4. EVIDENCE TABLES

4.1 Evidence tables for question 1. What is the evidence for the effectiveness of interventions to prevent, reduce, or promote the health behaviour, at what level (individual / community / population), and for which population groups (e.g. young people, pregnant women, elderly)?

4.1.1 Prevention of tobacco use, smoking cessation and reduction

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Abbot 1998	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 9	Smokers	The objective of this review was to evaluate the effects of hypnotherapy for smoking cessation.	Nine studies compared hypnotherapy with 14 different control interventions. There was significant heterogeneity between the results of the individual studies, with conflicting results for the effectiveness of hypnotherapy compared to no treatment or to advice. the authors therefore did not attempt to calculate pooled odds ratios for the overall effect of hypnotherapy. There was no evidence of an effect of hypnotherapy compared to rapid smoking or psychological treatment.	*Study countries:* USA, UK (1), Australia, Canada *Relevance score:* A
Bains 1998	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 17	Tobacco smokers in the general population. The majority of studies specifically included only adult smokers, i.e. those aged at least 16 years.	To review the current published literature on population-based smoking cessation interventions that involve incentives, and to examine whether such interventions are effective in reducing the prevalence of smoking.	The population-based interventions discussed in this review generally attracted 1 to 2% of the target population, regardless of the publicity or recruitment tactics used. No specific type of recruitment strategy was shown to be consistently more effective than others. One study had a participation rate of 9.5%, which was achieved through making the recruitment period more flexible. This contest produced the greatest impact although the actual sustained quit rate was low (13%). The quit rates for the programmes ranged from 13 to 45% and were in part dependent upon the length of follow-up, with lower quit rates more likely to be reported when this time was prolonged. The community-based programmes generally employed a contest approach, with smokers pledging to quit smoking for a specified number of days in exchange for the chance to win prizes in a lottery draw ('quit and win' contests). There was no evidence that particular types of incentives were able to influence participation or quit rates more than others, but the size of the incentive did appear to be important. Larger incentives were viewed as more effective at	*Study countries:* Not stated *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				motivating smokers to quit and stay smoke free than smaller ones.	
Bize 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 9	Smokers	To determine the efficacy of biomedical risk assessment provided in addition to various levels of counselling, as a contributing aid to smoking cessation	Eight trials were retained for data extraction and analysis. One of the eight used CO alone and CO + Genetic Susceptibility as two different intervention groups, giving rise to three possible comparisons. Three of the trials isolated the effect of exhaled CO on smoking cessation rates resulting in the following odds ratios (ORs) and 95% confidence intervals (95% CI:): 0.73 (0.38 to 1.39), 0.93 (0.62 to 1.41), and 1.18 (0.84 to 1.64). Combining CO measurement with genetic susceptibility gave an OR of 0.58 (0.29 to 1.19). Exhaled CO measurement and spirometry were used together in three trials, resulting in the following ORs (95% CI:): 0.6 (0.25 to 1.46), 2.45 (0.73 to 8.25), and 3.50 (0.88 to 13.92). Spirometry results alone were used in one other trial with an OR of 1.21 (0.60 to 2.42).Two trials used other motivational feedback measures, with an OR of 0.80 (0.39 to 1.65) for genetic susceptibility to lung cancer alone, and 3.15 (1.06 to 9.31) for ultrasonography of carotid and femoral arteries performed in light smokers (average 10 to 12 cigarettes a day).	*Study countries:* *Relevance score:* A
Brothwell 2001	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 33	Smokers aged 19 years and above.	To apply an evidence-based approach to determine whether the use of smoking cessation products should be promoted by Canadian dental offices.	Transdermal nicotine patches more than doubled the quit rates obtained in smoking cessation programmes (odds ratios: 2.07 to 2.6). Nicotine gum increased cessation rates by about 50% (odds ratios: 1.4 to 1.6). Bupropion nearly doubled smoking cessation success, with reported quit rates of 23.1 and 30.3% vs 12.4 and 15.6% for placebo. Tobacco use is associated with deteriorating periodontal health. Smokers respond less favourably to periodontal therapy, and former smokers show periodontal health intermediate to that found in current smokers and individuals who have never smoked.	*Study countries:* Canada only. *Relevance score:* B
Christakis 2003	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 4	Youth, aged <21 years	To conduct a systematic review of RCTs of smoking prevention interventions for youth delivered via medical or dental providers' offices.	Four articles met the inclusion criteria. Included were two studies conducted in primary care, and one each in dental and orthodontic offices. Three studies found no significant differences between treatment and control groups with respect to initiation of smoking during the follow-up period. Only one study demonstrated a significant effect on smoking initiation; in that study, 5.1% of the intervention group and 7.8% of the control group reported smoking at 12-month follow-up (odds RATIO= 0.63; 95% confidence interval, 0.44–0.91). None of the studies had follow-up times greater than 3 years.	*Study countries:* Two studies in USA and one each in UK and Finland. *Relevance score:* A

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Dunn 2001	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 29	Not stated	To examine the effectiveness of brief behavioural interventions adapting the principles and techniques of motivational interviewing (MI) in relation to substance abuse, smoking, HIV risk and diet/exercise.	Smoking cessation (2 studies): in one of the studies, one of the two ESs reported was significant (0.23, 95% CI: 0.06, 0.39). In the second study, none of the obtained ESs were significant. Diet/exercise studies (5 studies): three of the studies had significant ESs, ranging from 0.36 (95% CI: 0.07, 0.66) to 2.17 (95% CI: 0.93, 3.41). The regression analysis found no significant decline in ESs across the studies as a function of follow-up time (p=0.84). Within studies (using 5 studies with significant ESs and more than one follow-up period) the results were mixed.	*Study countries:* Not stated *Relevance score:* A
Ebbert 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 14	Those visiting dental surgery, workplaces, schools and individuals.	To assess the effects of behavioural and pharmacotherapeutic interventions to treat smokeless tobacco use.	One trial of bupropion did not detect a benefit of treatment after six months (Odds Ratio (OR) 1.00, 95% CI: : 0.23 to 4.37). Three trials of nicotine patch did not detect a benefit (OR 1.16, 95% CI: 0.88 to1.54), nor did two trials of nicotine gum (OR 0.98, 95% CI: 0.59 to1.63). There was statistical heterogeneity among the results of eight trials of behavioural interventions included in the meta-analysis. Three trials showed significant benefits of intervention. In a post-hoc analysis the trials of interventions which included an oral examination and feedback about ST-induced mucosal changes had homogeneous results and when pooled showed a significant benefit (OR 2.41 95% CI: 1.79 to 3.24).	*Study countries:* USA *Relevance score:* B
Edwards 2000	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** ++ *No. studies:* 19	Women and their families - postnatally and prenatal	The objective of this review was to examine the effectiveness of strategies to prevent postpartum smoking relapse.	There is emerging biochemically confirmed evidence from a single study suggesting that a theoretically based, multi-component intervention of sufficient intensity, provided during the postpartum period, can have a modest effect on postpartum smoking relapse rates at six months postpartum. There is no evidence to suggest that relapse prevention strategies which lack an appropriate theoretical base, consist of brief and infrequent interventions, and are provided in an antenatal clinic setting reduce postpartum smoking relapse rates. The optimum timing (early, mid or late pregnancy; and/or postpartum), frequency, and mix of postpartum smoking relapse prevention strategies have not yet been determined. The presence of a smoking partner and other social contacts who smoke are important determinants of postpartum smoking relapse.	*Study countries:* Not stated *Relevance score:* C

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Fichten-berg 2002	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 26	Employees in Government offices, hospitals, a telecom company, an ambulance service and a health maintenance organisation.	To assess the effects of smoke-free workplaces on cigarette consumption and to compare these effects with results from raising taxes.	Totally smoke-free policies significantly reduced the absolute prevalence of smoking and decreased cigarette consumption per smoker among continuing smokers: the reduction in absolute prevalence was 3.8% (95% CI: 2.8, 4.7) and the decrease in consumption was 3.1 (95% CI: 2.4, 3.8). The reduction in consumption per employee was 29% (95% CI: 11, 53). The effect of smoke-free policies did not change over time (for prevalence, r=0.08, P=0.75; for consumption per smoker, r=0.45, P=0.09; for consumption per employee, r=0.28, P=0.43). The funnel plot showed no evidence of publication bias.	*Study countries:* USA, Australia, Canada and Germany *Relevance score:* B
Fichten-berg 2002	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 8	Adolescents and tobacco salespersons in community shops	To determine the effectiveness of laws restricting youth access to cigarettes on prevalence of smoking among teens.	Based on data from 9 studies, there was no detectable relationship between the level of merchant compliance and 30-day (r .116; n 38 communities) or regular (r .017) smoking prevalence. There was no evidence of a threshold effect. There was no evidence that an increase in compliance with youth access restrictions was associated with a decrease in 30-day (r .294;n 18 communities) or regular (r .274) smoking prevalence. There was no significant difference in youth smoking in communities with youth access interventions compared with control communities; the pooled estimate of the effect of intervention on 30-day prevalence was 1.5% (95% CI: 6.0% to 2.9%).	*Study countries:* Not stated *Relevance score:* C
Friend 2002	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* Not stated	General population and young people.	To evaluate the effect of state and local mass-media campaigns on smoking prevalence and cigarette consumption.	Mass-media campaigns directed at the general population: two well-funded and implemented state-wide campaigns (California $0.5 per capita and Massachusetts $2.0 per capita) plus concurrent coordinated tobacco control programmes reduced smoking rates in the general population; there was a reduction in net smoking prevalence of 6 to 12%. In California, the tax increase was not offset by lower prices as occurred in Massachusetts. These two campaigns had mixed effects on youths. Some studies of the Californian campaign found no significant difference between youths exposed to the campaign and unexposed youths in terms of the rates of thinking about stopping smoking, while other studies found that exposure significantly reduced smoking prevalence and rates of starting smoking. Two studies of the Massachusetts campaign found that fewer exposed youths took up smoking compared with youths in other states: smoking prevalence among eight graders was reduced by 2% in	*Study countries:* USA only *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				Massachusetts, compared with an increase of 26% in other states, while among tenth graders, the increase in smoking was 16% in Massachusetts versus 23% in other states. Two smaller state wide campaigns of shorter duration in less populated areas (Michigan $0.2 per capita and Oregon $0.6 per capita) found smaller reductions in smoking (net decline 4% and 5%, respectively).The studies suggested that the greatest reductions were to be achieved in the first 3 years of the campaigns, with decreasing reductions over time thereafter. Mass-media campaigns directed at youth. Two youth-orientated state-wide campaigns were associated with reductions in smoking rates (Arizona PCC declined by 8% but no baseline rates were reported; Florida net reduction estimated as 5%). These appeared to be more successful than smaller community- level programmes. Community-level programmes that reduced smoking tended to be longer and more intensive than campaigns having less effect.	
Garrison 2003	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 6	Adolescent smokers	To conduct a systematic review of controlled trials for adolescent smoking cessation.	Included were three school-based studies, a study in pregnant adolescent girls, a hospital-based study, and a trial of laser acupuncture. None of the studies had follow-up times of >5.2 months. While the school-based studies demonstrated a positive short-term impact, the brevity of the follow-up time does not permit the assessment of long-term effectiveness. All three of the school-based studies reported significant impacts on cessation rates, although only one of these was a randomised trial. In this school-based study, the intervention group received eight classroom sessions over a 6-week period, while the control group received an informational brochure. At 4 weeks post-intervention, this study found that 52% of students reported that they were smoke-free for the previous 5 days by self-report, compared to 20% in the control group (relative risk [RR]=2.51; 95% CI: , 1.25–5.03). While this study extended follow-up to 20 weeks after the intervention, the subjects in the control group also received the intervention after the 4-week follow-up; thus, the results after this time could not be evaluated. In one of the other school-based studies at 3 months post-programme, the 30-day abstinence rates were 17% in the treatment arm and 8% in the control arm, for an odds ratio of 2.36 (95% CI: not reported). In a subanalysis, the odds ratios were highest for the subjects with the	*Study countries:* One of the studies was conducted in Singapore, while the others were conducted in the United States. *Relevance score:* C

