number of participants* n=159 (57% female) at baseline, n=144 at follow-up *Drop-out rate at follow-up* See comments	*Intention to quit at follow-up* OR 1.75 (0.42–7.34) *Smoking past 30 days* OR 1.38 (0.18–10.57)	*Implemented by* Not described *Fidelity* Not described *Comments* 78/322 youth from the baseline measurement participated in the follow-up measurement
Hollis et al 2005 [106] USA	*Study design* RCT *Aim* evaluate efficacy *Setting* 7 medical centers in an HMO in Northwest USA *Population*	*Intervention* Teen Reach to reduce smoking *Extent* Brief clinician advice, 10–12 minutes interactive computer program, 3–5-minutes brief motivational counseling + 2 boosters *Strategy* Pathways to change	*Comparison* Counselling to promote increased consumption of fruits and vegetables *Extent* 3–5 minutes + 2 educational brochures *Number of participants* n=1 270 (59.6% females, 76.9% Caucasian)	*% smoke-free, past 30 days* 1 year: OR 1.27 (1.08–1.51) 2 years: OR 1.23 (1.03–1.47)	*Implemented by* Research staff *Fidelity* Ensured *Attention-rate* 97.5% in the Teen Reach group received the basic intervention; 50% completed both booster sessions

	3 747 teens (14–17 years) visiting medical offices; 67% consented

Time to follow-up
1 and 2 years post intervention | *Number of participants*
n=1 254 (58.9% females, 79.6% Caucasian)

Drop-out rate at follow-up
1 year: 8.1%
2 years: 14.4% | *Drop-out rate at follow-up*
1 year: 4.6%
2 years: 10.2% | | 89% in the dietary arm received the intervention

Comments
Effects were stronger for those who were smokers at baseline than for nonsmokers |
| Idrisov et al 2013
[107]
Russia | *Study design*
RCT

Aim
Pilot test of an intervention

Setting
5 summer recreational camps in Bashkortostan

Population
Smoking camp participants, 13–19 years (mean age 16.7 years); recruitment via snow ball sampling

Time to follow-up
6 months | *Intervention*
Project EX smoking cessation program, adapted for Russia

Extent
8 sessions, 2–3 per week. Talk shows, alternative medicine techniques, home assignments

Strategy
Motivation enhancement and cognitive-behavioral skill information

Number of participants
n=65

Drop-out rate at follow-up
19.7% for the whole sample | *Comparison*
No intervention

Number of participants
n=77

Drop-out rate at follow-up
19.7% for the whole sample | *Number days smoking past 30 days (follow-up–baseline, Δ +/SE)*
I: –10.7 +/ 12.5
C: 29.8 +/– 11.7
p<0.05

Quit rate (%)
I: 7.5 +/– 2.9
C: 0.1 +/– 2.7
p<0.05 | *Implemented by*
Russian research staff in cooperation with the program developer. Camp counsellors volunteering to participate were trained for 8 hours

Fidelity
Ensured |
| Grossman et al 1998
[108]
USA | *Study design*
Random assignment evaluation design. Randomised at individual level

Setting
8 local agencies in US: San Antonio, Texas, Columbus, Ohio, Houston, Greater Minneapolis, Philadelphia, | *Intervention*
Big Brothers Big Sisters Program, mentoring program

Extent
The volunteer and youth agree to meet 2 to 4 times per month for at least 1 year, with a typical meeting lasting 3 to 4 hours | *Comparison*
Assessment only

Number of participants
n=567

Drop-out rate at follow-up
16.8% | | *Implemented by*
generally well-educated young professionals

Fidelity

Comments |

		Strategy A mentoring program that facilitates meaningful and long-lasting adult/youth relationships *Attendance rate* NR *Number of participants* n=571 *Drop-out rate at follow-up* 14.7%			
Rochester, New York), Wichita, Kansas and Phoenix, Arizona *Population* Youth between age 10 and 16 who came to the study agencies, n=1 138 enrolled *Time to follow-up* 18 months					
Bodin et al 2011 [27] Sweden	*Design* RCT, stratified by school and randomised in blocks of 2 *Aim* Independent evaluation of a program *Setting* 28 schools in Stockholm, Gothenburg and Malmö *Population* All students, 14 years old, n=128 students fulfilled selection criteria *Selection criteria* Self-reported need for additional adult contacts, no experience with illicit drugs, delinquency or acts of violence no ongoing contacts with psychiatry or social services	*Intervention* Mentor Foundation Mentoring program adapted from Big Brother Big Sister *Extent* Meetings at least every 2nd week for 2–4 hours during 1 year *Strategy* Trusting and empathic relationships with adults promote social-emotional and cognitive development *Number of participants* n=65 *Attention rate* n=33 had an average of 11.7 meetings with their mentor, n=27 discontinued the mentoring program, n=5 did not start	*Comparison* Phone calls from research staff on frequency and quality of contacts with non-parental adults *Extent* 5 minutes every 2nd month during the follow-up year *Number of participants* n=63 *Drop-out rate at follow-up* 3%	*Substance use (DUDIT-E)* Tobacco past 6 months 1.74 (0.71–4.24) Drunk past 30 days OR 1.05 (0.48–2.27) No alcohol OR 0.90 (0.40–2.04) Illicit drug use, lifetime OR 1.68 (0.25–11.09 <9)	*Implemented by* Voluntary mentors recruited from companies and higher compulsory schools. They were trained for 2 days and offered supervision by a program director or psychologist *Fidelity* NR *Comments* Underpowered study due to time constraints (sample size of n=200 was required)

	Time to follow-up Approximately 400 days after baseline measurement	*Drop-out rate at follow-up* 3%			
Fidler et al 2001 [109] UK	*Study design* RCT, randomised based on whether their day of birth was an even or odd number *Setting* Oxfordshire, UK *Population* 14 health centres in Oxfordshire agreed to participate, n=6 000 selected from patient list of 14 practices 10–14 years of age, 2 942 non-smokers *Time to follow-up* 1 year	*Intervention* A primary care based intervention to maintain the non-smoking status of young people *Extent* *Strategy* Age related materials about the advantages of remaining a non-smoker sent every 3 months, background information and further questionnaires at 6 and 12 months *Number of participants* n=1 437 *Drop-out rate at follow-up* Response to the final mailing 74.6%	*Comparison* Control group, only sent a final questionnaire after 12 months, to evaluate their current smoking attitudes and behaviour *Number of participants* n=1 458 *Drop-out rate at follow-up* Response to the final mailing 78.5%		*Implemented by* NR *Fidelity* NR *Comments*
Burford et al 2013 [110] Australia	*Study design* RCT *Setting* 8 metropolitan community pharmacies located around Perth city center in Western Australia *Population* n=1 259 screened, n=213 eligible, N=160 recruited *Time to follow-up*	*Intervention* The APRIL Face Aging software, a computer-generated photoaging intervention to promote smoking cessation among young adult smokers *Extent* 1 session of APRIL Face Aging software *Number of participants*	*Comparison* Assessment only *Number of participants* n=80 *Drop-out rate at follow-up* 6 months: 22.5%		*Implemented by* Pharmacists *Fidelity* NR *Comments* the participants and researcher could not be blinded to the study group

	1, 3 and 6 months	n=80 *Drop-out rate at follow-up* 6 months: 27.5%			
Broome et al 2011 [111] US	*Study design* Cluster-randomised trial design *Setting* 28 restaurant stores from a national casual dining chain in Austin TX (3 stores), Dallas/Fort Worth TX (16 stores), Houston TX (16 stores), and Chicago IL (4 stores) *Population* Young restaurant workers n=235, n=102 completed all three survey, n=133 completed 2 *Time to follow-up* 6 and 12 months	*Intervention* Team Resilience, prevention and early intervention to reduce alcohol consumption *Extent* Three 2-hour sessions held on 3 consecutive days *Strategy* Sessions included group discussions, role-play and practice activities, and a learning game. Data collection in stores over telephone and internet *Number of participants* n=125 *Drop-out rate at follow-up* In all: 6 months: 19.15% 12 months: 37.45%	*Comparison* Assessment only *Number of participants* n=110 *Drop-out rate at follow-up* NR		*Implemented by* NR *Fidelity* *Comments*
Boekeloo et al 2004 [112] USA	*Study design* RCT, stratified by provider as well as adolescent sex and age (12–13, 14–15, 16–17 years) *Setting* 5 managed care group practices in Washington DC *Population* Consecutive 12- to 17-year-olds seeing primary care providers	*Intervention* Brief Office-Based Interventions to Reduce Adolescent Alcohol Use. 2 intervention arms *Extent* *Strategy* One 15 minutes audio program, short interview and	*Comparison* Usual care and listening to radio selections for 15 minutes after their intake questionnaire *Number of participants* n=150 *Drop-out rate at follow-up* 12 months: 9.3%		*Implemented by* Study providers were in pediatrics (n=22) and family practice (n=4) and included 5 nurse practitioners and 21 physicians *Fidelity* Described elsewhere *Comments*

	(n=26) for general checkups. n=892 receiving general health examination, 445 eligible, n=447 intake interviews and randomisation *Time to follow-up* 6 and 12 months	an intervention bag (with brochures etc) *Attendance rate* Overall participation rate 409/784 (52.2%). *Number of participants* n=297 (audio only: n=150, audio + provider: n=147) *Drop-out rate at follow-up* 12 months: 8.1% (audio: 8.2%, audio + provider: 6.1%)			
Hallgren et al 2011 [113] Sweden	*Study design* RCT, stratified *Aim* To evaluate an American alcohol risk reduction program, adapted for Sweden *Setting* Public high-schools in Stockholm, n=23 schools participated, each contributing 2 classes *Population* n=926 students in their final 2 years of school, 18–19 years old, 91% were alcohol consumers at baseline *Follow-up time* 20 months	*Intervention* PRIME for Life under 21 *Intensity and duration* 24 sessions, 2 days each, during 5 months *Theoretical underpinning* Lifestyle risk reduction model *Prevention level* Universal *Number of participants* n=501 *Drop-out rate at follow up* 20%	*Comparison* CAU *Number of participants* n=361 *Attendance rate* NA *Drop-out rate at follow up* 21%	*Drinking frequency (times/week)* Females=0.10 *Binge drinking (points)* Females=0.82	*Implemented by* trained instructors *Fidelity* 85% of the curriculum was taught as intended while time constraints caused 15% variation

Table 9.1 MI Alcohol.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome (95% CI)	Applicability Comments
Carey et al 2006 [114] USA	*Study design* RCT, 6 intervention conditions *Aim* To evaluate the efficacy of a baseline TLFB 2 forms of BMI and whether the TLFB interview and BMI interact *Setting* College, (living in campus housing (82%); 17% members of fraternities or sororities) *Population* University students, n=509, heavy drinking freshmen (57%) sophomores (31%). Women 65% men 35%. They identified themselves as White (81%), Black 6%, Asian 8%, other 5% *Follow-up time* 12 months	*Interventions 5* <u>BMI B</u> is Basic BMI= assessment of the problem + tailored motivational strategies. <u>BMI E</u> is Basic BMI enhances with a decisional balance (DB) exercise. TFLB=Timeline Follow back, is a sensitizing assessment method <u>BMI B:</u> n=85 <u>BMI E:</u> n=81 <u>BMI B + TFLB:</u> n=87 <u>BMI E + TFLB:</u> n=86 <u>Assessment + TFLB:</u> n=89 *Extent* 1–2 sessions (depending on intervention type). Participants met with interventionists in private rooms *Prevention level* *Number of participants* n=509 <u>BMI B:</u> n=85 <u>BMI E:</u> n=81 <u>Assessment + TFLB:</u> n=89 <u>BMI B+ TFLB:</u> n=87 <u>BMI E + TFLB:</u> n=86	*Comparison* Control with assessment only *Number of participants* n=81 *Drop-out rate* <27%	*Outcome, At 12 months* *Mean (sd)* <u>Drinks per week</u> Control: 15.0 (10.5) Assessment + TFLB: 16.2 (11.6) BMI B: 12.8 (9.9) BMI B + TFLB: 14.5 (18.5) BMI E: 15.6 (10.8) BMI E + TFLB: 16.5 (13.0) <u>Drinks per drinking day</u> Control: 4.6 (2.5) Assessment +TFLB: 5.0 (2.6) BMI B: 4.1 (2.5) BMI B + TFLB: 4.1 (3.3) BMI E: 4.5 (2.2) BMI E + TFLB: 4.9 (2.9) <u>Heavy drinking frequency</u> Control: 5.1 (4.0) Assessment + TFLB: 6.3 (4.3) BMI B: 4.9 (3.5) BMI B + TFLB: 5.2 (4.4) BMI E: 5.7 (4.2) BMI E + TFLB: 6.4 (5.3)	*Implemented by* Research assistants trained by researcher/author (department of Psychology) *Fidelity* Adherence to the manual was documented by rating a random set (48%; n=162) of videotapes, sampling all semesters and interventionists. To establish interrater reliability, they rated 20% (n=33) of the videotapes twice. *Comments* Scales: The Rutgers Alcohol Problems Index (RAPI), Modified version of the Daily Drinking Questionnaire BAC=blood alcohol concentration

		1 407 screened, 810 eligible, 187 could not be contacted, 114 did not want to participate		Peak BAC Control: 0.17 (0.10) Assessment + TFLB: 0.20 (0.12) BMI B: 0.16 (0.08) BMI B + TFLB: 0.14 (0.09) BMI E: 0.16 (0.10) BMI E + TFLB: 0.19 (0.14)	
		Attendance rate 87% Completed 2 or more follow-ups, (1 month 97%, 6 months 77%, 12 months 78%)		
		Drop-out rate <22%		RAPI Control: 5.3 (5.1) Assessment + TFLB: 7.2 (7.3) BMI B: 4.7 (5.2) BMI B + TFLB: 4.3 (3.9) BMI E: 5.5 (6.3) BMI E + TFLB: 5.1 (5.7)	
				Between-Groups Effect Sizes (Cohen's d calculated with pooled standard deviations) at 12 months	
				Comparing Control & Assessment + TFLB Drinks per week=0.22 & 0.3 Drinks per drinking day=0.20 & 0.17 Heavy drinking frequency=0.05 & –0.02 Peak BAC=0.11 & 0.32 RAPI=0.12 & 0.22	
				Comparing BMI B & BMI B + TLFB	

