Appendix 9

Community-based interventions to prevent obesity ('Community 1')

EVIDENCE SUMMARY TABLES

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1. GENERAL PUBLIC HEALTH, OR PUBLIC HEALTH LINKED, INTERVENTIONS FOR THE PRIMARY PREVENTION OF OBESITY

SUMMARY

Evidence of efficacy for weight management/reduction

Twelve randomised controlled trial (RCTs) and one controlled before and after study (CBA) were identified which reported weight outcomes. Results suggest that sustained interventions which focused on diet and activity or provided counselling support were more likely to lead to positive trends in the maintenance of healthy weight/prevention of unhealthy weight gain compared with interventions which focused on physical activity (PA) or diet alone though no firm conclusions can be reached.

Diet and activity

Of the five RCTs which addressed diet *and* activity (Murray 1990; Fries 1993; Jeffrey 1999; Simkin Silverman 2003; Dzator 2004) only one (Simkin Silverman) found a significant prevention of unhealthy weight gain, although Fries and Jeffrey noted positive but non-significant trends. Murray, who compared two eating-management and one weight-loss programme with a PA control group, noted greater weight reduction in the weight loss group immediately after the intervention (10 weeks post-baseline), but this benefit was lost at 1-year follow-up. The latter four studies were based in the USA, one of adult men and women (Murray), one of retirees of both sexes (Fries), one of middle-aged women (Simkin Silverman) and one weak study among younger men and women (Jeffery). All four tended to be among higher socio-economic status (SES) populations. Simkin Silverman was an intensive intervention delivered by behavioural psychologists and nutritionists compared with relatively low-intensity interventions reported by Murray, Jeffrey and Fries. A relatively small RCT of Australian couples (Dzator) found no evidence that the intervention prevented unhealthy weight gain despite reporting improvements in diet.

One relatively large US-based study (Elder 1995) considered the effectiveness of a counselling programme focusing on preventive strategies, including individualised goal-setting for older people. Results appear to suggest that participants were more likely to maintain their weight over a 48-month period than those in the control group.

Diet alone

A CBA trial of a community food skills programme for a mostly female group in eight deprived areas of Scotland (Wrieden 2002) noted a slight decrease in mean weight (–0.6 kg) in the intervention subjects at 6 months post-intervention compared with the slight increase (1.8 kg) seen in control subjects (p = 0.049).

Physical activity alone

One US RCT of predominantly older, higher SES, white adults (Stewart 2001) found that information and support provided by trained staff and counsellors resulted in a significant self-reported reduction in body mass index (BMI), compared with no change in BMI among the control group.

Three US-based studies (Coleman 1999; Dunn 1999; Schmitz 2003) found no difference in weight loss between intervention and control groups but did result in significant changes to fat free mass/percentage body fat. Two of these studies were of low intensity (Schmitz focused on strength training, Coleman on daily

30-min walks). One (Dunn) compared 'exercise on prescription' with 6-month fitness centre membership for participants. In this study both the intervention and lifestyle group (behavioural intervention to be moderately active on most days) improved their percent body fat.

Two RCTs found no evidence of effect (Pereira 1998; Hillsdon 2002). A low-intensity UK-based study (Hillsdon) among middle-aged adults found no difference in weight between study participants who received a 'brief negotiation' or 'direct advice' and control group. However, follow-up of participants in this study was poor. Pereira reported no weight differences at 10-year follow-up of US postmenopausal women, although women encouraged to walk as part of the original trial continued to walk significantly more than the control group.

Evidence of efficacy for diet/physical activity outcomes

Dietary outcomes

A high quality systematic review (Pignone 2003) concluded that moderate or high intensity interventions can reduce consumption of saturated fat and increase the intake of fruit and vegetables. Briefer interventions delivered by primary care professionals were also effective but resulted in smaller changes to diet. However, the effect size was to some extent dependent on the number of components included in (i.e. the intensity) of the intervention. Based on complex definitions of effect sizes (for details see Pignone 2003) the authors found that the six studies with three of more components produced medium or large effect sizes.

The findings of the review were supported by three more recent RCTs (Havas 2003; Carpenter 2004; Dzator 2004) and an RCT that was not included in the review (Havas 1998). Carpenter demonstrated improvements to diet in middle-aged women (as measured by a modified healthy eating index) from either group meetings or advice via mail or website with a larger effect from the weekly group meetings. Dzator also found that interactive sessions and/or advice by mail over a 16-week period to couples resulted in improvements to total fat, fibre, and fruit and vegetable intake at 4 months and total fat intake at 12 months follow-up. Marginal improvements were reported in the high intensity versus the low intensity intervention but no significance values were reported.
Two multi-component personalised educational RCTs with lower SES US women, based on social marketing strategies (Havas 1998, 2003), resulted in significant increases in fruit and vegetables in both studies and, also, a reduction in fat and an increase in fibre in the later study (Havas 2003).

Two CBAs were identified (Wrieden 2002; Department of Health 2003), both carried out in the UK. A national before and after evaluation of *Five a Day* pilot projects in five UK communities (Department of Health 2003) concluded that the initiatives stemmed a fall in fruit and vegetable intake against the national trend (a fall in intake in the control group of 0.5 portions per day compared with no change in the intervention group). However a severe lack of methodological detail limits the strength of the conclusions that can be drawn. A community food skills programme for a mostly female group in eight deprived areas of Scotland (Wrieden 2002) resulted in an increase of one portion per week for fruit (p = 0.047) immediately post-intervention but this was not sustained at 6-month follow-up.

See also Broader Community Review (Table 1: supermarkets).

Physical activity

One high quality systematic review and nine more recent RCTs considered the effectiveness of interventions to increase PA levels.

The systematic review (Hillsdon 1996) identified a lack of UK-based research but was able to conclude that interventions to encourage walking and non-facility based activity are most likely to lead to sustainable increases in PA (up to at least 2 years). Only two of the more recent RCTs (Jeffery 1999; Schmitz 2003) did not support these conclusions. A small study finding no significant increase in PA among the intervention group (Schmitz) and a further weak RCT where the statistical values were unclear (Jeffery). The majority of studies were among motivated, higher SES groups but were undertaken among both males and females, a range of age groups, and through a range of delivery methods (e.g. mailed information, brief advice, structured programmes and counselling).

Evidence of corroboration in the UK

Of the intervention studies, one RCT focusing on PA (Hillsdon 2002) and two CBAs concentrating on diet change (Wrieden 2002; Department of Health 2003,) were carried out in the UK. In addition, many of the non-UK interventions identified could be generalisable to the UK, particularly for motivated individuals of higher social status.

In terms of implementation, five UK studies were found. Three (Lloyd 1995; Anderson 1998a; Wrieden 2002) considered barriers to dietary change and one considered potential barriers to increasing walking (Vernon 1998). The dietary studies identified practical issues that could reduce the effectiveness of an intervention (e.g. considering concerns around taste, cost, availability and time), but suggest that once these were addressed participants may be receptive to change, particularly in relation to increasing fruit and vegetable consumption. In terms of walking, the most significant barrier was lack of time reflecting findings of RCTs that compliance was likely to be better with less time demanding interventions (i.e. home- rather than facility-based). A weak UK study looking at the role of community recruited and trained nutrition assistants to provide healthy eating advice and support food related activities (Kennedy 1999) found that a fourfold increase in coverage resulted and that the majority of respondents preferred advice from a local person rather than a health professional, perceiving them to be more approachable and easier to access.

EVIDENCE TABLE 1: GENERAL PUBLIC HEALTH, OR PUBLIC HEALTH LINKED, INTERVENTIONS FOR THE PRIMARY PREVENTION OF OBESITY

First author	**Study design**	**Res type**	**Research quality**	**Study population**	**Research question and design** (include power calculation if available)	**Length of follow-up**	**Main results** (include effect size(s)/confidence intervals for each outcome if available)	**Confounders** (potential sources of bias)**/comments**
Evidence of efficacy (internal validity) for weight maintenance/reduction								
Dzator 2004	RCT Individual	1	+	Couples in Perth, Australia recruited by press and media publicity. Average age 29.4 (SD 8.2) years. No further details other than (in discussion) 'Higher socioeconomic status, based on occupational classification, was over-represented'.	**Aim:** To compare the effects of a diet and PA programme in couples. Couples were randomised to a: (1) programme delivered mainly by mail; (2) a combination of mail and interactive group sessions, or (3) control group. Power calculation: $p = 0.05$ with a power of 80% as a minimum. **Delivered by:** Health promotion professionals, including an exercise physiologist, a clinical nurse and a	16-week intervention. 8-month follow-up (1 year after baseline).	81% completed to 16 weeks (111/137). 59% completed to 1 year (81/137). Diets improved up to 12 months after beginning the 4-month programme, mainly in the interactive group. There were no significant differences for BMI at either four or twelve months in or between any of the groups ($p = 0.210$ at 4 months and $p = 0.121$ at 12 months).	No allocation concealment. Unclear whether the diet and PA questionnaires were validated. Intention to Treat (ITT) used. Motivated (volunteer) and higher SES couples.

					dietitian/nutritionist.			
Schmitz 2003	RCT Individual	1	+	Volunteer female staff and students from the University of Minnesota, USA. Self-reported BMI 20–35 kg/m^2. 100% women aged 30–50 (average 41.8, SD 6.4) years. 90% White, 10% African American or Asian. 85% had completed college.	**Aim:** To assess whether reductions in fat from 15 weeks supervised strength training would be maintained over 6 months of unsupervised exercise. Blocked randomisation by age to a 50-min strength training class twice weekly for 15 weeks followed by 6-month membership to exercise facility or no intervention control **Delivered by:** Supervised training by exercise trainer.	15 weeks supervised, then 6 months unsupervised training.	93% (56/60) of all women completed the study. Twice weekly strength training is behaviourally feasible for busy midlife women and the favourable body composition changes can be maintained over time. Over the total 39 weeks of strength training, the treatment group gained 0.89 kg more in fat free mass (p = 0.009), lost 0.98 kg more in fat mass (p = 0.06), and lost 1.63% more in percent body fat (p = 0.006) compared with control. Strength training did not result in any significant weight loss or waist circumference attenuation; however, there was a significant decrease in percent body fat with intervention compared with control.	Numerous exclusion criteria. No allocation concealment or ITT but 93% follow-up. Participants received US$200 for successful completion of the study. Motivated (volunteer), mostly White and higher SES individuals. This study may also be of relevance to the workplace review.
Simkin-Silverman 2003	RCT Individual	1	++	US study, Pennsylvania. 535 healthy premenopausal volunteer women aged 44–50 (mean age 47, SD 1.9) years with	**Aim:** To examine whether a behavioural intervention aimed at lifestyle changes in diet and PA can prevent the rise in weight and low-density-lipoprotein	54 months.	Attendance was consistently excellent, averaging 90%, with 95% (509/535) attending the 54-month assessment. 80% of intervention participants compared with 45% of controls were at or under baseline weight at 18 months, and 55% compared	Data to 18 months and background information reported in Simkin-Silverman 1998 The Women's Healthy Lifestyle Project. Study had 90% power

				average BMI 20–34 kg/m^2 (approx. half with normal weight at baseline). Participants were predominantly white (% not stated), 85% educated beyond high school and 86% employed.	(LDL)-cholesterol often observed during menopause. Intensive intervention to lower dietary fat and encourage PA and modest weight loss via group meetings and personalised plans. Assessment only control group. **Delivered by:** Behavioural psychologists and nutritionists.		with 26% at 4.5 years ($p < 0.001$), suggesting that weight gain during peri- to postmenopause can be prevented with a long-term lifestyle dietary and PA intervention. The mean weight chance in the intervention group was 0.1 kg below baseline compared with an average gain of 2.4 kg in the control group.	to detect an effect. Essentially White, well educated and motivated (volunteer) women.
Hillsdon 2002 UK Study	RCT Individual	1	+	Healthy sedentary men and women from two medical centres in Wellingborough, UK. *n* = 1658 Mean age = 54.9 (range 45–64) years 49% male 9.4% non-White 10.3% higher educated 44.8% no	**Aim:** To compare two low intensity communication styles in a one-to-one intervention: 1) Brief Negotiation (BN) with client centred consultations; 2) Direct Advice (DA) with info on benefits of PA; and encouragement 3) No intervention control.	1 year (Intervention phone calls until 8.5 months.)	32% follow-up in BN group 33% follow-up in DA group 62.5% follow-up in control Those who undertook less that one 30-min occasion of PA per week at baseline were less likely to complete the final log book than those doing at least that amount (odds ratio [OR] 0.29, 95% confidence interval [CI] 0.16, 0.53). No significant between group difference in weight change for BN and DA groups: Mean change from baseline at 12	Randomisation not clearly described but allocation concealment used. Low follow-up but ITT.

				education	Both intervention groups received 30 minute baseline intervention and telephone calls at 2, 6, 10, 18, 26 and 34 weeks relevant to intervention. **Delivered by:** Health promotion specialist.		month follow-up (95% CI): BN: 0.0 (–0.2, 0.2) DA: 0.01 (–0.2, 0.2) Between group difference: –0.03(–0.36, 0.30), p = 0.86 (adjusted for baseline BMI, age and energy expenditure). No results stated for difference between intervention vs. control in BMI change.	
Stewart 2001	RCT Individual	1	+	Volunteers from two Medicare health maintenance organisations in the US (California?). 66% female. Mean age 74 (SD 6), range 65–90 years. 8.5% minority groups. 18.9% high school education or less. 22% with graduate degree.	**Aim:** To compare the effectiveness of a choice-based PA programme to increase PA levels of seniors with control group who were offered programme at the end of the year Trained staff assisted participants to develop and maintain a PA regimen that they would be capable of sticking with. Information, support and opportunities for skill building were provided through numerous activities	1-year intervention. No follow-up.	Recruitment 85% (893/1053) of those eligible who responded to invitation. Only 173 were randomised to trial but 95% completion (164/173). Individually tailored programmes to encourage lifestyle changes in seniors may be effective. Self-reported data suggested that the intervention group subjects reduced their BMI from baseline by 0.496 kg/m^2 (p = 0.0001), whereas there was no significant change in the control group (p = 0.004, not significant).	The CHAMPS II Study, based on social cognitive theory. No allocation concealment or ITT but follow-up = 95%. Validated PA measure. Motivated (volunteer) mostly white, older, female majority and higher SES. Many subjects had health problems.

					(including ten workshops). Regular staff initiated phone calls from a counsellor. **Delivered by:** Trained staff and counsellors.			
Coleman 1999	RCT Individual	1	+	Forty-seven sedentary adult volunteer employees at the University of Buffalo, NY, USA (not engaging in vigorous intensity exercise at least three times per week for at least 20 min per session). Average BMI approx. 25.8 kg/m^2. 84% female, average age approx 43.1 (range 18–55) years. Almost exclusively White, well educated and SES 50–53 on a scale of 8–66.	**Aim:** To test different ways of meeting the recommendations for 30 min of moderate intensity activity on most days of the week. Volunteers were randomised to brisk walking 6days per week in: 1) continuous bout; 2) three 10-min bouts; (3) Any combination so long as each bout was at least 5 min. Academic researchers. **Delivered by:** Activity counsellors.	16-week intervention. 16-week follow-up.	77% (36/47) began study and 89% of those (32/36) completed to 16 weeks. A walking prescription of 30 min per day on most days of the week with the choice to walk in as little as 5-min bouts can improve body composition, as well as help sedentary people maintain these improvements over time. Percentage body fat was significantly reduced from baseline to 32-week follow-up in all groups (p = 0.03) although there was no significant change in body weight. No significant effects observed between groups.	No allocation concealment. No ITT but 85% follow-up. Study likely to be underpowered as small study (47 volunteers only from University). Motivated (volunteer), mostly female, white and high SES. Objective measure of activity using the TriTrac accelerometer as well as self-reported measures. Participants deposited US$50, refunded in segments for completion of assessments and good attendance. This paper may also be of relevance to the workplace review.

Dunn 1999	RCT Individual	1	+	Healthy sedentary men and women (self-reported PA of less than 26 and 24 kcal/day respectively) from Dallas, Texas, USA. Most modestly overweight but none >140% over ideal weight. 50.5% women. Average age 46.0 (± 6.6, range 35–60) years. Stated that 'Highly educated' but no details given.	**Aim:** To compare a lifestyle PA programme with traditional structured exercise. Academic research group. Used the Stages of Change model. The structured exercise group received a traditional exercise prescription for 6 months at a fitness centre individualised to participants after first 3 weeks, followed by meetings and correspondence during follow-up. **Delivered by:** 'Group leaders' and project staff. Higher education study. The lifestyle group received an intensive behavioural intervention to encourage 30 min moderate intensity	6 months intensive. 18 months maintenance.	Of 122 participants in the lifestyle group 89% (109/122) completed to 6 months and 82% (100/122) to 24 months. Of 115 in the structured group 90% (103/115) completed to 6 months and 78% (90/115) to 24 months. In initially sedentary healthy adults, a lifestyle PA intervention is as effective as a structured exercise programme. Over 24 months, neither group significantly changed their weight from baseline (–0.05 [95% CI –1.05, 0.96], $p = 0.93$] kg) and +0.69 [95% CI –0.37, 1.74] kg, $p = 0.20$, but each group significantly reduced their percentage of body fat from baseline (–2.39 [95% CI –2.92, –1.85]%, $p < 0.001$ and –1.85 [95% CI –2.41, –1.28]%, $p < 0.001$) in the lifestyle and structured activity groups respectively. No significant differences between groups ($p = 0.17$ for % body fat and $p = 0.32$ for weight).	Lacks a no-intervention control group. No allocation concealment but ITT used. Unclear how participants were recruited but probably volunteers. Highly educated. Measurement staff were blinded to allocation.