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				lowest "addiction quotients" (i.e., the less addicted to nicotine the subjects were, the more they benefited from the intervention).Another school-based study was unique in that it utilized gender-specific groups, with gender-matched adult leaders. In a stratified analysis, cessation rates were significantly different between treatment and control groups for females (29.6% vs 8.9%, respectively) but not for males (14.4% vs 15.9%, respectively). An additional study demonstrated a decrease in daily cigarette consumption and exhaled carbon monoxide levels, but not in actual cessation rates. The study of pregnant adolescents had three treatment arms: it was found that at 4 to 6 weeks post-intervention, 3 of 10 subjects in one treatment arm had "quit" smoking, compared to 5 of 30 subjects in the other two groups combined, a nonsignificant difference (RR=1.80; 95% CI: 0.52–6.22). The remaining two studies showed no difference between intervention and control groups in smoking outcomes.	
Hajek 2005	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 40	Military recruits; pregnant & postpartum women; hospital inpatients; others recruited from the community of assisted and unassisted abstainers	To assess whether specific interventions for relapse prevention reduce the proportion of recent quitters who return to smoking.	Forty studies met inclusion criteria, but were heterogeneous in terms of populations and interventions. The authors considered studies that randomised abstainers separately from studies that randomised participants prior to their quit date. The authors detected no benefit of brief and 'skills-based' relapse prevention interventions for women who had quit smoking due to pregnancy, or for smokers undergoing a period of enforced abstinence. The authors also failed to detect significant effects in trials in other smokers who had quit on their own or with a formal programme. Amongst trials recruiting smokers and evaluating the effect of additional relapse prevention components the authors also found no evidence of benefit in any subgroup. The authors did not find that providing training in skills thought to be needed for relapse avoidance reduced relapse, but most studies did not use experimental designs best suited to the task.	*Study countries:* Mostly USA and also other countries including UK, Germany, Spain, Canada etc *Relevance score:* A
Hajek 2001	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** +	All smokers	To determine the efficacy of rapid smoking and other aversive methods in helping smokers to stop smoking	For trials of rapid smoking, the pooled odds ratio (OR) of 12 studies included in the analysis is 1.98 with 95% confidence intervals of 1.36 to 2.90, suggesting that rapid smoking is effective in aiding smoking cessation. However the single study fulfilling current criteria for methodological adequacy yielded only a non-significant trend, while methodologically less adequate small studies tended to report better results. Other aversive methods did not differ significantly	*Study countries:* Not stated *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	No. studies: 25			from control procedures (OR 1.15, 95% CI: 0.73 to1.82), and there was a borderline 'dose response' to the severity of aversive stimulation (OR 1.66, 95% CI: 1.00 to 2.78).	
Hey 2005a	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 4	Individuals or communities	To determine whether quit and win contests can deliver higher long-term quit rates than baseline community quit rates.	To assess the impact of such programmes, the authors considered both the quit rates achieved by participants, and the population impact, which takes into account the proportion of the target population entering the contest. Four studies met the inclusion criteria. Three demonstrated significantly higher quit rates (8% to 20%) for the quit and win group than for the control group at the 12-month assessment. However, the population impact measure, where available, suggests that the effect of contests on community prevalence of smoking is small, with fewer than one in 500 smokers quitting because of the contest. Levels of deception, where they could be quantified, were high. Although surveys suggest that international quit and win contests may be effective, especially in developing countries, the lack of controlled studies precludes any firm conclusions from this review.	*Study countries:* USA, Canada and Russia *Relevance score:* C
Hey 2005b	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 15	Adults in workplaces, community and newspaper readers	To determine whether competitions and incentives lead to higher long-term quit rates. The authors also set out to examine the relationship between incentives and participation rates.	Fifteen studies met the inclusion criteria. None of the studies demonstrated significantly higher quit rates for the incentives group than for the control group beyond the six-month assessment. There was no clear evidence that participants who committed their own money to the programme did better than those who did not, or that different types of incentives were more or less effective. There is some evidence that although cessation rates have not been shown to differ significantly, recruitment rates can be improved by rewarding participation, which may be expected to deliver higher absolute numbers of successful quitters. Cost effectiveness analysis is not appropriate to this review, since the efficacy of the intervention has not been demonstrated.	*Study countries:* Most in USA, UK (3), Australia (1), and one in USA and Canada. *Relevance score:* A
Hopkins 2001	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* Not	Users of tobacco products & people exposed,or at risk of exposure to environmental tobacco smoke.	The assessment of the effectiveness of population-based interventions to reduce tobacco use and exposure to environmental tobacco smoke. Applicability,	*Strategies to reduce exposure.*Based on evidence from 10 studies, smoking bans and restrictions were shown to reduce exposure to environmental tobacco smoke in the workplace. Evidence from one study was insufficient to determine the effectiveness of community education in reducing exposure to environmental tobacco smoke in the home. *Strategies to reduce initiation.* Based on 8 studies, increasing the price of tobacco products was shown to reduce the prevalence of	*Study countries:* The review only included studies conducted in industrialised countries. *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	stated & could not be figured out from report.		cost and barriers to use were also assessed, but are not summarised in this abstract.	tobacco use and consumption among adolescents and young adults. Based on 11 studies, mass media campaigns combined with other interventions (e.g. education programmes) were shown to be effective in reducing tobacco use among adolescents, but the contribution of individual components was unclear. *Strategies to increase cessation.* Based on 17 studies, increasing the price of tobacco products increased cessation and reduced consumption. Based on evidence from 15 studies, mass media campaigns combined with other interventions (e.g. self-help information) reduced tobacco consumption. There was insufficient evidence to assess mass media cessation series or cessation contests. There was insufficient evidence to assess the effect of health care provider education alone on tobacco use cessation among patients. As a minimum, provider education together with a provider reminder system increased delivery of advice by providers and cessation of tobacco use among patients, based on 31 studies of multi-component systems. There was insufficient evidence to assess the effect of feedback to motivate providers. Based on evidence from 5 studies, reducing the cost of cessation therapy to patients was shown to increase the use of therapy and to increase cessation. Evidence from 32 studies showed that including telephone support with other interventions (e.g. education and clinical therapy) increased cessation.	
Lancaster 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 39	Smokers	The aims of this review were to assess the effectiveness of advice from physicians in promoting smoking cessation; to compare minimal interventions by physicians with more intensive interventions; to assess the effectiveness of various aids to advice in promoting smoking	Pooled data from 17 trials of brief advice versus no advice (or usual care) revealed a small but significant increase in the odds of quitting (odds ratio 1.74, 95% CI: 1.48 to 2.05). This equates to an absolute difference in the cessation rate of about 2.5%. There was insufficient evidence, from indirect comparisons, to establish a significant difference in the effectiveness of physician advice according to the intensity of the intervention, the amount of follow up provided, and whether or not various aids were used at the time of the consultation in addition to providing advice. Direct comparison of intensive versus minimal advice showed a small advantage of intensive advice (odds ratio 1.44, 95% CI: 1.24 to 1.67). Direct comparison also suggested a small benefit of follow-up visits. Only one study determined the effect of smoking advice on mortality. It found no statistically	*Study countries:* Widely international sample of studies including UK, USA, Japan,Norway etc *Relevance score:* A

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
			cessation and to determine the effect of anti-smoking advice on disease-specific and all-cause mortality.	significant differences in death rates at 20 years follow up.	
Lancaster 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 60	Smokers	The aims of this review were to determine the effectiveness of different forms of self-help materials, compared with no treatment and with other minimal contact strategies; the effectiveness of adjuncts to self help, such as computer-generated feedback, telephone hotlines and pharmacotherapy; and the effectiveness of approaches tailored to the individual compared with non-tailored materials.	The authors identified sixty trials. Thirty-three compared self-help materials to no intervention or tested materials used in addition to advice. In 11 trials in which self help was compared to no intervention there was a pooled effect that just reached statistical significance (N = 13,733; odds ratio [OR] 1.24, 95% CI: 1.07 to 1.45). This analysis excluded two trials with strongly positive outcomes that introduced significant heterogeneity. Four further trials in which the control group received alternative written materials did not show evidence for an effect of the smoking self-help materials. The authors failed to find evidence of benefit from adding self-help materials to face-to-face advice, or to nicotine replacement therapy. There were seventeen trials using materials tailored for the characteristics of individual smokers, where meta-analysis supported a small benefit of tailored materials (N = 20,414; OR 1.42, 95% CI: 1.26 to 1.61). The evidence is strongest for tailored materials compared to no intervention, but also supports tailored materials as more helpful than standard materials. Part of this effect could be due to the additional contact or assessment required to obtain individual data. A small number of other trials failed to detect benefits from using additional materials or targeted materials, or to find differences between different self-help programmes.	*Study countries:* Widely international sample of studies including UK, USA, Spain etc *Relevance score:* A
Lumley 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 64	Pregnant smokers	The primary objective was to identify whether continued smoking during pregnancy can be reduced by information about the risks of continued smoking, advice to quit, more intensive advice or individual counselling, group	This review included 64 trials. Fifty-one randomised controlled trials (20,931 women) and six cluster-randomised trials (over 7500 women) provided data on smoking cessation and/or perinatal outcomes. Despite substantial variation in the intensity of the intervention and the extent of reminders and reinforcement through pregnancy, there was an increase in the median intensity of both 'usual care' and interventions over time. There was a significant reduction in smoking in the intervention groups of the 48 trials included: (relative risk (RR) 0.94, 95% CI: 0.93 to 0.95), an absolute difference of six in 100 women continuing	*Study countries:* Range of countries including UK, USA, Argentina, Brazil, Cuba, Mexico etc *Relevance score:* A

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
			counselling, feedback on patho-physiological effects of smoking on the mother or fetus, the provision of nicotine replacement therapy, more detailed information/pictures of the fetus, the supplementation of information and advice with self-help manuals/videos or computer aided messages on strategies for quitting, rewards or incentives, peer support or additional social support.	to smoke. The 36 trials with validated smoking cessation had a similar reduction (RR 0.94, 95% CI: 0.92 to 0.95). Smoking cessation interventions reduced low birthweight (RR 0.81, 95% CI: 0.70 to 0.94) and preterm birth (RR 0.84, 95% CI: 0.72 to 0.98), and there was a 33 g (95% CI: 11 g to 55 g) increase in mean birthweight. There were no statistically significant differences in very low birthweight, stillbirths, perinatal or neonatal mortality but these analyses had very limited power. One intervention strategy, rewards plus social support (two trials), resulted in a significantly greater smoking reduction than other strategies (RR 0.77, 95% CI: 0.72 to 0.82). Five trials of smoking relapse prevention (over 800 women) showed no statistically significant reduction in relapse.	
May 2000	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 10	Smokers who wanted to stop.	The objective was to provide an overview of the role of social support in smoking cessation, and to critically review evidence regarding the use of 'buddy systems' (where smokers are specifically provided with someone to support them) to aid smoking cessation.	Of the 10 studies included in the review, 9 were clinic based, 8 used a group format, and 9 used buddies from smokers' existing relationships. Two of the 10 included studies showed a significant effect of the intervention on smoking cessation: one showed a significant difference between 'social support' and 'discussion' groups at each follow-up (P<0.05), while the other showed a significant difference (P<0.01) in abstinence at the end of treatment between 'buddy' pairs and 'solo' group in a nurse-led smokers clinic.	*Study countries:* Not stated *Relevance score:* C
McClure 2002	Systematic review (RCT) ***Level:*** 1	Studies of adults only	To review the literature to determine the effectiveness of using biomarker feedback to motivate and enable	The results of this review were mixed, but suggest that biological information conveying harm exposure, disease risk or impaired physical functioning may increase motivation to change. Subsequent behaviour change is also affected by the availability and intensity of concomitant treatment. Studies that failed to find a significant	*Study countries:* Not stated *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	Review quality: - *No. studies:* 8		health behaviour change	behaviour effect used only a single biomarker (CO level, cholesterol, or an index of physical fitness) and provided feedback on a single occasion. Three of the eight trials found evidence of behaviour change, which implies an effect on motivation. Each successful trial offered counselling in person and relevant treatment materials.	
Moher 2005	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 61	Adults over 18 years of age, in employment, who smoked.	To categorize workplace interventions for smoking cessation tested in controlled studies and to determine the extent to which they help workers to stop smoking or to reduce tobacco consumption.	Workplace interventions aimed at helping individuals to stop smoking included ten studies of group therapy, seven studies of individual counselling, nine studies of self-help materials and five studies of nicotine replacement therapy. The results were consistent with those found in other settings. Group programmes, individual counselling and nicotine replacement therapy increased cessation rates in comparison to no treatment or minimal intervention controls. Self-help materials were less effective. Workplace interventions aimed at the workforce as a whole included 14 studies of tobacco bans, two studies of social support, four studies of environmental support, five studies of incentives, and eight studies of comprehensive (multi-component) programmes. Tobacco bans decreased cigarette consumption during the working day but their effect on total consumption was less certain. The authors failed to detect an increase in quit rates from adding social and environmental support to these programmes. There was a lack of evidence that comprehensive programmes reduced the prevalence of smoking. Competitions and incentives increased attempts to stop smoking, though there was less evidence that they increased the rate of actual quitting.	*Study countries:* USA, some UK and other European countries, Japan etc *Relevance score:* A
Murphy-Hoefer 2005	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 14	Students attending colleges and universities	To provide a comprehensive summary of individual and policy interventions that have been implemented, evaluated, and peer reviewed since 1980	Fourteen studies were identified; only five received a “satisfactory” rating based on evaluation criteria. Most studies were based on convenience samples, and were conducted in 4-year institutions. Seven studies used comparison groups, and three were multiinstitutional. Individual approaches included educational group sessions and/or individual counseling that were conducted on campus mostly by healthcare personnel. None used nicotine replacement or other medications for cessation. The quit rates for both smokeless tobacco and cigarette users varied, depending on definitions and duration of follow-up contact. Institutional interventions focused	*Study countries:* Most studies set in USA *Relevance score:* C

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				mainly on campus smoking restrictions, smoke-free policies, antitobacco messages, and cigarette pricing. Results indicated that interventions can have a positive influence on student behaviour, specifically by reducing tobacco use (i.e., prevalence of cigarette smoking and use of smokeless products, amount smoked) among college students, and increasing acceptability of smoking policies and campus restrictions among both tobacco users and nonusers.	
Nishi 1998	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 5	Adult smokers. Participants who had suffered from chronic diseases such as cardiovascular diseases were excluded.	To assess the effect of group exercise programmes on smoking cessation.	The quality scores of the studies ranged from 7 to 9 points (out of a total of 13), with a mean of 8. Thus no study was excluded from further analysis and no stratification was performed on the basis of quality score. No heterogeneity was present. The summary odds ratio of the three studies which primarily aimed at smoking cessation was 2.35 (95% CI: 0.75, 7.31). When the two other studies were added, the summary odds ratio dropped to 1.85 (95% CI: 0.65, 5.24).	*Study countries:* Not stated *Relevance score:* B
Park 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 9	Smokers of any age, marital status, pregnant or otherwise; any level of nicotine dependence.	The purpose of this review was to determine if an intervention to enhance partner support helps smoking cessation when added as an adjunct to a smoking cessation programme.	Only eight articles (nine studies) met the inclusion criteria. The definition of partner varied among the studies. All studies included data on self reported smoking cessation rates, but there was limited biochemical validation of abstinence rates. The odds ratio for self-reported abstinence at 6-9 months was 1.08 (95% CI: 0.81 -1.44); and at 12 months post-treatment was 1.0 (95% CI: 0.75 - 1.34). Of the six studies that measured partner support at follow-up, only two studies reported significant increase in partner support in the intervention groups.	*Study countries:* Not stated *Relevance score:* C
Rice 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 29	Adult smokers, 18 years and older, of either gender recruited in any type of healthcare setting.	To determine the effectiveness of nursing-delivered smoking cessation interventions.	Twenty studies comparing a nursing intervention to a control or to usual care found the intervention to significantly increase the odds of quitting (Peto Odds Ratio 1.47, 95% CI: 1.29 to 1.68). There was heterogeneity among the study results, but pooling using a random effects model did not alter the estimate of a statistically significant effect. There was limited evidence that interventions were more effective for hospital inpatients with cardiovascular disease than for inpatients with other conditions. Interventions in non-hospitalized patients also showed evidence of benefit. Five studies comparing different nurse-delivered interventions failed to detect significant benefit from using additional components. Five studies of nurse	*Study countries:* Twelve in USA, eight in UK (one each in Scotland and Wales) and one each in Netherlands, Sweden, Canada, Australia, Spain, Japan and Denmark.