				Drinks per week=0.31 & 0.11 Drinks per drinking day=0.35 & 0.30 Heavy drinking frequency=0.36 & 0.25 Peak BAC=0.39 & 0.57 RAPI=0.39 & 0.50	
Fleming et al 2010 [115] USA, Canada	*Study design* RCT *Aim* To test the efficacy of brief physician advice in reducing alcohol use *Setting* 5 college health clinics in Wisconsin, Washington state and Vancouver, Canada *Population* n=986 intervention group, n=493 control group, n=493 college students <18 years 484 men, 502 women with high alcohol consumption in the previous 28 days *Follow-up time* 12-months	*Intervention* Motivational interviewing, contracting, diary cards, and take-home exercises *Extent* Two 15-minute counseling visits and 2 follow-up phone calls *Prevention level* *Number of participants* n=493 *Attendance rate 100%* All persons initially randomised to the intervention group (n=493) remained in this group for the analysis *Drop-out rate* <4%	*Comparison* A health booklet on general health issues and follow-up phone calls at 6 and 12 months *Number of participants* n=484 *Drop-out rate*	*Outcome, (95% CI)* Comparisons of 12-months follow-up means: <u>Number of drinks in the past 28 days.</u> Experimental: 51.7 (40.1) Control: 54.7 (40.3) p=0.18 <u>Heavy drinking days (≥5 drinks/day for men, ≥4 for women)</u> Experimental: 5.3 (4.3) Control: 5.5 (3.7) p=0.148 <u>Mean number of drinking days in the past 28 days.</u> Experimental: 9.9 (5.8) Control: 10.3 (5.5) p=0.053 <u>Mean RAPI score.</u> Experimental: 7.8 (7.5) Control: 9.1 (8.8) p=0.033 <u>The percentage of subjects with ≥1 hospitalisation or visit at</u>	*Implemented by* 13 physicians (91% of the interventions), 2 nurse practitioners, and 1 physician assistant trained to deliver the brief intervention *Fidelity* *Comments* 96% (n=945) completed the 6- and/or 12-months follow-up

				emergency department, urgent care or local detoxification unit in the previous 6 months Experimental: 18.5 Control: 18.3 (8.8), p=0. 934	
Hester et al 2012 [116] USA	*Study design* RCT (randomised by blocks), 2 experiments *Aim* To evaluate the effectiveness of a computer-delivered intervention (CDI) to reduce heavy drinking and alcohol-related problems *Setting* College in a clinical setting *Population* Exp 1, n=144 Exp 2, n=82 Heavy drinking students. Treatment: Male 62%, Female 38%. Control: Male 63%, Age 20.51 Female 37%. Age 20.29 *Follow-up time:* Exp 1, 12 months Exp 2, 1 month	*Intervention* Brief motivational intervention (BMI). Adapted for computer delivery Windows and web-based approximately 35 minutes per session *Extent* Two 15-minute counseling visits and 2 follow-up phone calls *Prevention level* *Number of participants* Exp 1, n=65 Exp 2, n=42 *Attendance rate* Exp 1, follow-up rate: n=59, 90% Exp 2, follow-up rate: n=42, 100% *Drop-out rate* Exp 1, <6% (n=4) Exp 2, <0% (n=0)	*Comparison* Assessment only *Number of participants* Exp 1, n=79 Exp 2, n =40 *Attendance rate* Follow-up rate Exp 1, 90% (n=71) Exp 2, 97% (n=39) *Drop-out rate* Exp 1, <7% (n=6) Exp 2, <2% (n=1)	*Outcome* Exp 1, at 12 months: Effect, female (1.127), (95% CI) Drinks per Week 4.12 (0.01–0.71) Peak BAC Typical Week 3.24 (–0.03–0.66) Av Number Drinks Heavier 5.46 (0.06–0.76) Av BAC Heavier 5.21 (0.05–0.75) AUDIT scores 3.38 (−0.03–0.67) CSAP scores 2.96 (−0.04–0.66) Exp 2, at 1 month: Effect, female (1.127), (95% CI) Drinks per Week 7.38 (0.16–1.05) Peak BAC Typical Week 12.85 (0.34–1.25) Av Number Drinks Heavier 16.65 (0.45–1.36) Av BAC Heavier 19.12 (0.51–1.43)	*Implemented by* Research assistants *Fidelity* *Comments* Scale used, Drinker's Check-up (DCU), AUDIT. We used the Brief Drinker's Profile (BDP), College Students, Alcohol Problems (CASP) BAC

McCambridge et al 2010 [117] UK	*Study design* Cluster randomised trial *Aim* To test the effectiveness of adaptation of Motivational Interviewing (MI) for universal prevention purposes *Setting* In 12 London Further Education colleges *Population* 416 students. Sample characteristics: (treatment/contol), male 55% /52%, English first language, 61%/56%, with job,19%/16%, sold drugs to friends 5%/5%, cigarette smokers 32%/24%, alcohol drinkers 50%/47%, cannabis smokers 20%/23%, ever used other drugs 6%/4%, mean age in years 17.5/17.6 *Follow-up time* 12 months	*Intervention* Individualised MI *Extent* The MI session was scheduled for delivery during a 1 hour lesson *Number of participants* n=206 *Attendance rate* 77% received MI (n=159), 23% did not attend MI (n=47) *Drop-out rate* Lost to follow-up <18% (n=37)	*Comparison* "Drug Awareness" (DA). This comprised a 16-question quiz, followed by further discussion components and the provision of leaflets on the effects of target drugs. Scheduled for delivery during a 1 hour lesson *Number of participants* n=210, 80% received DA (n=169), 20% did not attend DA (n=41) *Drop-out rate* Lost to follow-up <15% (n=31)	*Outcome* Difference (95% CI) (odds ratios for binary outcomes and mean differences in change scores) at 12 months <u>Alcohol:</u> Prevalence 0.99 (0.57; 1.71) Cessation 1.51 (0.82; 2.78) Initiation 0.75 (0.36; 1.59) *Baseline drinkers only* (n=202) 30-day frequency −0.12 (−1.58; 1.33) units past week −0.73 (−6.43; 4.96) AUDIT score −0.50 (−2.40; 1.39) Interactional problems score −0.10 (−0.39; 0.19)	*Implemented by* The majority of the interventions were delivered by the 2 researchers (n=144 and n=109 respectively) 6 college-based practitioners got workshop-based training in the delivery of both interventions *Fidelity* We aimed to audio-record a random sample of 1/4 MI sessions for fidelity monitoring. 31 MI sessions of 159 actually delivered being audio-recorded. This shortfall of 9 sessions was mostly due to some college practitioners being either uncomfortable asking participants for this to be done or about having their own practice sessions recorded *Comments* Scales used: Fagerstrom scale,

					AUDIT, Severity of Dependence Scale (SDS) + A measure of interactional problems for each substance which counts the number of relationship problems that the young person themselves attributes to their own use
Walters et al 2009 [118] USA	*Study design* RCT *Aim* A dismantling trial of MI and feedback among heavy-drinking college students *Setting* Medium-size private university in the southern United States *Population* 279 heavy-drinking students, >18 years *Follow-up time* 6 months	*Intervention* 1. Web feedback, (FBO) 2. MI only (MIO) 3. MI + feedback (MIF) *Extent* 1 session *Prevention level* *Number of participants* At assessment, FBO: n=67, MIO: n=70, MIF: n=70 *Attendance rate* At 6 months follow-up, FBO: n=54, MIO: n=59 MIF: n=67 *Drop-out rate* FBO: <19% MIO: <15% MIF: <4%	*Comparison* Assessment only (AO) *Number of participants* At assessment, n=69 At 6 months follow-up, n=61 *Drop-out rate* <11%	*Outcome* M (sd), effect size (all comparisons with AO) Composite AO –0.247 (1.056) FBO –0.486 (0.907) –0.093, p=0.58 MIO –0.298 (1.045) 0.075, p=0.77 MIF –0.551 (0.745) –0.535, p=0.001 Drinks per week AO 12.92 (14.16) FBO 12.07 (12.31) 0.076, p=0.80 MIO 11.59 (9.55) 0.096, p=0.88 MIF 10.19 (8.71) –0.412, p=0.009 Peak BAC AO 0.135 (0.104)	*Implemented by* The MIO and MIF sessions were delivered by 2 doctoral-level counselors and 5 clinical psychology doctoral students The personalised feedback was modified from the electronic Check-Up to Go feedback program. And used BAC, comparison to U.S. adult and campus norms and AUDIT For students in the FBO condition, the feedback form was displayed immediately on the computer Those in

			FBO 0.116 (0.095) –0.021, p=0.88 MIO 0.140 (0.110) 0.101, p=0.57 MIF 0.112 (0.088) –0.374, p=0.021 <u>Alcohol-related problems</u> AO 5.77 (6.11) FBO 3.72 (4.70) –0.341, p=0.086 MIO 5.41 (7.28) –0.052, p=0.76 MIF 4.06 (4.96) –0.428, p=0.020 Effect size (all comparisons with MIF) <u>Composite</u> FBO –0.477, p=0.009 MIO –0.626, p= 0.000 <u>Drinks per week</u> FBO –0.472, p=0.0050 MIO –0.523, p=0.0058 <u>Peak BAC</u> FBO –0.391, p=.017 MIO –0.508, p=0.0043 <u>Alcohol-related problems</u> FBO –0.163, p=0.59 MIO –0.352, p=0.045	the MIF condition received their feedback profile during the MI session *Fidelity* Each counselor completed 40 hours of MI training and submitted 4 practice tapes prior to seeing participants. A checklist for each session, all sessions were videotaped *Comments* Scales used: 7-day drinking calendar modified from the Daily Drinking Questionnaire, BAC, RAPI, Normative drinking perceptions were measured by asking students to estimate the percentage of U.S. college students of their sex who drank more than they did. RTCQ, AUDIT

			Comparison	Outcome, (95% CI)	Implemented by
Larimer et al 2001 [119] USA	*Study design* RCT, randomised at the level of the organization *Aim* *Setting* A West Coast university *Population* Participants were recruited from the incoming pledge classes of 28 fraternities, 21 fraternities interested, 12 randomly selected *Follow-up time* 1 year	*Intervention* Brief motivational enhancement intervention to reduce drinking and drinking-related consequences *Extent* I-hour individually tailored feedback session and a 1-hour housewide feedback program *Number of participants* n=6 houses n=77 participants *Attendance rate* 75% *Drop-out rate* Not reported	Comparison Assessment only/treatment-as-usual control condition *Number of participants* n=6 houses n=82 participants *Drop-out rate* Not reported	Outcome, (95% CI)	*Implemented by* Undergraduate students and clinical psychology advanced graduate students, one master's-level clinician and one licensed psychologist *Fidelity* *Comments*
Marlatt et al 1998 [120] USA	*Study design* RCT, randomised at individual level *Aim* *Setting* University of Washington, US *Population* All 508 students enrolling the university were screened in a 2 step process to achieve a high-risk sample. 366 consented to participate, 151 students served as normative comparison (under 29 years of age *Follow-up time* 2 years	*Intervention* Assessment and brief intervention to reduce harmful consequences of excessive alcohol consumption *Extent* 1 session based on MI, 1 hour, included individualised feedback about drinking patterns *Number of participants* n=174 *Attendance rate* Not reported *Drop-out rate* 17% for the study participants and normative sample together	Comparison Assessment only *Number of participants* n=117 *Drop-out rate* Not reported	Outcome, (95% CI)	*Implemented by* Interviewers: 2 doctoral-level clinical psychologists, 2 postdoctoral-level clinical psychologists, and 4 advanced graduate students in clinical psychology *Fidelity* Interviewers were trained (using a written manual, role play, and piloting) by John S. Baer, based on the specific protocol to be used

					for the feedback interviews *Comments* Male students showed higher overall drinking frequency and quantity rates than female. Females, on the other hand, showed significantly greater decrements in drinking problems over time than men
Marsden et al 2006 [121] UK	*Study design* 2-group randomised controlled trial, cluster randomised *Aim* *Setting* England *Population* 16–22 years old, regular users of MDMA ('ecstasy'), cocaine powder and crack cocaine in England, 369 screened for eligibility, 342 randomised to intervention and control *Follow-up time* 6 months	*Intervention* Assessment Information Motivation and Support. Self-assessment questionnaire and a single-session motivational intervention to induce positive behaviour change among young, regular users of MDMA ('ecstasy'), cocaine powder and crack cocaine *Extent* Baseline self-assessment questionnaire and a single-session intervention (45–60 minutes) *Number of participants* n=166 (mean age 18.3, 111 male, 55 female) *Attendance rate* 87.4% *Drop-out rate* 12%	*Comparison* Baseline self-assessment (no feedback) and written health risk information *Number of participants* n=176 (mean age 18.5, 116 male, 60 female) *Attendance rate* 88.1% *Drop-out rate* 12.5%	*Outcome, (95% CI)*	*Implemented by* 12 agency youth drug workers and 2 researchers at 5 locations in Greater London and south-east England *Fidelity* The worker had completed at least a basic drugs information and advice-training course or have equivalent practical experience before joining the study. All workers completed the training programme satisfactorily *Comments*

Werch et al 2005 [122] USA	*Study design* RCT, students randomly assigned within grade levels (9th and 11th grades) by computer *Aim* *Setting* Suburban high school in northeast Florida *Population* 604 students in 9th and 11th grade were recruited to participate, 51% Caucasian, 21.5% African American, 27.5% other. Mean age 15.24, 56% female *Follow-up time* 3 and 12 months	*Intervention* Project SPORT. A brief, multi-health behaviour intervention and prescription with a mailed reinforcing follow-up flyer to influence health behaviour *Extent* All interventions were administered within a single class period Tailored sport consultation: 12.65 minutes *Number of participants* n=302 (mean age: 15.22, 59.5% female) *Attendance rate* In all at 12 months: 85% *Drop-out rate* 12 months: 14%	*Comparison* Minimal Intervention Control, consisted of a wellness brochure and a pamphlet about teen health and fitness *Number of participants* n=302 (mean age: 15.25, 53% females) *Drop-out rate* 16%	*Outcome, (95% CI)*	*Implemented by* Trained fitness specialists (nurses and certified health education specialists) *Fidelity* Student feedback was collected immediately after the administration of the consultations and control booklets using a 12-item instrument measuring student satisfaction and perceived usefulness. *Comments* Limited sample, lack of measures of mediating factors
Wood et al 2007 [123] USA	*Study design* Randomised factorial study, 2x2 factorial design, randomised, separately by gender *Aim* *Setting* *Population* 334 college students ages 20–24 were recruited via posted flyers and advertisements, inquiring students completed a screening assessment by telephone	*Intervention* Assessment and Brief Motivational Intervention (BMI) and Alcohol Expectancy Challenge (AEC) for reducing alcohol use (looking at the unique and combined effect) *Extent* One-on-one session BMI, 45–60 minutes, 2 AEC sessions 1 week apart *Number of participants* n=?? BMI: AEC: BMI + AEC:	*Comparison* Assessment only control with follow-up concurrently with those receiving interventions to control for time of semester effects *Number of participants* n=?? *Drop-out rate* <%	*Outcome, (95% CI)*	*Implemented by* Trained clinical psychology graduate students *Fidelity* *Comments*

	Follow-up time 1, 3 and 6 months	*Attendance rate* 82% *Drop-out rate* Cumulative participant attrition was 17.6%, 24.5%, and 27.5% at 1-, 3-, and 6-months follow-ups			
Cunningham et al 2012 [124] USA	*Study design* RCT, (stratified by gender and age: 14–15, 16–18 years) *Aim* *Setting* Level I trauma center, Hurley Medical Center, in Flint, Michigan *Population* Patients (14–18 years of age) at an ED reporting past year alcohol use and aggression were enrolled and completed screening n=3 338, n=829 met study criteria, n=726 completed baseline survey *Follow-up time* 12 months	*Intervention* Assessment and SafERteens RCT, Therapist based intervention (TBI), computer based intervention (CBI) to examining the efficacy of BIs on peer violence and alcohol misuse *Extent* 1 CBI 29 minutes, 1 TBI 37 minutes *Number of participants* TBI: n=254 CBI: n=237 *Attendance rate* In all: 84% completed 12 months follow-up TBI: 80.3% CBI: 84.4% *Drop-out rate* TBI: 4.3% CBI: 6.3%	*Comparison* Participants assigned to the control received a trifold brochure with community resources. 12 months follow-up *Number of participants* n=235 *Attendance rate* 86% *Drop-out rate* 4.2%	*Outcome, (95% CI)*	*Implemented by* BI delivered by a computer or therapist assisted by a computer *Fidelity* *Comments* The null finding of consumption may be a result of the low level of alcohol use required for study inclusion (any alcohol use, even 1 drink), with recent reviews noting that positive BI effects are typically found with greater baseline consumption levels

| Monti et al 1999 [125] USA | *Study design* RCT, 2-group design, randomised at individual level