					PA most days but no fitness centre membership, followed by less regular meetings and correspondence. **Delivered by:** 'Group facilitators'			
Jeffery 1999	RCT Individual	1	+/– (weak)	Men and women recruited from diverse sources, Minnesota, USA. *n* = 1226 18.6% men 40.5% of women were low income (household incomes of US$25000 or less per year). Mean age = 38.4 years 90.7% white 89% with at least some college education Average BMI = 26.7 kg/m².	**Aim:** To evaluate effectiveness of low-intensity intervention to prevent weight gain with age. No-contact Control compared with: 1) education through monthly newsletters (questionnaire postcard included) encouraging paying attention to weight and making small changes in diet and exercise habits; and 2) education + incentives (entry into US$100 lottery if questionnaire postcard returned). Intervention subjects had option for participation in	3 years (Newsletters continued throughout 3 years.)	106 women who become pregnant excluded from the analysis. 809/1120 (72%) completed all data collection visits. Significant increase between intervention groups and control in self-reported frequency of healthy weight loss practices (including reducing energy intake, increasing exercise and fruit and vegetables intake and decreasing fat intake) (p = 0.01), related to a reduced rate of weight gain over time. Point estimates for rate of weight gain over three years were slightly lower in both intervention groups than control, but differences between all groups not statistically significant, p = 0.88.	No description of randomisation, no allocation concealment or ITT. **Baseline differences:** Mean BMI higher in education-only group. Higher % of whites in two education groups (92% and 93%) than in control (87%). Parallel analyses with subjects completing only partial data (1101/1120 – 98.3%) yielded very similar findings and are not described in paper. Pound of Prevention study.

					community activity every 6 months. Annual study visits for all participants. **Delivered by:** Researchers (although 6-monthly activities delivered by various including nutritionists).			
Pereira 1998	RCT Individual	1	+	Volunteer postmenopausal women from the Pittsburg, Pennsylvania, USA. Average age 57.5 ± 4.2 years. No socio-economic data provided but: 'our population of women was basically of the same … socio-economic status' (quoted verbatim from text).	**Aim:** To test the hypothesis that the women randomised to the walking group of a clinical trial were still walking more 10 years later than the women in the control group. Aim of original trial was to investigate the effect of PA on bone loss. The analysis on that this paper was based looks at increases in activity in the subjects of the above trial and factors associated with compliance. **Delivered by:** Original intervention	2-year intervention? (unclear if intervention continued after 2-year follow-up). 10-year follow-up.	85.6% (196/229) were interviewed by telephone at 10 year follow-up. The median self-reported values for both usual walking for exercise and total walking were significantly higher for walkers compared with controls (for both, $p = 0.01$) but there were no weight differences between groups. **In 1985:** BMI (kg/m^2) in walkers 25.9 (SD 4.84) and in controls 24.4 (SD 4.2). **In 1995:** BMI (kg/m^2) in walkers 25.9 (SD 5.02) and in controls 25.7 (SD 4.86).	Two-year results and background info in Kriska 1986 No allocation concealment. ITT carried out and described in detail in Kriska 1986. Telephone interviewers masked to group assignment.

					delivered by exercise leaders.			
Elder 1995	RCT Individual	1	+	Members of health maintenance organisation (HMO), USA. *n* = 1800 76.8% aged 65–74 years 52.5% female 78.5% had income <US$40,000 per year (approximately £21,000) 65.8% had ≥13-years education.	**Aim:** To evaluate the effectiveness of a preventive services intervention trial compared with control. Intervention was 8-week 2-hour workshops with 25 participants in each delivered in community centres. Workshops on self-care and mental alertness. Goal setting delivered via individualised 15 min counselling sessions. **Delivered by:** 'Facilitators'.	8-week intervention. 12- and 48-month follow-up	84% follow-up in intervention and 82% follow-up in control at 12 months. 44.3% follow-up at 48 months across both intervention and control. Repeated-measures analysis showed that the intervention group experienced little change in body mass in the 48-month period Compared with a consistent, though non-significant rise in body mass levels in the control group ($p \leq 0.10$).	No ITT. No allocation concealment. Difficult to tell if the only difference between groups was the treatment under investigation. Intervention participants received package of preventive interventions including immunizations and clinical tests as part of a larger trial – selected outcome effects may not be solely attributable to the intervention components. Subjects chose to take part in study after being randomly selected for the programme. Therefore subject motivation may have influenced the findings.
Fries 1993	RCT Cluster	1	+	Bank of America Retirees, California, USA. *n* = 4712 Mean age = 68.2 years	**Aim:** To evaluate the effectiveness of low intensity health promotion programme in terms of reduction of health	24 months (Repeat mailings of self-help materials to intervention throughout this	At 12 months 58% follow-up. At 24 months 47% follow-up. Attrition largely attributable to death, loss of eligibility or moving from state of California.	Baseline difference of 1 lb (0.45 kg) between groups in weight over ideal body weight. Group 1 higher at baseline.

				53% Female Highest work grade level = 13.0 (unclear UK comparison).	risk and medical costs. **Group 1:** Low cost (US$30) individualised programme with risk appraisal (signed by physician) and self-help materials delivered entirely by mail. **Group 2:** Risk appraisal with no feedback for first 12 months, then full programme. **Group 3:** Claims data only – control. Research-led. **Delivered by:** Unclear.	time for group 1 and in final 12 months for group 2.)	Non-significant but favourable trend seen at 12 months for weight over ideal body weight, with the between group difference (between group 1 and group 2) being 1 lb (0.45 kg). Group 1 lost 1 lb (0.45 kg) from baseline and group 2 lost 0 lb (0.00 kg).	No allocation concealment. No ITT. High attrition. Possibly generalisable to retirees.
Murray 1990	RCT individual	1	++	208 Participants recruited from the community by a newspaper advertisement in the 'Twin Cities' (Minnesota). Thus participants were	**Aim:** To evaluate several low-intensity intervention programmes designed for the general public to promote dietary change and reduce	Short-term interventions (varying from 4 to 8 weeks) with analysis at 10 weeks (post test) and 1 year (follow-up) after	5% dropped out and a further 14% attended less than half the lessons but an intention to treat analysis was used. Subjects in the weight management programme lost more weight (approx. 5.5 lb [2.49 kg] per person, $p < 0.05$)	No allocation concealment but ITT used. Participants were self-selected. The study was designed to look at cholesterol rather than weight reduction and

				self-selected. Average age 47 (range 25–70) years, 67% female. 89% had completed some education beyond high school, 60% with college degrees. No racial information.	blood cholesterol levels. Participants were randomised to: 1) eating patterns course (four weekly 2-hour sessions on food selection and preparation) including food-preparation/taste-testing component; 2) an identical course without the food-preparation/taste-testing; 3) weight management programme (eight weekly 1-hour sessions); 4) PA programme (four 2-hour sessions with an emphasis on walking). No power calculation. **Delivered by:** Higher education researchers. Classes taught by nutritionists and dietitians recruited from the community.	baseline.	than the control PA group (approx. 1.9 lb [0.86 kg] per person) at post test but both groups returned to within 1 lb [0.45 kg] of their baseline weights at 1 year follow-up. A cholesterol reduction (circa 4%) was maintained to 1-year follow-up in the dietary/weight loss compared with the control (PA) group.	the PA component was used as the control group, thus severely limiting the value of the RCT for weight outcomes. Participants were blocked by gender and past participation in a weight-loss programme.

Wrieden 2002	CBA	2	+	Eight deprived communities in Scotland. **At baseline:** 88% female. Mean age 32.3 (SD 10.2) (range 16–65) years. 72% rented their accommodation, 33% claimed housing benefit, 46% were on income support and 14% received job seekers allowance. Only 4% were employed full time. 64% manual social class, 11% heads of household had never worked. 77% finished full-time education aged ≤16 years, the intervention group having the highest percentage in this category (84%). In all cases a local community worker recruited people to	**Aim:** To develop, implement and evaluate a transferable community-based, food skills initiative aimed at increasing consumption of fibre-rich starchy carbohydrates, fish, vegetables and fruit and decreasing consumption of fat in adults living in areas of deprivation. During 2000–2001 the CookWell programme (ten weekly 2-hour sessions including data) was run in eight locations throughout Scotland for approx 2–3 months in each community (n = 6–10 in each intervention group). The development of the programme was informed by preliminary focus groups within the community.	Three-month intervention plus 6-month follow-up. Quantitative evaluations using food diaries, shopping diaries and questionnaires were carried out in intervention and delayed intervention (control) subjects at baseline, immediately post-intervention (circa 3 months) and 6 months later.	Of 113 subjects initially recruited, 93 (82%) completed the baseline assessments and by the 6-month follow-up 63 (56%) had completed some or all assessments. A slight decrease in mean weight (–0.6 kg) was observed for the intervention subjects at 6-months post-intervention and this was significantly different from the slight increase (1.8 kg) seen in control subjects (p = 0.049).	The Cookwell study. Reliability of outcome measures unclear and only 56% follow-up.

				take part.	**Delivered by:** Higher education researchers. No power calculation.			

Evidence of efficacy (internal validity) for diet outcomes								
Pignone 2003	Systematic review	1	++	Literature search 1966 – December 2001. Twenty-one RCTs were included, of which 21 study arms looked at patients not selected/identified by risk factors and 13 looked at patients with identified risk factors. Two trials were carried out in the UK (Roderick 1997; Steptoe 1999). Both studies included subjects with identified risk factors for coronary heart disease or with hypcholesterolaemi	**Aim:** To determine the effectiveness of counselling to promote a healthy diet among patients in primary care settings.	Trials had to be of at least 3 months duration with a minimum retention rate at follow-up of 50%.	Moderate- or high-intensity counselling interventions in primary care settings including use of interactive health communication tools (e.g. telephone messages, computer generated mailings), can reduce consumption of saturated fat and increase intake of fruit and vegetables. Brief counselling of unselected patients by primary care providers appears to produce small changes in dietary behaviour, but its effect on health outcomes is unclear. The authors could find no clear relationship between the risk status of patients and the effect size achieved. Studies using a greater number of components (e.g. dietary assessment, family involvement, social support, counselling, targeted advice, goal	Medline only searched but reference list follow-up and experts consulted. Otherwise a sound review methodology.

				a.			setting) had larger effect sizes. Six studies with three or more components produced medium (*n* = 2 studies) to large (*n* = 4 studies) effects (see Pignone for definitions). **Effect of reducing saturated fat consumption:** Six studies achieved large effect (>3% point reduction), five achieved a medium effect (1.3–3% point reduction) and six achieved a small effect (<1.3% point reduction). For the nine studies reporting change in % energy from saturated fat, net reductions ranged from 0.9–5.3% points. From ten studies for increasing fruit and vegetables consumption, three demonstrated small or no increases (<0.3 servings/day), five showed medium increases (0.3–0.8 servings/day), and two showed large increases (1.4–3.2 servings/day) (range 0–3.4 servings/day increase).	
Carpenter 2004	RCT Individual	1	++	Participants recruited from authors' database of subjects who expressed interest in participating in	**Aim:** To determine the effect of a cognitive and behavioural skills building intervention delivered via:	6-month intervention. No follow-up.	98/189 eligible participants randomised (52%). 95% of this group completed 6 months and ITT used. A behaviourally focused	Very small (pilot) study although methodologically strong. Described the majority of subjects as overweight but no BMI

				health related clinical trials, in Dallas, USA. 64% women, average age 49.6 (SD 11.3), range 29–71 years. 87% white. Circa 10% ≤12 years education, circa 30% >16 years education.	1) a small group in 20 weekly meetings [WM]; or 2) correspondence (20 sessions via mail and interactive web site) [CR]; compared with 3) a usual care control group [UC] on improvement in total diet quality. **Delivered by:** Weekly meetings delivered by two staff co-facilitators.		intervention can improve overall diet quality, especially if delivered through small-group meetings, compared with delivery through mail and interactive websites. The WM group significantly improved their Modified Health Eating Index (MHEI) score compared with the CR (p = 0.04) and UC (p = 0.002) groups. The CR group's improvement in MHEI score was not significantly different from that of the UC group (p = 0.19).	data. Used a *modified* form of a validated dietary measure – MHEI adapted from the US Department of Agriculture's Healthy Eating Index. Mostly white, motivated (volunteer) subjects.
Dzator 2004	RCT Individual	1	+	Couples in Perth, Australia recruited by press and media publicity. Average age 29.4 (SD 8.2) years. No further details other than (in discussion): 'Higher socioeconomic status, based on occupational classification, was over-represented in our study'.	**Aim:** To compare the effects of a diet and PA programme in couples delivered by different mechanisms, with control. Couples were randomised to either: 1) programme delivered mainly by mail ('low intensity'); 2) a combination of mail and interactive group sessions ('high intensity'); or 3) control group.	Sixteen-week intervention, Eight-month follow-up (1 year after baseline),	81% completed to 16 weeks (111/137). 59% completed to 1 year (81/137). Diets improved up to 12 months after beginning the 4-month programme, mainly in the interactive group. Both interventions were more effective than control with statistically significant differences at 4 months for a reduction in total fat (p = 0.023), grams of fibre (p = 0.037) and fruit and vegetable servings consumed (p = 0.019).* At 12 months, only the results for total fat remained	No allocation concealment. Unclear whether the diet and PA questionnaires were validated. ITT analysis used. Motivated (volunteer) and higher SES couples.

					Power calculation: p = 0.05 with a power of 80% as a minimum. **Delivered by:** Health promotion professionals, including an exercise physiologist, a clinical nurse and a dietitian/nutritionist.		significant (p = 0.013).* *Unclear if these results are comparing intervention groups or intervention and control/ There were only marginal improvements in the high intensity intervention group compared with the low intensity intervention group (no significance values given).	
Havas 2003	RCT Cluster with individual analysis	1	+	2066 women (1055 intervention and 1011 control) served by the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) in Maryland. The majority of participants were black (>50%), <30 years, high school graduates, single, unemployed and with incomes <$15,000.	**Aim:** To decrease the percent of energy derived from fat and to increase fruit, vegetable and fibre intake among low-income women served by the WIC programme. Cluster crossover RCT. Intervention participants had a multidimensional intervention, guided by formative research, which included five interactive nutrition sessions, individualised written materials and phone	6-month intervention with 2-month post-intervention follow-up (8 months) and 1 year later.	Of women meeting criteria, 39% at both intervention and control sites agreed to participate. 71.4% of intervention and 74.7% control participants completed the two months survey and 53.1% and 60.2% respectively completed the 1-year follow-up. Mean differences (intervention-control) in change from baseline were for percent energy from fat – 1.62 ± 0.33% (p < 0.0001), for consumption of fruit and vegetables 0.40 ± 0.11 servings (p = 0.0003), and for fibre intake 1.01 ± 0.31 g (p = 0.001). The changes remained significant at 1-year follow-up for the first two outcomes.	No details of randomisation method or allocation concealment although recruiters were blinded re treatment allocation. Intention to treat analysis carried out. Questionnaire piloted but not validated. ITT analysis but 159 participants (7%) were excluding for reporting 'highly unrealistic calorie [energy] intake'. Each woman was given US$20 for completing the post survey and US$20 for 1-year follow-up survey. Meets criteria for a

					calls. Controls received usual WIC care. No power calculation reported. Intervention provided by peer educators. Higher education researchers.			**social marketing** intervention (see methodology).
Havas 1998	RCT Cluster	1	+	3122 low-income women (enrolled in the federally funded Special Supplemental Nutrition Program for Women, Infants and Children, WIC programme) and their children (control condition *n* = 1679, intervention condition *n* = 1443). Subjects recruited during voucher pick-up [66% acceptance during intervention and 87% acceptance during control phase]. Overall the majority	**Aim:** To increase fruit and vegetable consumption among women served by the WIC programme in Maryland. Power calculation to detect 0.5 helping difference. Randomised crossover design. Randomisation by site, analysis by individual and site. The intervention was informed by focus group research and consisted of three components: nutrition sessions by peer educators; printed materials and visual reminders; and direct	Six-month intervention with 2-month (8-months post baseline) and 1 year later (20 months post baseline) follow-up.	Survey completion at 2 months – 75% intervention; 76% of control. At plus 1 year – 64% intervention; 60% control. ITT used. Two months post-intervention, mean daily consumption had increased by 0.56 ± 0.11 servings in intervention participants and 0.13 ± 0.07 servings in control participants (p = 0.002). One year later, mean consumption had increased by an additional 0.27 servings in both intervention and control (p = 0.004 between groups).	No details of randomisation method or allocation concealment. ITT analysis carried out. More intervention than control participants were black and/or on food stamps and fewer worked. A major concern is the lower baseline consumption of fruit and vegetables in intervention compared with control participants, although the intervention effect was still significant when this baseline difference was controlled for. Questionnaire piloted but not validated. **Ethnic differences:**

				of subjects were black (>50%), <30 years old. single and unemployed.	mail. The control group received the usual WIC programme, which included <10 min of nutrition education. Intervention provided by peer educators. Higher Education researchers.			Subgroup analysis showed that statistically significant changes occurred only among whites and those with at least a high school education. Barriers leading to non-attendance included lack of transportation, work schedules and lack of interest. Each woman was given US$10 for completing post survey. Meets criteria for a **social marketing** intervention (see methodology).
Department of Health 2003	CBA	2	+/–*	National evaluation of *five-a-day* pilot projects in five areas of the UK. No details provided in the executive summary and none available from project despite two approaches (fiveaday@sh.gsi.gov.uk).	**Aim:** To assess the feasibility of implementing an area-wide approach to increasing fruit and vegetable consumption. The intervention included action to improve access to fruit and vegetables by retailers, food co-	1-year intervention with pre- and post-questionnaires.	Response rate information not available but requested by email (see above). The community initiatives stemmed a fall in fruit and vegetable intake against the national trend. There was a fall in intake in the control group by almost half a portion (although baseline data suggested control group had a higher intake by 1.5 portions compared with intervention sites). Overall the intervention had a positive affect	Five-a-day project. Several baseline differences between the control and intervention populations. *Unless response rate information is made available, this study will be potentially severely confounded. Each of the local evaluation sites developed its own

					operatives and targeted promotional activities in the community and by primary health care professionals. Interventions provided by community based cross-sectoral teams in each area. **Delivered by:** Higher education researchers. No power calculation.		on people with the lowest intakes. Those who ate less than five a day at baseline increased their intake by one portion over the course of the study. In contrast, those who ate five or more a day at baseline decreased intakes by about one portion per day. At follow-up, 35% of people in the intervention areas reported improved access to fruit and vegetables compared with 21% in the control area.	evaluation strategy and tools. Due to the variations in methods, it was not possible to compare the results, or draw general conclusion. This paper is relevant to increasing awareness review.
Wrieden 2002	CBA	2	+	Eight deprived communities in Scotland. **At baseline:** 88% female. Mean age 32.3 (SD 10.2), range 16–65 years. 72% rented their accommodation, 33% claimed housing benefit, 46% were on income support and 14% received job seekers allowance. Only 4% were employed full time.	**Aim:** To develop, implement and evaluate a transferable community-based, food skills initiative aimed at increasing consumption of fibre-rich starchy carbohydrates, fish, vegetables and fruit and decreasing consumption of fat in adults living in areas of deprivation. During 2000–2001 the Cookwell	3-month intervention plus 6-month follow-up. Quantitative evaluations using food diaries, shopping diaries and questionnaires were carried out in intervention and delayed intervention (control) subjects at baseline,	Of 113 subjects initially recruited, 93 (82%) completed the baseline assessments and by the 6-month follow-up 63 (56%) had completed some or all assessments. A mean increase equivalent to one portion per week was seen in the intervention group immediately post-intervention for fruit (p = 0.047) but no other significant changes were seen. This change was not sustained at 6-month follow-up. Post-intervention quantitative and qualitative assessments suggested that the percentage of people cooking from basic	The Cookwell study. Reliability of outcome measures unclear and only 56% follow-up.