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				counselling on smoking cessation during a screening health check, or as part of multifactorial secondary prevention in general practice (not included in the main meta-analysis) found the nursing intervention to have less effect under these conditions.	*Relevance score:* A
Riemsma 2003	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 23	No restrictions were applied to participants other than they had to be smokers	To evaluate the effectiveness of interventions using a stage based approach in bringing about positive changes in smoking behaviour	Eight trials reported effects in favour of stage based interventions, three trials showed mixed results, and 12 trials found no statistically significant differences between a stage based intervention and a non-stage based intervention or no intervention. Eleven trials compared a stage based intervention with a non-stage based intervention, and one reported statistically significant effects in favour of the stage based intervention. Two studies reported mixed effects, and eight trials reported no statistically significant differences between groups. The methodological quality of the trials was mixed, and few reported any validation of the instrument used to assess participants' stage of change. Overall, the evidence suggests that stage based interventions are no more effective than non-stage based interventions or no intervention in changing smoking behaviour.	*Study countries:* Not clear *Relevance score:* B
Secker-Walker 2002	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 32	Adults, 18 years or older.	To carry out a systematic review to assess the effectiveness of community interventions in reducing the prevalence of smoking.	Thirty two studies were included, of which seventeen included only one intervention and one comparison community. Only four studies used random assignment of communities to either the intervention or comparison group. The population size of the communities ranged from a few thousand to over 100,000 people. Change in smoking prevalence was measured using cross-sectional follow-up data in 27 studies. The estimated net decline ranged from -1.0% to 3.0% for men and women combined (10 studies). For women, the decline ranged from -0.2% to + 3.5% per year (n=11), and for men the decline ranged from -0.4% to +1.6% per year (n=12). Cigarette consumption and quit rates were only reported in a small number of studies. The two most rigorous studies showed limited evidence of an effect on prevalence. In the US COMMIT study there was no differential decline in prevalence between intervention and control communities, and there was no significant difference in the quit rates of heavier smokers who were the target intervention group. In the Australian CART study there was a significantly greater quit rate for men but not women.	*Study countries:* Studies took place in a range of countires including Europe, North America, South Africa and Australia and one in India. *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Serra C 2000	Systematic review (RCT + non-RCT) ***Level:*** 2 ***Review quality:*** + *No. studies:* 11	Users of public places where restrictions or bans on smoking were implemented.	The aim of this review was to determine the effectiveness of interventions aimed at reducing tobacco consumption in public places. The review did not set out to evaluate their effectiveness in encouraging individuals to quit smoking.	Eleven of 22 studies reporting information about interventions to reduce smoking in public places met all the inclusion criteria. All included studies were uncontrolled before and after studies. The most effective strategies used comprehensive, multicomponent approaches to implement policies banning smoking within institutions. Less comprehensive strategies, such as posted warnings and educational material had a moderate effect. Five studies showed that prompting individual smokers had an immediate effect, but such strategies are unlikely to be acceptable as a public health intervention.	*Study countries:* USA only *Relevance score:* B
Sinclair 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 2	Community pharmacy clients who are smokers and who wish to stop.	To assess the effectiveness of interventions by community pharmacy personnel to assist clients to stop smoking.	The authors identified two trials which met the selection criteria. They included a total of 976 smokers. Both trials were set in the UK and involved a training intervention which included the Stages of Change Model; they then compared a support programme involving counselling and record keeping against a control receiving usual pharmacy support. In both studies a high proportion of intervention and control participants began using NRT. Both studies reported smoking cessation outcomes at three time points. However, the follow-up points were not identical (three, six and 12 months in one, and one, four and nine months in the other), and the trend in abstinence over time was not linear in either study, so the data could not be combined. One study showed a significant difference in self-reported cessation rates at 12 months: 14.3% versus 2.7% ($p < 0.001$); the other study showed a positive trend at each follow-up with 12.0% versus 7.4% ($p = 0.09$) at nine months.	*Study countries:* UK only *Relevance score:* A
Smeds-lund 2004	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 19	Workers. Most of the studies were set in workplaces with high smoking prevalence and white, heavy smokers.	To assess the effectiveness of recent worksite smoking cessation interventions and to compare findings with a meta-analysis published in 1990.	Several methodological inadequacies were noted in the included studies. Six of the 19 studies reported attrition during the intervention, while seven reported losses at follow-up. Potentially important moderating variables were inconsistently reported. The quite rate at 6 months ranged from 6.1 to 30.8% with the interventions and from 1.05 to 19.15% with the control. Workplace smoking cessation significantly increased quit rates s at 6 months (OR 2.03, 95% CI: 1.42, 2.90) and 12 months (OR 1.56, 95% CI: 1.17, 2.07) compared with control. There was no statistically significant difference between interventions beyond 12 months (OR	*Study countries:* Not stated *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				1.33, 95% CI: 0.95, 1.87). No statistically significant heterogeneity was detected at 6 or 12 months (P=0.11 and P=0.13, respectively). Statistically significant heterogeneity was detected beyond 12 months (P=0.0004). The treatment effect at 6 months was greater and precision was less in non-randomised studies (2 non-randomised trials; OR 4.65, 95% CI: 1.92, 11.28) in comparison with RCTs (6 RCTs; OR 1.74, 95% CI: 1.26, 2.40). No statistically significant heterogeneity was detected (P=0.79 and P=0.23, respectively). The results were similar at 12 months. There was no statistically significant difference between the interventions beyond 12 months for RCTs or non-randomised studies. Statistically significant heterogeneity was detected for non-randomised studies (P=0.0003), but not for RCTs (P=0.10).	
Sowden 2003	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 17	Young people aged less than 25 years in chosen communities and areas. The age of participants ranged from 8 to 24 years across the different studies.	To assess the effectiveness of community interventions in preventing the uptake of smoking in young people.	All studies used a controlled trial design, with six using random allocation of schools or communities. Of thirteen studies which compared community interventions to no intervention controls, two, which were part of cardiovascular disease prevention programmes, reported lower smoking prevalence. Of three studies comparing community interventions to school-based programmes only, one found differences in reported smoking prevalence. One study reported a lower rate of increase in prevalence in a community receiving a multi-component intervention compared to a community exposed to a mass media campaign alone. One study reported a significant difference in smoking prevalence between a group receiving a media, school and homework intervention compared to a group receiving the media component only.	*Study countries:* 11 studies took place in USA, 3 in UK, 2 in Australia and 1 in Finland. *Relevance score:* A
Sowden 1998	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 6	Young people aged less than 25 year	To determine the effectiveness of mass media campaigns in preventing the uptake of smoking in young people.	Six studies reporting the effectiveness of mass media campaigns met the inclusion criteria for this review, two of which were associated with reductions in smoking behaviour. One found that a mass media campaign was effective in influencing smoking behaviour compared with no intervention. One found that a mass media campaign combined with a schools-based programme was more effective than a schools-based programme alone. Both of these studies also found statistically significant differences between the intervention and control groups on intermediate outcomes, such as attitudes towards smoking, smoking norms and intentions to smoke in the future.	*Study countries:* Five studies in USA and one in Norway. *Relevance score:* B

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Stead 2003	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 27	Smokers or recent quitters. The definition of recent quitters was that used by the trial recruitment protocols, or by the participants themselves.	To evaluate the effect of proactive and reactive telephone support to help smokers quit.	Thirteen trials compared proactive counselling to a minimal intervention control. There was statistical heterogeneity, with five trials showing a significant benefit, and eight showing non significant differences. The heterogeneity was associated with trials that provided tailored self-help materials to the control group. Meta-analysis using all less intensive intervention arms as the control removed the heterogeneity and suggests that telephone counselling compared to less intensive intervention increases quit rates (OR 1.56, 1.38 - 1.77). Four trials adding telephone support to a face to face intervention control failed to detect a significant effect on long term quit rates. Four trials failed to detect an additional effect of telephone support in users of nicotine replacement therapy. Providing access to a hotline showed a significant benefit in one trial and no significant difference in two. No differences in outcome were detected in trials that compared different types of telephone counselling.	*Study countries:* Majority in USA, two in Australia, one in Canada and Spain. *Relevance score:* C
Stead 2005a	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 55	Smokers of either gender irrespective of their initial level of nicotine dependency, recruited from any setting.	To determine the effects of smoking cessation programmes delivered in a group format compared to self-help materials, or to no intervention; to compare the effectiveness of group therapy and individual counselling; and to determine the effect of adding group therapy to advice from a health professional or to nicotine replacement.	A total of 55 trials met inclusion criteria for one or more of the comparisons in the review. Sixteen studies compared a group programme with a self-help programme. There was an increase in cessation with the use of a group programme (N = 4395, odds ratio (OR) 2.04, 95% CI: 1.60 to 2.60). Group programmes were more effective than no intervention controls (seven trials, N = 815, OR 2.17, 95% CI: 1.37 to 3.45). There was no evidence that group therapy was more effective than a similar intensity of individual counselling. There was limited evidence that the addition of group therapy to other forms of treatment, such as advice from a health professional or nicotine replacement, produced extra benefit. There was variation in the extent to which those offered group therapy accepted the treatment. There was limited evidence that programmes which included components for increasing cognitive and behavioural skills and avoiding relapse were more effective than same length or shorter programmes without these components. This analysis was sensitive to the way in which one study with multiple conditions was included. The authors did not find an effect of manipulating the social interactions between participants in a group programme on outcome.	*Study countries:* Mainly USA and also Germany, Spain, Canada, Jamaica, Hong Kong, France and Norway. *Relevance score:* C
Stead 2005b	Systematic review (RCT + non-RCT)	Tobacco retailers and young people	To assess the effects of interventions to reduce underage access to	The authors identified 34 studies of which 14 had data from a control group for at least one outcome. Giving retailers information was less effective in reducing illegal sales than active enforcement or	*Study countries:* USA

Reviews of prevention of tobacco use, smoking cessation and reduction					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	Level: 1+2 ***Review quality:*** + *No. studies:* 34		tobacco by deterring shopkeepers from making illegal sales.	multicomponent educational strategies, or both. No strategy achieved complete, sustained compliance. In three controlled trials, there was little effect of intervention on youth perceptions of access or prevalence of smoking.	*Relevance score:* C
Thomas 2002	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 76	Children (aged 5 to12) and adolescents (aged 13 to18) in school settings.	To assess the effectiveness of school-based programmes in preventing children and adolescents from starting smoking.	Of the 76 RCTs identified, the authors classified 16 as category one (most valid). There were no category one studies of information giving alone. There were fifteen category one studies of social influences interventions. Of these, eight showed some positive effect of intervention on smoking prevalence, and seven failed to detect an effect on smoking prevalence. The largest and most rigorous study, found no long-term effect of an intensive 8-year programme on smoking behaviour. There was a lack of high quality evidence about the effectiveness of combinations of social influences and social competence approaches. There was limited evidence about the effectiveness of multi-modal approaches	*Study countries:* USA, Canada, Australia, Germany, Italy and the Netherlands, Norway, UK, Mexico and Spain. *Relevance score:* A
Ussher 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 11	Smokers wishing to quit or recent quitters	To establish whether exercise-based interventions alone, or combined with a smoking cessation programme, are more effective than a smoking cessation intervention alone.	The authors identified 11 trials, six of which had fewer than 25 people in each treatment arm. They varied in the timing and intensity of the smoking cessation and exercise programmes. Three studies showed significantly higher abstinence rates in a physically active group versus a control group at end of treatment. One of these studies also showed a significant benefit for exercise versus control on abstinence at the three-month follow up and a benefit for exercise of borderline significance (P = 0.05) at the 12-month follow up. One study showed significantly higher abstinence rates for the exercise group versus a control group at the three-month follow up but not at the end of treatment or 12-month follow up. The other studies showed no significant effect for exercise on abstinence.	*Study countries:* Mainly USA also with one each in Canada, New Zealand and UK. *Relevance score:* A
Wiehe 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 8	School children and leavers up to 18 yrs of age	To conduct a systematic review of rigorously evaluated interventions for school-based smoking prevention with long-term follow-up data.	The abstracts or full-text articles of 177 relevant studies were examined, of which 8 met the selection criteria. The 8 articles included studies differing in intervention intensity, presence of booster sessions, follow-up periods, and attrition rates. Only one study showed decreased smoking prevalence in the intervention group.	*Study countries:* Not stated *Relevance score:* D

4.1.2. Increasing or promoting the uptake of physical activity

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Brunton 2003	Systematic review (RCT + non-RCT) ***Level:*** *1+2* ***Review quality:*** **++** *No. studies:* 5	children aged four to 10.	To address what is known about the barriers to, and facilitators of, physical activity amongst children aged four to 10. It aimed to bring together the findings from 'qualitative' as well as 'quantitative' research on these barriers and facilitators.	Only five interventions (all US based) met the inclusion criteria. Interventions shown to be effective in a least one rigorous study include: education and provision of equipment for monitoring TV or video-game use; engaging parents in supporting and encouraging their children's physical activity; and multi-component, multi-site interventions using a combination of school-based physical education and home-based activities. Five qualitative studies examined children's views about physical activity. The authors found that whilst children have clear views on the barriers to, and facilitators of, their participation in physical activity, their views are often ignored in the development of interventions. Gaps were most noticeable in relation to issues (identified by children), of restricted access to opportunities for physical activity (e.g. busy traffic, poor quality of playgrounds, and the need for local, easily accessible facilities). The authors concluded that whilst there has been a substantial amount of evaluation activity related to promoting children's physical activity, little of this has been conducted in the UK or amongst socially excluded children.	*Study countries:* UK and other countries *Relevance score:* B
Conn 2003	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 17	Older adults (mean age 65 years or older)	To assess the effects of interventions aimed at increasing physical activity in older adults.	The methodological limitations of the studies included: small sample size; use of unvalidated outcome measures (8 RCTs); lack of a theoretical framework underlying the intervention (7 RCTs); and inadequate length of follow-up. Overall, 10 RCTs found the interventions increased physical activity or exercise compared with the control. One RCT reported greater physical activity in the control group. Focus of the intervention: 4 of the 6 RCTs that focused on walking found the intervention increased walking compared with the control. Sample size: 4 of the 5 small studies (n<60) found no difference in physical activity between the intervention and control. Population targeted: 6 of the 9 RCTs in people with health problems reported that the intervention increased physical activity compared with the control. Of the 8 RCTs in untargeted populations, four found the intervention increased activity compared with the control and four found no difference between the interventions.	*Study countries:* Not stated *Relevance score:* C

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				Length of follow-up: 4 of the 9 RCTs assessing outcomes less than 6 months after the intervention found that interventions significantly increased exercise, while 5 of the 7 RCTs assessing outcomes more than 6 months after the intervention found that interventions increased activity. Presence of supervision: 3 of the 5 RCTs of supervised exercise found that the interventions increased physical activity. Seven of the 12 RCTs without supervised exercise reported that the interventions increased exercise. Content of intervention: the results were inconsistent. No intervention with the same content used in 4 or more studies was shown to have a consistently positive or negative effect on physical activity or exercise. Four of the 6 RCTs that individualised the content reported that the interventions increased exercise. Intervention location and delivery: 3 of the 5 RCTs conducted in the participants' homes reported that the interventions increased physical activity. All 4 RCTs conducted in aggregated community settings reported that the interventions increased exercise. Six of the 11 RCTs conducted among researcher formed groups reported positive findings, while the other 5 RCTs reported negative findings. Four of the 5 RCTs that delivered motivational sessions over the phone reported that the interventions increased physical activity compared with the control.	
Dobbins 2001	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 19	Children and young people; schools based. Mix of ethnicities and urban or rural settings	To summarize the evidence of the effectiveness of school-based interventions in promoting physical activity and fitness in children and adolescents.	There is limited, but good evidence that school-based physical activity interventions are effective in increasing physical activity rates in children and adolescents, and in increasing duration of physical activity among children. There is also very limited but good evidence that grade-school-aged children exposed to physical activity promotion programmes lead more active lives as adults. The evidence demonstrates, however, that these interventions are not effective in altering most physical health status indicators. At a minimum, printed educational materials and changes to the school curriculum that promote physical activity are effective.	*Study countries:* USA (13), Australia, Greece, Norway, and the United Kingdom *Relevance score:* A

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Dunn 2001	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 29	Not stated	To examine the effectiveness of brief behavioural interventions adapting the principles and techniques of motivational interviewing (MI) in relation to substance abuse, smoking, HIV risk and diet/exercise.	Diet/exercise studies (5 studies): three of the studies had significant ESs, ranging from 0.36 (95% CI: 0.07, 0.66) to 2.17 (95% CI: 0.93, 3.41). The regression analysis found no significant decline in ESs across the studies as a function of follow-up time (p=0.84). Within studies (using 5 studies with significant ESs and more than one follow-up period) the results were mixed.	*Study countries:* Not stated *Relevance score:* A
Eden 2002	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 10	General primary care patients. The included studies were of sedentary or minimally active adult or senior men and women.	To determine whether counselling adults in primary care settings improves and maintains activity levels.	Interventions compared with a usual care control (5 RCTs and 1 non-randomised controlled trial). The results were mixed. Only one of the 3 trials reporting short-term (less than 6 months) outcomes found that the intervention significantly increased activity in comparison with usual care. Neither of the studies reported a significant interaction. Two of the 6 trials reporting long-term (greater than 6 months) outcomes found that the intervention significantly increased activity in comparison with usual care. None of the other 4 studies found any association. Interventions compared with each other (3 RCTs). One RCT found that advice plus agreeing a goal plus written prescription significantly increased activity at 6 weeks, compared with advice alone. One RCT found that specific goal setting significantly increased activity at 6 weeks in comparison with no specifically set goals. One RCT that compared advice, advice plus educational materials and both combined plus counselling found no significant difference in energy expenditure or fitness for men, but found that the combined intervention significantly increased self-reported physical activity in women at 6 months compared with advice plus educational materials. One study (148 healthy adolescents, 74% met recommendations for vigorous exercise at baseline) found that behavioural-change counselling for diet and exercise, which incorporated goal setting, increased the number of days on which moderate exercise was performed from 3.09 days per week at baseline to 4.52 days per week at 4 months' follow-up.	*Study countries:* Not stated *Relevance score:* C