Aim

Setting Emergency room (ER) in US

Population Patients at ER aged 18–19, mainly white, 184 was introduced to the study, 43 discharged, 94 agreed to participate

Follow-up time 3 and 6 months | *Intervention* Assessment and brief intervention (MI) to reduce alcohol-related consequences and use among adolescents

Extent MI lasted 35–40 minutes

Number of participants n=52, mean age 18.4

Attendance rate

Drop-out rate In all: 3 months: 7% 6 months: 11% | *Comparison* Standard care (SC), 5 minutes, general practice for treating alcohol-involved teens in an urgent care setting, included a handout on avoiding drinking and driving and a list of local treatment agencies

Number of participants n=42, mean age 18.3

Drop-out rate | *Outcome, (95% CI)* | *Implemented by* 12 trained bachelor's to master's level staff members with 1 to 2 years of experience

Fidelity Interventionists and patients independently completed a 14-item rating scale that assessed the degree to which important aspects of MI and the intervention protocol had been administered. Videotaped interventionists conducting an MI with naive research staff every 3 months

Comments Older adolescents and young adults who are problem drinkers or alcoholics may not respond as well to MI. Relatively high refusal rate |

| Walton et al 2010 [126] USA | *Study design* RCT. Randomisation was stratified by sex and age (14–15 or 16–18 years) and assigned based on computer-generated algorithm and using numbered sealed envelopes. Randomisation occurred in blocks of 21 (7 per group) *Aim* *Setting* Hurley Medical Center in Flint, Michigan, a level I trauma center *Population* 6 241 ED patients aged 14 to 18 in sample frame, 4 296 eligible for screening, 3 784 approach for screening, 3 338 completed screening, 829 met inclusion criteria, 726 randomised *Follow-up time* 3 and 6 months | *Intervention* The SafERteens brief interventions. Assessment, brochure, and Therapist brief intervention (TBI) or computer brief intervention (CBI) to reduce violence and alcohol misuse among adolescents *Extent* One CBI or TBI lasting 35 min with self-administered computerised follow-up assessments 3 and 6 months after the ED visit *Number of participants:* CBI: 237 (227 received intervention) TBI: 254 (236 received intervention) *Attendance rate* *Drop-out rate* 3 months CBI: 9.7% TBI: 8.9% 6 months CBI: 7.9% TBI: 11.4% | *Comparison* Control group received a brochure, 3 and 6 months follow-up *Number of participants:* n=235 (233 received control) *Drop-out rate* 3 months: 11.6% 6 months: 10.7% | *Outcome, (95% CI)* | *Implemented by* Research social workers *Fidelity* Follow-up staff were blinded to baseline condition assignment. Sessions were audiotaped and 20% were coded based on adherence and competence; therapists received individual and group supervision and periodic retrainings throughout the study *Comments* Attrition is a limitation of this study. Findings are limited by the 6-months follow-up |

Wood et al 2010 [127] USA	*Study design* Randomised factorial Study 2×2×3 factorial design, randomisation by computer algorithm *Aim* *Setting* A mid-sized public northeastern university, US *Population* n=1 014 parent-student dyads, students, mean age 18.4 were assessed prior to matriculation. Students n=1 532 contacted by phone, n=1 155 consented and completed baseline *Follow-up time* 10 and 22 months for students, 12 months for parents	*Intervention* Assessment and Brief motivational intervention (BMI) and Parent-based Intervention (PBI) as universal preventive interventions to reduce alcohol use among incoming college students, interventions examined alone and in combination *Extent* BMI 2 semi-structured in-person sessions and 1 BMI session for 45–60 minutes plus a booster BMI spring freshman year 20–30 minutes *Number of participants* BMI: n=253 PBI: n=256 PBI+BMI: n=249 *Attendance rate* *Drop-out rate* 10 months BMI: 9.49% PBI: 8.59% PBI+BMI: 13.25% 22 months BMI: 15.42% PBI: 16.41% PBI+BMI: 17.7%	*Comparison* Assessment-Only Control Group, follow-up 10 and 22 months *Number of participants* n=256 *Drop-out rate* 10 months: 5.47% 22 months: 14.45%	*Outcome, (95% CI)*	*Implemented by* All interventionists held a bachelor's degree or higher, and 10 were clinical psychology graduate students *Fidelity* Interviewers were not members of the research team, were blind to experimental condition, and were trained and monitored in standardised interviewing procedures *Comments* Small effect sizes, there is a clear need for further refinement and tailoring of this intervention with abstaining or light drinking college students

Turrisi et al 2009 [128] USA	*Study design* Randomised clinical trial, randomised at individual level *Aim* *Setting* Web-administered in US at large public northeastern (site A) and northwestern (site B) universities *Population* Incoming freshmen were randomly selected n=4 000 and screened, n=1 796 consented and completed assessment, n=1 419 were eligible, n=1 275 completed baseline, mean age 17.92. 1 275 parents were invited, n=903 parents consented *Follow-up time* 10 months	*Intervention* Brief Alcohol Screening and Intervention for College Students (BASICS) and parent handbook intervention, alone and together, to reduce alcohol use and consequences *Extent* BASICS interventions were 45–60 minutes *Number of participants* Parent: n=316 BASIC: n=277 Combined: n=342 *Attendance rate* In all: 85% follow-up Parent: 88.3% BASIC: 82.3% Combined: 81.3% *Drop-out rate* Parent:11.71% BASIC: 17.7% Combined:18.7%	*Comparison* Assessment-only control group completed all procedures in an identical manner to the BASICS-, parent-, and combined-intervention conditions, except that the BASICS intervention was mailed and the parent intervention was offered after the follow-up *Number of participants* n=340 *Attendance rate* 89.7% *Drop-out rate* 10.29%	*Outcome, (95% CI)*	*Implemented by* A trained peer facilitator *Fidelity* Peer facilitators were monitored through coding random 20-minute segments of every session, using the Motivational Interviewing Treatment Integrity 2.0 coding system *Comments* More work is needed to evaluate whether interventions need tailoring to match levels of risk
Murphy et al 2012 [129] USA	*Study design* Randomised controlled clinical trial *Aim* *Setting* Public university in the southern United States	*Intervention* An individual alcohol-focused BMI with a Substance-Free Activity Session (SFAS) to reduce substance use *Extent* One 50-minute alcohol-focused BMI with personalised feedback (BMI). SFAS 1 week later a 50-minute individual counselling session	*Comparison* An individual alcohol-focused BMI with a Relaxation Training (RT) control session 30 minutes	*Outcome, (95% CI)*	*Implemented by* Clinicians were 6 trained graduate students in clinical psychology *Fidelity* *Comments*

	Population n=1 107 students screened, n=201 first-year college students was eligible, n=82 agreed to participate, mean age 18.5 *Follow-up time* 1 and 6 months	*Number of participants* n=41 *Attendance rate* *Drop-out rate* 1 month: 0 6 months: 9.8%	*Number of participants* n=41 *Drop-out rate* 1 month: 2.4% 6 months: 17%		The current study suggests that the SFAS might benefit young adult drinkers who are transitioning to college
Spirito et al 2004 [130] USA	*Study design* Randomised clinical trial *Aim* *Setting* Emergency department (ED) of an urban hospital in the Northeast, level 1 trauma center *Population* English speaking adolescents 13 to 17 years inclusive treated in ED with alcohol in blood, breath or salvia were eligible n=152, study described to n=287 n=134 declined, n=152 participated *Follow-up time* 3, 6 and 12 months	*Intervention* Motivational Interview (MI), assessment battery, handouts, to reduce alcohol-related consequences and use *Extent* SC (standard care) intervention sessions 5 minutes, MI sessions 35 to 45 minutes, assessment battery 45 minutes. 3 months interview by phone, 6 months interview in person *Number of participants* n=78, 66.7% male *Attendance rate* In all 3 months: 93.4% 6 months: 89.5% 12 months: 89.5% *Drop-out rate* 6 months: 15.4%	*Comparison* Standard care (SC), 5 minutes with brief advice and a handout *Number of participants* n=74, 60.8% male *Drop-out rate* 6 months: 5.4%	*Outcome, (95% CI)*	*Implemented by* 12 bachelor's and master's level interventionists with 1 to 2 years of clinical research experience. All completed training in MI *Fidelity* The patient independently completed a 14-item rating scale that assessed the degree to which important aspects of the protocol had been administered. interventionists were videotaped conducting an MI *Comments*
Haller et al 2014 [131] Switzerland	*Study design* A cluster randomised controlled trial, randomised at individual level	*Intervention* Brief Intervention to reduce binge drinking and excessive cannabis use among young people	*Comparison* Physicians in the control group delivered usual care only	*Outcome, (95% CI)*	*Implemented by* Family physicians *Fidelity*

	Aim *Setting* Family medicine practices in the French speaking part of Switzerland *Population* The first 35 family physicians (FPs) who expressed interest, 33 consented. Young people aged 10–24 who consulted for health problems were recruited n=594 *Follow-up time* 3, 6 and 12 months	*Extent* Training intervention session 1: 3 hours Session 2: 2 hour 10–15 days after session 1 *Number of participants:* n=16 FPs n=287 patients (mean age 18.4, 49% male) *Attendance rate* *Drop-out rate* 3 months: 13.24% 6 months: 22.3% 12 months: 26.5%	*Number of participants* n=16 FPs n=307 patients (mean age 18.6, 45% male) *Drop-out rate* 3 months: 12.05% 6 months: 18.6% 12 months: 28.3%		*Comments* Training family physicians to use a brief intervention to address excessive substance use among young people was not effective in reducing binge drinking
Pengpid et al 2013 [132] South Africa	*Study design* RCT, randomised at individual level *Aim* *Setting* University in the Gauteng Province in South Africa *Population* Hazardous or harmful drinkers university students above 18, n=736 assessed for eligibility, n=152 randomised *Follow-up time* 6 and 12 months	*Intervention* Screening and brief intervention to reduce alcohol use by hazardous and harmful drinkers *Extent* 1 session of 20 minutes, questionnaires at follow-ups *Number of participants* n=81, mean age 21.7, 82.5% male *Attendance rate* *Drop-out rate* 6 months: 27.2% 12 months: 2.47%	*Comparison* The control group received a health education leaflet *Number of participants* n=71, mean age 22.1, 92.9% male *Drop-out rate* 6 months: 31% 12 months: 4.23%	*Outcome, (95% CI)*	*Implemented by* Trained assistant nurses *Fidelity* *Comments* Mainly male students

| Bernstein et al 2010 [133] USA | *Study design* A 3-group randomised assignment trial randomised at individual level

 Aim

 Setting A pediatric emergency department (PED) of BUMC, an innercity, academic hospital, level 1 trauma center

 Population Pediatric ED patients, n=9 521 who screened positive on AUDIT or high-risk behaviours were eligible, n=853 enrolled, 14–21 years

 Follow-up time 12 months | *Intervention* Project Reaching Adolescents for Prevention (RAP). Intervention (I) and Assessment Control (AC vs I). Assessment, brief motivational interview (BMI) to reduce alcohol consumption and associated risks

 AC group received assessment instrument, written hand out and reassessment 3 months and 1 year. I group received assessment and a structured conversation plus a booster call

 Extent Structured conversation 20–30 minutes

 Number of participants Intervention (I): n=283, 47% male

 Assessed control (AC): n=28, 44% male

 Attendance rate

 Drop-out rate Intervention: 3 months: 28.6% 12 months: 26.9% Assessed control 6 months: 30.6% 12 months: 26.4% | *Comparison* Minimally assessed control (MAC) screening survey and a brief written hand out

 Number of participants: Minimally assessed control: n=286, 46% male

 Drop-out rate Minimally assessed control 12 months: 30.77% | *Outcome, (95% CI)* | *Implemented by* A peer educator under 25 years with 1 month of training

 Fidelity

 Comments Follow-up rates were not ideal, future studies should focus on modalities to strengthen the intervention to address this gap between intent and outcomes |

				Outcome, (95% CI)	
Monti et al 2007 [134] USA	*Study design* 2-group randomised controlled trial *Aim* *Setting* Level 1 trauma center in Rhode Island *Population* Patient 18–25 years treated in ED with alcohol in blood, n=5 607 identified, n=627 eligible, n=212 consented, n=198 randomised *Follow-up time* 6 and 12 months	*Intervention* Brief motivational intervention for reducing alcohol use and problems *Extent* MI 30–45 minutes, personalised feedback report, 1 month booster telephone session 20 minutes, 3 months booster 25–30 minutes *Number of participants* n=98 *Attendance rate* *Drop-out rate* 6 months:19.4% 12 months: 20.41	*Comparison* Personalised feedback report only (FO) group received the same baseline assessment and computer-generated personalised feedback report as those in MI *Number of participants* n=100 *Drop-out rate* 6 months:14% 12 months: 17%	*Outcome, (95% CI)*	*Implemented by* 9 trained bachelor's and master's level clinicians with previous experience *Fidelity* *Comments* Lack of a control group
Spirito et al 2011 [135] USA	*Study design* Randomised clinical trial, 2 group randomised design *Aim* *Setting* An urban regional level I trauma centre in the Northeast United States *Population* Patient treated at level I trauma centre aged 13 to 17 years with a positive blood alcohol concentration as tested using blood, breath, or saliva, n=345 eligible, 125 randomised	*Intervention* Brief individual motivational interview (IMI) plus a family motivational interview (Family Check-Up (FCU)) to reduce alcohol use *Extent* One IMI 45–60 minutes for both groups, IMI+FCU 1 hour videotaped family assessment task (FasTask) with feedback *Number of participants* IMI+FCU: n=62 (50 received intervention) *Attendance rate* *Drop-out rate*	*Comparison* IMI only *Number of participants* IMI: n=63 *Drop-out rate* IMI: 3 months: 11.1% 6 months: 4.8% 12 months: 9.5%	*Outcome, (95% CI)*	*Implemented by* Interventionists with master's degrees in counselling and psychology *Fidelity* *Comments*

	Follow-up time 3, 6 and 12 months	IMI+FCU 3 months: 18% 6 months: 4% 12 months: 6%			

Table 9.2 Personalised Feed Back for prevention of alcohol misuse.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome (95% CI)	Applicability Comments
Labrie et al 2013 [136] USA	*Study design* RCT, randomised at individual level *Setting* 2 West Coast universities, US *Population* Enrolled students n=11 069 were contacted via mail and e-mail, n=4 818 responded and completed screening (18–25 years), n=2 034 met inclusion criteria, Heavy-drinking Caucasian and Asian undergraduates, n=1 831 completed baseline, n=1 663 randomised *Follow-up time* 1, 3, 6 and 12 months	*Interventions* A web-based personalised normative feedback (PNF) intervention (8 conditions: (typical student and gender-, race-, Greek status-, gender-race-, gender-Greek status-, raceGreek status-, gender-race-Greek status-specific) to reduce risky drinking and associated consequences *Extent* Web-based feedback *Number of participants* ?? PNF as a whole: n=1 483 *Attendance rate* *Drop-out rate*	*Comparison* Web-BASIC intervention repeated assessment control group *Number of participants* Control n=184 Web-BASIC n=183 *Drop-out rate* Control 1 month: 4.3% 3 months: 7.1% 6 months: 10.9% 12 months: 10.3%		*Implemented by* *Fidelity* *Comments*

| Lewis et al 2014 [137] USA | *Study design* RCT. Stratified by gender and level of drinking, randomly assigned at individual level