				64% manual social class, 11% heads of household had never worked. 77% finished full time education aged ≤16 years, the intervention group having the highest percentage in this category (84%). In all cases a local community worker recruited people to take part.	programme (ten weekly 2-hour sessions including data) was run in eight locations throughout Scotland for approx 2–3 months in each community (*n* = 6–10 in each intervention group). The development of the programme was informed by preliminary focus groups within the community. **Delivered by:** Higher education researchers. No power calculation.	immediately post-intervention (circa 3 months) and 6 months later.	ingredients increased in the intervention group compared with the control.	
Evidence of efficacy (internal validity) for physical activity outcomes								
Hillsdon 1996	Systematic review	1	++	Literature search 1966–96. Eleven RCTs included of 12 weeks minimum duration; all from the USA. In terms of the location of exercise, seven trials were home-based and seven	**Aim:** To revise and update a previous systematic review of RCTs of PA promotion in apparently healthy, free living adults.	Studies of 12 weeks minimum duration. Seven of the trials included post-intervention follow-up ranging from 2 months to	Interventions that encourage walking and do not require attendance at a facility are most likely to lead to sustainable increases in overall PA. Levels of PA can be increased and the increase can be maintained for at least 2 years. Regular follow-up, which need not be time consuming and expensive, improves the proportion of people able to maintain initial increases.	**Home-based:** Kriska 1986 Lombard 1995 King 1991 Noland 1989 King 1988 King (different arm) 1988 Godin 1987 **Facility-based:** McAuley 1994

				were facility-based.		12 years: Reid 1979; McAuley 1884; Kriska 1886; King 1988; King 1991; Marcus 1993; Lombard 1995.	Five of the seven home-based trials reported a significant positive outcome of the intervention (Kriska, Lombard, King, Noland, King) but only two of the five facility-based trials (McAuley, King). The small number of trials limits the strength of the conclusions and UK research is needed.	King 1988 MacKeen 1985 Reid 1979 Marcus 1993
Dzator 2004	RCT Individual	1	+	Couples in Perth, Australia recruited by press and media publicity. Average age 29.4 (SD 8.2) years. No further details other than (in discussion): 'Higher socioeconomic status, based on occupational classification, was over-represented in our study'.	**Aim:** To compare the effects of a diet and PA programme in couples. Couples were randomised to a: 1) programme delivered mainly by mail; 2) a combination of mail and interactive group sessions; or 3) control group. **Power calculation:** *p* = 0.05 with a power of 80% as a minimum. **Delivered by:** Health promotion professionals, including an exercise physiologist, a clinical	Sixteen-week intervention Eight-month follow-up (1 year after baseline)	81% completed to 16 weeks (111/137). 59% completed to 1 year (81/137). Both interventions were more effective than control with statistically significant differences at 4 months for exercise days per week (0.7 [SE 0.2]% difference from baseline in both intervention groups and 0.2 [SE 0.2]% difference in control group [*p* = 0.048]) but no difference in the high intervention relative to the low intervention group. At 12 months, there was no significant difference between the intervention and control groups. (High intensity intervention 0.3 [SE 0.2]% change from baseline, low intensity intervention 0.5 [0.2]% change from baseline and control 0.3 [0.2]% change from baseline.)	No allocation concealment. Unclear whether the diet and PA questionnaires were validated. ITT analysis used. Motivated (volunteer) and higher SES couples.

					nurse and a dietitian/nutritionist.			
Schmitz 2003	RCT Individual	1	+	Volunteer female staff and students from the University of Minnesota, USA. Self-reported BMI 20–35 kg/m^2. All women aged 30–50 (average 41.8, SD 6.4) years. 90% White, 10% African American or Asian. 85% had completed College.	**Aim:** To assess whether reductions in fat from 15 weeks supervised strength training would be maintained over 6 months of unsupervised exercise. Blocked randomisation by age to a 50-min strength training class twice weekly for 15 weeks followed by 6-month membership to exercise facility or no intervention control. **Delivered by:** Supervised training by exercise trainer.	Fifteen weeks supervised, then 6 months unsupervised training.	93% (56/60) completed the study. Twice weekly strength training is behaviourally feasible for busy midlife women and the favourable body composition changes can be maintained over time. However, there was no significant difference in PA between intervention and control.	Numerous exclusion criteria. No allocation concealment or ITT but 93% follow-up. Energy intake at baseline was higher in the treatment than the control group. Participants received US$200 for successful completion of the study. Motivated (volunteer), mostly White and higher SES individuals. University employees and researchers – relevant to workplace?
Simkin-Silverman 2003	RCT Individual	1	++	US study, Pennsylvania. 535 healthy premenopausal volunteer women aged 44–50 (mean age 47, SD	**Aim:** To examine whether a behavioural intervention aimed at lifestyle changes in diet and PA can prevent the rise in weight and LDL-	54 months.	Attendance was consistently excellent, averaging 90%, with 95% (509/535) attending the 54-month assessment. At both 6 and 18 months, the intervention group had significantly greater overall activity and energy	Data to 18 months and background info reported in Simkin-Silverman 1998 The Women's Healthy Lifestyle Project.

				1.9) years with average BMI 20–34 kg/m^2 (approx. half with normal weight at baseline). Participants were predominantly white (% not stated), 85% educated beyond high school and 86% employed.	cholesterol often observed during menopause. Intensive intervention to lower dietary fat and encourage PA and modest weight loss via group meetings and personalised plans. Assessment only control group. **Delivered by:** Behavioural psychologists and nutritionists.		expended from walking than controls compared with baseline ($p < 0.05$ for all measures). At 54-months the intervention group had significantly greater overall activity ($p < 0.001$) and less energy intake ($p < 0.01$).	Study had 90% power to detect an effect. Essentially White, well educated and motivated (volunteer) women.
Hillsdon 2002 UK Study	RCT Individual	1	+	Healthy sedentary men and women from two medical centres in Wellingborough, UK. *n* = 1658 Mean age = 54.9 years, range 45–64 49% male 9.4% non-white 10.3% higher educated 44.8% no education	**Aim:** To evaluate effectiveness of low-intensity intervention to prevent weight gain with age. 1) Brief Negotiation (BN) with client centred consultations; 2) Direct Advice (DA) with info on benefits of PA and encouragement) with no intervention control.	1 year (Intervention phone calls until 8.5 months.)	32% follow-up in BN group 33% follow-up in DA group 62.5% follow-up in control. Those who undertook less that one 30-min occasion of PA per week at baseline were less likely to complete the final log book than those doing at least that amount (OR 0.29, 95% CI 0.16, 0.53). ITT revealed that both intervention groups and control group significantly increased PA (energy expenditure in kcal [kJ]/kg per week) from baseline with no significant differences between combined	Randomisation not clearly described but concealment allocation used. Low follow-up but ITT.

					Both intervention groups received 30-min baseline intervention and telephone calls at 2,6,10,18,26 and 34 weeks relevant to intervention Power calculation: Sample size of approx 260 per intervention group (allowing for 10% loss to follow-up) was needed for 76% power to detect a difference of 5 kcal [21 kJ]/kg per week between the two intervention groups, and 87% power to detect a difference of 5 kcal [21 kJ]/kg per week between the combined intervention groups (BN + DA) and the control. **Delivered by:** Health Promotion Specialist.		intervention groups and control group: 3.7% difference (95% CI 4.7, 12.5) (p = 0.39), and no significant differences in PA (energy expenditure) between both intervention groups (10.2% difference (95% CI –3.9, 26.1), p = 0.16). BN groups who completed the study increased their PA significantly more than controls (24 [95% CI 7, 44]%, p < 0.01) No significant difference in energy expenditure between DA completers and control. (Values adjusted for baseline energy expenditure, age, gender, health status, employment, education and home ownership.)	
Stewart 2001	RCT Individual	1	+	Volunteers from two Medicare health maintenance	**Aim:** To examine the effectiveness of a	1-year intervention. No follow-up.	Recruitment 85% (893/1053) of those eligible who responded to invitation. Only 173 were	The CHAMPS II Study, based on social cognitive

				organisations in the US (California?). *n* = 173, randomised of 893 eligible 66% female. Mean age 74 (SD 6, range 65–90) years. 8.5% minority groups. 18.9% high school education or less. 22% with graduate degree.	choice-based PA programme to increase PA levels of seniors, compared with control group who were offered programme at the end of the year. Trained staff assisted participants to develop and maintain a PA regimen that they would be capable of sticking with. Information, support and opportunities for skill building were provided through numerous activities (including ten workshops). Regular staff-initiated phone calls from a counsellor. **Delivered by:** Trained staff and counsellors		randomised to trial but 95% completion (164/173). Individually tailored programmes to encourage lifestyle changes in seniors may be effective. The intervention group increased estimated energy expenditure by 487 kcal (2.04 MJ)/week in moderate or greater intensity activities compared with baseline ($p < 0.001$) and by 687 kcal [2.87 MJ]/week in physical activities of any intensity ($p < 0.001$) compared with baseline. Control group changes were negligible. Between-group analyses found changes were significantly different in both measures ($p < 0.05$).	theory. No allocation concealment or ITT but follow-up = 95%. Validated PA measure. Motivated (volunteer) mostly white, elderly, female majority and higher SES. Many subjects had health problems.
Coleman 1999	RCT Individual	1	+	Forty-seven sedentary adult volunteer employees at the University of Buffalo, NY, USA	**Aim:** To test different ways of meeting the recommendations for 30 min of moderate intensity activity on	16-week intervention. 16-week follow-up.	77% (36/47) began study and 89% of those (32/36) completed to 16 weeks. A walking prescription of 30 min per day on most days of the week with	No allocation concealment. No ITT but 85% follow-up. Small study (47 volunteers only from

				(not engaging in vigorous intensity exercise at least three times per week for at least 20 min per session). Average BMI approx. 25.8 kg/m^2). 84% female, average age approx 43.1 (range 18–55). Almost exclusively White, well educated and SES 50–53 on a scale of 8–66.	most days of the week. Volunteers were randomised to brisk walking 6 days per week in: 1) continuous bout; 2) three 10-min bouts; 3) any combination so long as each bout was at least 5 min. Academic researchers. **Delivered by**: Activity counsellors.		the choice to walk in as little as five min bouts can improve body composition, as well as help sedentary people maintain these improvements over time. Objective and subjective PA measures increased significantly from baseline to the end of the 16-week programme and changes were maintained at the 32-week follow-up for all groups ($p < 0.05$ for all measures).	University). Probably highly motivated, mostly female, white and high SES). Objective measure of activity using the TriTrac accelerometer as well as self-report. Objective measure of activity using the TriTrac accelerometer as well as self-report. Participants deposited US$50, refunded in segments for completion of assessments and good attendance. Semi-workplace intervention?
Dunn 1999	RCT Individual	1	+	Healthy sedentary men and women (self-reported PA of less than 26 and 24 kcal (109 and 100 kJ)/day respectively) from Dallas, TX, USA. Most modestly overweight but	**Aim:** To compare a lifestyle PA programme with traditional structured exercise. Academic research group. Used the Stages of Change	6 months intensive. 18 months maintenance.	Of 122 participants in the lifestyle group 89% (109) completed to 6 months and 82% (100) to 24 months. Of 115 in the structured group 90% (103) completed to 6 months and 78% (90) to 24 months. In initially sedentary healthy adults,	Lacks a no-intervention control group. No allocation concealment but ITT used. Unclear how participants were recruited but probably volunteers. Highly educated.

				none >140% ideal weight. *n* = 235 50.5% women. Average age 46.0 ± 6.6 (range 35–60) years. 'Highly educated' but no details given.	model. The structured exercise group received a traditional exercise prescription for 6months at a fitness centre individualised to participants after first 3 weeks, followed by meetings and correspondence during follow-up. **Delivered by:** **'**Group leaders' and project staff. Higher education study. The lifestyle group received an intensive behavioural intervention to encourage 30 min moderate intensity PA most days but no fitness centre membership, followed by less regular meetings and correspondence. **Delivered by:** 'Group facilitators'.		a lifestyle PA intervention is as effective as a structured exercise programme. At 24 months, adjusted mean changes were 0.84 kcal (3.5 kJ)/kg per day (95% CI 0.42, 1.25), $p < 0.001$, and 0.69 kcal (2.9 kJ)/kg per day (95% CI 0.25, 1.12), $p = 0.002$, for the lifestyle and structured activity groups, respectively. Between-group difference not significant ($p = 0.63$).	Measurement staff were blinded to allocation.

Jeffery 1999 .	RCT Individual	1	+/– (weak)	Men and women recruited from diverse sources, Minnesota, USA. *n* = 1226 18.6% men 40.5% of women were low income (household incomes of US$25000 or less per year (approx. £13,000) Mean age = 38.4 years 90.7% white 89% with at least some college education Mean BMI = 26.7 kg/m²	**Aim:** To evaluate effectiveness of intervention to prevent weight gain with age. No-contact control compared with: 1) education through monthly newsletters (questionnaire postcard included) encouraging paying attention to weight and making small changes in diet and exercise habits; and 2) education + incentives (entry into US$100 lottery if questionnaire postcard returned) Intervention subjects had option for participation in community activity every 6 months. Annual study visits for all participants. **Delivered by:** Researchers (although 6-monthly activities delivered by	3 years (Newsletters continued throughout 3 years.)	106 women who become pregnant excluded from the analysis. 809/1120 (72%) completed all data collection visits. Reported exercise decreased less in the two treatment groups than in control. Statistical significance unclear.	No description of randomisation process. No concealment allocation. No ITT. Baseline differences: Mean BMI higher in education-only group. Higher % of whites in two education groups (92% and 93%) than in control (87%). Parallel analyses with subjects completing only partial data (1101/1120 [98.3%]) yielded very similar findings and are not described in paper. Pound of Prevention study.

					various including nutritionists).			
Pereira 1998	RCT Individual	1	+	Volunteer postmenopausal women from the Pittsburg, Pennsylvania area, USA. *n* = 229, average age 57.5 ± 4.2 years. No socio-economic data provided but: 'our population of women was basically of the same … socio-econ omic status' (quoted verbatim from text).	**Aim:** To test the hypothesis that the women randomised to the walking group of a clinical trial were still walking more 10 years later than the women in the control group. Aim of original trial was to investigate the effect of PA on bone loss. The analysis on which this paper was based looks at increases in activity in the subjects of the above trial and factors associated with compliance. **Delivered by:** Original intervention delivered by exercise leaders.	Two-year intervention? (unclear if intervention continued after 2-year follow-up). Ten-year follow-up.	85.6% (196/229 women randomised into the original trial) were interviewed by telephone at 10-year follow-up. The median values for both self-reported usual walking for exercise and total walking were significantly higher for walkers compared with controls (for both, $p = 0.01$), with median differences of 706 and 420 kcal (2.95 and 1.76 MJ)/week respectively.	Two-year results and background info in Kriska 1986 No allocation concealment. ITT analysis carried out and described in earlier publication. Telephone interviewers masked to group assignment.

Evidence of corroboration (external validity)								
Evidence of salience – Is it appropriate for the UK?								
First	**Study**	**Res**	**Resea**	**Study population**	**Research**	**Length of**	**Main results**	**Confounders/comments**

author	design	earch type	rch quality		question and design	follow-up		
Hillsdon 2002 UK Study	RCT Individual	1	+	Healthy sedentary men and women from two medical centres in Wellingborough, UK. See above.	See above.	See above.	See above.	See above.
DOH 2003	CBA	N/a	+/–* ***[where is note?]***	National evaluation of *five-a-day* pilot projects in five areas of the UK.	See above.	See above.	See above.	See above.
Wrieden 2002	CBA	2	+	Community food skills programme in eight deprived communities in Scotland.	See above.	See above.	See above.	See above.

Evidence for implementation – Will it work in the UK?