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Finlay 2005	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 8	General population	To update a previous review investigating the effectiveness of physical activity interventions using mass media, and to assess identified studies for evidence of an understanding of the inception, transmission and reception of mass media interventions.	Overall, the eight studies showed that mass media interventions influenced short-term recall of physical activity messages. Changes in knowledge were noted in certain demographic groups. Six studies investigated changes in physical activity, and all but one found an increase in physical activity post intervention. The increases in physical activity tended to be in small subgroups, or for specific behaviours such as walking.	*Study countries:* USA, Australia, UK *Relevance score:* A
Hillsdon 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 17	Adults in primary health care, workplaces, university and the community	To assess the effects of interventions for promoting physical activity in adults aged 16 years and older, not living in an institution.	The effect of interventions on self reported physical activity (11 studies; 3940 participants) was positive and moderate, with a pooled standardised mean difference of 0.31 (95% CI: 0.12 to 0.50), as was the effect on cardio-respiratory fitness (7 studies; 1406 participants) pooled SMD 0.4 (95% CI: 0.09 to 0.70). The effect of interventions in achieving a predetermined threshold of physical activity (6 studies; 2313 participants) was not significant with an odds ratio of 1.30 (95% CI: 0.87 to 1.95). There was significant heterogeneity in the reported effects as well as heterogeneity in characteristics of the interventions. The heterogeneity in reported effects was reduced in higher quality studies, when physical activity was self-directed with some professional guidance and when there was on-going professional support.	*Study countries:* Not stated *Relevance score:* A
Holtzman 2004	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 71	General population	To examine the evidence that physical activity interventions, alone or combined with diet modification or smoking cessation, are effective in helping individuals sustainably increase their aerobic physical activity or maintain adequate aerobic physical	The range of populations, interventions, and outcomes in the included studies, as well as inadequate information provided, did not allow pooling of studies. Results were examined semi-quantitatively using whether a study was positive, significant, and, when possible, its effect size. Forty-five percent of the studies had at least one statistically significant outcome; 5.9 percent had an effect size greater than .8 and 5.9 percent were between .5 and .8. There were no clear patterns in results by setting, intensity, interventions using theory, combined interventions, and those that addressed accessibility, possibly due to the small number of studies. It was not possible to draw conclusions about mediators and moderators. Physical activity interventions in the cancer survivor populations were found to have	*Study countries:* Not stated *Relevance score:* A

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
			activity.	multiple beneficial effects. The most consistent and strong findings were positive effects on vigor/vitality, cardiorespiratory fitness, quality of life, depression, anxiety, and fatigue.	
Jackson 2005a	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** ++ *No. studies:* 0	People of all ages	To review all controlled evaluation studies of interventions organised through sporting settings to increase participation in physical activity.	No rigorous studies were identified which tested the effects of interventions organised through sporting organisations to increase participation in sport.	*Study countries:* No studies identified *Relevance score:* A
Jackson 2005b	Systematic review (RCT + non-RCT) ***Level:*** 2 ***Review quality:*** + *No. studies:* 0	People of all ages	To review all controlled evaluation studies of policy interventions organised through sporting settings to increase healthy behaviour (related to smoking, alcohol, healthy eating, sun protection, discrimination, safety and access).	No rigorous studies were located to test the effectiveness of policy interventions organised through sporting organisations to increase healthy behaviours, attitudes, knowledge or inclusion of health oriented policies within the organisations	*Study countries:* Not applicable *Relevance score:* A
Jago 2004	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 9	Children and adolescents aged 5 to 18 years.	To assess the effectiveness of non-curricular interventions for increasing physical activity in children and adolescents.	Physical activity during school breaks (5 studies). Three studies found that interventions during school breaks (painting school playgrounds, playground supervisors implementing a games curriculum, and taught playground games or introduced equipment) could increase physical activity by 17 to 60%. One study found that an increased number of physical activity sessions during the day significantly increased activity among boys, but not girls. One study found that structured break periods significantly increased self-reported physical activity in boys and girls. Active travel to school (1 study). One study found that travel coordinators had no significant effect on self-reported school travel patterns. Extracurricular activities (1 study). One study found that after school resistance training had no significant effect on energy expenditure in 12 obese	*Study countries:* Not stated *Relevance score:* B

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				girls. Summer schools or camps (2 studies). Two studies found no consistent significant increase in physical activity. One study found that a summer day camp did not significantly increase physical activity measured by the CSA, but it did increase self-reported usual activity. The other study found that an after school 'activity club' plus summer day camp did not significantly change self-reported habitual blocks of moderate to vigorous activity.	
McLure 2002	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 8	Studies of adults only	To review the literature to determine the effectiveness of using biomarker feedback to motivate and enable health behaviour change	The results of this review were mixed, but suggest that biological information conveying harm exposure, disease risk or impaired physical functioning may increase motivation to change. Subsequent behaviour change is also affected by the availability and intensity of concomitant treatment. Studies that failed to find a significant behaviour effect used only a single biomarker (CO level, cholesterol, or an index of physical fitness) and provided feedback on a single occasion. Three of the eight trials found evidence of behaviour change, which implies an effect on motivation. Each successful trial offered counselling in person and relevant treatment materials.	*Study countries:* Not stated *Relevance score:* B
Ogilvie 2004	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** ++ *No. studies:* 22	Urban populations	To assess what interventions are effective in promoting a population shift from using cars towards walking and cycling and to assess the health effects of such interventions.	22 studies met the inclusion criteria. The authors found some evidence that targeted behaviour change programmes can change the behaviour of motivated subgroups, resulting (in the largest study) in a shift of around 5% of all trips at a population level. Single studies of commuter subsidies and a new railway station also showed positive effects. The balance of best available evidence about publicity campaigns, engineering measures, and other interventions suggests that they have not been effective. Participants in trials of active commuting experienced short term improvements in certain measures of health and fitness, but the authors found no good evidence on effects on health of any effective intervention at population level.	*Study countries:* Range of countries including UK, Denmark, USA, Australia *Relevance score:* A
Proper 2003	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 26	Healthy working people. The participants in the included studies were blue or white-collar workers, home care	To assess the effectiveness of worksite physical activity programmes on improving physical activity, physical fitness and health.	There was strong evidence from two high-quality RCTs that worksite physical activity programmes increased physical activity levels. The evidence for any improvement in cardiorespiratory fitness was inconclusive. One high-quality RCT showed a significant increase in maximum oxygen consumption; however, this was not supported by the results of a second high-quality RCT. Three high-quality RCTs found a positive effect of the intervention on back or neck pain, or incidence of back pain. Limited evidence from two low-quality RCTs	*Study countries:* Not stated *Relevance score:* B

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
		workers, fire-fighters, nurses, police or military personnel.		showed a reduction in fatigue in the treatment groups.There was no evidence of any effect of the intervention on serum lipid levels or blood-pressure.There was inconclusive evidence for changes in muscle flexibility, muscle strength, body weight, body composition and general health with the intervention.	
Rees 2001	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** + *No. studies:* 28	Young people 11-16 years	To provide practitioners, policy-makers and researchers with a summary of evidence to help them develop, implement and evaluate interventions for promoting physical activity amongst young people. The authors had a particular focus on young people from socially excluded groups and upon interventions targeting structural or environmental (e.g. access to facilities) barriers to physical activity.	Two types of study were included: international studies evaluating the effectiveness of interventions, and UK studies examining young peoples own views about physical activity and how it might be promoted. A total of 28 studies met the inclusion criteria: 16 examined young peoples views and 12 were potentially rigorous evaluations of the effectiveness of interventions. Many of the interventions were evaluated in schools, some of which also extended activities into the home and the community through seeking parental involvement. Peer influence was also explored. Reliable evidence on the effectiveness of these efforts was, however, scare. When positive effects were detected these were restricted to young women. In terms of young peoples views, the vast majority saw physical activity as beneficial for both health and social reasons. Young women particularly valued the role of physical activity in maintaining weight and a toned figure, but unlike young men, they found that physical activity did not fit in well with their leisure time. Ideas for promoting physical activity included: increasing or modifying practical and material resources, such as creating more cycle lanes, making activities more affordable, increasing access to clubs for dancing, and combining sports with leisure facilities; and more 'non-traditional' activities to choose from in school PE. A comparison across study types suggest major gaps for research and development. The effectiveness of interventions that address or build on young peoples ideas have yet to be sufficiently evaluated. This is the case for the need for less traditional school-based activities including dance and aerobics, for modifications to PE organisation and teaching, for additional community and personal resources or materials.	*Study countries:* USA and UK *Relevance score:* A

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Van Sluijs 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 29	Adults over 18 yrs.	To systematically review the literature concerning the effect of stages-of-change–based interventions in primary care on smoking, physical activity, and dietary behaviour.	A total of 29 trials were selected for inclusion. Thirteen studies included a physical activity intervention, 14 aimed at smoking cessation, and five included a dietary intervention. Overall methodologic quality was good. No evidence was found for an effect on stages of change and actual levels of physical activity. Based on the strength of the evidence, limited to no evidence was found for an effect on stages of change for smoking and smoking quit rates. Odds ratios for quitting smoking showed a positive trend. Strong evidence was found for an effect on fat intake at short- and long-term follow-up. Limited evidence was found for an effect on stages of change for fat intake at short-term follow-up.	*Study countries:* Not stated *Relevance score:* C
Van-der-Bij 2002	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 38	Older adults (mean age; 51-88) from general community settings;living in nursing/residential home or using primary healthcare facilities.	To evaluate the effectiveness of physical activity interventions among older adults.	*Home-based physical intervention studies (n=9):* the mean participation rate was 90% (range: 86 to 93) for the short-term interventions and lower (range: 49 to 68%; mean not reported) for the long-term interventions. Of the 2 studies reporting the outcome change in physical activity, one was a short-term intervention and the other was long-term. The short-term intervention study reported a decline in exercise activity 18 months after the intervention ended: 3.6 days/week versus 2.8 days/week. The long-term intervention study reported a decline in physical activity in both the intervention and control groups, with the decline being significantly larger in the control group. *Group-based physical intervention studies (n=38):* the mean participation rate was 84% (range: 55 to 100) for the short-term interventions and 75% (range: 63 to 84) for the long-term interventions. Four studies (2 short-term and 2 long-term interventions) comparing baseline and follow-up physical activity levels for the intervention group reported outcome levels that were significantly higher than baseline. Five studies (3 short-term and 2 long-term interventions) comparing control groups reported significantly higher physical activity levels in the intervention groups; 4 of these were the same studies reported for baseline to follow-up activity levels in the intervention group. Three studies (2 short-term and one long-term intervention) compared activity levels at the end of the intervention with levels after 12, 18 or 120 months. Only one of these studies reported significantly higher physical	*Study countries:* Not stated. *Relevance score:* A

Reviews of increasing or promoting the uptake of physical activity					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				activity levels in the intervention group than in the control group. *Educational physical activity interventions (n=10):* All of the studies reported on the outcome change in physical activity. The 6 short-term intervention studies reported a significant increase in physical activity in the intervention group than in the control group. Three of the 9 long-term interventions resulted in a significant improvement in physical activity levels.	

4.1.3. Reducing alcohol misuse or postponing alcohol use

Review of reducing alcohol misuse or postponing alcohol use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Bertholet 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 19	Patients attending primary care	To evaluate the evidence of efficacy of brief alcohol interventions aimed at reducing long-term alcohol use and related harm in individuals attending primary care facilities but not seeking help for alcohol-related problems.	The authors examined 19 trials that included 5639 individuals. Seventeen trials reported a measure of alcohol consumption, of which 8 reported a significant effect of intervention. The adjusted intention-to-treat analysis showed a mean pooled difference of -38 g of ethanol (approximately 4 drinks) per week (95% confidence interval, -51 to -24g/wk) in favor of the brief alcohol intervention group. Evidence of other outcome measures was inconclusive.	*Study countries:* USA, Europe, Africa, Australia. *Relevance score:* C
Ditter 2005	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** + *No. studies:* 7	Total population and people in 'drinking establishments'	To assess the evidence of effectiveness of designated driver programmes for reducing alcohol-impaired driving and alcohol-related crashes.	A single study of a population based designated driver promotion campaign was identified. Survey results indicated a 13 percentage point increase in respondents “always” selecting a designated driver, but no significant change in self-reported alcohol-impaired driving or riding with an alcoholimpaired driver. Eight studies of incentive programmes at drinking establishments met inclusion criteria. Seven of these evaluated the number of patrons who identified themselves as designated drivers before and after programmes were implemented, with a mean increase of 0.9 designated drivers per night (interquartile range: 0.3 to 3.2 designated drivers per night). The eighth study reported a 6 percentage point decrease (p 0.01) inself-reported driving or riding in a car with an intoxicated driver among respondents exposed to an incentive programme.	*Study countries:* USA & Australia *Relevance score:* B
Doggett 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 6	Women with an alcohol problem were defined as those who self reported a problem or women who 'risk drank' on average in excess of 80	To determine the effects of home visits during pregnancy and/or after birth for pregnant women with a drug or alcohol problem.	Six studies (709 women) compared home visits after birth with no home visits. None provided a significant antenatal component of home visits. The visitors included community health nurses, pediatric nurses, trained counsellors, paraprofessional advocates, midwives and lay African-American women. Most studies had methodological limitations, particularly large losses to follow up. There were no significant differences in continued illicit drug use (2 studies, 248 women; relative risk (RR) 0.95, 95% CI: 0.75 to 1.20), continued alcohol use (RR 1.08, 95% CI: 0.83 to 1.41) failure to enrol in a drug treatment programme (2 studies, 211 women; RR 0.45 95% CI: 0.10 to 1.94). There was no	*Study countries:* USA and Australis *Relevance score:* C