Setting A large public north western university

Population Random sample of n=3 224 undergraduate students, 18–25 years, invited from the registrar office, n=1 468 screened, n=48 randomised

Follow-up time 3 and 6 months | *Interventions:* A web-delivered Personalised Normative Feedback (PNF) intervention to reduce alcohol-related risky sexual behaviour

Extent

Number of participants Alcohol only: n=119 Alcohol related RSB: n=121 Combined alcohol and sex: n=119

Attendance rate

Drop-out rate Alcohol only 3 months: 11% 6 months: 14.3%

Alcohol related RSB 3 months: 9.1% 6 months: 10.8%

Combined 3 months: 11.8% 6 months: 19.3% | *Comparison* Attention control feedback

Number of participants n=121

Drop-out rate 3 months: 8.3% 6 months: 20.7 | | *Implemented by*

Fidelity

Comments The intervention was associated with reductions in frequency of drinking prior to sex but not reductions in quantity of consumption prior to sex |
| Martens et al 2010 [138] USA | *Study design:* RCT, randomisation occurred through a random number table

Setting: A private liberal arts college in the Northwest, a state university in the Midwest, and a private liberal arts women-only college in the Northeast | *Interventions* Assessment and an electronically delivered personalised drinking feedback (PDF) for reducing alcohol

Extent Feedback on questionnaire, follow-up questionnaires 1 and 6 months

Number of participants PDF-targeted: n=96

Attendance rate | *Comparison* A standard (i.e., nontargeted) PDF intervention and an education-only (EO) condition that also included targeted information

Number of participants: PDF-standard: n=80 EO: n=87

Drop-out rate PDF-standard | | *Implemented by*

Fidelity

Comments The interventions in the present study required relatively little staff time and were easy to implement. Low sample size. Women-only |

	Population Students who participated in sport, n=1 215 were e-mailed, n=294 completed baseline, n=263 received intervention *Follow-up time* 1 and 6 months	*Drop-out rate* PDF-targeted 1 month: 13.5% 6 months: 19.8%	1 month: 11.3% 6 months: 18.8% EO: 1 month: 8.1% 6 months: 17.2%		college (76% women)
Neighbors et al 2010 [139] USA	*Study design* RCT, randomised at individual level *Setting* A large public northwestern university, US *Population:* n=4 103 freshmen students invited, n=2 095 completed screening, n=894 met drinking eligibility criteria, n=818 completed baseline *Follow-up time* 6, 12, 18 and 24 months	*Interventions* Web-based personalised normative feedback (PNF) (gender-specific vs. gender-nonspecific PNF) *Extent* *Number of participants* GSF (gender-specific feedback) baseline only: n=163 GSF (gender-specific feedback) each assessment: n=164 GNSF (gender-nonspecific feedback) baseline only: n=164 GNSF (gender-nonspecific feedback) each assessment: n=163 *Attendance rate* *Drop-out rate* GSF baseline only: 6 months: 6.1% 24 months: 20.3% GSF each assessment: 6 months: 9.8% 24 months: 20.1%	*Comparison* (Attention control) design, received facts about students at the university that were generated from a recent large survey *Number of participants:* n=164 *Drop-out rate* 6 months: 8% 24 months: 19%		*Implemented by* *Fidelity* *Comments* To date, it is among the largest and longest evaluations of a randomised trial of a web-based intervention for college student drinking

		GNSF baseline only: 6 months: 11% 24 months: 19% GNSF each assessment: 6 months: 3.7% 24 months: 15.3%			

Table 9.3 BI for prevention of tobacco and marijuana consumption.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome (95% CI)	Applicability Comments
Hollis et al 2005 [106] USA	*Study design* RCT, randomisation was blocked over time and stratified according to medical center and 30-day cigarette smoking status (smoked or did not smoke) *Setting* Kaiser Permanente Northwest, a health maintenance organisation in the Portland, Oregon, and Vancouver, Washington, metropolitan areas *Population* Teens (14–17 years) with appointments at medical centers n=3 747 invited, n=2 526 randomised, n=1 272 dietary intervention, n=1 254 tobacco intervention *Follow-up time*	*Interventions* A brief counselling plus a computer-based tobacco intervention to reduce tobacco use *Extent* A 30-second clinician advice message, a 10-minute interactive computer program, a 5-minute motivational interview, and up to two 10-minute telephone or inperson booster sessions *Number of participants* n=1 272 *Attendance rate* 87.8% completed 2 year follow-up *Drop-out rate* 1 year: 4.6% 2 year: 10.1%	*Comparison* Attention control (dietary intervention) was a 5-minute motivational intervention to promote increased consumption of fruits and vegetables *Number of participants* n=1 254 *Drop-out rate* 1 year: 8.1% 2 year: 14.4%		*Implemented by* Trained health counsellors *Fidelity* *Comments* Study sample was largely white (78%).

	1 and 2 year				
Norman et al 2008 [83] Canada	*Study design* RCT. A 2-group repeated measures randomised control trial randomised at individual level by computer *Setting* 14 secondary schools in Toronto, Canada *Population* Adolescents from 14 secondary schools (snowball sampling) n=2 210 eligible, n=1 402 assessed as smokers at baseline *Follow-up time* 3 and 6 months	*Interventions* A Web-assisted tobacco intervention with small-group motivational interview, addressing smoking prevention and cessation with adolescents *Extent* One single 60 minutes classroom session with e-mail follow-up once a month, 10 minutes small-group motivational interview *Number of participants* n=640 *Attendance rate* *Drop-out rate* 3 months: 9% 6 months: 12.7%	*Comparison* An interactive control condition task; evaluation of the quality of Web sites *Number of participants* n=700 *Drop-out rate* 3 months: 7.3% 6 months: 8.3%		*Implemented by* Trained graduate-level counsellors or public health nurses *Fidelity* *Comments*
Bernstein et al 2009 [140] USA	*Study design* RCT. A 3-group randomised controlled preliminary trial. Randomisation in blocks of 100 stratified by age group (14–17 and 18– 21 years) *Setting* Pediatric Emergency Department (an urban, academic PED)	*Interventions* Screening and Brief Intervention (SBI) to Reduce Marijuana Use Among Youth and Young Adults *Extent* 20- to 30-minute structured conversation, 5- to 10-minute booster phone call *Number of participants* n=68 *Attendance rate* 12 months follow-up rate at 71% *Drop-out rate*	*Comparison* Standard Assessed Control (AC) received a battery of standard assessment instruments, written handout and appointments to return Non-assessed Control (NAC) received a brief written information *Number of participants:* AC: n=71 NAC: n=71		*Implemented by* Trained peer educators who were under 25 years of age and spoke Spanish, Haitian Creole, and Cape Verdean as well as English; all except one had a bachelor's degree *Fidelity* *Comments* A small pilot study, not sufficient power

	Population Patients aged 14–21 years in PED, n=325 eligible (used marijuana), n=210 enrolled *Follow-up time* 3 and 12 months	3 months: 38.2% 6 months: 30.9%	*Drop-out rate* AC 3 months: 22.6% 6 months: 22.6% NAC: 12 months: 33.8%		
Lee et al 2010 [141] USA	*Study design* RCT, randomised at individual level *Setting* A large public university in the Northwest United States *Population* 4 000 incoming students (17–19 years) prior to beginning college were recruited by mail and email, n=2 123 responded, n=370 eligible (use of marijuana 3 months prior to screening), n=341 completed baseline (mean age 18.03) *Follow-up time*	*Interventions* A brief, web-based personalized feedback selective intervention for college student to reduce marijuana use *Extent* Individual personalised feedback *Number of participants* n=171 *Attendance rate* 92.38% completed both follow-ups *Drop-out rate* In both groups: 3 months: 5% 6 months: 5.6%	*Comparison* Assessment only *Number of participants* n=170 *Drop-out rate*		*Implemented by* *Fidelity* *Comments*

	3 and 6 months				
Stein et al 2011 [142] USA	*Study design* RCT, randomised at individual level *Setting* Providence, RI *Population* The study sample was recruited from the community through newspaper and radio advertisements n=1 728 screened, n=515 eligible, n=332 woman enrolled *Follow-up time* 6 months	*Interventions* A 2-session motivationally focused intervention to reduce marijuana use *Extent* One individual sessions lasting 45 minutes right after baseline, on session 45 minutes 1 month later *Number of participants* n=163 *Attendance rate* *Drop-out rate* 6 months: 22.7%	*Comparison* Assessment-only condition *Number of participants:* *n*=169 *Drop-out rate* 6 months: 19.5%		*Implemented by* Interventionists were clinicians experienced in MI *Fidelity* *Comments* Only women participated in the study
Walton et al 2013 [143] USA	*Study design* RCT, stratified by gender and grade, in blocks of 21; 7 per group and grade 6–8th; 9th and up including dropouts *Setting* 7 urban federally qualified health clinics (FQHC)s in the Midwest *Population*	*Interventions* Project Chill, a brief cannabis universal prevention program delivered by a therapist (TBI) or a computer (CBI) in preventing cannabis use among adolescents *Extent* TBI lasted on average 38 minutes CBI lasted on average 33 minutes *Number of participants* CBI: 247 TBI:233 *Attendance rate*	*Comparison* Participants in control were given a brochure containing warning signs of problems with cannabis and community resources *Number of participants* n=234 *Drop-out rate* 3 months: 7.7% 6 months: 14.5% 12 months: 11.5%		*Implemented by* Therapists were trained in MI *Fidelity* Fidelity was monitored by audio-taping and providing feedback via regular individual and group supervision *Comments*

	Adolescents (12–18 years) recruited in treatment or waiting rooms at FQHSs, n=1 920 enrolled, n=1 813 eligible, n=1 664 approached, n=1 416 screened, n=849 met criteria (no prior cannabis use), n=714 completed baseline and randomised *Follow-up time* 3, 6 and 12 months	*Drop-out rate* CBI 3 months: 11% 6 moths: 11.7% 12 months: 11% TBI 3 months: 14.6% 6 months: 14.2% 12 months: 13.7%			
Werch et al 2010 [144] USA	*Study design* RCT *Setting* A large, diverse public high school in northeast Florida *Population* Adolescents 10th and 11th grade, 465 recruited and 416 baseline *Follow-up time* 3 months	*Interventions* Planned Success intervention, a brief image-based prevention intervention *Extent* A tailored in-person communication 20 minutes and weekly mailings of follow-up series of parent/guardian print materials *Number of participants* n=179 *Attendance rate* *Drop-out rate* In all: 13%	*Comparison* Usual care control *Number of participants* n=181 *Drop-out rate*		*Implemented by* *Fidelity* Consultation fidelity was monitored by conducting independent ratings of audio-taped segments of interventions by research staff. And participant feedback on the consultation and control material *Comments* A relatively small sample from a single high school
Walker et al 2011 [145] USA	*Study design* RCT, randomisation to condition was accomplished following stratification on stage of change and grade	*Interventions* One Motivational Enhancement Therapy (MET), a brief intervention to reduce cannabis use and one Educational Feedback Control (EFC) *Extent*	*Comparison* Delayed Feedback Control (DFC) *Number of participants* DFC: n=105		*Implemented by* Trained bachelor's and master's level counsellors *Fidelity* *Comments*

	level using tables of randomly permuted blocks *Setting* High schools in Seattle, Washington *Population* Adolescents (14–19 years) who smoked cannabis regularly, n=619 screened, n=320 eligible, n=310 randomly assigned *Follow-up time* 3 and 12 months	MET: Two 45–50 minutes MI sessions 1 and 2 weeks after baseline, 4 optimal CBT (cognitive-behavioral treatment) sessions 50 minutes EFC: Two 45–50 minutes sessions with presentation on current research and facts about cannabis, 1 and 2 weeks after baseline and 4 optimal CBT (cognitive-behavioral treatment) sessions 50 minutes *Number of participants* MET: n=103 EFC: n=102 *Attendance rate* *Drop-out rate* MET 3 months: 3% 12 months: 8.7% EFC 3 months: 2% 6 months: 9.9%	*Drop-out rate* DFC: 3 months 1%		

Table 10.1 Community coalitions.

Author Year Reference Country	Study design Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Implemented by Fidelity Comments
Hawkins 2009 [146] USA Hawkins 2012 USA Hawkins 2014 [147] USA	*Study design* RCT, communities matched in pairs and randomised *Aim* *Setting* 24 communities in 7 states across the US; small-moderate sized towns with own enforcement structures *Population* All students in grade 5 (age 10 years), n=4 407 consented (50% females, 67% Caucasian) and their parents *Follow-up time* 6 and 8 years after baseline	*Intervention* CTC (Communities that Care), a system to guide communities to choose, implement and monitor effective preventive interventions *Extent* 5 years *Prevention level* Universal *Number of participants* n=2 405 *Attendance rate* NA *Drop-out rate* <10%	*Comparison* CAU + received youth survey results on risk factors *Number of participants* n=2 002 *Drop-out rate* <10%	*Implemented by* CTC coalition members trained by certified CTC trainers (6 sessions over 6–12 months). Members were trained to use data from surveys to prioritise risk factor to be targeted *Fidelity* *Comments*
Spoth et al 2007 [148] USA Spoth et al 2011 [149] USA Spoth et al	*Study design* Cluster RCT, schools matched for school district size and location *Aim* Evaluation of the PROSPER partnership model to translate research into practice *Setting*	*Intervention* Family: SFP-10-14 in Grade 6 School: LST (4 teams), Project Alert (4 teams), All Stars (6 teams) in Grade 7 *Extent* SFP 10-14: 7 sessions LST: 15 lessons Project Alert: 11 lessons All Stars: 13 lessons	*Comparison* CAU *Number of participants* n=5 931 *Drop-out rate* 11%	*Implemented by* Teams including representatives from Cooperative Extension Systems (CES), parents, public school leader, youths, service agencies (8–12 individuals). Teams chose from a menu of programs to be implemented

2013 [150] USA	6th grade in schools in 28 communities (rural and small cities) in Iowa and Pennsylvania *Population* All students participated *Follow-up time* 18 months past baseline	*Prevention level* Universal *Number of participants* n=6 091 students SFP 10-14: n=1 064 families (17% of eligible families) *Attendance rate* SFP 10-14: 63% attended at least 6 sessions *Drop-out rate* 9.8% at 18 months past baseline		Facilitators of SFP 10-14 received 2 days training by certified SFP 10-14 trainers *Fidelity* Ensured *Comments:* One-tailed analysis
Perry et al 2003 [33] USA	*Study design* RCT, schools matched on SES, drug use and size *Aim* *Setting* 24 middle and junior high schools in Minnesota that had at least 200 students in 7th grade *Population* n=6 728 eligible (67.3% Caucasian) *Follow-up time* End of second year ("post test")	*Intervention* I1: DARE, skills training I2: DARE plus *Extent* 2 years DARE: 10 sessions DARE plus: additional a classroom-based peer-led parental involvement program, VERGE: 1 weekly session for 4 weeks and home activities. 13 postcards were mailed to the students' homes. Extracurricular activities: Neighborhood action teams to address drug use and violence *Prevention level* universal *Number of participants* DARE: n=2 226 from 8 schools DARE plus: n=2 221 *Attendance rate* NR *Drop-out rate* 16% for the whole sample	*Comparison* CAU *Number of participants* n=1 790 *Drop-out rate* 16% for the whole sample	*Implemented by* DARE: trained and experienced police officers DARE plus: as DARE + an extra 2 hour session on interactive teaching methods VERGE: trained teachers Extracurricular activities: community organizers *Fidelity* *Comments*
Altman et al	*Design*	*Intervention*	*Comparison*	*Implemented by*