First author	Study design	Research type	Research quality	Study population	Research question and design	Length of follow-up	Main results	Confounders/comments
Wrieden 2002	CBA	2	+	Eight deprived communities in Scotland. **At baseline:** 88% female. Mean age 32.3 (SD 10.2),	**Aim:** To develop, implement and evaluate a transferable community-based, food skills initiative aimed at increasing consumption of fibre-rich starchy carbohydrates, fish, vegetables and fruit and	Quantitative evaluations were carried out in intervention and delayed intervention (control) subjects at baseline,	Of 113 subjects initially recruited, 93 (82%) completed the baseline assessments and by the 6-month follow-up 63 (56%) had completed some or all assessments.	The Cookwell study. Reliability of outcome measures unclear and only 56% follow-up.

				range 16–65 years. 72% rented their accommodation, 33% claimed housing benefit, 46% were on income support and 14% received job seekers allowance. Only 4% were employed full time. 64% manual social class, 11% heads of household had never worked. 77% finished full time education aged ≤16 years, the intervention group having the highest percentage in this category (84%). In all cases a local community worker recruited people to take part.	decreasing consumption of fat in adults living in areas of deprivation. During 2000–2001 the Cookwell programme (10 weekly 2-hour sessions including data) was run in eight locations throughout Scotland for approx. 2–3 months in each community (*n* = 6–10 in each intervention group). The development of the programme was informed by preliminary focus groups within the community. **Delivered by:** Higher education researchers. No power calculation.	immediately post-intervention and 6 months later (see above). Qualitative interviews were carried out in a sample of intervention and control subjects at the 6-month follow-up.	Participants reported an increase in confidence and pride. The importance of a creche for sessions with familiar workers was crucial to the attendance of participants with young children. Barriers to changing food intake at home included time, demands of caring for young children, taste preferences of family members and dented confidence if a recipe didn't work out well.	
Kennedy 1999	Audit/Evaluation	3	+	Ninety-four members of the community in low-income areas in Bolton, UK. No socio-economic	**Aim:** To explore the role of CNAs in helping to increase coverage of local community dietetic services and to bring about positive changes in the	N/a	50% of the 94 traceable individuals who had been in contact with the CNA for more than a brief session agreed to take	A highly selected group. Questions unclear and exact activities of CNAs unclear. Results could be confounded.

				details were provided of interviewees although 18% of 163 community nutrition assistants (CNAs) contacts lived in deprived areas as classified by census information.	determinants of health eating, within low-income areas of Bolton. The role of the CNAs, who were locally recruited and trained, was to make contact with members of the community, offer introductory talks to groups, run practical activities (e.g. cook and taste), provide healthy eating advice and support food related activities. Members of the community who had been contact with a community nutrition assistant for more than a brief exploratory session took part in the focus group (*n* = 8) and telephone interviews (*n* = 41). No power calculation. **Delivered by:** Higher education researchers.		part. CNAs resulted in a more than fourfold increase in coverage of community nutrition services. More than half (59%, *n* = 41) the respondents selected for telephone interview said they had made changes in their eating habits as a result of contact with the CNAs. When asked about what factors had influenced these changes more than half identified, without prompting, the CNA as having a positive role. The majority of respondents (77%) preferred having a local person rather than a health professional to fulfil this advisory role because local people were perceived as more approachable, easier to access and showing greater empathy.	
Anderson 1998a	Surveys (within RCT)	3	+	Adults recruited at random through a market research agency in Reading	**Aim:** An assessment of perceived barriers to increasing fruit and vegetable consumption as	8 weeks. Questionnaire surveys at	79% of participants randomised completed the study (*n* = 135/170).	Part of the UK *Take Five* study. Short intervention (8 weeks).

				and Glasgow, UK. **Intervention group:** Average age 35.1 (SD 12.4) years, 74% female, 68% non-manual, 11% unemployed. BMI 25.0 (SD 4.5) kg/m^2.	part of a nutrition education intervention. **Delivered by:** Original RCT probably delivered by higher education researchers.	baseline and 8 weeks.	Belief evaluations pre- and post-study indicated that the support of family and friends, food costs, time constraints and shopping practicalities were barriers to greater consumption to increase fruit and vegetable intake. Perceived situational barriers to increasing intakes were limited availability at work canteens, take-aways, friends' houses and at work generally. Following the intervention the number of visits to the shops was perceived as a greater barrier for increasing intakes of fruit and vegetables. Perceived practical opportunities for increasing intakes highlighted drinking fruit juice, taking fruit as a dessert, having fruit as a between meal snack and eating two portions of vegetables with a meal.	Questionnaires, based on the theory of planned behaviour, were pre-tested though not previously validated. Subjects paid compensation (amount not stated) at end of study.
Vernon 1998	Cross-sectional survey	3	+	Members of the general public living in Salisbury , UK who had requested	**Aim:** To evaluate the 'Doorstep Walks' scheme, a pack detailing ten local walks and	N/a	229 questionnaires returned (71% follow-up) and 61% uptake.	Study design did not allow for an analysis by pre-intervention activity level, which limits

				a walking pack. *n* = 322 71% female	benefits of PA, devised by 'Salisbury Walking Forum', an alliance of local groups. Questionnaires issued to collect demographic information and identify motivations and barriers to walking. **Delivered by:** Salisbury walking forum, an alliance of local groups.		By far the most frequently given reason for non-participation (60%) was the shortage of free time, although other barriers were having no one to walk with (15.6%), having no walks near their home (14.4%), being fearful of walking the routes unaccompanied (12.2%, physically unable (11.1%), needed more encouragement (8.9%) and cost restriction (11.1%).	application of the findings.
Lloyd 1995	Surveys (within RCT)	3	+/–	Volunteers in Reading, UK, recruited through newspaper advertisements, aged 18–55 with a BMI of 20–29.9 kg/m^2. **Experimental group:** 22% men, age 35.1 ± 11.3. No socio-economic data provided.	**Aim:** To examine perceived and actual barriers to dietary fat reduction. Subjects were allocated to control or an experimental group receiving instruction on dietary fat reduction. 'Barrier' questionnaires to subjects in the intervention group (*n* = 45) at 4, 8, 12, 16 and 20 weeks. Analysis concentrates on first questionnaire, since more people attempted change in first two weeks than at other times in the study. **Delivered by:**	20-week intervention No post-intervention follow-up.	87% (61/70) subjects completed the study. Over the first 2 weeks of the study, of dietary changes attempted, reducing intake of cakes, biscuits, snacks and cheese was not popular, whereas increasing intake of fruit and vegetables was one of the most well liked changes. Perceived barriers pre-intervention (reduction in taste, ease of shopping and expense) reflected the actual problems encountered. One of the	RCT for efficacy rejected as 1. Unclear data on methodology (e.g. unexplained large number in intervention compared with control group) and weight outcomes. Unclear whether the questionnaire was validated (although referenced) and limited methodological information. Treat as marginal +. Subjects paid £100. on completion of the study.

					State Registered Dietitian or MSc level nutritionist		most consistently reported problems was that of reduction in taste quality of the diet. Other problems included an increase in cost, decrease in convenience, lack of family support for certain changes, and an inability to judge the fat content of the diet.	

2. OPPORTUNISTIC IDENTIFICATION AND LIFESTYLE/EXERCISE ADVICE ON REFERRAL IN PRIMARY CARE SETTINGS FOR PRIMARY PREVENTION OF OBESITY

Evidence of efficacy for weight management/reduction

Nine RCTs reported weight or body composition outcomes, of which three looked at general health advice, one looked at diet interventions alone, and five looked at PA interventions alone. One systematic review looked at exercise training programmes, some of which included diet, in early postmenopausal women.

The results suggest that interventions that provide general advice, addressing both diet and activity, are more likely to prevent unhealthy weight gain than those focusing on diet or activity alone. Of those focusing on PA alone, a more positive outcome was found when interventions were delivered by facilitators from more than one discipline.

General health advice/screening – diet and activity

Three UK based RCTs (Imperial Cancer Research Fund (ICRF) 1994, 1995; Family Heart Study Group (FHSG) 1994**)** were identified with the intensity of intervention based on participants risk score. One RCT (ICRF 1994) found no effect on BMI at 1 year, but a 1.4% reduction in BMI in the intervention group compared with the control at 3 years ($p < 0.005$) (ICRF 1995). The two RCTs from the same study had different control groups. FHSG (1994) reported that the weight of the intervention group was lower by an average 1 kg compared with controls and the proportion of patients with high BMI (≥30 kg/m^2) were lower in intervention than control (no significance values stated). Both interventions were delivered by nurses.

Diet alone

The health check and diet-only RCT (John 2002) reported no difference in weight loss between intervention and control groups ($p = 0.68$) at 6 months.

Physical activity alone

Five RCTs (Taylor 1998; Halbert 2000; Lamb 2002; Elley 2005; Tully 2005) reported weight outcomes in PA interventions. Three RCTs consisted of serially reinforced advice/motivation by telephone after an initial consultation/advice session (Halbert 2000; Lamb 2002; Elley 2005). One study in the UK encouraged intervention participants to attend 'health walks' (Lamb 2002), one study in New Zealand looked at a general practitioner (GP) intervention for sedentary 40–79 year-olds and one study in Australia looked at an exercise specialist intervention in a population of older adults (≥60 years; Halbert 2000). Two RCTs looked at exercise advice or prescription alone, both in the UK. One advised non-supervised walking for healthy sedentary people aged 50–65 years (Tully 2005) and one looked at GP exercise referral to a leisure centre for 40–70-year-olds, the majority of whom were overweight or obese (Taylor 1998).

None of the five RCTs showed a significant effect for weight loss at follow-up (of up to 37 weeks depending on study) although positive trends were noted in two studies (Elley, Taylor), one showing a reduction in skinfold thicknesses up to 16 weeks (Taylor). One study (Halbert) showed a significant weight gain in women in the intervention group ($p = 0.01$). Two of the interventions were delivered by facilitators from more than one discipline (Elley: GP/practice nurse and exercise specialist; Lamb: physiotherapist and local health walks coordinator), two were delivered by an exercise specialist alone (Halbert, Taylor) and one was unsupervised (Tully).

The systematic review of exercise training in early postmenopausal women (Asikainen 2004), where some of the interventions were combined with diet, found an improved body composition in 9 of 18 studies. The best effect was in the three studies of overweight women that combined training and diet, but six of the studies with positive results included some women within the normal weight range.

Evidence of efficacy for diet outcomes
One systematic review and four more recent RCTs provide some evidence that interventions can result in changes to dietary intake.

A systematic review (Ashenden 1997; ten studies with diet outcomes, all randomised) reported that dietary advice trials were very mixed in interventions employed and study populations. Of four trials directly assessing dietary change by collecting data on fat and fibre intake, one found very positive results, one found no significant difference on either measure and two found significant differences for one measure but not the other.

Four RCTs published since the systematic review were identified. With the exception of one (Steptoe) the RCTs had predominantly white samples, two were UK-based (Steptoe, John) with one based in a low-income area (Steptoe). Two studies gave dietary advice by physicians in routine consultations (Delichatsios, Beresford), and two were provided by research nurses (Steptoe, John). Three of the RCTs (Delichatsios 2001; John 2002; Steptoe 2003) reported that individually tailored intervention resulted in increases in self-reported fruit and vegetable intake between 3 months (Delichastsios), 6 months (John) and 12 months (Steptoe) between 0.6 portion per day (Delichatsios) to 1.4 portions per day (John) compared with control groups. Steptoe reported increased consumption (at 12 months) in both a nutrition advice and tailored behaviour intervention, but stated significantly higher intake in the tailored behaviour intervention (0.6 portions per day, $p = 0.021$). Beresford (1997) measured changes in fat intake, which were significantly larger at 3 and 12 months in the intervention group.

Evidence of efficacy for physical activity outcomes
Three systematic reviews (Eakin 2000; Eden 2002; Morgan 2005), all retained because of the limited overlap, and including four UK RCTs (Stevens 1998; Taylor 1998; Harland 1999; Lamb 2002), plus one more recent study from New Zealand (Elley 2005), provide some evidence that primary care-based interventions can increase PA levels.

One systematic review concluded that counselling adults in a primary care setting is moderately effective in the short term (Eakin 2000), and one that evidence was ‘inconclusive’ (Eden 2002). Interventions tailored to the participant characteristics and which offered written materials to patients produced stronger results. The most recent systematic review (Morgan 2005) concluded that exercise referral schemes appear to increase PA levels in certain populations, namely those that are not sedentary but already slightly active, older adults and those who are overweight but not obese.

The systematic reviews were unpicked to look at the four UK studies in more detail. One UK RCT which gave physiotherapist run advice sessions to sedentary 40–70-year-olds and encouraged the intervention group to participate in lay led walking schemes reported no significant between group differences in self-reported PA at 12 months and no effect on weight loss (see above). However, when only completers were analysed, the intervention was more effective than advice only (Lamb 2002). Taylor (1998) was an exercise referral scheme intervention with weight outcomes only, discussed above. Harland (1999) was an incentives study (see Table 3) offering vouchers entitling free access to leisure facilities. Increased PA scores were reported at 12 weeks, but this increase was

not maintained in the long term (12 months). Stevens (1998) provided a consultation followed by a personalised 10-week programme to sedentary 45–70-year-olds. There was a significant net 10.6% reduction in the proportion of people classed as sedentary in the intervention compared with the control group at 8-months follow-up.

The recent New Zealand-based RCT of oral and written advice from GPs or practice nurses plus motivational phone calls by an exercise specialist reported a significant difference between intervention and control including the proportion undertaking 2.5 hours exercise per week ($p = 0.003$) at 12 months (Elley 2005).

Evidence of corroboration in the UK

Two systematic reviews, seven qualitative studies, two RCTs (one suspended), four cross-sectional surveys, one evaluation and survey and one evaluation of case studies provided evidence of UK corroboration.

Barriers to change

A systematic review (Keller 1999) found that that individual perceptions of self-efficacy ('I believe I can exercise regularly') are important and strongly related to exercise behaviour and that clinicians can help facilitate these perceptions. Four additional studies (Horsefall Turner/Wealden District Council 1997; Martin 1999; See Tai 1999; Hardcastle 2001) where participants had been referred to an exercise prescription at a leisure centre revealed a variety of barriers to adherence. These included the importance of social support (all), time (Martin; See Tai; Horsefall Turner) the gym environment and time spent with instructors (Hardcastle, Martin and Horsefall Turner). Other barriers were illness and injury, work pressure, transport, programs not appropriately tailored, lack of money. Knowing where facilities are at the start of the programme increased likelihood of completing a programme by 3.5 times ($p = 0.043$) (See Tai 1999). A qualitative study of guided walks (Ashley 1999) found that *Health Walks* were a sustainable form of exercise, but planning and promotion activities should take into account the seasons and varying needs of walkers (grades of difficulty, evening walks for workers, etc.) as well as emphasising the social benefits.

Data from two RCTs where the intervention was delivered by nurses (Baron 1990; John 2004) reported patients' barriers to healthy eating included partners and children disliking recommendations and the difficulty of preparation and finding food outside of the home. Only 10% and 8% respectively reported these barriers in the Baron study, but 37 of 40 people reported at least one barrier in John.

Patients' views of health professional advice

One cross-sectional survey of mainly white, UK patients (Duaso 2002) suggested that significantly more respondents would have liked to have received advice than did ($p < 0.001$). Women found the advice more helpful than men ($p < 0.05$). Hardcastle (2001) demonstrated the importance of encouragement from GPs in promoting PA in addition to participant commitment and confidence. However, a cross-sectional survey (Vernon 1998) on the effectiveness of walking packs found that the major barrier was lack of time (60%) rather than motivation by a GP or health professional (14%). A small qualitative study (Fuller 2003) found that couples viewed general practice as a place for treatment of illness and disease rather than provision of dietary advice. Health was only one of many factors influencing their daily decisions about food and they were concerned about contradictory messages.

Attendance at UK exercise referral schemes

A systematic review of four RCTs and five evaluation studies of UK exercise referral schemes (Gidlow 2005) found that attendance was generally poor. Approximately 80% of participants who took up referral dropped out before the end of the programme. More women than men took up referral (60 vs. 40%) but there was no evidence of higher attendance in women.

Health professionals in primary care
Activity: One evaluation of case studies of PA promotion schemes in primary care (Biddle 1994) revealed that success depends on the qualities of key personnel in contact with participants and establishing a programme depends on the enterprise of an energetic innovator. A qualitative study (Smith 1996) reported that referring practice members saw exercise promotion as a therapeutic as opposed to a preventive option and tight referral criteria was a barrier. Data from a suspended RCT (Fielder 1995) found that barriers to recruiting patients to a GP-led programme included time, overly complicated questionnaires and lack of financial incentive for the health professionals.
Diet: A qualitative study by Fuller (2003) reported that GPs viewed general practice setting as a place for treatment of illness and disease, and their advice was affected by personal preference (younger, females doctors being more enthusiastic). GPs were concerned that dietary advice could damage their relationship with patients. Hopper (1995) reported that practice nurses gave dietary advice more frequently than GPs. Time was the main barrier for GPs to training and offering dietary advice. The primary health care workers surveyed felt that their practice population was not sufficiently motivated to follow dietary advice.

Community pharmacies
Six qualitative studies, two of pharmacy contractors/advisors (Keene 1995; Ursell 1999) and four of community pharmacists (Benson 1995; Moore 1995; Ursell 1999; Coggans 2000) cited time, confidential space, training issues and cost issues (including loss of revenue) as barriers to increasing health promotion. Two of the studies (Benson 1995; Coggans 2000) noted concerns that giving lifestyle advice was ‘interference’.

One qualitative study of consumers (Anderson 1998b) found that only 40% thought it was the usual job of the pharmacist to give health promotion advice although 92% said that they would pick up health information leaflets at the pharmacy. In another study (Coggans 2000) less than 32% reported that they would seek information or help on healthy eating and only 23% would seek help on exercise at the community pharmacy. Conclusions from a Delphi study of health professionals (Coggans 2000) were that factors that facilitate pharmacy staff/customer interaction should be addressed as well as enhancing perceptions of pharmacists as key players in the health care team who provide a confidential service.