Review of reducing alcohol misuse or postponing alcohol use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
		g/day or binge drinking.		significant difference in the Bayley MDI (3 studies, 199 infants; weighted mean difference 2.89, 95% CI: -1.17 to 6.95) or Psychomotor Index (WMD 3.14, 95% CI: -0.03 to 6.32). Other outcomes reported by one study only included breastfeeding at six months (RR 1.00, 95% CI: 0.81 to 1.23), incomplete six-month infant vaccination schedule (RR 1.07, 95% CI: 0.58 to 1.96), non-accidental injury and non-voluntary foster care (RR 0.16, 95% CI: 0.02 to 1.23), failure to use postpartum contraception (RR 0.41, 95% CI: 0.20 to 0.82), child behavioural problems (RR 0.46, 95% CI: 0.21 to 1.01), and involvement with child protective services (RR 0.38, 95% CI: 0.20 to 0.74).	
Elder 2004	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 8	General Population	To assess whether, and under what conditions, mass media campaigns are helpful in preventing AID and alcohol-related crashes.	The median decrease in crashes across all studies and all levels of crash severity was 13% (interquartile range [IQR]: 6% to 14%). The median decrease in injury-producing crashes, the most common crash outcome, was 10% (IQR: 6% to 15%). The two studies that used roadside BAC test results as outcome measures showed net decreases of 158% and 30% in the proportion of drivers with BAC levels that suggest alcohol impairment (0.05 g/dL and 0.08 g/dL, respectively). There was no clear difference in the effectiveness of campaigns that used legal deterrence messages and those that used social and health consequences messages.	*Study countries:* Australia, New Zealand, USA *Relevance score:* B
Elder 2005	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 13	Children in schools-based, and peer organisations	To assess the effectiveness of school-based programmes for reducing drinking and driving and riding with drinking drivers	For instructional programmes, the median estimated change measured in the five studies evaluating self-reported drinking and driving was 0.10 standard deviations (SDs) (range: 0.22 to0.04 SD). The median estimated change in the four studies evaluating the effects of such programmes on self-reported riding with drinking drivers was 0.18 SD(range: 0.72 to 0.10 SD). The instructional programvaried widely with respect to several variables identified in previous research as being potentially important to programme effectiveness, including exposure time, programme content, and degree of interaction with students. Nonetheless, nearly all programmes had some interactive component, rather than being purely didactic in their approach.	*Study countries:* USA, Australia, NZ, and UK *Relevance score:* A
Foxcroft 2002	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** +	Adults and children in schools, colleges and community-based	To identify and summarise rigorous evaluations of psychosocial and educational interventions aimed at the primary prevention	20 of the 56 studies included showed evidence of ineffectiveness. No firm conclusions about the effectiveness of prevention interventions in the short- and medium-term were possible. Over the longer-term, the Strengthening Families Programme (SFP) showed promise as an effective prevention intervention. The Number Needed to Treat (NNT) for the SFP over 4 years for three alcohol initiation behaviours (alcohol use, alcohol use without permission and first drunkeness) was 9 (for all	*Study countries:* USA, UK, Canada, Sweden, Norway, Australia & one international *Relevance score:*

Review of reducing alcohol misuse or postponing alcohol use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	No. studies: 56		of alcohol misuse by young people	three behaviours). One study also highlighted the potential value of culturally focused skills training over the longer-term (NNT=17 over three-and-a-half years for 4+ drinks in the last week).	A
Wagenaar 2002	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* A total of 241 analyses drawn from 132 papers.	Majority of participants were under 21 years old, and many were college students.	To determine the effectiveness of a policy of a minimum legal drinking age (MLDA) of 21 years in reducing the consumption of alcohol by the under-21s and the occurrence of alcohol-related harm.	Forty-eight studies with 78 analyses examining the effect of a MLDA on alcohol consumption were found. In 27 analyses there was a statistically-significant inverse relationship between the MLDA and alcohol consumption, while in 5 analyses there was a statistically-significant positive relationship. Of the 33 analyses judged to be of higher quality, 11 showed a statistically-significant inverse relationship between the MLDA and alcohol consumption and one showed a statistically-significant positive relationship. Of the 24 analyses of college students, 3 reported a statistically-significant inverse relationship and 3 reported a significant positive relationship. The 3 high-quality studies showed no relationship. Fifty-seven studies with 102 analyses of drink-driving and traffic accidents were found. Of these, 52 analyses showed a statistically-significant inverse relationship between the MLDA and accident-related incidents, while 2 showed a statistically-significant positive relationship. Of the 79 studies judged to be of higher quality, 46 showed a statistically-significant inverse relationship between the MLDA and traffic accidents; none found a statistically-significant positive relationship. There were 6 analyses of college students, of which 2 reported an inverse relationship and one a positive relationship. None of the high-quality studies were in college students. Twenty-four studies with 61 analyses of health and social problems (excluding traffic crashes) were found. Ten of these analyses reported a statistically-significant inverse relationship between the MLDA and accident-related incidents, with 4 reporting a positive correlation. Of the 23 studies judged to be of higher quality, 8 showed a statistically-significant inverse relationship between the MLDA and outcome measures; none found a statistically-significant positive relationship. Thirty- four analyses of college students were found, of which 2 showed a statistically-significant inverse relationship and 3 showed a statistically-significant positive relationship. The 2 high-quality studies showed no significant relationship.	*Study countries:* USA and Canada. *Relevance score:* C

Review of reducing alcohol misuse or postponing alcohol use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Walters 2000	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 17	All problem drinkers	To test the overall effectiveness of behavioural self-control training for problem drinking.	There was no statistically-significant heterogeneity across the included studies. The fixed-effect model yielded a combined effect size for the entire sample of 17 studies of 0.33 (standard error 0.08), which was of sufficient magnitude to reject the null hypothesis of no relationship between behavioural self-control training and outcome (Z>1.96). Behavioural self-control training was superior to no intervention or alternative non-abstinence-orientated interventions, but was not statistically significantly better than abstinence-programmes. Additional analyses found behavioural self-control training to be equally effective for use with alcohol-dependent and problem-drinking individuals, and for follow-ups spanning several months to several years.	*Study countries:* Not stated *Relevance score:* B
Wells-Parker 1995	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 194	Drink-driving offenders	To assess the efficacy of interventions to reduce recidivism among drink-driving offenders.	The effect sizes given here exclude those derived from studies that were non-randomised, and in which intervention and comparison groups were not clearly comparable. Educational interventions (48 studies): mean effect size 0.08 (standard error, SE 0.02); median effect size 0.07; 15 studies had a negative effect size. Education alone (24 studies): mean effect size 0.04 (SE 0.03); median effect size 0.02; 8 studies had a negative effect size. Education with another intervention (21 studies): mean effect size 0.12 (SE 0.03); median effect size 0.09; 5 studies had a negative effect size. Psychotherapy or counselling (25 studies): mean effect size 0.07 (SE 0.04); median effect size 0.09; 7 studies had a negative effect size. Psychotherapy or counselling with education (19 studies): mean effect size 0.13 (SE 0.03); median effect size 0.09; 4 studies had a negative effect size. Probation (16 studies): mean effect size 0.01 (SE 0.02); median effect size 0.03; 7 studies had a negative effect size. Alcoholics Anonymous (3 studies): mean effect size -0.12 (SE 0.20); median effect size -0.15; 2 studies had a negative effect size. Antabuse (5 studies): mean effect size 0.08 (SE 0.06); median effect size 0.06; 1 study had a negative effect size. Effects on number of alcohol-related crashes (10 studies): mean effect size 0.07 (SE 0.03).	*Study countries:* Not stated *Relevance score:* C
Whitlock 2004	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** +	Non-dependent drinkers 12 years of age or older	To systematically review evidence for the efficacy of brief behavioural counseling interventions in primary care settings to reduce risky and harmful	Six to 12 months after good-quality, brief, multicontact behavioural counseling interventions (those with up to 15 minutes of initial contact and at least 1 follow-up), participants reduced the average number of drinks per week by 13% to 34% more than controls did, and the proportion of participants drinking at moderate or safe levels was 10% to 19% greater compared with controls. One study reported maintenance of improved drinking patterns for 48 months.	*Study countries:* Australia, New Zealand, UK *Relevance score:* A

Review of reducing alcohol misuse or postponing alcohol use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	No. studies: 12		alcohol consumption		
Willis 2004	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** ++ *No. studies:* 14	Drivers who have been convicted of drink driving.	To systematically assess the effectiveness of ignition interlock programmes on recidivism rates of drink drivers, by examining rates of recidivism while the ignition interlock device was installed in the vehicle and after removal of the device.	The RCT showed that the interlock programme was effective while the device was installed in the vehicle; relative risk 0.36 (95% CI: 0.21 to 0.63). Controlled trials support this conclusion, with a general trend in in both first-time and repeat offenders towards lower recidivism rates when the interlock device is installed. Neither the RCT nor the controlled trials provide evidence for any effectiveness of the programmes continuing once the device has been removed.	*Study countries:* Canada, USA, Australia and Sweden *Relevance score:* C
Zwerling 1999	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 6	Younger drivers subject to relevant laws	To evaluate the effectiveness of low blood alcohol concentration laws for younger drivers	Included studies were heterogeneous in terms of types of interventions, participants and outcome measures. However, all 6 studies showed a reduction in injuries or crashes after the implementation of the law, although, for 3 studies, these reductions were not statistically significant. The study with the smallest reduction in injuries had a power of 70% to detect a 10% decline in serious injuries. Reductions in outcome in the other studies ranged from 11% to 33% with a cluster of parameter estimates just under 20%. One study evaluated laws with different levels of BAC and found a dose-response effect. The greatest reduction (22%) was reported for night-time, single vehicle fatalities in those states with zero BAC laws. In states with 0.02% BAC laws, the reduction average 17% and in states with 0.04 to 0.06% BAC laws, the reduction was 7%.	*Study countries:* USA and other countries *Relevance score:* D

4.1.4. Promoting healthy eating

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Ammer-man 2002	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 29	Studies conducted in populations similar to those encountered in primary care	TTo examine the effectiveness of counselling in the primary care setting to promote a healthy diet. This review question was one of seven questions investigating the relationship between health and diet and the effects of dietary change interventions.	There were 17 studies of dietary fat, 10 of fruit and vegetable intake, 7 of dietary fibre, and 12 of more than one nutrient or food group. All the studies were of good or fair quality. Effect of counselling on dietary fat intake: 6 studies reported large effects, 5 had medium effects and 6 had small effects. Effect of counselling on fruit and vegetable intake: 2 studies reported large effects, 5 had medium effects and 3 had small effects. Effect of counselling on dietary fibre intake: 4 had medium effects and 3 had small effects.The dietary counselling interventions tended to be more effective in high-risk status populations and high-intensity interventions were more effective: the interventions used in high-risk populations tended to be of a higher intensity and, hence, were more effective. Interventions employing more of the effective counselling elements produced larger changes in behaviour. Insufficient studies were found to determine the individual effect of specific counselling techniques. There were no studies of the adverse effects of counselling to alter dietary habits.	*Study countries:* Not stated. *Relevance score:* C
Ciliska 1999	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 15	Participants over 4 years old	To examine the effectiveness of community interventions to increase fruit and vegetable consumption in people aged 4 years and older.	*Interventions with parents of young children (4 studies).* Two of the 4 studies were independent evaluations of the Expanded Food and Nutrition Education Programme (EFNEP). The results of the first study indicated that the intervention group experienced a significant increase in their fruit and vegetable consumption at the end of the 6-month programme, from 2.6 to 3.7 servings/day (P<0.001), with no significant change in the control group. A statistical comparison of the post-test intervention with the post-test control was not given. The results of the second study (RCT) showed that, at the end of the 6 months, the experimental group had a statistically-significant increase over the usual EFNEP intervention in their daily intake of fruits (from 1.5 to 2.6 servings/day, P<0.002) and vegetables (from 0.9 to 1.6 servings/day, P<0.05). A further multicentre cohort analytic study was conducted on mothers whose children were in a 'Head Start' programme. The results indicated that there were no significant differences in groups in total vegetable servings per day, nor in fruit intake for three of the five groups studied. Two of the intervention groups had an increase in fruit	*Study countries:* Not stated *Relevance score:* B

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				consumption, from 1.9 to 2.7 servings/day (P<0.05); they also experienced a significant increase in vitamin C-rich fruits (from 0.3 to 0.67 servings/day, P<0.05) and dark green vegetables (from 0.27 to 0.58 servings/day, P<0.05). The last controlled study assessed a special supplemental nutrition programme for women, infants and children. Both groups increased their fruit and vegetable intake, but the intervention group experienced a statistically-significant greater increase in intake than the control group (P=0.002). The results of the last school intervention that was based on the PRECEDE model showed that at post-test (1 year after completion of the 3-year programme), the intervention group had a significant increase in fruit and vegetable servings/day from 2.63 to 3.0 (P<0.05). *Interventions with adults - non-worksite (3 studies).* In one trial, in which the participants received either tailored or non-tailored information regarding dietary change, there were no differences between the groups observed at follow-up 4 months post-intervention. Both groups decreased their fruit and vegetable intake by 0.25 servings/day. The second randomised trial which was conducted on women who were at risk of breast cancer, aimed to reduce total calorie intake, increase complex carbohydrates, and ensure adequate intake of vitamins and minerals without supplements. The results showed at 12 and 24 months' follow-up, fruit and vegetable intake significantly increased (P<0.001) in the intervention group more than in the control, from a baseline of 15.9% of total kcal/day to 22% at 12 months and 23.1% at 24 months (P<0.001). The total energy intake decreased in the intervention group by 25% and they experienced a mean weight loss of 3.1 kg. The results of the final study, which assessed the effectiveness of having a Healthy Heart Coalition, showed that there was no change in the proportion of people who consumed at least five servings of fruits and vegetables per day, whether or not they were from a community that had an active coalition. *Interventions with adults - worksite (2 studies).* The results of the first trial indicated that the intake of fruits and vegetables increased from 2.6 to 2.8 servings/day in the intervention group, compared with 2.58 to 2.6 servings/day in the control group (P<0.001 The results of the second	

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				trial showed that there was no post-test difference in the mean servings per month of fruit.	
Fletcher 1998	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 23	Free living (i.e. not institutionalised) elderly people above the age of 65 years.	To establish which interventions are effective in promoting healthy eating among elderly people living in the community.	*Nutrition interventions in elderly people in the community meal setting:* Only one study out of three found short-term benefits of the programme. Success was related to focusing on high-risk individuals, use of a motivational group-led model, and the emphasis on improving vitamin, protein and mineral intakes. *Nutrition interventions in elderly people in communal settings:* None of the studies demonstrated adequate evidence for a benefit of intervention, although conversely, none provided adequate evidence for no benefit. Nutrition interventions in the elderly population living in the community: evidence for the effect of nutrition interventions targeting elderly people in the general community was poor. *Nutrition interventions as part of health promotion interventions: the* results of three RCTs suggest that a feedback/goal-setting type intervention may lead to improved eating behaviours in elderly people.	*Study countries:* Only studies from developed countries were included in the review - the only country specifically mentioned is USA. *Relevance score:* B
Roe 1997	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 76	Adults and children in different settings	1. To summarise recent evaluations of 'Healthy Eating Interventions', and to critically assess the reliability of evidence on effectiveness and implications for future practice.	Most good quality studies, which reporting a dietary outcome measure, showed a benefit of intervention (15 studies out of 25). Long-term interventions in the population achieved reductions in dietary fat of 1 to 4% of energy intake. Blood cholesterol was measured in less than half of the studies. The majority (7 out of 10) of good quality studies in the settings of schools, workplaces and primary care, showed a reduction in blood cholesterol ranging from 2 to 3% among adults in the general population and from 2 to 10% among children and adolescents. The majority (5 out of 6) of good quality studies of community-based interventions showed no effect on blood cholesterol. The greatest magnitude in change in diet was seen in studies with highly motivated volunteers in intensive programmes. A substantial number of studies showed no effect of the intervention on the main outcomes measured, compared with controls. This was seen particularly in the community setting, where a significant change in the intervention group was often equalled in the long term by a secular change in the control group. The majority of interventions in the supermarket and catering settings showed an effect on food purchases in the short term, i.e. while the intervention was in place. Passive manipulation of food composition decreased the fat content of catered meals. The characteristics of	*Study countries:* Not specifically stated but implies UK is included. *Relevance score:* A