1999 [151] USA	A paired experiment where the experimental unit was the community pair *Setting* Monterey County, California *Population* Middle and high school students (7th through 11th grade, 13–18 years) in 4 rural communities. Minors 13–17 years n=41 participated in tobacco purchase surveys *Time to follow-up* 3 years	A longitudinal community intervention on the reduction of tobacco sales to minors and subsequent effects on tobacco consumption by youths *Extent* Community education, merchant education and voluntary policy change over a 3-year period. 87 different outlets were visited by minors (56% in comparison communities and 44% in treatment communities) *Strategy* *Number of participants* Time 1: n=1 180 Time 2: n=1 369 Time 3: n=1 172 Time 4: n=1 481 41 participated in tobacco purchase surveys *Drop-out rate at follow-up*	Untreated comparison community *Number of participants* *Drop-out rate at follow-up* ?	County health department staff were the key staff delivering education messages and materials, although 14 teenagers were also involved in presenting reports to Soledad and Gonzales City Councils and in merchant education *Fidelity* NR *Comments* This study is the first to show that an intervention without active law enforcement operations can substantially reduce tobacco sales to minors
Biglan et al 2000 [152] USA	*Design* Cluster RCT, communities matched in pairs on SES and size *Aim* *Setting* 16 small Oregon communities *Population* 5 annual cross sectional samples of 7th and 9th grade students (ages 12–13 and 14–15 years), 48–49% females, Caucasian >80% *Time to follow-up* 1 year post intervention	*Intervention* Project SexTeen, PATH school based + community program (CP) *Extent* 2 years PATH: 5 sessions in one week per school year during grades 6–12 CP: 4 modules (media advocacy, anti-tobacco activities, family communications, ACCESS limitation of availability) *Strategy* Skills training *Number of participants* *Drop-out rate at follow-up* Average 22.2% for the whole sample	*Comparison* PATH *Number of participants* *Drop-out rate at follow-up* Average 22.2% for the whole sample	*Implemented by* PATH: Teachers trained by project staff in a single session for 2–3 hours CP: Paid community coordinator and youth and adult volunteers from the community *Fidelity CP* 10–13 youth anti-tobacco, 2–3 anti-access and 0.8–3.9 family communication activities/monthly

Komro et al 2008 [153] USA	*Design* Cluster RCT, study units, matched for ethnicity, SES, mobility and school achievement *Aim* *Setting* Groups of schools with 5–8 grade classes, total at least 200 students per grade, in low-income areas of Chicago *Population* n=4 259 students from 61 schools (50% female, 43% Afro American, 29% Hispanic, 13% Caucasian and 15% other; 72% received free lunch) *Time to follow-up* Post-test after grade 8	*Intervention* Project Northland, adapted to urban, multi-ethnicity context *Extent* 3 years: peer-led classroom curricula (6–10 sessions/hear); parental involvement (including 4 home-based sessions/year), peer leadership and community service projects; community organization and environmental neighborhood change *Strategy* Change personal, social and environmental factors that support alcohol use *Number of participants* n=2 501–2 538 students *Drop-out rate at follow-up* 39% for the full sample	*Comparison* CAU; between 39 and 69% of schools reported implementation of an alcohol or drug prevention program *Number of participants* n=3 079–3 147 *Drop-out rate at follow-up* 39% for the full sample	*Implemented by* Teachers, trained by research staff; 10 Chicago-based organisers to implement the peer leader training and the events and projects *Fidelity* Curricula implemented with 82–87% completeness *Comments* Attention rate for the school curriculum was 53% in the intervention group. Average cumulative exposure to home sessions: 5/12. 40% of students participated in community activities in the intervention group
Perry et al 2002 [154] USA Perry et al 1996 [155] USA	*Design* Cluster RCT, school district level *Aim* *Setting* 24 school districts in rural, lower-middle SES communities in a "high-risk area" for alcohol problems in Minnesota *Population* n=3 151 students in 6th grade n=2 953 students were included in the analyses (47% female, 93% Caucasian)	*Intervention* Project Northland *Extent* Grade 6–8: classroom curricula, parent involvement programs, peer leadership, community task forces Grade 9: brief 5-session classroom program Grade 10: no intervention Grade 11–12: community action teams (responsible server programs, compliance checks etc) were the center piece supported by 6-session classroom curriculum, parent involvement, media campaigns, peer action teams *Strategy* Skills training, peer influence *Number of participants*	*Comparison* Delayed intervention *Number of participants* n=1 401 *Drop-out rate at follow-up*	*Implemented by* *Fidelity* *Comments* The intervention was most successful in grades 6–8, the lack of intervention in grade 10 had a negative impact and the community actions in grades 11–12 had a positive impact

	Time to follow-up 6 years (post-test)	n=1 549 *Drop-out rate at follow-up* 32.2% for the whole sample		
Wolfson et al 2012 [156] USA	*Study design* Cluster RCT, stratified for size of school and readiness to implement the initiative *Aim* Reduce drinking *Setting* 4-year, liberal arts colleges with at least 2 500 undergraduates in North Carolina. Out of 14 schools, 10 consented *Population* Cross-sectional surveys sent to 1 200 randomly selected students 4 times *Time to follow-up* 1, 2, 3 years (post-test)	*Intervention* SPARC community coalition during 3 years *Extent* Assessment Coalition building; including administrators, students, community members (mean 21 individuals/campus) Strategic planning: included at least 3 of alcohol availability, harm minimization, social norms, alcohol price and marketing Action: e.g. policies, social norms marketing campaigns, cooperation with community law enforcement. Sustainability: included securing funding *Number of participants* See population *Drop-out rate at follow-up* 68.7% at 1 year 74.2% at 2 years 77.4% at 3 years	*Comparison* CAU	*Implemented by* Community organizers located at the campus. They were trained and supervised by research staff, 12 in-depth trainings over 3 years *Fidelity* *Comments*
Flewelling et al 2013 [157] USA	*Design* Randomised trial. Communities were stratified by region and population size and then randomly assigned *Setting* Oregon *Population* 36 Oregon communities were selected, high schools students (8th through 11th grade)	*Intervention* 5 interrelated intervention components designed to reduce underage access to alcohol *Extent* Intervention activities implemented for a period of 2 years, data collected annually *Strategy* *Number of participants* 18 communities. Aggregated sample size: n=7 229	*Comparison* No intervention, only questionnaires annually *Number of participants* 18 communities. Aggregated sample size: n=7 108 *Drop-out rate at follow-up*	*Implemented by* County prevention coordinators and project staff *Fidelity* NR *Comments*

		Drop-out rate at follow-up 47.7% (?)	36.1% (?)	
	Time to follow-up Around 3 years for every cohort			
Piper et al 2000 [158] USA	*Design* Stratified random assignment of cohorts *Setting* Wisconsin *Population* 6th graders from 21 middle schools, n=2 483 pretest sample *Time to follow-up* Surveyed annually over 4 years (from 6th grade to 10th grade)	*Intervention* The Healthy for Life program to positive influence the health behaviors of middle school students *Extent* A 54-lesson curriculum delivered either in one 12-week block (intensive) or three 4-week segments over 3 years (age approximately) *Strategy* Social Influence Theory *Number of participants* Age approximately: Max n=827 Intensive: Max n=758 Total max n=1 585 *Drop-out rate at follow-up* In total 32% drop-out at 10th grade	*Comparison* Usual programming which often included health prevention oriented curriculum *Number of participants* Max n=898 *Drop-out rate at follow-up* ?	*Implemented by* Same-age-peer leaders, teachers *Fidelity* NR *Comments*
Vartiainen et al 1998 [159] Finland	*Design* Schools were paired on the following community variables: size of population, number of junior high schools and number of students in the school, degree of urbanization, and age structure. *Setting* North Karelia, Finland *Population* 7th grade students (12–13 years) in 1978	*Intervention* The North Karelia Youth Project, a school and community based smoking prevention program *Extent* Over 2 years, 10 sessions in all (3 in 7th grade, 5 in 8th grade and 2 in 9th grade) *Strategy* A social influence approach *Number of participants* Teacher led program: n=299 Health educator led program: n=314	*Comparison* Assessment only? *Number of participants* n=290 *Drop-out rate at follow-up* 73.5%	*Implemented by* Health educators and trained peer leaders and teachers *Fidelity* NR *Comments* A unique result is that the effects were observed far into adulthood

		Total: n=231		
	Time to follow-up 15 years	*Drop-out rate at follow-up* 41.1% (after 15 years)		
Vartiainen et al 2007 [160] Finland	*Design* Schools were randomised *Setting* Helsinki, Finland *Population* n=2 745 students 7th through 9th grade, participated in the ESFA program, 27 schools were randomised, n=2 816 students participated at baseline *Time to follow-up* 3 years	*Intervention* The effects of a 3 year smoking prevention programme in secondary schools *Extent* The programme included 14 information lessons about smoking and refusal skills training over a 3-year period. Data was collected 4 times *Strategy* Behavioural journalism techniques *Number of participants* 13 schools, n=1 244 *Drop-out rate at follow-up* 23.6%	*Comparison* Standard health education curriculum *Number of participants* 14 schools, n=1 501 *Drop-out rate at follow-up* 42%	*Implemented by* Trained teachers *Fidelity* NR *Comments*
Weitzman et al 2004 [161] USA	*Design* A quasi-experimental longitudinal analysis using repeated cross-sectional survey data. Students randomly selected *Setting* Colleges in the US *Population* Colleges who fell within the high binge group and willingness were invited, 10 were accepted into the program. Full time undergraduate students enrolled *Time to follow-up* 4 years	*Intervention* A matter of Degree-program (AMOD), a multisite environmental prevention initiative on student heavy alcohol consumption, using data from the Harvard School of Public Health College Alcohol Study (CAS) *Extent* ?? *Strategy* A system view of behavior *Number of participants* n=750 (10 schools) *Drop-out rate at follow-up* NR	*Comparison* The remainder of the high binge colleges that participated in subsequent CAS surveys served as comparison sites to track regular change on the same outcome measures *Number of participants* n=225 (32 schools) *Drop-out rate at follow-up*	*Implemented by* Trained local field evaluators *Fidelity* NR *Comments*

			NR	
Wagenaar et al 2006 [162] USA	*Design* A longitudinal quasi-experimental design. The design compares time trends *Setting* US states *Population* A total of 490 000 students were surveyed from 1995 to 2004 *Time to follow-up* Repeated annual measures over 9 years	*Intervention* The Reducing Underage Drinking through coalitions (RUD)project founded 10 states for 8 years to form coalitions designed to change the policy and normative environment regarding youth access to alcohol *Extent* Media and alcohol policy measures collected through 2003, youth drinking behavior and alcohol related car crashes through 2004 *Strategy* Print news media coverage, legislative bills enacted, youth drinking behavior and youth alcohol-related driving behaviors and traffic crash mortality *Number of participants* 10 states. A total of 490 000 students were surveyed from 1995 to 2004 *Drop-out rate at follow-up* NR	*Comparison* Non-RUD states *Number of participants* 40 states *Drop-out rate at follow-up* NR	*Implemented by* *Fidelity* NR *Comments*
Nelson et al 2005 [163] USA	*Design* A quasi-experimental longitudinal study design. Students were randomly selected *Setting* Colleges in the US *Population* The 10 AMOD sites were drawn from top tertile of colleges by drinking behavior in the initial Harvard School of Public Health (HSPH) College Alcohol Study (CAS) sample. Full time	*Intervention* A Campus-Community Environmental Alcohol Prevention Initiative on Student Drinking and Driving: Results from the ''A Matter of Degree'' Program Evaluation *Extent* Over 4 years *Strategy* Rooted in the public health model of agent-host-environment *Number of participants* 10 schools, n=750 *Drop-out rate at follow-up*	*Comparison* Colleges from the top tertile from which the AMOD program sites were drawn that did not participate in the AMOD program *Number of participants* 32 schools, n=225 *Drop-out rate at follow-up* NR	*Implemented by* Key stake holders from campus and the local community *Fidelity* NR *Comments*

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	undergraduate students enrolled each survey year *Time to follow-up* Surveyed annually for 4 years	*NR*		
Flewelling et al 2005 [164] USA	*Design* A non-randomised community trial *Setting* Vermont *Population* Students in grade 8 through 12 *Time to follow-up* 3 year	*Intervention* A coalition-based prevention initiative to prevent and reduce adolescent substance use. Vermont's SIG, New Directions (ND) *Extent* The coalitions were funded in fall 1998 for a 3-year period *Strategy* The ND project was based on the premise that effective communitywide prevention of adolescent substance use requires coordination among multiple organizations and institutions, encompassing a comprehensive mix of prevention activities *Number of participants* n=12 889 *Drop-out rate at follow-up* +8.4% (?)	*Comparison* Non ND *Number of participants* n=10 938 *Drop-out rate at follow-up* 2%	*Implemented by* Trained full-time coalition coordinators *Fidelity* Although efforts were made to encourage and facilitate fidelity of program implementation for all research-based programs, programmatic activities were unlikely to have been implemented with the same degree of fidelity as in tightly controlled research-oriented demonstration projects *Comments*
Bagnardi et al 2011 [165] Italy	*Design* A quasi-experimental (non-randomised) controlled intervention trial *Setting* Italy *Population* Communities with no more than 30 000 inhabitants, individuals age more than 15 years (median age intervention=46 years)	*Intervention* "Alcohol, less is better" project: an Italian community-based prevention programme on reducing per-capita alcohol consumption *Extent* Between 1999 and 2006, 2.5 years of activities were carried out (brochures, newspapers, lessons in schools and religious and sporting associations, events *Strategy* A community system approach *Number of participants*	*Comparison* ? *Number of participants* 8 communities, n=4 560 *Drop-out rate at follow-up* 15% (?)	*Implemented by* Community leaders and institutional or volunteer organisations *Fidelity* NR *Comments*