EVIDENCE TABLE 2: OPPORTUNISTIC IDENTIFICATION AND LIFESTYLE/EXERCISE ADVICE ON REFERRAL IN PRIMARY CARE SETTINGS FOR PRIMARY PREVENTION OF OBESITY

First author	**Study design**	**Research type**	**Research quality**	**Study population**	**Research question** (include power calculation if available)	**Length of follow-up**	**Main results** (include effect size(s)/confidence intervals for each outcome if available)	**Confounders** (potential sources of bias)**/comments**
Evidence of efficacy (internal validity) for weight maintenance/reduction								
Asikainen 2004	Systematic review	1	++	Literature search 1996 – November 2002. Comprehensive search strategy but English language studies only included. Twenty-eight RCTs included, 18 of which had a weight or body fat outcome (1804 subjects in all); three of these were for overweight subjects and combined exercise and diet. Location of studies not described.	**Aim:** To evaluate data on exercise training studies with special reference to improving health in early postmenopausal women.	Duration range for weight loss studies was 12 weeks to 1 year.	Body composition was improved in 9 of 18 studies. The mean weight loss ranged from 2 to 10 kg in 12 weeks to 1 year (note: the best results were accomplished in the three studies with overweight participants that used training and diet). The most effective exercise prescription for losing body fat was 30–60 min of walking or other aerobic training at 45–75% VO_{2max} on 3–5 days per week for 15 weeks to 1 year, or strength training with weight machines twice per week for 1 year. In the training studies where participants were not overweight, adipose tissue was not lost as often as with overweight participants. The authors concluded that health professionals should recommend to sedentary women in early menopause who have fitness or weight concerns, a programme of at least 30 min of daily moderate walking in one to three bouts in addition to resistance exercises	Review found in update search: unpicking not possible within timeframe for completion but six of nine studies with positive outcomes included women within normal weight range. Few studies reported in detail how randomising was performed, if there were power calculations, if staff were blinded, ITT analyses. Some did not report drop out, attendance or injury rates.

							twice per week.	
Elley 2005	RCT Cluster	1	++	All sedentary 40–79-year-old patients visiting general practitioner during study period, in eastern Waikato region of New Zealand. *n* = 878 Mean age = 57.9 years 66.5% female 47% low economic status 28% with post-high school qualification 77% European origin	**Aim:** To assess long-term effectiveness of a clinician based initiative in general practice that provides counselling on PA. GPs and practice nurses prompted by patient to give oral and written advice on PA during usual consultations. Exercise specialist continued support by phone (three calls over 3 months). Control received usual care. **Power calculation:** Sample size of 800 patients from 40 practices (power = 90%). **Delivered by:** GPs/practice nurses and exercise specialist.	12 months	85% follow-up of enrolled patients at 12 months. Very slight BMI (kg/m^2) reduction in both groups but no significant difference between intervention and control for BMI reduction (–0.06 [95% CI –0.24, 0.12], p = 0.5).	In the intervention group 385 patients received intervention from general practitioner and 66 patients received intervention from practice nurse.
John 2002 UK Study	RCT Individual	1	++	Healthy participants aged 25–64 years recruited from a primary care health	**Aim:** To evaluate the effectiveness of a brief negotiation	6 months	95% follow-up in both groups. **No difference in weight loss between groups:**	Self-reported values are susceptible to reporting bias, so results should be interpreted with caution.

				centre, Thame, Oxfordshire, UK. *n* = 690 Mean age = 46 years 51% female 49% Social Class I and II 10% Social Class IV and V 'The general practices had few patients from ethnic minorities.'	method to encourage an increase in fruit and vegetables to at least five portions/day. Intervention group received health check followed by 25 min tailored dietary negotiation. Two-week reinforcing phone call and letter sent at 3 months. Control received intervention 6 months later. **Delivered by:** Trained research nurses.		Self-reported weight loss (kg) was 0.6 (SD 2.6) in both intervention and control groups. Adjusted between group difference in change* 0.1 (95% CI –0.4, 0.6), *p* = 0.68. *Adjusted for baseline value and sex.	Same study as John 2004.
Tully 2005	RCT Individual	1	+	Thirty-one healthy, sedentary 50–65-year-olds identified by searching the medical registers of three urban general practices in Belfast, UK**,** and subsequent selection by questionnaire. Overall recruitment rate = 5.9% (31/527).	**Aim:** To examine the effects of 30 min of self-paced, non-supervised, brisk walking, 5 days per week on the health and fitness of people aged 50–65 years. Intervention group (*n* = 21) instructed to walk briskly for 30 min, five days per week for	12 weeks. No longer-term follow-up.	81% completion and 90% adherence to protocol in intervention group. 90% completion in control group. The mean time spent walking by the intervention group was 27.72 ± 9.79 min/day. No significant changes were found in weight-related measures in either group.	No allocation concealment and no ITT although >80% completion. Participants likely to be highly motivated – overall recruitment rate = 5.9%. The authors noted that reported adherence was high suggesting greater acceptability of a pedometer-driven home-based model (vs. leisure centre exercise protocol).

				No socio-economic details provided.	12 weeks (all in one session or bouts of no less than 10 min). They were asked to record in a diary the time spent walking and the number of steps using a pedometer. Control group (*n* = 10) asked to maintain habitual lifestyle. No power calculation. Intervention delivered by higher education researchers.			
Lamb 2002 UK Study	RCT Individual	1	+	Men and women aged 40–70 years taking <120 min of moderate intensity activity per week. Reading, UK. *n* = 260 48.8% male Mean age = 50.5 (SD 7.8) years	**Aim:** To compare health walks, a community-based lay-led walking scheme versus advice only (from a primary health care professional) in middle-aged adults. Intervention and control took part in a 30 min standardised advice session led by a physiotherapist. Intervention given information about health walks and received up to three	6 months and 1 year	Loss to follow-up at 12 months was approximately 27% in each group. No statistically significant differences between people lost to follow-up and those who remained in the trial. No significant within-group changes from baseline in BMI at 12 months: –0.01 kg/m² reduction in advice group and –0.002 kg/m² reduction in Health walks group. Between group difference –0.009 (95% CI –0.39, 0.194).	Low follow-up, analysis by ITT. Related qualitative study below (Ashley).

					motivational phone calls from a local health walk coordinator. Control received no further intervention. Power calculation: Sample size of 100 people for each group (power = 90%). An additional 30% included to allow for loss to follow-up. **Delivered by:** Physiotherapist and local health walks coordinator.			
Halbert 2000	RCT Individual	1	++	Adults aged ≥60 years who were healthy, sedentary and living in the community. Adelaide, Australia. *n* = 299 Mean age = 67.5 years 46% Male	To determine whether provision of individualised PA advice by an exercise specialist in general practice, reinforced at 3 and 6 months, is effective in modifying PA, compared with no advice control. **Delivered by:** Exercise specialist.	12-month follow-up.	Follow-up of 88%. Over 12 months there were no statistically significant changes from baseline in body weight within either the control or intervention group. Weight decreased in men in the intervention and control groups and in women in the control group but increased in intervention group women (p = 0.01). (Values for gender not stated so unclear if significance value for intervention women only.) **Control group values:**	Generalisable to older adults only.

							Baseline = 74 (71.8–76.1) kg and 12 months = 73.6 (71.5–75.8) kg Intervention group values: Baseline = 75.9 (73.8–78) kg and 12 months = 76.0 (73.9–78.1) kg No between group difference stated. ***[ranges or 95%CI?]***	
Taylor 1998	RCT Individual	1	+	142 recruits from 345 men and women, aged 40–70 years and identified as smokers, hypertensive of overweight on medical records in East Sussex general practices. Circa 37% men. No socio-economic details provided.	**Aim:** To examine the effects of a GP exercise referral programme on modifiable coronary heart disease risk factors. The exercise group received a Health Education Authority leaflet on preventing coronary heart disease and was offered 20 half-price sessions over 10 weeks at a leisure centre. Patients engaged in moderate and vigorous aerobic activity in a semi-supervised informal environment. The control group received the leaflet but no further intervention.	Ten-week intervention. Outcomes measured at 0, 8, 16, 26 and 37 weeks.	41% (142) of the 345 invited to enter were randomised. 50% (71) provided data at all assessments, 41% of the exercise and 69% of the control group. 87% of those referred used the prescription and 28% (high adherers) (45% of obese patients) did at least 15 sessions. The exercise group reduced sum of skinfold thicknesses by 8.1 (95% CI 2.9, 13.3)% more than the control group, up to 16 weeks after baseline. High adherers (≥ sessions attended) reduced sum of skinfold thicknesses by 9.2 (95% CI 0.9, 17.5)% more than the control group up to 26 weeks.	Randomisation by random numbers but no allocation concealment. Assessments were not blinded. ITT analysis not carried out other than for the physical self-perception assessment. Baseline measures were broadly similar but there are more obese participants in the intervention group (30 vs. 18%) suggesting a potential weakness in randomisation. Overall there were 83% overweight or obese subjects in the intervention group and 71% overweight or obese subjects in the control group. Objective measures of weight and skinfold thickness. PA (Blair's)

					Intervention provided by higher education researchers. The assessment was by a postgraduate exercise scientist and the outcomes measured by a 'trained researcher'. A power calculation was based on a 4 mmHg blood pressure reduction.			and physical self-perception (PSPP) measures well referenced and probably validated. See also companion corroborative study, Taylor 2005
Imperial Cancer Research Fund 1995 UK Study	RCT Cluster	1	+	Patients aged 35–64 years in 1989 from five urban general practices. Bedfordshire, UK. *n* = 11090 Mean age = 49 years Area chosen for mixed urban and suburban setting, range of heavy and light industry and varied demographic profile.	**Aim:** To determine the effectiveness of health checks (risk factor counselling and negotiation of targets), performed by nurses in primary care, in reducing risk factors for cardiovascular disease and cancer. Control received health check at least 1 year later. Structured dietary assessment. No description of PA component. **Delivered by:** Nurses.	Three years (although mutually arranged (or structured for some risks) follow-up visits during this time, and some randomised to annual health checks).	Comparison of groups within the randomised population. Intervention was 2205 invited for re-examination in 1992–93 after an initial health check in 1989–90. Control group was 1916 randomly allocated an initial health check in 1992–93. Follow-up in control was 81.3% (1916 of 2783 randomised*) of those randomised. Follow-up in intervention was 82.2% (1160 of 2205 randomised*) of those who attended their first health check. *Excluding those who moved from the area. Dietary advice led to a small difference in BMI in intervention groups compared with controls but	Different levels of risk factor received different levels of intensity of intervention. Follow-up sessions for all patients at mutual agreement of nurse and subject. No allocation concealment. ITT analysis carried out.

							failed to reduce the proportion of the population with obesity. At follow-up, mean BMI was lower in intervention group than in control by 1.4% ($p < 0.005$).	
Imperial Cancer Research Fund 1994 UK Study	RCT Cluster	1	+	See above.	See above.	1 year (Although mutually arranged [or structured for some risks] follow-up visits during this time.)	Comparison of groups within the randomised population. Intervention was 2136 patients invited for re-examination in 1990–92 after an initial health check in 1989–90. Control was 3988 attending first check in 1990–92. Follow-up in control was 79.1% (1908 of 2760 randomised, excluding 348 who had moved). Follow-up in intervention was 77.8% of those who attended their first health check (1616 of 2136 randomised, excluding 60 who had moved [= 2076]) At 1 year, no significant difference between groups in BMI (kg/m^2): 0.16 (95% CI –0.06, 0.38). When analysis restricted to attendees a significant difference was found (1.2%) in BMI between intervention and control (significance not stated).	See above. Treated as separate study from above as different control group.
Family Heart	RCT Cluster	1	+	Male patients on GP lists aged 40–	**Aim:** To measure change	1 year	73% response rate to initial questionnaires	No description of randomisation process

Study Group 1994 UK study				59 years in 26 practices in 13 towns, and their partners, UK. *n* = 12472 59.8% male Mean age men = 51.5 years Mean age women = 49 years	in cardiovascular risk factors achievable in families over 1 year by a nurse-led cardiovascular screening and lifestyle intervention in general practice. Intervention received 1.5-hour screening and risk-related lifestyle advice. Internal and external controls received screening 1 year later. **Delivered by:** Nurses.	(Although intervention subjects followed up during this time according to risk score.)	At 1 year, 88% follow-up in intervention males, and 85% follow-up in intervention females. Non-returnees twice as likely to be smokers, more overweight than returnees and with a slightly lower prevalence of diagnosed disease. At 1 year, in the intervention group, weight among returnees was lower by an average 1 kg compared with the internal and external control groups (no significance stated). At 1 year, the proportion of patients with high BMI (≥30 kg/m^2) were lower in the intervention group than in controls (no significance stated).	and no allocation concealment. No ITT analysis re weight outcomes. Follow-up during year dependent on risk score. Substantially more subjects in external control than intervention and internal control. Little baseline data given.

Evidence of efficacy (internal validity) for diet outcomes								
Ashendon 1997	Systematic review	1	+	Literature search year of inception – May 1995. Thirty-seven randomised trials included in all. Ten to modify dietary behaviour.	**Aim:** To explore how effective lifestyle advice provided by GPs is in changing patient behaviour.	Range of follow-up, 3 months to 2 years in ten dietary advice trials.	The dietary advice trials were very mixed in interventions employed and study populations. Of four trials directly assessing dietary change by collecting data on fat and fibre intake only one found positive results, one found no significant difference on either measure and two found significant differences for one measure but not the other. Six trials measured changes in lipid levels (outcome not included in rapid review).	Literature search did not include unpublished trials – may introduce bias. Dietary advice: Logsdon 1989 Cupples 1994 Imperial Cancer Research Fund OXCHECK 1994 Baron 1990* Koopman 1990 Cohen 1991 Beresford 1992

								Campbell 1994 Family Heart Study Group 1994* Tomson 1995 *UK or Irish study
Delichatsios 2001	RCT Cluster	1	+	Adult primary care patients. New England, USA. *n* = 504 (of 1183 eligible) **Intervention:** Mean age = 49.9 ± 12.5 years 77.4% female 83% white 62% with at least a bachelor degree. **Control:** Mean age = 56.8 ± 12.9 years 63.1% female 97% white 56.9% with at least a bachelor degree.	**Aim:** To evaluate a multifaceted nutrition intervention to improve dietary habits among adult primary care patients. Intervention vs. control. Intervention comprised brief personalised recommendations at routine office visits and mailed personalised dietary recommendations, verbal endorsement and motivational phone calls to set targets. US$5 incentive offered for	Three-month follow-up survey (although intervention taking place during this time).	85% follow-up in intervention group. 92% follow-up in control group. Adjusting for age, sex, race and baseline intake, the change in self-reported fruit and vegetable intake in the intervention group was significantly higher than control (0.6 [95% CI 0.3, 0.8] servings/day. No intervention effect on dairy products. (no significance stated).	No allocation concealment. ITT analysis carried out. Some baseline differences. Mean age higher in control group. % of African Americans higher in intervention group. Self-reported outcomes – validated questionnaire. Meets criteria for a **social marketing** intervention (see methodology).

					completion of baseline survey and US$5 for final survey. **Delivered by:** Primary care physician or nurse practitioners and trained telephone counsellors. Nutritionist if necessary.			
Steptoe 2003 UK Study	RCT Individual	1	++	Patients from a primary care centre in a deprived, ethnically mixed, inner city area, UK, aged 18–70 years. *n* = 271 61% female 26% Black 3% Asian 70% White 68% in low-income category. 34% in receipt of benefits.	**Aim:** To measure the effect of brief behavioural counselling in general practice on consumption of fruit and vegetables in adults from a low income population. Two × 15 min counselling (2 weeks apart) on: 1) nutrition counselling (education and	12 months	At 12 months, 81% follow-up in behavioural counselling group, and 80% follow-up in nutrition counselling group. Consumption of fruit and vegetables increased from baseline to 12 months by 1.5 and 0.9 portions per day in behavioural and nutrition groups (mean between group difference 0.6 [95% CI 0.1, 1.1] portions, $p = 0.021$). The proportion of participants eating five or more portions a day increased by 42% with behavioural counselling and 27% with nutritional counselling in the two groups (mean between group difference 15 [95% CI 3, 28]%, $p = 0.019$). There were significant between-group differences suggesting that one	No allocation concealment. ITT analysis carried out. No true control group and low recruitment (12%).

					information); or 2) behavioural counselling (tailored advice). **Delivered by:** Research nurses.		counselling intervention was more effective than the other. Differences were maintained when analysis restricted to 177 participants with incomes ≤£400 per week.	
John 2002 UK Study	RCT Individual	1	++	See above.	See above.	See above.	95% follow-up in both groups. Self-reported daily fruit and vegetable intake increased by a mean 1.4 (SD 1.7) portions in the intervention group and by 0.1 (SD 1.3) portion in the control group (between group difference = 1.4 [95% CI 1.2, 1.6], $p < 0.0001$).* Mean difference of 1.3 (95% CI 0.9, 1.6) daily portions between intervention and control for 'pre-contemplators', 1.6 (95% CI 1.2, 1.9) daily portions for 'contemplators' and 1.3 (95% CI 0.9, 1.7) daily portions for those in 'action' (all p values < 0.001). *Adjusted for baseline value and sex.	Self-reported outcomes.
Beresford 1997	RCT Cluster	1	+	Adult patients from six primary care clinics in Puget Sound, Seattle, USA. n = 2111* (of 3490 eligible)	**Aim:** To evaluate the effectiveness of a low-intensity dietary intervention in primary care practice in	3 months and 12 months	86.1% follow-up at 12 months. Both groups reduced their self-reported fat intake (% energy from fat) from baseline but at both 3 and 12 months, changes from baseline were significantly larger in the intervention group compared with control.	* As reported in abstract (value of 2121 given in text). Allocation concealment used but no ITT analysis.

				51% ≥ 65 years 68% female 91% White 28% income <US$25,000.	lowering dietary fat intake and raising dietary fibre intake. Physicians gave intervention patients a self-help booklet and brief motivational message during routine appointment. Reminder letter 2 weeks later. Control was usual care. **Delivered by:** Physicians.		**At 3 months:** Mean intervention effect –1.04 (95% CI –1.67, –0.41), $p < 0.01$. At 12 months mean intervention effect –1.20 (95% CI –1.68, –1.73), $p < 0.01$. The corresponding differential change in fat score was –0.046 (95% CI –0.074, –0.018), $p < 0.01$ at 3 months and –0.044 (95% CI –0.073, –0.016), $p < 0.01$ at 12 months.	
Evidence of efficacy (internal validity) for physical activity outcomes								
Eden 2002	Systematic review	1	++	Literature search 1994 – March 2002. Seven RCTs and one CCT included rated as 'good' or 'fair' quality.	**Aim:** To determine whether counselling adults in primary care settings improves and maintains PA levels.		Evidence is inconclusive that counselling adults in the primary care setting to increase PA is effective. Among six controlled trials with a usual care control group, the effects of counselling on PA were mixed with three trials showing statistically significant increases in PA and the remaining three trials showing no effect. Because most studies had at least one methodological limitation, it was difficult to rigorously assess the efficacy of	Included trials: Physically Active for Life 1999 Norris 2000 Smith 2000 Kerse 1999 Change of Heart 1999 Burton 1995 Activity Counseling Trial 2001 Swinburn 1998

							interventions. More evidence is needed.	
Eakin 2000	Systematic review	1	++	Literature search 1980–98. Fifteen RCT or quasi-experimental controlled trials reviewed.	**Aim:** To summarise primary care based interventions for increasing PA and make recommendations for integrating successful strategies into practice.		Primary care-based PA counselling is moderately effective in the short term, although there is considerable variability across studies. Studies in which the interventions were tailored to participant characteristics and which offered written materials to patients produced stronger results. Of ten studies reporting 0- to 11-month post-intervention outcomes, seven reported statistically significant PA outcomes. Of the seven studies reporting post-intervention outcomes at 12 months or longer, three reported statistically significant outcomes.	Included studies: [studies not referenced by Eakin] Goldstein 1999 Bull 1998 *Stevens 1998 *Swinburn 1998 Marcus 1997 Calfas 1996 Dowell 1996 Burton 1995 Elder 1995 Graham Clarke 1994 OXCHECK 1994 Lewis 1993 Logsdon 1989 Kelly 1989 Reid 1979
Morgan 2005	Systematic review	1	+	Literature search to 2002. English language studies only. Nine RCTs included, four of which were from the UK – see comments.	**Aim:** To review current evidence of effectiveness for exercise referral schemes. Studies had to be based in primary care settings.	Limited information in review. Unpicking required (and done for UK studies only).	Exercise referral schemes appear to increase PA levels in certain populations, namely those who are not sedentary but already slightly active, older adults and those who are overweight (but not obese). However, increases in the level of PA may not be sustained over time.	Included since updates older reviews but of lesser quality. No unpublished studies sought and English language studies only included. Little detail of quality methods and appraisal probably undertaken by one reviewer only. UK studies all unpicked: Taylor 1998; Stevens 1998; Harland 1999;