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				effective and less effective interventions were also reported.	
Shepherd 2002	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** + *No. studies:* 22	Young people 11-16 years	To provide practitioners, policy-makers and researchers with a summary of evidence to help them develop, implement and evaluate interventions for promoting healthy diet amongst young people.	Several multi-component interventions complementing classroom activities with school wide initiatives as well as involving parents were found to have positive effects. There is stronger evidence for effectiveness amongst young women compared to young men. Although attitudes towards healthy eating were generally positive, personal preferences for fast foods on grounds of taste tended to dominate food choice. Young people particularly valued the ability to choose what they eat. Healthy foods were predominantly associated with parents/adults and the home, whilst fast food was associated with pleasure, friendship and social environments. Factors inhibiting their ability to eat healthily included poor availability of healthy meals at school, healthy foods sometimes being expensive, and wide availability of, and personal preferences for, fast foods. Ideas for promoting nutrition included the provision of information on nutritional content of school meals (for young women particularly), and better food labelling.	*Study countries:* USA and UK *Relevance score:* A
Tedstone 1998	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 14	Children aged roughly 1 to 5, their parents, other family members, and other carers e.g nurseries or nursery staff.	To review interventions promoting healthy diets in children aged 1 to 5 years, with the aim of identifying the most effective methods to bring about dietary changes, in line with dietary goals.	Most studies demonstrated some positive effect on nutrition knowledge. However, the impact on eating behaviour was less frequently assessed and the outcome was variable. There were no data to evaluate the long-term effectiveness on knowledge or behaviour. Interventions targeting children. Traditional, video or computer-based teaching methods were successful at increasing nutrition knowledge, and their effectiveness was enhanced by including parents. A single study showed the same intervention to be more effective when delivered in a pre-school setting by teachers than in a home setting by parents. The studies that assessed food consumption only measured snack selection as an outcome measure, and these showed variable results. The two studies that presented healthy and unhealthy snacks together appeared to show a less positive effect than those where only healthy snacks were offered to the children for evaluation purposes. Behavioural modification techniques using repeated exposure to initially novel foods were successful at increasing willingness to consume the foods, but only if tasting was used as part of the exposure. One study showed that the use of a reward to encourage consumption of	*Study countries:* Not stated - objectives and conclusions of review in relation to UK only, with the indication that interventions from other countrie such as USA were included. *Relevance score:* A

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				foods was unsuccessful once the reward had been removed. Interventions targeting carers. One-to-one diet counselling which was needs focused was successful at bringing about improvements in diet quality and food-related organisational skills in UK mothers. Similarly, haemoglobin concentrations were improved in children whose parents additionally received vouchers to purchase food as part of a welfare programme based in the USA. Nutrition education workshop and a related newsletter were shown to have differential positive effects on children's diets (based on parental questionnaire) when implemented in two different geographical locations. A nutrition education workshop had no effect on the menus offered by school meal providers in day-care centres.	
Thomas 2003	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** + *No. studies:* 33	Children aged 4 - 10	To survey what is known about the barriers to, and facilitators of, healthy eating amongst children aged four to 10 years old. It focuses in particular on barriers and facilitators in relation to fruit and vegetables.	Of the 41 included studies, 33 were outcome evaluations and eight were studies of children's views or the views of their parents/carers.Three of the 33 outcome evaluations studied interventions to encourage children to try unfamiliar fruit and vegetables. Of the 30 which studied interventions to increase children's consumption of any fruit and vegetables, 19 were entered into a statistical meta-analysis (11 were excluded on the grounds that methodological problems meant that their findings could not be relied on). The types of interventions evaluated by these studies were largely school-based, and often combined learning about the health benefits of fruit and vegetables with 'hands-on' experience in the form of food preparation and taste-testing. The majority targeted parents and/or involved them in intervention delivery alongside teachers and health promotion practitioners. Some included environmental modification involving, for example, changes to the foods provided at school. Some interventions targeted more than one outcome (for example, fruit and vegetable consumption, fat intake, knowledge, self-efficacy, Body Mass Index (BMI) and physical activity). The results of the meta-analysis revealed that these kinds of interventions have a small, but significant positive effect. Pooled estimates from the nineteen studies suggest that implementation of these interventions will, on average, increase children's fruit intake by one-fifth of a portion per day and their vegetable intake by a little less then one-fifth of a portion per day. These are averages though, and different	*Study countries:* USA and UK *Relevance score:* A

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				interventions produced different effects. Bigger effects are associated with targeted interventions for parents with risk factors for cardiovascular disease (increasing fruit and vegetable intake by almost two portions) and with those interventions which do not 'dilute' their focus on fruit and vegetables by trying to promote physical activity or other forms of healthy eating (for example, reduced intake of sodium and fat) in the same intervention (effects sizes were three times higher in these studies). Single component interventions, such as classroom lessons alone or providing fruit only tuck shops, were not effective. Two main messages emerged from the findings of studies that conducted integral process evaluations: promoting healthy eating can be an integral and acceptable component of the school curriculum; and effective implementation in schools requires skills, time and support from a wide range of people. The results of the meta-analysis suggest that it is easier to increase children's consumption of fruit than vegetables. Three outcome evaluations studied interventions that attempted to address children's apparent greater dislike for vegetables by 'exposing them' to new or previously disliked vegetables. Their results revealed that it is possible to get children to try these vegetables (although allowing them a choice appears to be more effective than enforcing or rewarding this behaviour), but it is unclear whether such strategies would lead to increases in children's everyday consumption of vegetables.	
Van Teijlingen 1998	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 9	Pregnant women and women of childbearing age. Childbearing-age participants were aged 15-45 or thereabouts.	To assess the effectiveness of specific interventions on changes in pregnant womens' dietary knowledge, attitudes and/or behaviour; to determine the extent of such changes; and to determine the characteristics of effective interventions.	In the five studies of women of childbearing age, results showed that participants could improve their knowledge and dietary intake and that the changes were statistically significantly greater in groups receiving an intervention compared with the controls. In the 4 studies of pregnant women, only one study provided specific outcome data in relation to a healthy diet and that study had adequate statistical power and demonstrated small improvements in both control and intervention groups, with a greater, but statistically non-significant, improvement in the intervention group. This study also evaluated changes in knowledge and attitudes and demonstrated small changes in the desired direction in control and intervention groups; the difference in knowledge scores between the groups reached statistical significance but the magnitude of the difference is unlikely to represent an improvement which is worthwhile in practice. The other three studies suggested that pregnant	*Study countries:* Not stated *Relevance score:* A

Reviews of promoting healthy eating					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				women appear to improve their intake of energy and possibly protein in response to interventions designed to improve pregnancy outcomes, but they did not provide data on other components of a healthy diet or on knowledge or attitudes.	

4.1.5. Preventing illicit drug use

Reviews of preventing illicit drug use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Faggiano 2005	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** ++ *No. studies:* 32	Primary or secondary school pupils formed the target population. Studies targeting special populations were excluded	To evaluate the effectiveness of school-based interventions in improving knowledge, developing skills, promoting change, and preventing or reducing drug use versus usual curricular activities or a different school-based intervention .	(1) Knowledge versus usual curricula Knowledge focused programmes improve drug knowledge (standardised mean difference (SMD) 0.91; 95% CI: 0.42 to 1.39). (2) Skills versus usual curricula Skills based interventions increase drug knowledge (weighted mean difference (WMD) 2.60; 95% CI: 1.17 to 4.03), decision making skills (SMD 0.78; CI 95%: 0.46 to 1.09), self-esteem (SMD 0.22; CI 95% 0.03 to 0.40), peer pressure resistance (relative risk (RR) 2.05; CI 95%: 1.24 to 3.42), drug use (RR 0.81; CI 95% 0.64 to 1.02), marijuana use (RR 0.82; CI 95% 0.73 to 0.92) and hard drug use (RR 0.45; CI 95% 0.24 to 0.85). (3) Skills versus knowledge: no differences are evident. (4) Skills versus affective Skills-based interventions are only better than affective ones in self-efficacy (WMD 1.90; CI 95%: 0.25 to 3.55).	*Study countries:* USA, Canada< Mexico and UK (1 only) *Relevance score:* A
Gates 2006	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 17	Young people under 25 years of age	(1) - To summarise the current evidence about the effectiveness of interventions delivered in non-school settings intended to prevent or reduce drug use by young people under 25;	Many studies had methodological drawbacks, especially high levels of loss to follow-up. There were too few studies for firm conclusions. One study of motivational interviewing suggested that this intervention was beneficial on cannabis use. Three family interventions (Focus on Families, Iowa Strengthening Families Programme and Preparing for the Drug-Free Years), each evaluated in only one study, suggested that they may be beneficial in preventing cannabis use. The studies of multi component community interventions did not find any strong effects on drug use outcomes, and the two studies of education and skills training did not find any differences between the intervention and control groups.	*Study countries:* USA, China and UK (1 only) *Relevance score:* A
Roe 2005	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 16	Children and young people who are vulnerable (leaving care, mental health problems, prostitutes etc)	The aim of this study was to carry out a comprehensive and systematic review of the literature on drug-use prevention with vulnerable young people.	The most common setting for these evaluations was in schools, where life-skills training interventions showed positive results in reducing drug use (at least in the short term). In the community an intensive multi-component intervention (the Children at Risk programme) was the most effective.	*Study countries:* USA *Relevance score:* D

Reviews of preventing illicit drug use					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Werch 2002	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 17	Youths or young adults, especially those in grades 4 to 12 (U.S. education system, and/or equivalent) and college students, were eligible.		The programmes described in the studies were drug prevention programmes (n=9) and alcohol prevention programmes (n=8); both types of programme included tobacco use. In the 17 evaluation studies included in the review, some 43 negative outcomes were reported. The most common negative outcomes resulting from prevention programmes were behavioural effects; these consisted primarily of increases in consumption, especially alcohol use. Drug prevention programmes resulted in 24 harmful effects, which included increases in alcohol use, cigarette use, marijuana use and multiple drug use. These effects were greater than those reported for alcohol prevention programmes. The majority of negative effects were behavioural measures, resulting in increased consumption. The nonbehavioural measures included less self-efficacy to resist alcohol use, greater perceived benefits of drinking and increased drug-use offers. The alcohol prevention programmes resulted in 19 harmful effects. The majority (58%) were nonbehavioural measures, with the most found in alcohol use, followed by cigarettes and marijuana. These nonbehavioural measures included increased estimates of alcohol, cigarette and marijuana offers, pro-alcohol attitudes and increased expectations about drinking in the future. The behavioural measures all resulted in increased alcohol use or related problems.	*Study countries:* Of the 17 studies, 12 were undertaken in the US, 2 in Australia, 2 in Canada, and one in multiple countries (countries not stated) *Relevance score:* B

4.1.6. Preventing sexual risk taking in young people

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
Bennett 2005	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 16	Teenagers under 18.	The authors compared school-based abstinence-only programmes with those including contraceptive information (abstinence-plus) to determine which has the greatest impact on teen pregnancy.	The results of this systematic review show that some abstinence-only and abstinence-plus programmes can change teens' sexual behaviours, although the effects are relatively modest and may last only short term. Delay in initiation of sexual activity was shown in one abstinence-only programme and two abstinence-plus programmes. Three programmes examined whether sexually inexperienced teens exposed to the abstinence-only programmes were less likely to become sexually active than controls. One of these studies did find a statistically significant delay in sexual initiation: 77% of teens in the intervention group remained abstinent at the 6-month follow-up compared with 50% of control teens, p = .05. None of the programmes resulted in decreased numbers of partners in sexually experienced teens. Contrary to concerns that abstinence-plus programmes may increase sexual activity, all except one of the 11 programmes including contraceptive information failed to show an increase in sexual activity or a decline in the age at first intercourse for participating teens. Four abstinence-plus studies found that all teens in the intervention group had decreased frequency of sexual activity compared with controls. The results of these studies call into question the notion that teaching students about contraception in addition to abstinence encourages sexual activity. Although neither abstinence-only nor abstinence-plus programmes had sweeping effects on teens' sexual activity, programmes that offered contraceptive education significantly influenced students' knowledge and use of contraception. Over 80% of abstinence-plus programmes measuring contraceptive knowledge showed an increase at follow-up. In the study that compared an abstinence-only, an abstinence-plus and a control group, the abstinence-plus group reported significantly more condom use than the control groups at all follow-ups with a statistically significant odds ratio of 3.38 at 3 months (95% CI: –9.16) The one study comparing an abstinence-only to an abstinence-plus programme found that teens in the abstinence-only group scored lower on questions about correct contraceptive use. Seven of the 10 programmes that evaluated contraceptive use noted an improvement in the number of teens using contraception. Several	*Study countries:* USA only *Relevance score:* C

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				factors make a direct comparison of teen pregnancy prevention programmes difficult to do. The diversity in the subject populations is one challenge. Even by limiting studies to those conducted in the United States, the variation in teenage culture seen in these studies, affected by such factors as age, degree of urbanization, minority representation, and class, makes it difficult to meaningfully compare the appropriateness of one intervention over another. Variability in the particular pregnancy prevention programme is another challenge, as each had its own intervention curriculum. Finally, small sample sizes limit the generalizability of many studies, and short follow-up times from a few weeks to a couple months do not allow for adequate evaluation of the long-term impact of a programme.	
DiCenso 2002	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** ++ *No. studies:* 26	Adolescents aged 11 to 18 years. Most of the participants were African-American or Hispanic, and were from low socioeconomic groups.	The authors' objective was to determine how effective prevention programmes are at delaying intercourse, increasing the use of contraceptives and reducing unplanned pregnancy among adolescents.	Only 8 of the included studies scored more than two points on the quality assessment scale. The intervention did not reduce pregnancy rates among young women in the programmes (12 trials; OR 1.04, 95% CI: 0.78, 1.40). There was no evidence of statistically-significant heterogeneity among the studies (chi-squared 14.0, d.f.=11, P=0.23). There was evidence to suggest that the intervention increased the rate of pregnancy among the partners of young men in the programme (4 of the 5 studies were abstinence programmes) (OR 1.54, 95% CI: 1.03, 2.29). There was no evidence of statistically- significant heterogeneity among the studies (chi-squared 2.9, d.f.=4, P=0.58). The intervention did not delay the initiation of sexual intercourse among either young women (13 trials; OR 1.12, 95% CI: 0.96, 1.30) or young men (11 trials; OR 0.99, 95% CI: 0.84, 1.16). There was no evidence of statistically-significant heterogeneity among these studies (chi-squared 3.34, d.f.=12, P=0.99 and chi-squared 12.1, d.f.=10, P=0.28, respectively). The intervention did not increase the use of contraception at every intercourse among either young women (8 trials; OR 0.95, 95% CI: 0.69, 130) or young men (3 trials; OR 0.90, 95% CI: 0.70, 1.16). There was evidence of statistically-significant heterogeneity among	*Study countries:* The included studies were carried out in North America, Australia, New Zealand or Western Europe. *Relevance score:* C