		10 communities, n=5 623		
	Time to follow-up 2 years	*Drop-out rate at follow-up* 14% (?)		
Spera et al 2010 [166] USA	*Design* A repeated cross-sectional within-site (i.e., each community) design *Setting* 4 states in the USA (Phoenix, Tucson, Honolulu, California and Great Falls) *Population* Active-duty Air Force members ages 18–25, both on- and off-base within the 5 demonstration sites and the 5 comparison communities (n=2 008 in 2006 and 2 112 in 2008), as well as the air force overall (n=11 964 in 2006 and 12 993 in 2008) *Time to follow-up* 1 year	*Intervention* Enforcing Underage Drinking Laws intervention *Extent* A 3 year period *Strategy* Theory of change approach focusing on the pathways by which context, process and outcomes are linked *Number of participants* n=1 000 *Drop-out rate at follow-up* +11.6% (?)	*Comparison* *Number of participants* n=1 008 *Drop-out rate at follow-up* 1.2%	*Implemented by* A broad-based coalition (e.g., law enforcement officials, government officials, alcohol and beverage commission representatives, and Air Force human service providers) *Fidelity* NR *Comments*
Treno et al 1997 [167] USA	*Design* Quasi-experimental design *Setting* Sacramento, CA, 2 low-income, predominately ethnic minority neighborhoods *Population* Individuals between 15–29 years with high rates of alcohol-involved problems (although a specific population was targeted by program activities, it was expected that	*Intervention* The Sacramento Neighborhood Alcohol Prevention Project (SNAPP) *Extent* A total of 5 project interventions *Strategy* An environmental strategies approach *Number of participants* Census lock groups n=37. 37 establishments in the South and 25 establishments in the North were visited	*Comparison* No-treatment comparison site *Number of participants* Census block groups n=243 *Drop-out rate at follow-up* NR	*Implemented by* ? *Fidelity* Project lead agencies worked with collaborative advisory committees, composed of members drawn from each of the 2 geographical areas and that worked to ensure intervention implementation and fidelity to project design

	effects would be experienced neighbourhood-wide) *Time to follow-up* ?	*Drop-out rate at follow-up* NR		*Comments*
Rehnman et al 2005 [168] Sweden	*Design* *Setting* An inner-city area of Stockholm, Norrmalm *Population* Grade 9 students (mostly age 16). 3 questionnaires were distributed among all 9 grade students in 2 schools, 64% participated baseline *Time to follow-up* 25 months	*Intervention* "The beer campaign", community action-based intervention, the STAD Project *Extent* A series of activities during 2 years involving information/training of parents, police and shopkeepers, media advocacy and monitoring *Strategy* *Number of participants* n=55 grocery shopkeepers, n=12 attempted to buy beer *Drop-out rate at follow-up* ?	*Comparison* Katarina-Sofia parishes, a similar inner-city area *Number of participants* NR *Drop-out rate at follow-up* NR	*Implemented by* NR *Fidelity* NR *Comments*
Ramstedt et al 2013 [169] Sweden	*Design* A quasi-experimental design *Setting* Violence-related emergency room visits from 5 major hospitals in Stockholm *Population* Adolescents age 18–20 years *Time to follow-up* 5 years	*Intervention* A multi-component community intervention project to reduce youth violence related to alcohol use *Extent* The data covered the years 2005–2010, which yields 3 data points before the intervention, and 3 after the intervention was introduced *Strategy* Co-operation, information/education and increased enforcement *Number of participants* NR *Drop-out rate at follow-up* NR	*Comparison* ? *Number of participants* NR *Drop-out rate at follow-up* NR	*Implemented by* NR *Fidelity* NR *Comments*

Table 10.2 Community coalitions - CCT.

Author Year Reference Country	Study design Aim Setting Population Follow-up time	Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Outcome, (95% CI)	Applicability Comments
Bagnardi et al 2011 [165] Italien	*Study design* Alcohol, less is better' is a quasi-experimental (non-randomised) controlled intervention trial *Aim* To evaluate differences in the individual alcohol consumption after a community-based prevention programme *Setting* 10 selected small Italian communities, involving a total of 123 235 individuals. 8 communities were chosen as control group *Population* The intervention programme was conducted in 10	*Intervention* The intervention programme adopted a community systems approach, based upon the active involvement of community leaders and institutional or volunteer organisations. The main aim of the programme was to achieve changes in the attitude towards alcohol drinking behaviour in the study population *Extent* 2.5 years *Theoretical underpinning* NR *Prevention level* Universal *Number of participants* n=3 382 (51.4% female), mean age: NR *Attendance rate* NR *Drop-out rate at follow-up* 14%	*Comparison* Standard curriculum *Number of participants* n=2 644 (52.8% female), mean age: NR *Attendance rate* NR *Drop-out rate at follow-up* 15%	Overall, a significant reduction (p<0.001) of individual self-reported alcohol consumption was observed in the intervention sample (–1.1 drinks/week) relative to control sample (+0.3 drinks/week). The reduction was significantly greater in males than in females (p for heterogeneity = 0.016). In the young (15–24-year-olds) intervention and control samples showed opposite trends (–0.4 drinks/week and +1.7 drinks/week, respectively)	*Implemented by* Researchers and active involvement of community leaders and institutional or volunteer organizations *Fidelity* *Comments*

	communities, involving a total of 123 235 inhabitants *Follow-up time* 2.25 years				
Bernat et al 2007 [170] USA	*Study design* CCT *Aim* Effects of the Early Risers "Skills for Success" early-age-targeted prevention program on serious conduct problems following 5 years of continuous intervention and one year of follow-up *Setting* 23 semi-rural schools in Minnesota *Population* First through sixth-grade at-risk children from 23 semi-rural schools in Minnesota *Follow-up time* 5 years of continuous	*Intervention* The Early Risers "Skills for Success" intervention model includes 5 components that are delivered as a coordinated package each year over a multi-year period. 3 fixed-prescription components (Summer program, 'Circle of Friends' child groups, and Family Skills parent groups) offer a standard level of programming to all participants. The full-strength program is designed to (1) enhance children's self-regulation, social adaptation, and academic achievement, and to (2) promote parent's capacity to support their child's healthy development by building positive parent-child relations, improving parenting practices, and enlisting parent involvement in the child's schooling *Extent* A 3-year intensive phase followed by a 2-year booster phase *Theoretical underpinning* Early-starter model of conduct problems development provided the theoretical framework for the Early Risers intervention	*Comparison* *Number of participants* 121 (27% female), mean age: 6.7 at baseline *Attendance rate* *Drop-out rate at follow-up* 36% at 6 year follow-up	Drug use history was measured with standard drug use frequency (DUF) items from the National Institute of Health annual survey of drug use behavior of American high school students (Johnston, O'Malley, & Bachman, 2000). Youth were asked how often they tried tobacco, had alcoholic beverages, used marijuana, and used any other drugs (e.g., cocaine, speed, mushrooms, and methamphetamines) in the past year. A 7-point Likert Scale was used to measure use, ranging from never (0) to 40 or more times (7) 13% (n=20) of youth reported tobacco use and 19% (n=28) reported drinking alcohol in the past year. No program effects were found for tobacco, $F_{(1.20)}=.12$, ns, or alcohol, $F_{(1.20)}=.07$, ns. Only 2% (n=3) of youth reported using marijuana and less than 1% (n=1) reported using other drugs. Due to small cell sizes, differences between program and control groups for marijuana or other drugs were not assessed	*Implemented by* Community partnership including local schools, local community health and social services agencies, and university based prevention specialist *Fidelity* On average 60% participation in the intervention activities during the intensive phase. 93% participated in the booster session *Comments*

	intervention and 1 year of follow-up	*Prevention level* Targeted prevention for at-risk children *Number of participants* n=124 (33% female), mean age: 6.6 (int) at baseline *Attendance rate* Of the 1 840 children who were screened, 341 (18.5%) met the at-risk criteria, and of those, 245 (71.8%) were enrolled as participants in the current study. Based on random assignment of their school, 124 children from the at-risk sample participated in the study as program children and 121 served as controls *Drop-out rate at 6 year follow-up* 41%			
Flewelling et al 2005 [164] USA	*Study design* CCT *Aim* This article reports findings from the evaluation of a non-randomised community trial in Vermont in which 23 community coalitions were funded for 3 years to select and implement a comprehensive mix of research-based prevention	*Intervention* A comprehensive mix of research-based prevention strategies designed to reduce substance use prevalence among adolescents – Project Northland, Life skills training and Project Alert *Extent* 3 years *Prevention level* Universal *Number of participants* n=13 891 (50.4% female), mean age 8–12th grade	*Comparison* Fourth, no control over the prevention activities implemented in the school districts that constituted the comparison group was possible. Essentially, these sites represented a “business as usual” condition, meaning that there could be considerable variation in what sorts of prevention activities were conducted in those areas *Number of participants* n=11 041 (49.8% female), mean age 8–12th grade	Findings suggest that collaborative community-based efforts implemented within a supportive framework such as Vermont’s New Directions project can have a meaningful impact on the prevalence of substance use behaviors among youth. The greatest relative reductions were observed for past-30-day use of marijuana and cigarettes (both p, .05)	*Implemented by* 23 community-based coalitions in Vermont were funded to select and implement research-based prevention strategies designed to reduce adolescent substance use. The source of the funding was a State Incentive Grant awarded to the state of Vermont in 1997 by the CSAP

strategies designed to reduce substance use prevalence among adolescents *Setting* 23 community Coalitions in Vermont *Population* 24 932 adolescents *Follow-up time* 3 years	*Attendance rate* NR *Drop-out rate* Within participating schools, approximately 85% of students completed the survey in each of the 3 years	*Attendance rate* NR *Drop-out rate* See comment		*Fidelity* Although efforts were made to encourage and facilitate fidelity of program implementation for all research-based programs, programmatic activities were unlikely to have been implemented with the same degree of fidelity as in tightly controlled research-oriented demonstration projects *Comments* An overall assessment of the effects of the ND project was conducted by comparing changes in outcome measures on the basis of repeated cross-sectional student survey data from schools within SUs served by ND coalitions with corresponding changes experienced by

				schools in the remainder of the state
Gripenberg et al 2011 [171] Sweden	*Study design* A pre- (2003) and post-intervention study (2004 and 2008) design *Aim* Evaluate long-term effects of a multi-component community-based club drug prevention programme *Setting* High-risk licensed premises in central Stockholm, Sweden *Population* Community mobilisation, drug-training for doormen and other staff, policy work, increased enforcement, environmental changes and media advocacy and public relations work *Follow-up time*	*Intervention* Clubs against Drugs' a multi-component community-based intervention, a number of different working groups developed policy documents, training curriculum, media and PR strategies, and produced an educational film. 2-day drug-training course for doormen and a 1-day drug-training course for other staff. The purpose of the training was to increase knowledge on how to identify drug use, improve cooperation between the nightlife industry and authorities, change attitudes towards club drug use and to motivate staff to intervene towards club drug use. *Extent* 2002–2008 Base line study 2003 (n=40) Follow-up study 2004 (n=48) Follow-up study 2008 (n=55)	No control group	Doormen at licensed premises intervened towards obviously drug-intoxicated guests to a much greater extent in 2008 compared to the 2 earlier measurements in 2003 and 2004. The effects of the intervention have not only been sustained, but have also been improved significantly. For a number of reasons, these results are due most probably to the 'Clubs against Drugs' intervention	*Implemented by* *Fidelity* *Comments*

	2004 and 2008			
Huckle et al 2005 [172] New Zealand	*Study design* Case study design *Aim* Regional community action intervention to reduce access to alcohol from offlicense premises by minors *Setting* For both pre- and post-intervention surveys the total population of bottle shops, supermarkets and grocery outlets holding off-licences to sell alcohol in Auckland were identified (Liquor Licensing Authority, Department of Justice, New Zealand). A random sample was selected. Representative numbers for each metropolitan city and rural district were obtained as well as for each type of premise regionally	*Intervention* (1) monitoring alcohol sales made without age identification from off-licenses, (2) utilizing data on alcohol sales for media advocacy and direct contact with alcohol retailers and (3) working with key enforcement staff to encourage increased monitoring and enforcement of minimum purchase age legislation for off-licenses in Auckland *Extent* 25 years *Theoretical underpinning* NR *Prevention level* Universal *Number of participants* n=3 382 (51.4% female), mean age NR *Attendance rate* NR *Drop-out rate at follow up* 14%	*Comparison* Standard curriculum *Number of participants* n=2 644 (52.8% female), mean age NR *Attendance rate* NR *Drop-out rate at follow-up* 15%	Collaborative and intersectoral community action interventions implemented regionally can be effective in redirecting resources to achieve preventive outcomes at a population level	*Implemented by* Researchers and active involvement of community leaders and institutional or volunteer organizations *Fidelity* *Comments*

	Population Total number of premises randomly selected was approximately 250 for both surveys *Follow-up time* 2.25 years			
Schelleman-Offermans et al 2012 [173] The Netherlands	*Study design* A longitudinal (2008, 2009, and 2010) quasi-experimental comparison group design including 2 Dutch communities *Aim* Determining whether intensified inspections on alcohol retailers, combined with a policy withdrawing liquor licenses if retailers are fined twice per annum, is effective in reducing adolescents' odds to initiate weekly drinking and drunkenness *Setting* 2 Dutch communities, 1	*Intervention* Intensified inspections on alcohol retailers, combined with a policy withdrawing liquor licenses *Extent* Information from local youth workers, community policeman, social media and on urban planning (e.g., distances from premises to high schools) were used. Each community had approximately 25 hotspots. Hotspots in the intervention community were inspected at least 8 times in the 2-year intervention period *Prevention level* Universal *Number of participants* n=X (49.5% boys), mean age 14.1 Intervention community n=688 *Attendance rate* 95% *Drop-out rate* Intervention group 18%	*Comparison* Standard *Number of participants* n=639 (48.2 boys), mean age: 14.2 *Attendance rate* 95% *Drop-out rate* Control group 15.5%	The intervention was ineffective in reducing the odds to initiate weekly drinking; adolescents in the intervention community were more likely to initiate weekly drinking. On the other hand, the intervention reduced the odds to initiate drunkenness among weekly drinkers	*Implemented by* This study was funded by the Dutch organisation for health research and care innovations (ZonMw) and a travel grant that was received by K.S-O. from the School for Public Health and Primary Care (CAPHRI) *Fidelity* *Comments*

	intervention and 1 comparison, was used. Outcomes were assessed by following *Population* A cohort of 1 327 adolescents (aged 13–15 years at baseline) *Follow-up time* 2 year			
Nelson et al 2005 [163] USA	*Study design* Quasi-experimental longitudinal design (non-randomised) controlled intervention trial *Aim* To evaluate the effects of AMOD, a community based prevention program for reducing drinking and driving in college students *Setting* Colleges in the top tertile of drinking drinking behavior in the HSPH College Alcohol Study (CAS)	*Intervention* A coalition based program generating active participation from key stakeholders, on campus and in the surrounding local community, in the aim of changing an environment that encourages heavy alcohol consumption *Extent* 1997– *Theoretical underpinning* – *Prevention level* College students *Number of participants* 15 445 students nested within 10 colleges, 7 177 students in 5 colleges with "high program implementation" and 8 268 in 5 colleges with "low program implementation"	*Comparison* Colleges in the top tertile of drinking behavior in the HSPH College study that did not participate in the AMOD-program *Number of participants* 10 653 students nested in 32 colleges *Attendance rate* 100% (college level) *Drop-out rate at follow-up* 100% (college level)	Among students who drank alcohol in the past year and drove a motor vehicle one or more times a week the prevalence rates of driving after any drinking was 44.9% in 1997 and 41.6% in 2001 at AMOD-intervention colleges. The prevalence rates were 41.4% in 1997 and 42.5% in 2001 in control colleges. The difference in change over time between AMOD and control colleges was statistically significant (p 0.0313) and the decline over time in AMOD-colleges also significant (p 0.0452) when tested in multilevel regression models adjusted for individual and college characteristics Prevalence rates for driving after consuming five or more drinks declined at AMOD-colleges, from 17.9% in 1997 to 15.2% in 2001, but increased from 15.6% to 18.6% in control colleges. The difference	