								Lamb 2002
Elley 2005	RCT Cluster	1	++	See above.	See above.	See above.	85% follow-up of enrolled patients at 12 months. Mean total energy expenditure increased by 9.4 kcal (39 kJ)/kg per week (p = 0.001) and leisure exercise by 2.7 kcal (11 kJ)/kg per week (p = 0.02) or 34 min/week more in the intervention group than in the control (p = 0.04). The proportion of the intervention group undertaking 2.5 hours/week of leisure exercise increased by 9.72% (p = 0.003) more than in the control group (number needed to treat 10.3).	See above.
Lamb 2002 UK Study	RCT	1	+	See above.	See above.	See above.	Loss to follow-up at 12 months was approximately 27% in each group. No statistically significant differences between people lost to follow-up and those who remained in the trial. There were no significant between group differences (between intervention groups) in self-reported PA at 12-month follow-up by intention to treat analysis (between group difference = 6 [95% CI –5, 16.4])%. In people who completed the trial, health walks was more effective than giving advice only in increasing moderate intensity activity above 120 min/week (between group difference = 13 (95% CI 0.003, 25.9)%, p = 0.05).	
Stevens	RCT	1	+	714 people aged	**Aim:**	10-week	1288/2253 approached completed	Randomisation method

1998				45–74 years from two London general practices classed as not active (i.e. sedentary or low/high intermediate activity). Circa 42% men, 54% economically active, 85% white, 29% degree level, 34% no qualifications. All on the surgery lists in the targeted age group were sent a PA questionnaire.	To assess the (cost) effectiveness of a primary care based intervention aimed at increasing levels of PA in inactive people aged 45–74 years. **Intervention subjects:** Consultation with exercise development officer and personalised 10-week programme combining leisure centre and home-based activities. **Control subjects:** Information on local leisure centres. Higher	intervention. Assessment 8 months after randomisation.	questionnaires (57%). 714 were randomised. Of 363 randomised to intervention 35% (126) attended the first consultation and 25% (91) returned for the second consultation at the end of the 10-week programme. There was a net 10.6 (95% CI 4.5, 16.9)% reduction in the proportion of people classified as sedentary in the intervention group compared with the control group, 8 months after baseline. The intervention group also reported an increase in the mean number of episodes of PA per week compared with the control group (an additional 1.52 (95% CI 1.14, 1.95) episodes.	not described. No concealment allocation. Self-reported PA measures but using a validated tool (Blair's 7-day recall). ITT analysis used. Most PA was undertaken away from the leisure centre and the authors concluded that environmental efforts to encourage activities not requiring attendance at a leisure centre may have a greater impact.

					education/health promotion researchers. Intervention by one exercise development officer. No power calculation.			

Evidence of corroboration (external validity)								
Evidence of salience – Is it appropriate for the UK?								
First author	**Study design**	**Research type**	**Research quality**	**Study population**	**Research question**	**Length of follow-up**	**Main results**	**Confounders/comments**
Steptoe 2003 UK Study	RCT Individual	1	++	Patients from a primary care centre in a deprived, ethnically mixed, inner city area, UK.	See above.	See above.	See above.	See above.
John 2002 UK Study	RCT Individual	1	++	Healthy participants aged 25–64 years recruited from a primary care health centre, Thame, Oxfordshire, UK.	See above.	See above.	See above.	See above.
Lamb 2002 UK Study	RCT	1	+	Men and women taking less than 120 min of moderate intensity activity per week. Reading, UK.	See above.	See above.	See above.	See above.
Tully 2005	RCT	1	+	Thirty-one healthy, sedentary 50–65-	See above.	See above.	See above.	See above.

	Individual			year-olds identified by searching the medical registers of three urban general practices in Belfast, UK.				
Taylor 1998	RCT Individual	1	+	142 recruits from 345 men and women, aged 40–70 years and identified as smokers, hypertensive of overweight on medical records in East Sussex general practices.	See above.	See above.	See above.	See above.
Imperial Cancer Research Fund 1995 UK study	RCT	1	+	Patients aged 35–64 years in 1989 from five urban general practices. Bedfordshire, UK	See above.	See above.	See above.	See above.
Imperial Cancer Research Fund 1994 UK study	RCT	1	+	Patients aged 35–64 years in 1989 from five urban general practices. Bedfordshire, UK	See above.	See above.	See above.	See above.
Family Heart Study Group 1994	RCT	1	+	Male patients on GP lists in 26 practices in 13 towns, and their partners, UK.	See above.	See above.	See above.	See above.

Evidence for implementation – Will it work in the UK?								
First author	**Study design**	**Research type**	**Research quality**	**Study population**	**Research question**	**Length of follow-up**	**Main results**	**Confounders/comments**
Gidlow 2005	Systematic review	3	++	Literature search to October 2003 for UK exercise referral interventions. Nine studies met the inclusion criteria: four RCTs and five evaluations of existing schemes.	**Aim:** To explore the attendance of UK exercise referral schemes (ERS), who attends them, why participants drop out of schemes and to compare evaluations of existing ERS with RCTs. Method of participant recruitment was the only marked difference between the two types of study. In RCTs and evaluations, rates of referral uptake and	The durations of the interventions were 10 (*n* = 5), 12 (*n* = 2) or 14 weeks (*n* = 1), although one RCT lasted 2 years despite reporting 10-month outcomes.	Attendance was generally poor; approximately 80% of participants who took up referral dropped out before the end of programmes. More women than men took up referral (60 vs. 40%) but there was no evidence of higher attendance in women. None of the participant characteristics reported were consistently associated with attendance. Most of the reasons for attrition and negative comments from participants related to practical problems associated with attending leisure facilities.	

					attendance were varied but comparable. All interventions were facility-based.			
Keller 1999	Systematic review	3	++	Literature search 1990 – June 1998. Twenty-seven primary and secondary prevention studies included.	**Aim:** To provide a critical systematic review of research using social cognitive theory in exercise research.		Individual perceptions of self-efficacy ('I believe that I can exercise regularly') are important and strongly related to exercise behaviour. Intervention studies demonstrated that participation in an exercise programme promoted self-efficacy and that programmes designed to increase outcome expectations and self-efficacy significantly increased exercise behaviour. Clinicians can facilitate perceptions of self-efficacy by verbal persuasion, modelling exercise behaviour and discussing the positive physical effects of PA.	Worldwide review. Unknown if any of the studies were based in the UK.
John 2004	Qualitative study (from RCT)	3	++	Purposive sample* (of patients not selected as contemplating change) from participants in an RCT examining effectiveness of a nurse-led intervention to increase fruit and vegetables intake. Thame, Oxfordshire, UK.	**Aim:** To examine the barriers to fruit and vegetables consumption after a 6-month trial. Participants asked at initial intervention interview to anticipate barriers and	Interviews carried out 2 weeks after 6-month follow-up.	Barriers anticipated and experienced: • Women reported children and male partners as obstructive to attempts to increase fruit and vegetables consumption. Men reported that partners were supportive. • Additional time needed to prepare food. • Perceived expense of fruit and vegetables. Barriers discovered during intervention: • Problems of getting fruit and vegetables while travelling.	*Sample selected to include those likely to have experienced different barriers. Same study as John 2002.

				n = 40 Mean age 45.9 years 47.5% female Social class I and II = 47.5% Social class III M, III NM, IV and V = 52.5% 72.5% had reported an increase in fruit and vegetables consumption.	discussed barriers at 6-month follow-up. Semi structured interviews carried out at respondents' homes by independent researcher to explore barrier issues in greater depth. **Delivered by:** Intervention by nurses.		• Problems when routine is disrupted at weekends. • 37 of 40 people reported at least one barrier, but 29 of 40 still reported increasing their fruit and vegetable consumption.	
Taylor 2005	Qualitative study (from RCT)	3	+	142 recruits from 345 men and women, aged 40–70 years and identified as smokers, hypertensive of overweight on medical records in East Sussex general practices. Circa 37% men. No socio-economic details provided.	**Aim:** To examine the effects of a GP exercise referral programme on modifiable coronary heart disease risk factors. See Taylor 1998 for details.	Ten-week intervention. Outcomes measured at 0, 8, 16, 26 and 37 weeks.	The exercise group became significantly ($p < 0.05$) more positive about their physical self-worth, physical condition and physical health (but not their physical appearance) than did the control group between baseline and subsequent assessments.	Interviews at eight weeks identified that 50% were positive, 35% had mixed feelings and 15% had only negative comments about the concept of GP referral to a leisure centre-based exercise programme. Concerns included the long waiting time before the introductory session, lack of staff support in a sometimes crowded and noisy exercise room and inconvenient times (off peak hours 09.00–17.00 hours only).

								See Taylor 1998 for quantitative results.
Fuller 2003	Qualitative Study	3	+	GPs *n* = 15 (eight female, seven male) and 30 patients (15 married couples in social class 3, 4 or 5 with young children) from general practices in the Lothian area of Scotland, UK.	**Aim:** To investigate the view of GPs and their patients about healthy eating and the provision of healthy eating advice in general practice. **Delivered by:** N/a.	N/a	GPs and couples saw the general practice setting as a place for treatment of illness and disease. Interviews with couples revealed that health was only one factor that appeared to influence day-to-day decisions about food choice, and that they felt expert messages were contradictory. They felt 'bombarded' by healthy eating information, particularly from the media. GP advice affected by personal preferences and greater enthusiasm was displayed by younger and female doctors. GPs felt that dietary advice may damage their relationship with patients.	Very small sample size, is likely to be underpowered to detect an effect if one exists.
Duaso 2002	Cross-sectional survey	3	+	Patients from a general practice in north-east of England. *n* = 516 (from 3612 eligible) Age range = 17–45 years Characteristics below for responders only (*n* = 316) 59.2% female	**Aim:** To examine patients' recall and perceptions of lifestyle counselling received from practice nurses, and whether patient needs were met. Structured postal	N/A	63% response rate (316 of 516). Those with unhealthy behaviour profiles seem to have received more advice. There appears to be a discrepancy between patients' expectations of lifestyle advice from the practice nurses and the receipt of such advice. Significantly more respondents would have liked to have received advice on diet, weight reduction and exercise than actually received it ($p < 0.001$).	Low response rate. Under-reporting by patients may have occurred due to memory or not recognising advice for what it was.

				Mean age male = 34.1 years and female 33.6 years White, male = 92% Female = 97% In full time employment, male = 98%, female = 72%	questionnaire with letter from GP and stamped self-addressed envelope included. **Delivered by:** Lifestyle counselling by nurses.		On average, patients found the advice received from the practice nurses very/fairly helpful, but significant difference between male and female perceptions: most women found the advice very/fairly helpful while male patients more dubious ($p < 0.05$).	
Hardcastle 2001	Qualitative study	3	++	Older women newly referred by their GP to an exercise programme at a local leisure centre. *n* = 15 Age range = 50–80 years	**Aim:** To explore past and current experiences of PA and perceptions of what blocks/motivates older women to be active. One 20–40 min semi-structured interview in leisure centre cafeteria (based on 'life story' technique), and two follow-up interviews at 5 and 10 weeks. **Delivered by:** Unclear,	10 weeks	80% of the women appeared to have initiated the idea for referral with their GP and the data show an informal network whereby referred women advocate exercise in the community. The data show a lack of commitment, confidence and encouragement from the GPs in promoting PA and referring to exercise programmes. The data show that social support appears to be crucial for some older people, especially regarding instruction and the interpersonal skills of the exercise instructor.	Questions posed during interviews unknown. Very small sample size, is likely to be underpowered to detect an effect if one exists.

					possibly exercise practitioner/instructor.			
Martin 1999	Qualitative data from retrospective analysis	3	+	Finishers (16 male and 26 female) and non-finishers (12 males and 23 females) of a 10-week GP referral exercise prescription programme, Margate, Kent, UK. Mean age = 52.9 years 51% had BMI >25 kg/m^2.	**Aim:** To examine characteristics of finishers and non-finishers of a GP exercise referral scheme. Semi-structured telephone interviews conducted by an independent interviewer **Delivered by:** Unclear.	N/A	Finishers were less reliant on social support and more likely to report tangible health benefits. Non-finishers relied on support from others when attending the gym. Both finishers and non-finishers felt intimidated by others at the gym and felt it was not a comfortable environment for older people. Also, there was feeling in both groups that initial exercise programmes not appropriately tailored. Reasons for non-finishing were mainly illness and injury, but work pressures, time and transport problems were also cited.	Programme had been running for 3 years – responses may be susceptible to recall bias so reliability of results is limited. Content of semi-structured interviews not reported. Results suggest that methodology used was too crude to accurately measure complex characteristics that determine differences between finishers and non-finishers.
See Tai 1999	Cross-sectional survey	3	+	Inner-city general practice patients referred to an exercise prescription at a local leisure centre. *n* = 152 71% female Age range 16–75 years	**Aim:** To examine factors that affect adherence to a GP referral to exercise prescription scheme at a local leisure centre.	N/A	Adherers to exercise programme were significantly older than non-adherers ($p = 0.026$). Previous barriers to exercise included lack of money, having no energy, not knowing about local exercise facilities, having no partner to exercise with, not being fit enough and having no time. A significantly higher proportion of those who cited 'lack of money' as a barrier	May be of particular relevance to GPs in deprived urban area where high morbidity co-exists with low incomes. Same programme as Smith 1996

					Demographic and barriers data collected at baseline and analysed for adherers and non-adherers. **Delivered by:** Referral by GPs and associated staff. Delivered by trained fitness consultant and referred back to GP.		dropped out of the programme than those who did not cite it as a barrier (55.3 vs. 44.7%, *p* = 0.024). Those who cited 'not knowing about local exercise facilities' as a barrier were 3.5 times more likely to complete the programme (*p* = 0.043).	
Ashley 1999	Qualitative questionnaire study	3	++	336 participants of a Health Walks scheme in Woodley in the Thames Valley and 22 walk leaders. **Walkers:** 78% female. Mean age 58 (SD 10.2), range 27–83 years. 2% unemployed, 47% retired, 11% home-makers. Primarily white (Woodley is 96% White).	**Aim:** To determine the effectiveness of Health Walks in an urban area, specifically looking at how the local development of schemes can be coordinated. Questionnaire study of walkers and walk leaders.	N/A	47% response (*n* = 476) to 768 surveys but only 366 had attended at least one walk and, thus, completed the questionnaire. 22/29 walk leaders (76%) completed questionnaires. The Health Walks programme was a sustainable form of exercise for the majority of participants; 90% said they would continue with the programme. The three main motivators for walk leaders were companionship, ownership of the scheme and appreciation of their commitment to the organisation. Recommendations from the research included:	Study funded by the Countryside Agency and British Heart Foundation. There were a higher proportion of respondents who had completed more than two Health Walks and women than found in Health Walks participants generally. Given the higher proportion of regular attenders, the high percentage saying they would continue walking should be treated with caution.

				Researchers probably from Oxford Brookes University.	**Delivered by:** Volunteer walk leaders.		• take into account the seasons, and varying needs (levels of difficulty, evening walks for workers etc.) in promotion and planning; • emphasise the social aspects; • target participants via general practice, including close links with local health centres; • emphasise the importance of moderate daily activity (e.g. errands by foot rather than by car).	Qualitative study linked to RCT in Lamb
Vernon 1998	Cross-sectional survey	3	+	Members of the general public living in Salisbury, UK, who had requested a walking pack. *n* = 322 71% female	**Aim:** To evaluate the 'Doorstep Walks' scheme, a pack detailing ten local walks and benefits of PA, devised by 'Salisbury Walking Forum', an alliance of local groups. Questionnaires issued to collect demographic information and identify motivations and barriers to walking. **Delivered by:**	N/A	229 questionnaires returned (71% follow-up) and 61% uptake. Few respondents (14%) thought that 'having the walks recommended by a GP or health professional' was an important motivating factor. By far the most frequently given reason for non-participation (60%) was the shortage of free time, although other barriers were having no one to walk with (15.6%), having no walks near their home (14.4%), being fearful of walking the routes unaccompanied (12.2%), physically unable (11.1%), needed more encouragement (8.9%) and cost restriction (11.1%). GP surgeries cited as the single most common place to find out about the initiative.	Study design did not allow for an analysis by activity level, which limits application of the findings.