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				the studies of young women (chi-squared 12.8, d.f.=7, P=0.08), which was not explained by the authors' a priori hypotheses. Statistically-significant heterogeneity was not evident among the studies of young men (chi-squared 0.07, d.f.=2, P=0.97). The intervention did not increase the use of contraception at last intercourse among either young women (5 trials; OR 1.05, 95% CI: 0.50, 2.19) or young men (4 trials; OR 1.25, 95% CI: 0.99, 1.59). There was evidence of statistically-significant heterogeneity among the studies of young women (chi-squared 14.2, d.f.=4, P=0.007), which was not explained by any of the sensitivity analyses. Statistically-significant heterogeneity was not evident among the studies of young men (chi-squared 0.1, d.f.=3, P=0.99).	
Moos 2003	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 4	Pregnant teenagers aged 12-19 years, males aged 15-18 years, women under 20 years who were attending a FPC for contraception and females under 18 years who were attending a FPC, from white, african american and hispanic backgrounds. Clinical setting.	The authors' objective was to assess the effect of counselling in a clinical setting in the USA to prevent unintended pregnancy in adults and adolescents, and to make recommendations for research.	There was no good-quality evidence available to assess the effectiveness of counselling. The four studies were not well designed and had poor internal and external validity. The interventions were diverse and could not be compared. One RCT (1,449 teenage boys) showed no significant difference in the proportion who were sexually active 1 year post- intervention, but showed that the intervention significantly increased contraceptive use and knowledge about STDs. Methodological flaws included the potential for selection bias (high rates of refusal to participate), a nonrepresentative population (higher income white males) and the lack of intention-to-treat analysis. One cohort study (79 pregnant teenagers) showed that at 6 months the programme significantly increased contraceptive use and knowledge between teenagers with and with no repeat pregnancy, but found no significant difference at 2 years. The number of participants followed up at 2 years was small. Methodological flaws included the small sample size, an unvalidated questionnaire and a high drop-out rate. One longitudinal study (823 women attending a FPC) showed no significant difference between enhanced contingency planning and conventional family planning in continuing the use of contraception at 1 year. Methodological flaws included the potential for selection	*Study countries:* USA only *Relevance score:* C

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				bias, few details of the participants and a high drop-out rate. One longitudinal study (1,256 teenagers attending a FPC) showed that clinics using experimental counselling significantly increased continued use of contraception and had fewer problems with the chosen method than nonexperimental clinics. Methodological flaws included the potential for selection bias, the potential for non-comparable treatment groups and a high drop-out rate. No experimental studies that analysed harms were identified.	
Morrison-Beedy 2004	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 6	Adolescent females; under 19 years old.	The authors' objective was to evaluate existing human immunodeficiency virus (HIV) prevention interventions targeted at adolescent females.	Four of the six studies reported a significant effect of the intervention on an outcome measure. Two reported an increase in condom use, two a decrease in the number of sexual partners, and two a decrease in risky sex. The study reporting an increase in condom use and a decrease in risky sex was a community-based programme that gave information and improved motivation and behavioural skills. The study reporting a decrease in the number of sexual partners and risky sex was conducted in a school setting, and provided 2-hour interactive sessions with videos, skills-building exercises and role play. The study reporting an increase in condom use was set in a family planning clinic, and involved participants in a 10- to 20-minute discussion about STDs and condom use, and demonstration and role play. The study reporting a decrease in sexual partners was based in a children's hospital, and provided one 7-minute video and counselling, with booster sessions.	*Study countries:* Not stated *Relevance score:* C
Mullen 1999	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 20	Participants aged 13 to 19 years.	To determine the effectiveness of behavioural and social interventions on the sexual risk behaviour of sexually experienced adolescents in the United States, and to assess factors associated with variations in outcome.	Sex without condoms was less likely in the sexual risk reduction intervention group than the control/comparison group (13 studies): OR 0.66 (95% CI: 0.55, 0.79, p<0.001). Intervention also had a positive protective effect on the mixed behavioural risk index (2 studies)and the composite behavioural risk outcome (16 studies); the ORs were 0.66 (95% CI: 0.50, 0.88, p<0.01) and 0.65 (95% CI: 0.50, 0.85, p<0.01), respectively. Intervention was not associated with having fewer sexual partners in comparison with the control/comparison group (OR 0.89, 95% CI: 0.76, 1.05) or with reduced STD incidence (2 studies; OR 1.18, 95% CI: 0.48, 2.86). Statistically-significant heterogeneity was found for sex without	*Study countries:* USA only. *Relevance score:* C

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				condoms and the composite behavioural risk outcome. Many of the subgroup analyses resulted in heterogeneous subgroups without significant differences between the subgroups. The formal tests for publication bias were not statistically significant, though the authors indicated there was graphical evidence of possible publication bias.	
Pedlow 2003	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 22	The participants were aged from 9 to 20 years from both general and high-risk populations. Only one study was conducted with homosexual teenagers.	The authors' objective was to provide a review and methodological critique of human immunodeficiency virus (HIV) risk reduction interventions for adolescents.	Sixteen studies evaluated group interventions, with the number of sessions ranging from 1 to 12. Seven evaluated individual interventions, six with a single session and one with five sessions. Of the 23 interventions, 13 achieved a statistically significant reduction in risk. Eight studies (4 individual, 4 group) reported on the contraction of STDs, which was reduced in 29% of the studies (1 individual, 1 group). Fifteen studies (5 individual, 10 group) reported on the number of partners, which was reduced in 27% of the studies (1 individual, 3 group). Fifteen studies (6 individual, 9 group) reported on condom use, which improved in 53% of the studies (2 individual, 6 group). Seven studies (1 individual, 7 group) reported on the frequency of unprotected sex, which was reduced in 75% of the studies (6 group). Seven studies (2 individual, 5 group) reported on abstinence, which increased by 14% in one study (a group intervention of 8 sessions). Four group intervention studies reported on delayed onset of sex, which increased in 50% of the studies. Twelve studies (intervention types unclear) reported on the frequency of sex, which was reduced by 42%.	*Study countries:* Not stated *Relevance score:* C
Robin 2004	Systematic review (RCT + non-RCT) ***Level:*** 1+2	Adolescents. Some studies included only African-	To review adolescent sexual risk-reduction programmes that were evaluated using quasi-	Among frequently measured behaviours, condom use (8 studies of 12) was affected most consistently, and delayed initiation of sexual intercourse (4 studies of 11) was affected least consistently. Among measures less commonly used, the most consistent impact was	*Study countries:* USA *Relevance score:* C

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
	Review quality: *-* *No. studies:* 24	American	experimental or experimental methods and published in the 1990s.	observed for whether participants became pregnant or impregnated their sexual partners. Three studies reported negative findings: (a) increased likelihood of males in the intervention group engaging in sex within the last month relative to the control group; (b) increased reports of pregnancy and STD ; (c) less contraceptive use at most recent sex among females who were sexually inexperienced at baseline; or (d) less contraceptive efficiency (i.e. an index measure combining the consistency of contraceptive use and effectiveness of the selected method of contraception) among females in the intervention group. It is worth noting that most studies did not test the treatment by subgroup interaction before conducting subgroup analyses. Programmes with positive effects most commonly employed interactive and participatory educational strategies. Although the authors that effective programmes emphasize skills that reduce specific behaviours, interventions more generally targeted toward increasing youth resiliency and competencies are emerging as promising approaches to reducing sexual risk behaviour.	
Yamada 1999	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** ++ *No. studies:* 24	Adolescents 10-19 yrs of age. Schools, clinics and community-based programmes.	To determine whether primary prevention programmes are effective in preventing sexually transmitted disease (STD) in adolescents aged 10 to 19 years.	The validity of the studies was rated as 'moderate' for 4 studies (n=1,391) and 'weak' for the remaining 20 studies. One of the interventions examined by one of the 4 'moderate' studies was offered in a university setting (the participants included female undergraduates), while the other 3 were offered in the community (the participants included low-income African-American and Hispanic adolescents in the USA). Initiation of sexual intercourse or abstinence (11 studies): only one of the moderately rated studies measured this outcome and found non significant results. One weak study reported a statistically- significant improvement as a result of the intervention. Condom use (20 studies): 8 studies (3 rated as moderate) found a statistically-significant improvement in condom use. Number of sexual partners (12 studies): 4 studies (one rated as moderate) found a statistically-significant reduction in the number of sexual partners. Frequency of sexual intercourse (11 studies): 3 studies (one rated as moderate) demonstrated a reduction in the frequency of sexual partners. Frequency of unprotected sexual intercourse (7 studies): 5 studies (2	*Study countries:* *Relevance score:* C

Reviews of preventing sexual risk taking in young people					
Author and date	**Review type and quality**	**Study population**	**Review objective**	**Main results**	**Applicability to UK**
				rated as moderate) found a statistically-significant reduction in the frequency of unprotected sexual intercourse. Diagnosed cases of STDs (4 studies): none of the moderately rated studies measured diagnosed cases of STD.	

4.2 Evidence tables for question 2. What is the evidence for effectiveness of interventions to change *knowledge* related to the health behaviour, at what level (individual / community / population), and for which population groups (e.g. young people, pregnant women, elderly)?

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
Bennett 2005	Sexual Risk Taking	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** - *No. studies:* 16	Teenagers under 18. Setting of the programmes varied from the suburbs to the inner city. The racial composition of the subjects was also highly variable; majority white or African-American. Five studies provided information on the socioeconomic status.	the authors compared school-based abstinence-only programmes with those including contraceptive information (abstinence-plus) to determine which has the greatest impact on teen pregnancy.	Over 80% of abstinence-plus programmes measuring contraceptive knowledge showed an increase at follow-up. In the study that compared an abstinence-only, an abstinence-plus and a control group, the abstinence-plus group reported significantly more condom use than the control groups at all follow-ups with a statistically significant odds ratio of 3.38 at 3 months (95% CI: –9.16) The one study comparing an abstinence-only to an abstinence-plus programme found that teens in the abstinence-only group scored lower on questions about correct contraceptive use. Seven of the 10 programmes that evaluated contraceptive use noted an improvement in the number of teens using contraception. Several factors make a direct comparison of teen pregnancy prevention programmes difficult to do. The diversity in the subject populations is one challenge. Even by limiting studies to those conducted in the United States, the variation in teenage culture seen in these studies, affected by such factors as age, degree of urbanization, minority representation, and class, makes it difficult to meaningfully compare the appropriateness of one intervention over another. Variability in the particular pregnancy prevention programme is another challenge, as each had its own intervention curriculum. Finally, small sample sizes limit the generalizability of many studies, and short follow-up times from a few weeks to a couple months do not allow for adequate evaluation of the long-term impact of a programme.	*Study countries:* USA only. *Relevance score:* C

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
Faggiano 2005	Drug misuse	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** ++ *No. studies:* 32	Primary or secondary school pupils formed the target population. Studies targeting special populations were excluded	To evaluate the effectiveness of school-based interventions in improving knowledge, developing skills, promoting change, and preventing or reducing drug use versus usual curricular activities or a different school-based intervention .	(1) Knowledge versus usual curricula. Knowledge focused programmes improve drug knowledge (standardised mean difference (SMD) 0.91; 95% CI: 0.42 to 1.39). (2) Skills versus usual curricula. Skills based interventions increase drug knowledge (weighted mean difference (WMD) 2.60; 95% CI: 1.17 to 4.03), (3) Skills versus knowledge. No differences are evident.	*Study countries:* USA, Canada< Mexico and UK (1 only) *Relevance score:* A
Finlay 2005	Physical Activity	Systematic review (non-RCT) ***Level:*** 2 ***Review quality:*** - *No. studies:* 8	Communities:5 cities in central California; age 25 to 60 in New South Wales; age 16 to 74 in England; groups with a high prevalence of obesity in England; 4 cities in southern Ontario; age 50 to 65 in a West Virginia city; age 18 to 65 in an Arizona town.	The authors' objective was to update a previous review investigating the effectiveness of physical activity interventions using mass media, and to assess identified studies for evidence of an understanding of the inception, transmission and reception of mass media interventions. Only the first part of the objective is discussed in the abstract.	Overall, the eight studies showed that mass media interventions influenced short-term recall of physical activity messages. Changes in knowledge were noted in certain demographic groups. Six studies investigated changes in physical activity, and all but one found an increase in physical activity post intervention. The increases in physical activity tended to be in small subgroups, or for specific behaviours such as walking.	*Study countries:* 5 cities in central California, New South Wales, England, 4 cities in southern Ontario, a West Virginia city and an Arizona town. *Relevance score:* A
Moos 2003	Sexual Risk Taking	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** -	Pregnant teenagers aged 12-19 years, males aged 15-18 years, women under 20 years who were	The authors' objective was to assess the effect of counselling in a clinical setting in the USA to prevent unintended pregnancy in adults and	One RCT (1,449 teenage boys) showed no significant difference in the proportion who were sexually active 1 year post- intervention, but showed that the intervention significantly increased contraceptive use and knowledge about STDs. One cohort study (79 pregnant teenagers) showed that at 6	*Study countries:* USA only *Relevance score:* C

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
		No. studies: 4	attending a FPC for contraception and females under 18 years who were attending a FPC	adolescents, and to make recommendations for research.	months the programme significantly increased contraceptive use and knowledge between teenagers with and with no repeat pregnancy, but found no significant difference at 2 years. The number of participants followed up at 2 years was small. Methodological flaws included the small sample size, an unvalidated questionnaire and a high drop-out rate.	
Song 2000	Sexual Risk Taking	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 67	Young people	This study sought to analyze and synthesise findings from selected studies about effects of school-based sexuality education on adolescents' sexual knowledge from 1960 through 1997.	The 67 studies reported 72 outcomes regarding sexual knowledge, which were grouped into six independent variables related to knowledge about sexuality. A weighted effect size method developed by Hedges and Olkin was calculated using all studies. For all studies, 97% of weighted effect sizes were positive. The weighted average effect size on sexual knowledge across all studies of 0.41 was statistically significant, indicating a significant difference occurred between control and experimental groups' mastery of objectives related to sexual knowledge.	*Study countries:* USA *Relevance score:* D
Tedstone 1998	Diet	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 14	Children aged roughly 1 to 5, their parents, other family members, and other carers e.g nurseries or nursery staff.	This report reviewed interventions promoting healthy diets in children aged 1 to 5 years, with the aim of identifying the most effective methods to bring about dietary changes, in line with the dietary goals .	Most studies demonstrated some positive effect on nutrition knowledge. However, the impact on eating behaviour was less frequently assessed and the outcome was variable. There were no data to evaluate the long-term effectiveness on knowledge or behaviour. Interventions targeting children. Traditional, video or computer-based teaching methods were successful at increasing nutrition knowledge, and their effectiveness was enhanced by including parents.	*Study countries:* Not stated (but possibly UK) *Relevance score:* A
Van Teijlingen 1998	Diet	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 9	Pregnant women and women of childbearing age. Childbearing-age participants were aged 15-45 or thereabouts. Studies were community-based and clinic-based.	To assess the effectiveness of specific interventions on changes in pregnant womens' dietary knowledge, attitudes and/or behaviour; to determine the extent of such changes; and to determine the characteristics of effective interventions.	In the five studies of women of childbearing age, results showed that participants could improve their knowledge and dietary intake and that the changes were statistically significantly greater in groups receiving an intervention compared with the controls. One study also evaluated changes in knowledge and attitudes and demonstrated small changes in the desired direction in control and intervention groups; the difference in knowledge scores between the groups reached statistical significance but the magnitude of the difference is unlikely to represent an improvement which is worthwhile in practice. The other three studies suggested that pregnant women appear to	*Study countries:* Not stated *Relevance score:* A

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
					improve their intake of energy and possibly protein in response to interventions designed to improve pregnancy outcomes, but they did not provide data on other components of a healthy diet or on knowledge or attitudes.	