	Population College students nested within colleges *Follow-up time* Annual follow up 1997–2001	*Attendance rate* 100% (college level) *Drop-out rate at follow-up* 0% (college level)		in change over time between AMOD and control colleges was statistically significant (p 0.0029) and the decline over time in AMOD-colleges also significant (p 0.0034) Prevalence rates for riding with an intoxicated driver declined at AMOD-colleges, from 29.8% in 1997 to 27.1% in 2001, but increased in control colleges (from 25.7% to 28.8%). The difference in change over time between AMOD and control colleges was statistically significant (p 0.0012) and the decline over time in AMOD-colleges also significant (p 0.003) Further analyses indicated that changes of reduction among AMOD-colleges occurred at colleges with high program implementation, relative to control colleges	
Pentz et al 1989 [174] USA	*Study design* Quasi-experimental longitudinal design (non-randomised) controlled intervention trial *Aim* To evaluate the effects of a community based program aiming to reduce the	*Intervention* A program comprising a 10-session youth education on skills training for resistance of drug use (given in school), 10 homework sessions involving active interviews and role-plays with parents and family members (assigned as part of the classroom sessions), and mass media coverage of the program in local newspapers, radio- and TV-shows. The program was part of the	*Comparison* No intervention during follow-up *Number of participants* 2 054 students nested within 18 schools *Attendance rate* 100% at the school level (of which 4/18 were assigned randomly)	The proportion of drug users was higher in all schools at follow-up, but the change in proportion of users was smaller in intervention schools than in control schools The change in proportion of drug users at follow-up in intervention and control schools respectively were: 3.4 (0.2; 6.6 95% CI)/13.1 (7.5; 18.8) for cigarette smoking, 4.2 (1.6; 6.8)/9.4 (6.5; 12.4) for alcohol use and 3.4 (1.6; 5.3/7.1	

	prevalence of gateway drug use in adolescents *Setting* 50 public middle- and junior high schools in the Kansas City area, Missouri, USA *Population* Early adolescents (middle- and junior-high school students) nested within schools *Follow-up time* Annual follow-up, 1984–1986	Midwestern Prevention Project (MPP) *Extent* The program was delivered from August 1984 through January 1986 *Theoretical underpinning* – *Prevention level* Adolescents in the community *Number of participants* 3 011 students nested within 24 schools *Attendance rate* 100% at the school level (of which 4/28 were assigned randomly to the intervention program, and 20 chose to implement the program) *Drop-out rate at follow-up* 0% at school level. (Attrition on the individual level among the minority of participants who were tracked over time was estimated to 26%)	*Drop-out rate at follow-up* 100% at school level. (Attrition on the individual level among the minority of participants who were tracked over time was estimated to 26%)	(4.0; 10.3) for marijuana use, in analyses adjusted for grade, race, urbanity an socioeconomic status The change in proportion of users in the last week at follow-up in intervention and control schools respectively were: 4.3 (1.7; 6.9)/10.5 (5.6; 15.5) for cigarette smoking, 2.1 (3.4; 6.4)/4.9 (3.4; 6.4) for alcohol use and 2.4 (1.2; 3.6)/4.7 (2.5; 6.9) for marijuana use in adjusted analyses	
Riggs et al 2009 [175] USA	*Study design* Long term follow-up of a quasi-experimental controlled intervention trial *Aim* To determine whether early intervention can decrease the	*Intervention* Former student in a school where The Midwestern Prevention Project (MPP) was implemented. The MPP comprised a school program (see Pentz 1989[174]), a parent program (comprising a parent-school group and a parent skills training), mass media coverage, community organisation and policy change *Extent*	*Comparison* Former students in control schools *Numbers of participants* See under intervention *Attendance rate* See under intervention *Drop-out rate at follow up* See under intervention	Association between the MPP-intervention, marijuana use in high school (at age 12–14) and use of health services in early adulthood were tested in a structural equation model (SEM) that also included sex, ethnicity, grade, and the extent of marijuana use on weekly basis MPP participation in early adolescence was directly associated with to the use of mental health	

	likelihood that adolescents will use marijuana and, in turn, the likelihood that they will need psychological services in adulthood *Setting* Original setting for the initial intervention study were 8 high schools in the Kansas City area, Missouri, USA *Population* Young adults (27–32 years of age) who took part in an intervention study in early adolescence (from ages 11 or 12) *Follow up time* 1984–2003	The program components of MPP were implemented over 5 years *Theoretical underpinning* Ecological Theory and Integrative Transactional Theory: influences on adolescent drug use are community wide *Prevention level* Individual *Number of participants* For both conditions, intervention and control: A total of 961 (69%) traceable individuals of 1 338 randomly selected participants from an original panel of 1 606 *Attendance rate* For both conditions, intervention and control: 100% of traced individuals *Drop-out rate at follow-up* For both conditions, intervention and control:0%		services in early adulthood (p<0.001), where those in the intervention group had used mental health services less frequently in the past year as tested MPP participation in early adolescence was directly associated with marijuana use at ages 14–17 (p<0.05) A test of indirect effects in the full structural equation model demonstrated a significant indirect effect from the intervention condition in young adolescence, to the use of health of health services in early adulthood, through marijuana use at age 14–17 (p<0.05). Thus, in the model, the effect of MPP participation on use of mental health services in early adulthood was mediated by marijuana use at ages 14–17	
Wolff et al 2011 [176] USA	*Study design* Randomised Community Trial (the unit was "retailers", but randomisation occurred at the community level) *Aim*	*Intervention* An alcohol retailer tool containing an introductory letter to the manager/owner, fact sheets on Massachusetts liquor laws, information on underage youth and alcohol, and tips for checking ID:s and refusing alcohol sales; age calculation stickers for employees; 2 signs and 2 door/window decals	*Comparison* No intervention *Number of participants* 132 *Attendance rate* See under intervention *Drop-out rate at follow-up*	There were no differences between the intervention groups and controls on outcomes with regard to attitudes towards checking ID, training staff in ID checking or refusing to sell alcohol inappropriately But retailers in the intervention group posted more window/door	

To explore the impact of a brief intervention to increase retailer attitudes towards checking ID, encourage retail managers to formalize ID-checking procedures, and to promote customers to be prepared to show ID when purchasing alcohol on retailer attitudes and behavior regarding ID-checking *Setting* 10 communities in Massachusetts, USA *Population* Retailers of alcohol *Follow-up time* 3 months (intervention disseminated in November 2009 with follow-up survey taking place in late January 2010)	informing customers of ID checking policies; a pamphlet on consequences of driving under the influence; a customer targeted card on laws around alcohol sales and ID-checking policies; and a best management practices guidebook for managers/owners *Extent* One mailed tool-kit *Theoretical underpinning* *Prevention level* Off and on premise retailers of alcohol *Number of participants* 137 *Attendance rate* Not given, but overall 50.6% of all retailers (in both intervention and control communities) asked to respond to an initial survey preceding the intervention answered – and only they were followed *Drop-out rate at follow-up* 43.8% (consisting of retailers who reported they had not opened the tool kit sent to them, and who were excluded from the analyses)	0%	decals at follow up (p 0.0069 in a regression model adjusted for baseline number of signs, community level factors and retailer factors) compared to controls Retailers in the intervention group were also more likely to provide written materials to staff at follow up (OR 2.074 and 95% CI 1.003; 4.299) in a logistic regression model adjusted for baseline number of signs, community level factors and type of retailer factors	

Weitzman et al 2004 [161] USA	*Study design* Quasi-experimental longitudinal design *Aim* To evaluate the effects of AMOD, a community based prevention program for reducing drinking and driving in college students, on student heavy alcohol consumption and resultant harms *Setting* Colleges in the top tertile of drinking drinking behavior in the HSPH College Alcohol Study (CAS) *Population* College students nested within colleges *Follow-up time* Annual follow-up 1997–2001	*Intervention* A coalition based program generating active participation from key stakeholders, on campus and in the surrounding local community, in the aim of changing an environment that encourages heavy alcohol consumption *Extent* 1997– *Theoretical underpinning* – *Prevention level* Universal *Number of participants* ≥10 000 students nested within 10 colleges *Attendance rate* 100% (college level) *Drop-out rate at follow up* 0% (college level)	*Comparison* Colleges in the top tertile of drinking behavior in the HSPH College study that did not participate in the AMOD-program *Number of participants* ≥10 000 students nested within 32 colleges *Attendance rate* 100% (college level) *Drop-out rate at follow-up* 100% (college level)	*Change over time (OR and CI), and test of trend for comparison of intervention vs control* Difficulty obtaining alcohol I (high) OR 1.58 (1.16; 2.16) Control OR 0.94 (0.81; 1.10) I (high) vs C: p 0.0016 I (low)–n.s **Alcohol consumption** Any alcohol use, binge drinking, frequent binge drinking, take up binge drinking in college, drinks ≥10 occasions in the past 30 days, drunk ≥3 occasions in the past 30 days, usually binge drinks when drinking–all n.s. **Alcohol related harms** Miss a class I: OR 0.77 (0.65; 0.90) I vs C: p<0.0001 Drove after 5 or more drinks I: OR 0.64 (0.49; 0.84) C: OR 1.28 (1.10; 1.48) I vs C: p 0.0440 Drove after 5 or more drinks I: OR 0.64 (0.49; 0.84) C: OR 1.28 (1.10; 1.48) I vs C: p 0.0440 Hangover, fall behind in school, do something regretted, forgot where they were, got into an argument, unplanned sex, unprotected sex, vandalism, got into trouble with the police, got hurt or injured, medical	

				treatment for overdose, 5 or more alcohol related problems –all n.s	
				Alcohol related second hand effects	
				Insulted, got in an argument, assaulted, property vandalised, had to babysit a student, found vomit, study or sleep disrupted, unwanted sexual advance, date rape and 3 or more secondhand effects–all n.s	
				All presented data from adjusted analyses	
Spera et al 2010 [166] USA	*Study design* Repeated cross-sectional within site (community) design *Aim* Effectiveness of a broad based coalition	*Intervention* The Enforcing Underage Drinking Laws (EUDL) *Extent* A set of community based environmental activities: enforcement of restriction of social availability of alcohol, compliance checks of	*Comparison* Control communities matched by urbanity, Air Force base mission, Air Force base size and rated of problem drinking in enlisted junior personnel *Number of participants*	*Change over time in rates of problem drinkers for 5 intervention sites vs matched control sites:* I1: –13.6% C1: –1.9% I1 vs C1: –11.7%, p<0.05 I2: –9.8% C2: –11.2%	*Implemented by* The community surrounding the targeted Air Force base *Fidelity* Each intervention site implemented

	intervention using an environmental strategies approach to reduce drinking among active duty Air Force members aged 18–25 *Setting* 5 communities with nearby air force bases across USA which received grants for a 3 year-long program *Population* Acitve duty enlisted junior personnel *Follow-up time* 2 years (2006–2008)	retailers, impaired driver enforcement, local policy development, offering alternative acitvities *Theoretical underpinning* A theory of change focusing on the pathways by which context, process, and outcomes are linked *Prevention level* Universal *Number of participants* Baseline: n=2 008, nested within 10 communities (5 intervention sites, 5 control sites). Follow-up: n=2 112 nested within 10 communities (5 interventions sites, 5 control sites) *Attendance rate* 100% at the community level. Individual level: 48.5% in 2006 at baseline 49.0% in 2008 at follow-up *Drop-out rate at follow-up* 0% at the community level. Individual level N.A (cross sectional surveys)	Baseline: n=2 008 nested in 10 communities Follow-up: n=2 112 nested in 5 communities *Attendance rate* See under intervention *Drop-out rate at follow-up* 0% at the community level. Individual level N.A (cross section al surveys)	I2 vs C2: 1.4%, n.s. I3: –9.4% C3: –5.8% I3 vs C3: –3.6%, n.s. I4: –8.1% C4: –9.3% I4 vs C4: 1.2%, n.s. I5: –5.3% C5: 11.3% I5 vs C5: –16.6%, p<0.05	the intervention activities at a frequency proportional to the size of their community *Comments* 16.5% of survey responders skipped questions on the endpoint alcohol. Responses on alcohol questions for them were imputed through a sequential regression imputation method Due to differences in timing of the intervention and fidelity to the intervention between intervention sites, data were not pooled, but instead presented for each intervention site and compared to its' matched control site
Treno et al 2006 [167] USA	*Study design* Quasi-experimental, non-randomised, trial	*Intervention* The Sacramento Neighborhood Prevention Project (SNAPP) *Extent*	*Comparison* All other neighborhoods in the community *Nb participants*	*Alcohol related injuries and police incidents over time (time series of monthly data, effect sizes = ratio of differences in change scores*	*Implemented by* Research scientists from a prevention research center in conjunction with a

	Aim Effectiveness of a neighborhood program to reduce to reduce alcohol access to young people *Setting* 2 economically and ethnically diverse neighborhoods, within the same community, with high rates of crime and drink related problems *Population* 2 neighborhoods in a larger community, selected because of ethnic diversity, low income and high rates of crime and drinking related problems *Follow up time* 5 years (where the intervention was delayed by a year in one of 2 intervention groups)	A 5 component neighborhood program: mobilisation to support the overall project, a neighborhood awareness initiative, responsible beverage service initiative, under age enforcement and intoxicated-patron law enforcement *Theoretical underpinning* *Prevention level* Universal *Number of participants* 1 Neighborhood (N1): early intervention 1 Neighborhood (N2): delayed intervention *Attendance rate* 100% *Drop-out rate at follow-up* 0%	N given as 243 census blocks as compared to a combined number of census blocks of 37 in the intervention groups *Attendance rate* NA *Drop-out rate at follow up* NA	*between intervention groups (N1+N2) and control condition):* **Police incident reports:** Assaults: –0.475, p<0.001 Public drunkenness: n.s. **Emergency medical services:** Aggregate outcomes: –0.695, p 0.005 Assault: –571, p 0.019 Motor vehicle accidents: –0.548, p 0,028 Alcohol and other drugs: n.s. Suicide: n.s.	local program coordinator, and in coalition with community based organisations and the police *Fidelity* *Comments* The program was targeted to underprivileged neighborhoods and program applicability and impact may not be representative of other types of neighborhoods The comparison between intervention and control may be affected by differences in SES between groups Program activities in the intervention group may have contaminated the control condition (the community at large)
Rohrbach et al 1994	*Study design* Observational study of a single cohort	*Intervention* The Midwestern Prevention Program (MPP), in Indiana called the I-STAR	*Comparison* Parents' exposure to the parent education program as	*Population representativeness of the parent/student sample:*	*Implemented by* *Fidelity*

[177] USA	Aim Effectiveness of parental participation in the MPP parent program on adolescent use of alcohol and cigarettes	Extent A parent education program (one of several components in the MPP) comprising parent-child homework exercises, parent organisation at school sites, parental skills training workshops, and parent participation in community organisation activities	measured by summed scores of five survey items: helping the child with I-STAR homework assignments, participating in the I-STAR parent program implementation committee, attending on or more parent skills training sessions, participating in community drug prevention activities, participating in any other I-STAR activities)	Students who did not drop out from the study had higher SES and lower lifetime cigarette and alcohol use compared to drop-outs	NA
	Setting All public (n=29) and private (n=28) middle and junior high schools in the Indianapolis, Indiana	*Theoretical underpinning*		*Parental participation* 72.9% of parents reported taking part in at least one program component during follow-up	*Comments* This is a purely observational report of results from a cohort in the MPP/I-STAR, where all participants had access to the intervention.
		Prevention level Universal	*Number of participants* See under intervention	*Relationship between parental participation and adolescent alcohol and cigarette use at follow up:* Alcohol use*: beta –0,053 (less use by higher parent participation), $p<0.10$	
	Population Students in sixth or seventh grade, in schools taking part of the MPP	*Number of participants* A 70% sample of the 25% students who were randomly selected by classroom to participate in the evaluation of the MPP, and whose parents were selected to the evaluation of the parent education program component of the MPP (n=2 500)	*Attendance rate* See under intervention	Cigarette use*: beta –0.056 (less use), $p<0.05$	The representativeness of the sample who responded to the follow-up survey, and thus are included in the analyses is affected by a higher SES and lower use compared to non-responders
	Follow-up time 18 months	*Attendance rate* 50.5%	*Drop-out rate at follow-up* See under intervention	Friend's use*: beta –0.063 (less use), $p<0.05$	
		Drop-out rate at follow-up 25%		Sibling's use*: beta 0.050 (less use), $p<0.05$	
				*Results from linear regression models controlled for parents' SES and marital status; child's ethnicity, sex and grade; parents' smoking and alcohol use; child's, friends' and siblings' smoking and alcohol use; and parents' and child's communication on drug use	

Table 12.1 Massmedia and campaigns.