					Salisbury walking forum, an alliance of local groups.			
Smith 1996	Qualitative study	3	++	Clinical and support staff (23 of 40) in 10 (of 14) general practices involved in referring patients to exercise prescription programme in Inner-London leisure centre. GPs *n* = 16 Practice Nurses *n* = 4 Practice Managers *n* = 4 Receptionist *n* = 1 34.8% male (all GPs)	**Aim:** To identify practices' reasons for joining exercise referral scheme, perceptions of benefit of scheme, selection criteria for referral and reported personal behaviour. Semi-structured interviews carried out at practices. **Delivered by:** N/A	N/A	Referring practice members saw exercise promotion as a therapeutic option, rather than an instrument for primary prevention. Legal implications of referring patients led to over-caution and frustration among referring practice members at not being able to refer the people they considered most in need of the scheme. (Family Health Services Association [FHSA] criteria allowed only 'low risk' patients to be referred). Majority of participants said they participated in some form of sport or leisure activity. The main reason for not doing so was lack of time due to work or social commitments.	May be of particular relevance to GPs in deprived urban area where high morbidity co-exists with low incomes. Same programme as See Tai 1999
Horsefall Turner/Wealden District Council 1997	Evaluation and survey	3	+	Patients referred by GPs to exercise prescription who presented themselves at leisure centre. East Sussex, UK.	**Aim:** To evaluate Wealden District council's Oasis programme of exercise	N/A	1994 (January–July), 21.9% completers. Males more likely to complete than females (27.4 vs. 19.1%). Older patients more likely to complete. Patients referred by GPs who referred the most patients were more likely to complete. Risk category did not affect adherence.	1994. Follow-up of non-adherers stopped when time ran out. 1997 (and 1994?). Data presented on those who were referred and

				1994: *n* = 729 65.4% female >75% aged ≥41 years **1994–1997:** *n* = 627, 66% female Mean age 52 years, range 16–87	referral from GPs to a leisure centre in terms of factors affecting adherence, client views and physiological data. **Two evaluations:** 1994 – Adherence characteristics examined through initial consultation data – non-adherers telephoned. 1997 – questionnaire survey of sample of 192 participants. **Delivered by:** Referred by GP, delivered by programme staff (including fitness instructors and		Principle reasons for non-completion were patient too busy (32.5%) or had become ill or injured (28%). Significant number dropped out due to insufficient supervision or that programme too boring. Other factors were expense and transport. December 1994 – May 1997: 43% completed (47% of males who started and 41% of females). No major differences in completion rates found according to initial fitness or location. Clients referred for medical complaints such as hypertension or arthritis appear to demonstrate better adherence than those referred for stress or weight loss. Adherence significantly better for medium-risk groups compared with high- and low-risk groups. Questionnaire sample biased towards adherers, but general satisfaction with programme. Area identified for improvement was amount of time staff have to spend with clients.	presented themselves at the leisure centre. 1994–1997. Sample selection criteria not given.

					liaison nurse) and referred back to GP.			
Fielder 1995	RCT (suspended)	1	N/A (as trial suspended)	Sedentary patients aged 18–64 years from seven general practices within a 4-mile radius of the local leisure centre. *n* = 38 (out of 900 patients needed to show an effect). RCT suspended.	**Aim:** To assess whether referral to a leisure centre programme was a major factor leading to increased PA. This paper aims to examine data from the RCT to understand failure of trial. **Delivered by:** Referral by GP and fitness assessment presumably from leisure centre staff.	N/A	Slow rate of recruitment into trial. GPs cited the increase in time spent with patients, complicated nature of questionnaire, lack of space for patient to fill in questionnaire and lack of financial incentive for GP as reasons for this.	Suspended RCT as trial did not achieve required sample size.
Hopper 1995	Cross-sectional survey/case study	3	+	Active GP practices in on Sheffield Health Authority's GP practice list. *n* = 100 Primary health care workers	**Aim:** To investigate level of advice given on dietary matters, methods used to give this advice and nutritional		Interviews conducted in 46 of 100 active practices (46% response rate). Practice nurses gave dietary advice more frequently than GPs ($p < 0.05$) and GPs were more likely ($p < 0.05$) to give verbal advice only, whereas practice nurses tended to take a dietary history and give both written and verbal advice. Most GPs	Unknown if questionnaire was validated. Low response rate.

				interviewed *n* = 58. GP *n* = 36 (83% male, mean age 56 years). Practice nurse *n* = 22 (100% female, mean age 35 years).	knowledge and attitudes towards nutrition by Sheffield Primary Health Care Trusts (PHCT), GPs and practice nurses. Structured questionnaire administered by interviewer. **Delivered by:** N/a.		surveyed mentioned the major constraint to offering dietary advice was time. All practice nurses and half of GPs surveyed were interested in attending a nutrition course, but the majority of GPs cited time as a barrier to this. A large proportion of primary health care workers felt that their practice population was not sufficiently motivated to follow dietary advice.	
Ursell 1999	Qualitative study	3	+	Community pharmacists (CPs) (*n* = 96, random sample), lead health authority pharmaceutical advisors and medical directors of public health (*n* = 26) in the West Midlands. No socio-economic information provided. Researchers from the School of Pharmacy, Aston	**Aim:** To examine the attitudes of CPs and those responsible for pharmaceutical policy at health authority level towards a role for community pharmacy in public health provision. Postal questionnaire. **Delivered by:** N/A	N/A.	Overall response rate = 48%. CPs 44%, public health directors 62% and lead pharmaceutical advisors 69%. The proportion of CPs (50%) who perceived the current role of the pharmacist in public health provision to be 'very important' was significantly greater than the corresponding group of policy makers (11%, $p < 0.01$). Lack of time was cited by 62% of CPs as the most important constraint preventing pharmacist involvement in public health promotion while financial issues were considered the most important constraint by 40% of policy-makers. When asked about possible solutions to aid pharmacy involvement, pharmacist	Brief report and very little methodological detail provided. The questionnaire does not appear to have been validated.

				University.			inclusion in primary care group function was considered essential by 27% and 79% of policy-makers and CPs respectively. The need for increased funding (73%, 96% respectively) and appropriate training (67%, 70%) were both highly regarded. The authors tentatively proposed that, given the disparity of views, a clear dialogue on the issue should be established between CPs and policy-makers.	
Anderson 1998b	Qualitative study	N/a	++	Consumers (*n* = 592) interviewed in six pharmacies in Barnet. 74% female. 40% ≥60 years old. 85% white European, 15% unemployed, 35% retired. 90% regular pharmacy users. Researchers probably from Kings College London.	**Aim:** To investigate whether consumers came to the pharmacies for advice on general health matters, read health promotion leaflets and had heard of the Barnet Health Authority High Street Health Scheme (HSHS). **Delivered by:** N/A	N/A.	Many consumers do not currently perceive that there is a role for community pharmacists in health promotion. The GP's surgery was felt to be the most convenient place to get advice about staying healthy, and the GP the best person from whom to get it. The pharmacist was rated second, above the media, although only 15% of respondents had ever asked the pharmacist for general health advice. Only 40% thought that it was the usual job of the pharmacist to give advice about staying healthy although 92% said that they could pick up health information leaflets at the pharmacy. The authors concluded that pharmacist training alone would not change the public's perception of pharmacists. There was no significant variation in responses according to age, race or	Health authority-funded project.

							employment status although women were more likely to get advice from the media.	
Keene 1995	Qualitative study	3	+	Pharmacy contractors based in West Glamorgan. *n* = 48 (of 50)	**Aim:** To examine present state of health education among pharmacists, perceived costs and benefits, and factors to increasing health education activity. Questionnaires with open and closed questions, interviews of up to 1 hour and ethnographic notes. **Delivered by:** Academic and Health Authority researchers.	N/A	Great majority of contractors expressed support for engaging in health promotion but some qualified it with arguments of it being a significant waste of resources and a diversion from core activity of dispensing. Two-fifths of respondents saw time as the strongest constraint against health promotion, one-fifth mentioned space and just under one-third referred to cost. Majority saw training as an essential part of developing pharmacy services, but concerns about co-ordination of training and lack of time for training featured prominently in the comments.	Survey small in scale and range.
Moore 1995	Qualitative study	3	++	Community pharmacists in Kingston and Richmond FHSA, UK.	**Aim:** To identify health promotion activities, and	N/A.	Pharmacists' activities in health promotion were 2.5 times more likely to be reactive rather than proactive. Barriers to health promotion experienced	

				n = 30 (of 34 approached)* *Reasons for refusal include lack of time, illness of pharmacists or unwillingness to participate.	barriers to improving and increasing health promotion activity in community pharmacies. Structured interviews by a research pharmacist. **Delivered by:** N/A		by community pharmacists were lack of time and space, need for a consulting area, desire for payment by the FHSA, need for training, insufficient support from their local health promotion unit, lack of regular contact with health promotion facilitator and the need for more staff.	
Coggans 2000	Qualitative survey, Delphi analysis and literature review	3	++	1) Semi-structured interviews with 60, 30 pharmacists and 30 pharmacy assistants, in community pharmacies in Scotland. 2) Dephi exercise with 25 health professionals. 3) Literature review. Pharmacy customers: 68% female, 7% <20 years, 22% ≥60 years. 19% higher managerial and 7% long-term	**Aim:** To find out what aspects of health promotion are pharmacy customers most receptive to and what methods are appropriate for the delivery of pharmacy health promotion. Research carried out by the Pharmaceutical Services	N/A	Although virtually every customer reported that they were happy to discuss health information with the pharmacist or assistant, <32% reported that they would seek information or help in the community pharmacy on healthy eating and only 23% would seek information or help on taking exercise. Pharmacists were willing and eager to discuss a range of health issues with customers, although there was some reluctance in relation to lifestyle issues, as well as awareness of the limitations arising from lack of privacy. Conclusions from the survey and Delphi study were that factors that facilitate pharmacy staff/customer interaction should be addressed as well as enhancing perceptions of pharmacists as key players in the health care team who provide a confidential service.	

				unemployed.	Division of the Scottish Executive Health Department. **Delivered by:** N/A			
Benson 1995	Qualitative study	3	+	Purposive sample of ten practicing community pharmacists in the UK to obtain geographic and socio-economic range. All white, Anglo-Saxon. Six women, four men. Researcher background unknown (National Pharmaceutical Association/King's College).	**Aim:** To explore pharmacists' perceptions of the nature of their health education role, the practicalities of implementing this role and the obstacles to be overcome. **Delivered by:** N/A	N/A	There was considerable uncertainty about the health education role of pharmacists. There were profound concerns among the respondents that a health education role required 'interference' in patients lives and that health education was often not income generating, a barrier for pharmacies since they run as commercial enterprises. The authors concluded that a paradigm shift would be needed to overcome the barriers of the pharmacist's traditional inclination to a product orientated approach and ethical concerns about interference.	Small sample and all White. Paper lacked methodological detail – example quotes rather than detailed summary provided.
Biddle 1994	Evaluation of case studies	3	+	Structured sample of 50 (of 173) PA promotion schemes in primary health care (20 practice managed and 30 leisure centre managed).	**Aim:** To identify existing PA interventions and any evaluations of them and identify criteria	N/A	Success of PA promotion depends on qualities of key personnel in contact with participants, in particular appropriate training in health promotion techniques and counselling for exercise. Establishing a scheme depends on the enterprise of an energetic innovator.	

				Sample structured in order to get examples from a range of environments and participant profiles. Primary health care facilitators interviewed *n* = 50.	for and barriers to success. Structured questionnaire checklists delivered over the phone (or mailed if lack of time). **Delivered by:** N/A		In most schemes participants are predominantly middle-aged women, often overweight.	
Baron 1990	Survey within RCT	3	+	Patients on the lists of a group general practice in Abingdon, Oxford, UK. Intervention subjects from an RCT investigating the effect of nutrition advice by a nurse in general practice. *n* = 187 52% male Mean age = 41.6 years	**Aim:** To examine difficulties encountered by intervention subjects (queried at 1, 3 and 12 months) with the dietary recommendations. Intervention received 30 min session with nurse aimed at lowering fat and increasing fibre intake. Booklet and two follow-up sessions at 1 and 3 months	3 months and 12 months	89.3% follow-up in intervention group at 12 months. Dietary intervention appeared to be well accepted by the intervention group. 8% thought the recommended regimen was hard to prepare or difficult to find in restaurants. 10% of the intervention group noted that they or their families disliked the recommendations and subjects with this complaint were more likely to drop out of the study.	No allocation concealment. No ITT analysis. Number of subjects evaluated for difficulties encountered with the dietary advice vary because of losses to follow-up and missing data.

					Delivered by: Intervention by nurse.			

3. INCENTIVES

SUMMARY

Evidence of efficacy for weight management/reduction
Only one RCT conducted in the USA (the Pound of Prevention study) reported weight outcomes (Jeffery 1999). This low-intensity intervention to prevent weight gain comprised of education or education with incentives (entry into a US$100 lottery) compared with a control. After a 3-year follow-up significant differences were reported between intervention groups and control with a higher reported frequency in healthy weight loss practices. This was related to a non-significant reduced rate of weight gain over time. No weight gain differences were found between the treatment groups.

Evidence of efficacy for diet/physical activity outcomes
One multifaceted RCT to improve dietary habits among adult primary care patients (Delichatsios 2001) offered an incentive of US$5 for completion of the baseline survey and again for the final survey for those in the intervention group. The intervention group reported a positive effect for fruit and vegetable consumption (an increased of 0.6 servings per day). No effect was found for dairy products.

Two PA incentive interventions (both RCTs – one conducted in the UK and the Pound of Prevention study in the USA) demonstrated a positive short-term effect for PA outcomes. Harland (1999) offered vouchers entitling free access to leisure facilities and reported increased PA scores at 12 weeks and increased vigorous activity in the intervention participants. However, this increase was not maintained in the long-term (12 months). Jeffery (1999) reported that exercise decreased less in the education and education plus incentives groups however statistical significance is unclear.

Evidence of corroboration in the UK
Only one study (Harland) was undertaken in the UK. No other evidence of corroboration was identified.

EVIDENCE TABLE 3: INCENTIVES

First author	**Study design**	**Research type**	**Research quality**	**Study population**	**Research question** (include power calculation if available)	**Length of follow-up**	**Main results** (include effect size(s)/confidence intervals for each outcome if available)	**Confounders** (potential sources of bias)**/comments**
Evidence of efficacy (internal validity) for weight maintenance/reduction								
Jeffery 1999	RCT Individual	1	+/– (weak)	Men and women recruited from diverse sources, Minnesota, USA. *n* = 1226 18.6% men 40.5% of women were low income (household incomes of ≤US$25000 per year) Mean age = 38.4 years 90.7% white 89% with at least some college education Mean BMI = 26.7 kg/m².	**Aim:** To evaluate the effectiveness of low-intensity intervention to prevent weight gain with age. No-contact control compared with: 1) education through monthly newsletters (questionnaire postcard included) encouraging paying attention to weight and making small changes in diet and exercise habits; and	3 years (Newsletters continued throughout 3 years.)	106 women who become pregnant excluded from the analysis. 809/1120 (72%) completed all data collection visits. Significant increase between intervention groups and control in self-reported frequency of healthy weight loss practices (including reducing calories, increasing exercise and fruit and vegetables intake and decreasing fat intake) (p = 0.01), related to a reduced rate of weight gain over time. Point estimates for rate of weight gain over three years were slightly lower in both intervention groups than control, but differences between all groups not statistically significant, p = 0.88.	Also included in Table 1. No description of randomisation process. No allocation concealment. No ITT analysis. **Baseline differences:** Mean BMI higher in education-only group. Higher % of whites in two education groups (92% and 93%) than in control (87%). Parallel analyses with subjects completing only partial data (1101/1120 [98.3%]) yielded very similar findings and are not described in paper. Pound of Prevention Study.

					2) education + incentives (entry into US$100 lottery if questionnaire postcard returned). Intervention subjects had option for participation in community activity every 6 months. Annual study visits for all participants. **Delivered by:** Researchers (although 6 monthly activities delivered by various including nutritionists).			

Evidence of efficacy (internal validity) for diet outcomes								
Delichatsios 2001	RCT Cluster	1	+	Adult primary care patients New England, USA.	**Aim:** To evaluate a multifaceted preventive nutrition intervention to improve	3-month follow-up	85% follow-up in intervention group. 92% follow-up in control group.	No description of randomisation process. No allocation concealment. ITT

				n = 504 (of 1183 eligible) **Intervention:** Mean age = 49.9 ± 12.5 years 77.4% female 83% white 62% with at least a bachelor degree **Control:** Mean age = 56.8 ± 12.9 years 63.1% female 97% white 56.9% with at least a bachelor degree	dietary habits among adult primary care patients. Intervention vs. control. Intervention comprised mailed personalised dietary recommendations, verbal endorsement and motivational phone calls to set targets. US$5 incentive offered for completion of baseline survey and US$5 for final survey. Control comprised no intervention. **Delivered by:** Primary care physician or nurse practitioners and trained telephone counsellors. Nutritionist if necessary.	survey (although intervention taking place during this time).	Adjusting for age, sex, race and baseline intake, the change in fruit and vegetable intake in the intervention group was higher than control (0.6 [95% CI 0.3,0.8] servings/day. No intervention effect on dairy products.	analysis used. Some baseline differences. Mean age higher in control group. Proportion of African Americans higher in intervention group.
Evidence of efficacy (internal validity) for physical activity outcomes								
Harland 1999 UK Study	RCT Individual	1	++	Adults aged 40–64 years attending routine surgeries in one urban general practice in a socio-economically disadvantaged area of Newcastle, UK. *n* = 523 42.5% male 52% employed 10% unemployed	**Aim:** To evaluate the effectiveness of combinations of three methods to promote PA versus a control intervention. Brief (one interview) or intensive (six interviews over 12 weeks) motivational interviewing with or without financial incentive (30 vouchers entitling free access to	12 months	81% response rate at 12 weeks and 85% at 1 year. More participants in the combined intervention groups reported increased PA scores at 12 weeks than controls (38 vs. 16%, difference 22 [95% CI 13, 32]%, $p < 0.001$, with a 55% increase observed in those offered six interviews plus vouchers. Vigorous activity increased in 29% of	One urban general practice in a socio-economically disadvantaged area Less subjects per group in final analysis than required by power calculation, therefore study a little short on power.

				and seeking work 13% unable to work due to illness 72% manual occupational class (III, IV, V)	leisure facilities) and a no intervention control group. Group 1 *n* = 105 – Brief intervention Group 2 *n* = 106 – Brief intervention and vouchers Group 3 *n* = 104 – Intensive intervention Group 4 *n* = 102 Intensive intervention and vouchers 107 participants per group required to detect a difference between success rates of 40% to 60% at 80% power and 5% significance level. **Delivered by:** Interviews by trained health visitor.		intervention participants and 11% of controls (difference 18 [95% CI 10, 26]%, $p < 0.001$) but differences between the four intervention groups were not significant. Short-term increases in activity were not sustained regardless of intensity of intervention.	
Jeffery 1999	RCT	1	+/– (weak)	See above.	See above.	See above.	106 women who become pregnant excluded from the analysis. 809/1120 (72%) completed all data collection visits. Self-reported exercise decreased less in the two treatment groups than in control. Statistical significance unclear.	See above.