4.3 Evidence tables for question 3. What is the evidence for effectiveness of interventions to change attitudes related to the health behaviour, at what level (individual / community / population), and for which population groups (e.g. young people, pregnant women, elderly)?

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
Ciliska 1999	Diet	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 15	Participants over 4 years old: low-income mothers (n=4,106), grade 4 to 9 school children	To examine the effectiveness of community interventions to increase fruit and vegetable consumption in people aged 4 years and older.	Interventions with school children (6 studies). One study showed that there was a significant increase in consumption of broccoli, carrots, spinach salad (all at P<0.05) and green beans (P<0.01). The programme significantly improved the knowledge of students in kindergarten to grade 5, but not of those in grade 6. There was also a significant improvement in attitude towards eating nutritious foods and vegetables, but not towards eating new foods. A second study, which assessed a curriculum taught over grades 3, 4 and 5 on the experience of eating a variety of foods, indicated that there were no overall significant differences in the groups on food intake or attitude scores at post-test. An analysis of variance also showed no differences by site, gender or ethnicity.	*Study countries:* Not stated *Relevance score:* B
Sowden 1998	Smoking	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 6	Young people aged less than 25 year	To determine the effectiveness of mass media campaigns in preventing the uptake of smoking in young people.	Six studies reporting the effectiveness of mass media campaigns met the inclusion criteria for this review, two of which were associated with reductions in smoking behaviour. One found that a mass media campaign was effective in influencing smoking behaviour compared with no intervention. One found that a mass media campaign combined with a schools-based programme was more effective than a schools-based programme alone. Both of these studies also found statistically significant differences between the intervention and control groups on intermediate outcomes, such as attitudes towards smoking, smoking norms and intentions to smoke in the future.	*Study countries:* Five studies in USA and one in Norway. *Relevance score:* B
Van Teijlingen 1998	Diet	Systematic review (RCT + non-RCT) ***Level:*** 1+2	Pregnant women and women of childbearing age. Childbearing-	To assess the effectiveness of specific interventions on changes in pregnant womens' dietary	In the 4 studies of pregnant women, only one study provided specific outcome data in relation to a healthy diet and that study had adequate statistical power and demonstrated small improvements in both control and intervention groups, with a greater, but statistically non-	*Study countries:* Not stated *Relevance score:* A

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
		Review quality: + *No. studies:* 9	age participants were aged 15-45 or thereabouts.	knowledge, attitudes and/or behaviour; to determine the extent of such changes; and to determine the characteristics of effective interventions.	significant, improvement in the intervention group. This study also evaluated changes in knowledge and attitudes and demonstrated small changes in the desired direction in control and intervention groups; the difference in knowledge scores between the groups reached statistical significance but the magnitude of the difference is unlikely to represent an improvement which is worthwhile in practice. The other three studies suggested that pregnant women appear to improve their intake of energy and possibly protein in response to interventions designed to improve pregnancy outcomes, but they did not provide data on other components of a healthy diet or on knowledge or attitudes.	

4.4 Evidence tables for question 5. What is the evidence for the effectiveness of different models / theoretical approaches in changing behaviour, attitudes or knowledge?

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
Adams 2003	Physical Activity	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 16		The authors aimed to assess whether interventions based on the transtheoretical model (TTM) are more effective than other interventions in promoting physical activity.	There was substantial heterogeneity in the programmes reviewed in terms of the intervention design, recruitment methods, participants recruited, outcome measures, length of follow-up, and results; this made comparison difficult. Losses to follow-up were often high, ranging from 3 to 61%. In the short term (less than 6 months), most studies (11 out of 15) reported some significant benefit of TTM-based interventions over control conditions, in terms of either stage progression or activity levels. Only 6 studies showed a statistically- significant benefit in terms of increased activity. In one study, the control group (who were given 6 months' free gym membership, starting with 3 weeks of supervised exercise instruction) showed a statistically-significant increase in activity levels in comparison with TTM interventions. In the longer term (over 6 months), only 2 out of 7 studies reported some benefit of TTM-based programmes.	*Study countries:* UK & USA *Relevance score:* A
Andersen 1999	Smoking	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 16 but details of 22 presented in tabular format.	Different groups of smokers,including white female smokers & those with low readiness to change recruited via ads;from alcohol treatment centres;adolescents enrolled in smoking cessation programme;low-	To evaluate the use of the Transtheoretical Model (TTM) used in smoking cessation interventions and to discuss the efficacy of this theoretical framework interventions in smoking cessation interventions.	Across all the intervention studies both the treatment strength (the dose and amount of treatment) and integrity (discrimination between two treatments) was weak. Problems in primary studies included: no independent contribution for stages of change and indicators of addiction level; and the possibility that the intervention may not have been delivered as designed. Only results from the RCTs are reported below. One RCT allocated smokers with low readiness to change to three tailored letters, one tailored letter, self-help guide, or no materials and reported that at 6 months both tailored letters led to greater stage transition among immotives, and that three tailored letters led to significantly greater intention to quit.	*Study countries:* Not specifically stated but USA implied (e.g. African American participants in some studies). *Relevance score:* C

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
			income pregnant women & African American church attender		One RCT compared TTM and action oriented conditions in 135 adolescents enrolled on a two year smoking cessation programme and reported no statistically significant difference between conditions. One RCT allocated volunteer smokers recruited by newspaper ads to standardised self-help manuals (ALA) individualised manuals matched to stage (TTT), interactive expert systems computer reports (ITT), or personalised with four counsellor calls, stage manuals, and computer reports (PITT) and found that, at 18 months, ITT produced more significantly more prolonged abstinence, TTT group were significantly better than ALA, and ITT was significantly better than both ALA and TTT. One RCT allocated 521 low-income pregnant women to usual care or physician provided information, cessation pamphlet and advice to quit and found there to be no significant differences in stages of change between second and 36th week in either group. One RCT allocated 22 African American churches either to intensive culturally specific intervention or self-help and found that after 18 months there were no significant differences in quit rates between the groups, though there was significantly more progress along stages of changes and more awareness of and contact with cessation programmes in intervention groups. Further analysis was reported in the paper, including factors associated with stages of change.	
Faggiano 2005	Drug misuse	Systematic review (RCT + non-RCT) ***Level:*** 1&2 ***Review quality:*** ++	Primary or secondary school pupils formed the target population. Studies targeting	To evaluate the effectiveness of school-based interventions in improving knowledge, developing skills, promoting change, and preventing or reducing	In the review the three groups of prevention programmes (knowledge, skills and affective-focused (social competence) displayed different patterns of efficacy with regard to individual outcomes: • knowledge focused programmes improve mediating variables (especially drug knowledge) compared with usual curricula, but are not more effective then skills based	*Study countries:* USA, Canada< Mexico and UK (1 only) *Relevance score:* A

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
		No. studies: 32	special populations were excluded	drug use versus usual curricular activities or a different school-based intervention .	programmes. When final outcomes are considered (drug use), their effects are comparable to those of the usual curricula and the other two types of programmes; • affective-focused (social competence) programmes improve decision making skills and drug knowledge compared to usual curricula and knowledge-focused interventions. Two low quality studies gave conflicting results: one showed a positive effect for drug use, whereas another showed an opposite effect for marijuana. • skills focused programmes have a positive effect on both mediating variables (drug knowledge, decision making, self-esteem and peer pressure resistance) and final outcomes, compared to usual curricula. The meta-analysis on drug (ns), hard drug and marijuana use (dichotomous variables) show a lower use in the intervention groups at the post test, even years after the intervention, with most of the RCTs included having a satisfactory methodological quality (mainly quality score = B). On the other hand the only difference stemming from the comparison of skills focused programmes with other kind of interventions relates to self-esteem improvement. The findings have some limitations: • none of the RCTs satisfied all the quality criteria used in the review and all were classed as B or C. Even so, all but one of the studies comprised in the meta-analyses had a B quality score; • many comparisons between interventions have never been studied: for example the authors found no comparisons of affective with other interventions with regard to drug behaviour. • most results are outcomes at post test and there are very few evidence long-term follow-ups; • many RCTs do not present effect measures but only statistical indicators (f, p...) or other heterogeneous effect measures so it was impossible to combine them in the meta-analysis	

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
Foxcroft 2002	Alcohol	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** + *No. studies:* 56	Adults and children in schools, colleges and community-based	1. To identify and summarize rigorous evaluations of psychosocial and educational interventions aimed at the primary prevention of alcohol misuse by young people., 2. To assess the effectiveness of primary prevention interventions over the longer-term (> 3 years).	20 of the 56 studies included showed evidence of ineffectiveness. No firm conclusions about the effectiveness of prevention interventions in the short- and medium-term were possible. Over the longer-term, the Strengthening Families Programme (SFP) showed promise as an effective prevention intervention. The Number Needed to Treat (NNT) for the SFP over 4 years for three alcohol initiation behaviours (alcohol use, alcohol use without permission and first drunkeness) was 9 (for all three behaviours). One study also highlighted the potential value of culturally focused skills training over the longer-term (NNT=17 over three-and-a-half years for 4+ drinks in the last week). Whether interventions focused on alcohol alone, or alcohol as one of a number of drugs, appeared to have no effect on outcome in the studies reviewed. However, the majority of these studies were conducted in the U.S.A., where the goal of misuse prevention programmes tends to be abstention from any substance use (including alcohol). This may not be the target outcome for drinking behaviour in other countries, where the emphasis tends to be sensible drinking rather than abstinence. Different philosophies underlie the two approaches so caution must be taken if the adoption of intervention programmes from the United States is contemplated. For example, in Britain different messages are given for alcohol compared with tobacco or illegal drugs - sensible age-related use for the former, abstinence for the latter. Furthermore, it is difficult to judge the relative merits of different interventions if evaluations report different outcomes and the public health relevance of these different outcomes is unknown.	*Study countries:* USA, UK, Canada, Sweden, Norway, Australia & one international *Relevance score:* A
Marshall 2001	Physical Activity	Systematic review (non-RCT)	The participants were men and women at	To summarise the findings from empirical applications of the	Across all constructs and stage transitions (n=56), 413 effect sizes were computed for physical activity (n=46), self-efficacy (n=67), pros (n=50), cons (n=50),	*Study countries:* USA, Canada, UK and Australia.

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
		Level: 2 ***Review quality:*** - *No. studies:* 71 published studies containing 91 samples.	varying stages on the scale of intending to exercise, who were in the age ranges less than 25, 25 to 39, 40 to 54, and 55 years and over.	transtheoreticalmodel (TTM) of behaviour change in the domain of physical activity.	experimental processes of change (n=100), and behavioural processes of change (n=100). Across the total sample, 14% of the individuals were in precontemplation, 16% in contemplation, 23% in preparation, 11% in action and 36% in maintenance. The results on the moderator variables were tabulated in the paper. The stage of change and physical activity was consistent with the TTM; the level of physical activity increased as individuals moved to a higher stage of change. The largest effect was evident for preparation for action (d=0.85, 95% CI: 0.64, 1.07). Small to moderate increases in physical activity were also evident from precontemplation to contemplation (d=0.34, 95% CI: 0.14, 0.55; failsafe k=7), suggesting that transitions between inactive stages are associated with changes in physical activity. Self efficacy: the effect estimates across the stage transitions were all positive and significant, suggesting that confidence to be active increased with each stage of change, as proposed by the TTM. Decisional balance: all effect sizes for behavioural pros were positive and significant with the exception of contemplation to preparation, suggesting that perceived benefits of change increase for every forward stage transition. The largest and most robust effect size was evident from precontemplation to contemplation (d=0.97; failsafe k=50). Contemplation to preparation had the smallest and least robust effect estimate (d=0.01). Decisional balance: all effect sizes for behavioural cons were small to moderate, significant and negative, suggesting that the perceived disadvantages of becoming physically active decrease across the stages. Processes of change (findings tabulated in the paper): across all processes of change, the largest effects were evident from precontemplation to contemplation (d range: 0.55 to 1.18). For all five behavioural processes and three experiential processes, the smallest effects were evident from action to maintenance (d range: 0.03 to 0.07). Across all processes and stage transitions, the largest single effect	*Relevance score:* A

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
					size was for self-liberation from pre- contemplation to contemplation (d=1.18; failsafe k=25).	
Robin 2004	Sexual Risk Taking	Systematic review (RCT + non-RCT) ***Level:*** 1+2 ***Review quality:*** - *No. studies:* 24	Some studies included only African-American	To review adolescent sexual risk-reduction programmes that were evaluated using quasi-experimental or experimental methods and published in the 1990s.	Virtually no key study features or programme characteristics clearly distinguish studies with positive, null, and negative effects from each other. However, when the authors aggregate the studies, four implications for effective programmes become apparent: (a) they have focused on skills that reduce specific sexual risk behaviours; (b) the duration and intensity of a programme may play a role in its effectiveness; (c) the need for researchers and health educators to carefully determine what constitutes an entire programme; and (d) programme facilitators' training may be more important than whether facilitators' and participants' demographic characteristics match. The importance of emphasizing skills focusing on reducing specific sexual risk behaviours is underscored by the fact that, although most of the programmes contained skills-building activities (e.g., sexual communication, decision-making, problem solving), programmes reporting null and negative effects (with the exception of one study) appeared to emphasize skills that were less specific. The authors also found that many of these programmes were likely to have evaluations published in 1995 or before, and to be between 7 and 15 hours in duration. These findings are consistent with prior literature reviews. Programmes for which evaluations were published after 1995 were of longer duration, and longer programmes also contained more general types of skills and knowledge. This may reflect a shift toward multi-component interventions that target a variety of youth competencies. Such broad-based programmes may be appealing because community objections to them are less likely than objections to programmes focused specifically on sexuality and sexual	*Study countries:* USA *Relevance score:* C

Author and date	Behaviour	Review type and quality	Study population	Review objective	Main results	Applicability to UK
					risk-reduction behaviours. However, more narrowly focused programmes have been more extensively evaluated and their effects are better understood. Consequently, health educators should exercise caution in depending solely on broad-based programmes to reduce sexual risk behaviours among youth.	
Thomas 2002	Smoking	Systematic review (RCT) ***Level:*** 1 ***Review quality:*** + *No. studies:* 76	Children (aged 5 to12) and adolescents (aged 13 to18) in school settings.	To assess the effectiveness of school-based programmes in preventing children and adolescents from starting smoking.	Of the 76 randomised controlled trials identified, the authors classified 16 as category one (most valid). There were no category one studies of information giving alone. There were fifteen category one studies of social influences interventions. Of these, eight showed some positive effect of intervention on smoking prevalence, and seven failed to detect an effect on smoking prevalence. The largest and most rigorous study, the Hutchinson Smoking Prevention Project, found no long-term effect of an intensive 8-year programme on smoking behaviour. There was a lack of high quality evidence about the effectiveness of combinations of social influences and social competence approaches. There was limited evidence about the effectiveness of multi-modal approaches	*Study countries:* USA, Canada, Australia, Germany, Italy and the Netherlands, Norway, UK, Mexico and Spain. *Relevance score:* A