Author Year Reference Country	Study design Aim Setting Population Follow-up time		Intervention Number of participants Attendance rate (%) Drop-out rate (%)	Comparison Number of participants Attendance rate Drop-out rate	Implemented by Fidelity Comments
Slater et al 2011 [178] USA	*Study design* RCT *Aim* To reduce adolescent marijuana use *Setting* n=20 U.S communities and 40 schools in the study at each wave Within each of the 20 communities, 2 middle schools were recruited and randomised to receive or not receive in-school media *Population* n=3 236 students, 52% females *Inclusion criteria* Mean age 12.4 years at baseline, 7–8th grade *Follow-up time* NR		*Intervention* 2 community media-based interventions "Be Under Your Own Influence" in school media *(*posters and banners), "Above the Influence" (ONCDP). Directed to students *Intensity and duration* 1-day community-reediness training *Theoretical underpinning* Developmentally appropriate goals, autonomy and achievement or competence *Prevention level* Universal *Number of participants* n=10 U.S (communities received community-level trainings or materials) Attendance rate 84.5% (wave 1 survey) 86.2% (wave 2 survey) 86.1% (wave 3 survey) 81.3% (wave 4 survey*)* *Drop-out rate at follow-up* NR	*Comparison* CAU *Number of participants:* n=10 U.S (communities did not receive community-level trainings or materials) *Attendance rate* NR *Drop-out rate at follow-up* ?	*Implemented by* *Fidelity* *Comments* Missed surveys appeared to be a matter more of absenteeism or slips in getting students to survey sessions, than of panel mortality. 0.4% exaggerators (excluded from analyses)

			Intervention	Comparison	Implemented by
Longshore et al 2006 [37] US	*Study design* Cluster RCT, school level *Aim* Evaluate the effects of combining the National Youth Anti-Drug Media campaign and a school-based curriculum *Setting* 45 school clusters (high schools and their feeders) in medium/small size towns and rural areas in the US *Population* n=4 689 adolescents (49.4% female, 88.3% Caucasian) *Follow-up time* Post-test only		*Intervention* I1: ALERT, revised I2: ALERT plus School curriculum, written material, parental involvement (home-learning activities) *Extent* ALERT: 8 lessons in 7th grade and 5 in 8th grade ALERT plus: Additionally 5 booster lessons each in grades 9 and 10 *Number of participants* ALERT: n=1 379 from 16 clusters ALERT Plus: n=1 023 from 14 clusters *Attendance rate* *Drop-out rate at grade 9* 14.4% for the full sample	*Comparison* Preventive curricula as usual *Number of participants* n=1 615 from 15 clusters *Drop-out rate* 14.4% for the full sample	*Implemented by* *Fidelity* *Comments* Not ITT The intended degree of exposure to the campaign was 2.5 youth oriented ads per week ALERT Plus had a favorable effect among high-risk girls but not in the overall 9th grade sample
Flay et al 1995 [179] US	*Study design* Schools were randomised using a randomised multi-attribute blocking approach *Setting* Southern California, Los Angeles and San Diego *Population* Students in 7th grade in 340 classrooms, n=7 351 pretested, n=6 695 indicated their gender, race and smoking status *Follow-up time* 1 and 2 year		*Intervention* A large-scale, social-influences-based, school and media-based tobacco use prevention and cessation. Classroom delivery (mass media intervention) and television delivery (a media television intervention *Intensity and duration* The intervention occurred during 7th grade. Students were surveyed twice in grade 7 and once in each of grade 8 and 9 *Number of participants*	*Comparison* Treatment as usual and attention control with the same outcome expectancies as the treatment conditions *Number of participants:* Los Angeles Attention control placebo=7 schools No treatment control=7 schools San Diego	*Implemented by* Trained data collectors *Fidelity* Not reported *Comments* Poor execution of the television programming, few reported smoking

			Los Angeles SR+TV=7 schools SR-Only=7 schools TV-Only=7 schools San Diego SR-Only=6 schools *Attendance rate* 2 year follow-up: 47% of the original sample was present *Drop-out rate at follow-up* NR	No treatment control=6 schools *Attendance rate* Not reported *Drop-out rate at follow-up* NR	
Flynn et al 2010 [180] USA	*Study design* One member of each designated market areas (DMA) pair was randomised to receive the media interventions *Setting* Florida, South Carolina, Texas, and Wisconsin *Population* 4 matched pairs of medium-sized metropolitan areas (designated market areas (DMAs)) were identified. Young people grades 4–12 n=2 500 per DMA, n=30 499 eligible, n=19 966 completed baseline survey *Follow-up time* 4 years		*Intervention* Mass media interventions to reduce youth smoking prevalence: 4 simultaneous age-specific media campaigns *Intensity and duration* 4 simultaneous campaigns consisting of specially developed messages based on behavioural theory were placed in popular TV, cable, and radio programming using purchased time for 4 years. Class-room surveys *Number of participants* Baseline: 9 544 Follow-up: 11 860 *Attendance rate* 80.2% Drop-out rate at follow-up +24.7%	*Comparison* assessment only *Number of participants:* Baseline: 10 412 Follow-up: 11 385 *Attendance rate* 82.9% *Drop-out rate at follow-up* +9.34%	*Implemented by* A diverse group of 15 production companies developed 30- and 60-second TV or radio message concepts. Message concepts were reviewed by panels of social scientists and media experts *Fidelity* NR *Comments*

			Intervention	Comparison	Implemented by
Carpenter et al 2011 [181] US	*Study design* Cross-sectional, used school zip codes to match each respondent to a media market *Setting* US *Population* Grade 8, 10 and 12 students, n=130 245, 210 media markets in US *Follow-up time* Lasted 2 years		*Intervention* Above the Influence antidrug campaign, data from Monitoring The Future (MTF) study, an antidrug advertisement to reduce marijuana use *Intensity and duration* 2006–2008, monthly advertising exposure *Number of participants* 124 377 *Attendance rate* NR *Drop-out rate at follow-up* NR	*Comparison* NR *Number of participants* NR *Attendance rate* NR *Drop-out rate at follow-up* NR	*Implemented by* *Fidelity* *Comments* The data were derived from repeated cross sections of adolescents and did not follow the same adolescents over time (i,e., did not have panel data)
Emery et al 2005 [182] USA	*Study design* Cross-sectional *Setting* 75 media markets in US that accounted for 78% of American viewing households *Population* US teen audience 12–17 years from 8th, 10th, and 12th grade classes, drawn to be representative of all students in the specified grade for the 48 contiguous states. The Nielsen ratings data and state tobacco control policy data were merged with the 1999 and 2000 MTF student-level data by year n=65 891 cases (25 800 8th grade, 20 164 10th grade, and 19 927 12th grade)		*Intervention* State-sponsored anti-tobacco media campaigns combined with self-reported data from Monitoring the Future (MTF) study *Intensity and duration* 1999 to 2000. Data were collected from February to June each year Number of participants Total n=51 085 19 043 8th grade 16 131 10th grade and 15 911 12th grade *Attendance rate* The average 1999–2000 student response rate was 85.5% *Drop-out rate at follow-up* NR	*Comparison* NR *Number of participants:* *Attendance rate* *Drop-out rate at follow-up*	*Implemented by* Nielsen Media Research (New York, NY) state-sponsored antitobacco media campaigns *Fidelity* *Comments*

				Intervention	Comparison	Implemented by
	Follow-up time Lasted 1 year					
Farrelly et al 2009 [183] USA	*Study design* Cross-sectional data, A quasi-experimental design *Setting* 210 media markets in US *Population* Adolescents age 12–17 during the initial survey round in 1997 *Follow-up time* Lasted over 7 years			*Intervention* A prominent national youth smoking-prevention campaign (Truth), aired commercials on select TV networks and TV programs popular with youth *Intensity and duration* From 1997 to 2004 (rounds 1–8), an in-person interview annually *Number of participants* n=8 984 *Attendance rate* *Drop-out rate at follow-up* NR	*Comparison* NR *Number of participants:* *Attendance rate* *Drop-out rate at follow-up*	*Implemented by* National Longitudinal Survey of Youth 1997 (NLSY97) *Fidelity* *Comments*
Farrelly et al 2005 [184] USA	*Study design* A multistage random sampling design and a pre/post quasi-experimental design *Setting* 420 public and private secondary schools *Population* n=50 000, 18 000, 17 000, and 16 000 8th-, 10th-, and 12th-grade students per year, respectively *Follow-up time* Lasted over 5 years			*Intervention* The "truth" campaign, national antismoking campaign to discourage tobacco use among youths combined with data from Monitoring the Future survey *Intensity and duration* From 1997 to 2002 self-administered surveys in school classrooms each spring *Number of participants* Approximately 50 000 Attendance rate The average student response rate: 8th grades: 89% 10th grades: 86% 12th grades: 82.8%	*Comparison* Students in the 1997–1999 surveys served as an unexposed control group *Number of participants* NR *Attendance rate* *Drop-out rate at follow-up*	*Implemented by* National Institute on Drug Abuse and conducted by the University of Michigan's Institute for Social Research *Fidelity* *Comments* repeated cross-sectional surveys, not repeated measures on the same students

			Drop-out rate at follow-up		
Hornik et al 2008 [185] USA	*Study design* Respondents were selected through a stratified 4-stage probability sample design *Setting* US *Population* 3 nationally representative cohorts of US youths aged 9 to 18 years and their parents. Across rounds 1 through 4, a total of 8 117, 6 516, 5 854, and 5 126 youths were interviewed, respectively *Follow-up time* Lasted over 5 years		*Intervention* The National Youth Anti-Drug Media Campaign combined with data from the National Survey of Parents and Youth (NSPY) *Intensity and duration* From September 1999 to June 2004, an in-home survey 4 times (the National Survey of Parents and Youth (NSPY)) *Number of participants* Sample size ranged from 8 117 in the first to 5 126 in the fourth round *Attendance rate* 65% first-round response rate, with 86%–93% of still eligible youths interviewed subsequently *Drop-out rate at follow-up*	*Comparison* NR *Number of participants:* *Attendance rate* *Drop-out rate at follow-up*	*Implemented by* Media channels: television (local, cable, and network), radio, Web sites, magazines, movies, theatres, and several others *Fidelity* *Comments*
Murray et al 1994 [186] USA	*Study design* A nested cross-sectional design, randomly selected units *Setting* Minnesota and Wisconsin *Population* Minnesota and Wisconsin school children, annually from 1986 through 1990, 43–46 sampling units were randomly selected to represent each state *Follow-up time* 5 year initiative		*Intervention* The Minnesota-Wisconsin Adolescent Tobacco-Use Research, a mass-media campaign aimed at discouraging tobacco use, television and radio ads and ads in newspapers and billboards. The Two-State Tobacco Project (TSTP) *Intensity and duration* From 1986–1990, annual independent survey, a self-administered questionnaire *Number of participants*	*Comparison* Wisconsin school children exposed to the usual care standard school curricula, school policies and mass-media anti-smoking campaigns Number of participants: Eligible: 1986: 3 838 1987: 4 184 1988: 3 758 1989: 3 456 1990: 3 457	*Implemented by* Survey teams from the University of Minnesota conducted the survey *Fidelity* *Comments*

			Eligible: 1986: 3 871 1987: 4 252 1988: 4 000 1989: 3 969 1990: 4 230 Attendance rate 1986: 92.5% 1987: 92.6% 1988: 94.3% 1989: 91.1% 1990: 92.8% *Drop-out rate at follow-up*	Attendance rate 1986: 93.2% 1987: 94.6% 1988: 92.0% 1989: 91.5% 1990: 91.6% *Drop-out rate at follow-up*	
Slater et al 2007 [187] USA	*Study design* Cross-sectional The MTF survey uses a multistage sampling design *Setting* The February 1999 through June 2003 Monitoring the Future surveys involved 109 308 students and data on retail cigarette marketing collected from 966 communities in which the students reside *Population* 8th-, 10th-, and 12th-grade students, with modal ages of 14, 16, and 18 years participating in their second year of the Monitoring the Future (MTF) survey *Follow-up time* Over 5 years		*Intervention* A cigarette retail marketing practices on youth smoking uptake combined with data from Monitoring the Future surveys (MTF) *Intensity and duration* February 1999 through June 2003 *Number of participants* 26 301 *Attendance rate* *Drop-out rate at follow-up* NR	*Comparison* NR *Number of participants:* *Attendance rate* *Drop-out rate at follow-up*	*Implemented by* NR *Fidelity* *Comments*

Table 16. Economic evaluation on information campaigns for children and youths compared with no campaign.

Author Year Reference Country	Study design Population Setting Perspective	Intervention versus control	Incremental cost	Incremental effect	ICER	Study quality and transferability* Further information Comments
Holtgrave et al 2009 [188] USA	CUA on a tobacco initiation prevention campaign, truth® Youths aged 12–17 years Societal perspective	Social marketing campaign *versus* no campaign Intervention estimated to 1.6% decrease in smoking prevalence in year 2002, equivalent to 300 000 fewer youth smokers	All costs reported in USD year 2000 Total campaign costs: 324 070 000 (of which Evaluation and Litigation approx. 30 000 000) Medical treatment cost saved per youth smoker averted: 13 072 Net costs: –1 895 562 000	To account for possible future uptake of smoking, number of non-smokers adjusted to 169 800 youths QALYs saved per case averted: 1.05 Total number of QALYs: 178 290	Base-case: Cost-saving Pessimistic case: 4 302 per QALY	Medium study quality and medium transferability to Sweden Campaign effectiveness reported in Farrelly et al, 2005 [184] Estimates of medical costs averted and QALYs from Wang et al, 2001 [189]

* Study quality is a combined assessment of the quality of the study from a clinical as well as an economic perspective.

CUA=Cost-utility analysis ICER=Incremental cost-effectiveness ratio; USD=United States Dollars

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