Evidence of corroboration (external validity)								
Evidence of salience – Is it appropriate for the UK?								
First author	**Study design**	**Research type**	**Research quality**	**Study population**	**Research question**	**Length of follow-up**	**Main results**	**Confounders/comments**
Harland 1999 UK study	RCT Individual	1	++	Adults aged 40–64 years attending routine surgeries in one urban general practice in a socio-economically disadvantaged area of Newcastle, UK	See above.	See above.	See above.	
Evidence for implementation – Will it work in the UK?								
First author	**Study design**	**Research type**	**Research quality**	**Study population**	**Research question**	**Length of follow-up**	**Main results**	**Confounders/comments**

SEARCH STRATEGIES

1.exp OBESITY/
2. exp Weight Gain/
3. exp Weight Loss/
4. obes$.af.
5. (weight gain or weight loss).af.
6. (overweight or over weight or overeat$ or over eat$).af.
7. weight change$.af.
8. ((bmi or body mass index) adj2 (gain or loss or change)).af.
9. body mass.ti,ab.
10. or/1–9
11. exp Behavior Therapy/
12. exp Social Support/
13. exp Family Therapy/
14. exp Psychotherapy, Group/
15. ((psychological or behavio?r$) adj (therapy or modif$ or strateg$ or intervention$)).af.
16. (group therapy or family therapy or cognitive therapy).af.
17. ((lifestyle or life style) adj (chang$ or intervention$)).af.
18. counsel?ing.af.
19. social support.af.
20. (peer adj2 support).af.
21. (children adj3 parent$ adj therapy).af.
22. or/11–21
23. exp OBESITY/dh [Diet Therapy]
24. exp Diet, Fat-Restricted/
25. exp Diet, Reducing/
26. exp Diet Therapy/
27. exp FASTING/
28. diet$.af.
29. (diet$ adj (modif$ or therapy or intervention$ or strateg$)).af.
30. (low calorie or calorie control$ or healthy eating).af.
31. (fasting or modified fast$).af.
32. exp Dietary Fats/
33. (fruit or vegetable$).af.
34. (high fat$ or low fat$ or fatty food$).af.
35. formula diet$.af.
36. or/23–35
37. exp EXERCISE/
38. exp Exercise Therapy/
39. exercis$.af.
40. (aerobics or physical therapy or physical activity or physical inactivity).af.
41. (fitness adj (class$ or regime$ or program$)).af.
42. (aerobics or physical therapy or physical training or physical education).af.
43. dance therapy.af.
44. sedentary behavio?r.af.
45. or/37–44
46. exp Complementary Therapies/
47. (alternative medicine or complementary therap$ or complementary medicine).af.
48. (hypnotism or hypnosis or hypnotherapy).af.
49. (acupuncture or homeopathy or homoeopathy).af.
50. (chinese medicine or indian medicine or herbal medicine or ayurvedic).af.
51. or/46–50
52. ((diet or dieting or slim$) adj (club$ or organi?ation)).af.
53. (weightwatcher$ or weight watcher$).af.
54. (correspondence adj (course$ or program$)).af.
55. (fat camp$ or diet$ camp$).af.
56. or/52–55

57. exp Health Promotion/
58. exp Health Education/
59. Mass Media/
60. (health promotion or health education).af.
61. (media intervention$ or community intervention$).af.
62. (community adj2 program$).af.
63. (family intervention$ or parent$ intervention).af.
64. or/57–63
65. exp Health Policy/
66. exp Nutrition Policy/
67. (health polic$ or food polic$ or nutrition polic$).af.
68. or/65–67
69. exp OBESITY/pc [Prevention & Control]
70. Primary Prevention/
71. (primary prevention or secondary prevention).af.
72. (preventive measure$ or preventative measure$).af.
73. (preventive care or preventative care).af.
74. (obesity adj2 (prevent$ or treat$)).af.
75. or/69–74
76. exp Controlled Clinical Trials/
77. exp Random Allocation/
78. exp Double-Blind Method/
79. exp Single-Blind Method/
80. exp PLACEBOS/
81. exp Research Design/
82. exp Intervention studies/
83. exp Evaluation studies/
84. exp Cost Benefit Analysis/
85. (time adj series).tw.
86. ((singl$ or doubl$ or trebl$ or tripl$) adj5 (blind$ or mask)).af.
87. exact{CONTROLLED-CLINICAL-TRIAL}.pt.
88. placebo$.af.
89. (matched communities or matched populations).af.
90. (control$ adj (trial$ or stud$ or evaluation$ or experiment$)).af.
91. (comparison group$ or control group$).af.
92. matched pairs.af.
93. (outcome study or outcome studies).af.
94. (quasiexperimental or quasi experimental or pseudo experimental).af.
95. (nonrandomi?ed or non randomi?ed or pseudo randomi?sed).af.
96. randomi?ed.hw.
97. (cohort or survey: or qualitative).ti,ab.
98. or/76–97
99. exp Meta-Analysis/
100. meta-analys$.ti,ab.
101. metaanalys$.ab,ti.
102. meta analys$.ab,ti.
103. Cochrane.ab,sh,ti.
104. (review$ or overview$).ti.
105. review$.pt.
106. (synthes$ adj3 (literature$ or research or studies or data)).ab,ti.
107. pooled analys$.ab,ti.
108. ((data adj2 pool$) and studies).mp. [mp=title, original title, abstract, name of substance, mesh subject heading]
109. ((hand or manual or database$ or computer$) adj2 search$).ab,ti.
110. ((electronic or bibliographic$) adj2 (database$ or data base$)).ab,ti.
111. ((review$ or overview$) adj10 (systematic$ or methodologic$ or quantitativ$ or research$ or literature$ or studies or trial$ or effective$)).ab.
112. or/99–111
113. (retrospective$ adj2 review$).ab,sh,ti.
114. (case$ adj2 review$).ab,sh,ti.

115. (record$ adj2 review$).ab,sh,ti.
116. (patient$ adj2 review$).ab,sh,ti.
117. (patient$ adj2 chart$).ab,sh,ti.
118. (peer adj2 review$).ab,sh,ti.
119. (chart$ adj2 review$).ab,sh,ti.
120. (case$ adj2 report$).ab,sh,ti.
121. (rat or rats or mouse or mice or hamster or hamsters or animal or animals or dog or dogs or cat or cats or bovine or sheep).ab,sh,ti.
122. or/113–121
123. 122 not (122 and 112)
124. 112 not 123
125. 22 or 36 or 45 or 51 or 56 or 64 or 68 or 75
126. 10 and 125 and 98
127. 10 and 125 and 124
128. 126 or 127
129. Residence characteristics/
130. Delivery of health care/
131. Community Networks/
132. Social Change/
133. Social Support/
134. Community Health Aides/
135. Community Health Nursing/
136. Community Health Planning/
137. Community Health Services/
138. Community-Institutional Relations/
139. Community Medicine/
140. Community Pharmacy Services/
141. Rural Health Services/
142. Public Health/
143. Public Health Practice/
144. Public Health Nursing/
145. Preventive Health Services/
146. Primary Prevention/
147. (primary prevention or secondary prevention).af.
148. (preventive care or preventative care).af.
149. Physician's role/
150. Peer Group/
151. Self-Help Groups/
152. Health Personnel/
153. Allied Health Personnel/
154. Mass Media/
155. ((gp$ or general practitioner$ or physician$) adj5 (intervention$ or refer$ or advi$ or train$ or run$)).af
156. ((nurse$ or health visitor$ or pharmacist$ or pharmacy) adj5 (intervention$ or refer$ or led or support$ or advi$ or train$ or run$)).af
157. ((health professional$ or nutritionist$ or dietician$) adj5 (intervention$ or refer$ or led$ or support$ or advi$ or train$ or run$)).af
158. ((peer$1 or lay or professional$1 or community or agenc$) adj5 support).af
159. ((peer$1 or lay or community) adj5 (group$1 or network$1 or program$ or clinic$)).af
160. health promotion/mt
161. (exercise$ prescri$ or exercise$ refer$).af
162. ((nutrition$ or diet$) adj2 advis$).af
163.Community wide.af
164.Social support.af
165.Social network$.af
166. ((lifestyle$ or life style$ adj2 (change$ or advi$)).af
167. or/129–166
168. 128 and 167
169. animal.sh.
170. human.sh.

171. 169 not (169 and 170)
172. 168 not 171
173. limit 172 to yr=1990–2005

DATA SOURCES

Database searches were carried out in January 2005 for papers published from 1990 onwards (1995 onwards for systematic review level evidence).

The following information sources were searched:

AMED (Allied and Complementary Medicine)
ASSIA (Applied Social Sciences Index and Abstracts)
British Nursing Index
CAB Abstracts - Human health and nutrition, agriculture
CENTRAL (Cochrane Controlled Trials Register)
CINAHL (Cumulative Index to Nursing & Allied Health Literature)
Clinical Evidence - http://www.clinicalevidence.org
Cochrane Database of Systematic Reviews
CRD (EED database) http://www.york.ac.uk/inst/crd
DARE (Database of Abstracts of Reviews of Effects)
Embase
EPPI-Centre - http://eppi.ioe.ac.uk/
ERIC (Educational Resources Information Centre)
Food Standards Agency - http://www.food.gov.uk/science/research/
HDA Evidence Base - http://www.hda-online.org.uk/html/research/effectiveness.html
Health Evidence Bulletins – Wales - http://hebw.cf.ac.uk
HealthPromis
IUHPE (International Union for Health Promotion and Education) - http://www.iuhpe.nyu.edu/pubs/index.html
Medline
NCCHTA (National Coordinating Centre for Health Technology Assessment) - http://www.ncchta.org
NICE (National Institute for Clinical Excellence)– www.nice.org.uk
Public Health Effectiveness (Hamilton, Ontario) - http://www.health.hamilton-went.on.ca/CSCARB/EPHPP/ephpp.htm
PsycINFO
SIGN (Scottish Intercollegiate Guidelines Network) – http://www.sign.ac.uk
Social Science Citation Index (equiv. to Current Contents)
Sociological Abstracts
Sport Discus

Update searches
An update search of the same databases was carried out in September 2005 for worldwide intervention and UK corroborative studies. A final search was completed on 1 December 2005 for systematic reviews and controlled trials only in a reduced number of databases: CINAHL, Cochrane, Embase, Medline and PsycINFO.

The search strategies (see part c, supporting information) were developed in Medline and adapted for use with the other information sources. Additional papers (*n* = 18) were located from reference lists or in the searches carried out for the broader community review, or were suggested by the Guidance Development Group.

EXCLUDED REFERENCE LISTS

Papers excluded due to lack of time

Paper	Reason for exclusion
Barr SI, Yarker KV, Levy-Milne R, Chapman GE. Canadian dietitians' view and practices regarding obesity and weight management. *Journal of Human Nutrition and Dietetics* 2004;17(6).	Non-UK corroborative – excluded due to lack of time.
Barras C, Bloom *N*, Cook S, Luzhansky Z, Skinner B. Hand in Hand: Encouragement and facilitation of support and self-help group use. *Internet Journal of Health Promotion* August 1996.	Non-UK corroborative – excluded due to lack of time.
Bebetsos E, Chroni S, Theodorakis Y. Physically active students' intentions and self-efficacy towards healthy eating. *Psychological Reports* 2002;91(2):485–95.	Non-UK corroborative – excluded due to lack of time.
Black DR, Blue CL, Coster DC, Chrysler LM. Corporate social marketing: message design to recruit program participants. *American Journal of Health Behavior* 2002;26(3):188–99.	Non-UK corroborative – excluded due to lack of time.
Blackburn GL, Waltman BA. Physician's guide to the new 2005 dietary guidelines: How best to counsel patients. *Cleveland Clinic Journal of Medicine* 2005;72(7); 609-618.	Non-UK corroborative – excluded due to lack of time.
Bryant C, Lindenberger J, Brown C, Kent E, Schreiber JM, Bustillo M, et al. A social marketing approach to increasing enrollment in a public health program: A case study of the Texas WIC program. *Human Organization* 2001;60(3):234–46.	Non-UK corroborative – excluded due to lack of time.
Bull F, Schipper E, Jamrozik K, Phil D. How can and do Australian doctors promote physical activity? *Preventive Medicine* 1997;26(6):866–73.	Non-UK corroborative – excluded due to lack of time.
Clark T, Sleath B, Rubin RH. Influence of ethnicity and language concordance on physician–patient agreement about recommended changes in patient health behaviour. *Patient Education and Counselling* 2005;53(1):87–93.	Non-UK corroborative – excluded due to lack of time.
Clemmens D, Engler A, Chinn PL. Learning and living health: College students' experiences with an introductory health course. *Journal of Nursing Education* 2004;43(7):313–8.	Non-UK corroborative.
Croft JB, Temple SP, Lankenau B, Heath GW, Macera CA, Eaker ED, et al. Community intervention and trends in dietary-fat consumption among black-and-white adults. *Journal of the American Dietetic Association* 1994;94(11):1284–90	Non-UK corroborative – excluded due to lack of time.
Davis LL, Broome ME, Cox RP. Maximizing retention in community-based clinical trials. *Journal of Nursing Scholarship* 2002;34(1):47–53	Non-UK corroborative – excluded due to lack of time.
Drayton-Brooks S, White N. Health promoting behaviors among African American women with faith-based support. *ABNF Journal* 2004;15(5):84–90.	Non-UK corroborative – excluded due to lack of time.

Dwyer JJ, Hansen B, Barrera M, Allison KR, Ceolin-Celestini S, Koenig D, et al. Maximising children's physical activity: an evaluability assessment to plan a community-based, multi-strategy approach in an ethno-racially and socio-economically diverse city. *Health Promotion International* 2003;18:199–208.	Non-UK corroborative – excluded due to lack of time.
French SA NS. Reducing barriers to participation in weight-loss programs in low-income women. Journal of the *American Dietetic Association* 1998;98(2):198–200..	Non-UK corroborative – excluded due to lack of time.
Goodman RM, Steckler A, Hoover S, Schwartz R. A critique of contemporary community health promotion approaches: Based on a qualitative review of six programs in Maine. *American Journal of Health Promotion* 1993;7:208–20..	Non-UK corroborative – excluded due to lack of time.
Greene GW, Fey-Yensan N, Padula C, Rossi S, Rossi JS, Clark PG. Differences in psychosocial variables by stage of change for fruits and vegetables in older adults. *Journal of the American Dietetic Association* 2004;104(8);1236–43..	Non-UK corroborative – excluded due to lack of time.
Guion LA. Partnerships for Progress: summer youth nutrition programs. *Journal of Extension* 1998;36(6)	Brief narrative evaluation of seven youth nutritional programmes. Non-UK corroborative excluded due to lack of time.
Harris JE, Hamaday V, Mochan E. Osteopathic family physicians' attitudes, knowledge, and self-reported practices regarding obesity. *Journal of the American Osteopathic Association* 1999;99(7):358–65.	Non-UK corroborative – excluded due to lack of time.
Hawk C, Long CR, Perillo M, Boulanger KT. A survey of US chiropractors on clinical preventive services. *Journal of Manipulative and Physiological Therapeutics* 2004;27(5).	Non-UK corroborative – excluded due to lack of time.
Honda K. Factors underlying variation in receipt of physician advice on diet and exercise: Applications of the behavioral model of health care utilization. *American Journal of Health Promotion* 2004;18(5):370–77	Non-UK corroborative – excluded due to lack of time.
Huang J, Yu H, Marin E, Brock S, Carden D, Davis T. Physicians' weight loss counseling in two public hospital primary care clinics. *Academic Medicine* 2004;79(2): 156–61.	Non-UK corroborative – excluded due to lack of time.
Hunt JR, Kristal A, White E, Lynch JC. Physician recommendations for dietary change: their prevalence and impact in a population-based sample*. American Journal of Public Health* 1995;85(5):722–6.	Non-UK corroborative – excluded due to lack of time.
Jackson CL. Lifestyle counselling in general practice. Waste of time or challenge of skill? *Medical Journal of Australia* 1992;157(6):396–8.	Non-UK corroborative – excluded due to lack of time.
Kayman S, Bruvold W, Stern JS. Maintenance and relapse after weight loss in women: behavioral aspects. *American Journal of Clinical Nutrition* 1990;52(5):800–807.	Non-UK corroborative – excluded due to lack of time.
Kelleher CC, Fallon UB, McCarthy E, Dineen BD, O'Donnell M, Killian M et al. Feasibility of a lifestyle cardiovascular health	Non-UK corroborative – excluded

promotion programme for 8–15 year olds in Irish general practice: results of the Galway Health Project. *Health Promotion International* 1999;14:221–9.	due to lack of time.
Keller I, Legetic B. Training Chilean primary health care professionals in nutrition for non-communicable disease prevention. *Revista Panamericana de Salud Republica – Pan American Journal of Public Health* 2004;16(4):242–9.	Non-UK corroborative – excluded due to lack of time.
Kreuter MW, Scharff DP, Brennan LK, Lukwago SN. Physician recommendations for diet and physical actiivity: which patients get advised to change. *Preventive Medicine* 1997;26(6):825–33.	Non-UK corroborative – excluded due to lack of time.
Kreuter MW, Chheda SG, Bull FC. How does physician advice influence patient behavior? Evidence for a priming effect. *Archives of Family Medicine* 2000;9(5):426–33.	Non-UK corroborative – excluded due to lack of time.
Lazovich D, Curry SJ, Beresford SAA. Implementing a dietary intervention in primary care practice: a process evaluation. *American Journal of Health Promotion* 2000;15(2):118–25.	Non-UK corroborative – excluded due to lack of time.
Lee Y-S. Gender differences in physical activity and walking among older adults. *Journal of Women and Aging* 2005;17(1/2):55–70.	Non-UK corroborative.
Lee JS, Kritchevsky SB, Tylavsky FA, Harris T, Everhart J, Simonsick EM et al. Weight-loss intention in the well-functioning, community-dwelling elderly: associations with diet quality, physical activity, and weight change. *American Journal of Clinical Nutrition* 2004;80(2):466–74.	Non-UK corroborative – excluded due to lack of time.
McGuire MT, Jeffrey RW, French SA, Hannan PJ. The relationship between restraint and weight and weight-related behaviors among individuals in a community weight gain prevention trial. *International Journal of Obesity and Related Metabolic Disorders* 2001;25(4):574–80.	Non-UK corroborative – excluded due to lack of time.
Messecar DC, Salveson CA, Monkong S. Feasibility of a virtual health and wellness center for the Oregon Air National Guard. *Military Medicine* 2002;167(1):38–43..	Non-UK corroborative – excluded due to lack of time.
Mihalynuk TV, Knopp RH, Scott CS, Coombs JB. Physician informational needs in providing nutritional guidance to patients. *Family Medicine* 2004;36(10); 722-26 .	Non-UK corroborative – excluded due to lack of time.
Monge-Rojas R, Garita C, Sanchez M, Munoz L. Barriers to and motivators for healthful eating as perceived by rural and urban Costa Rican adolescents. *Journal of Nutrition Education and Behaviour* 2005;37(1):33–40.	Non-UK corroborative – excluded due to lack of time.
Murtagh EM, Boreham CAG, Nevill A, Hare LG, Murphy MH. The effects of 60 minutes of brisk walking per week, accumulated in two different patterns, on cardiovascular risk. *Preventive Medicine* 2005;41(1):92–7.	Excluded at critical appraisal. Potentially severely confounded study. 1–
Ness K, Elliott P, Wilbur V. A peer educator nutrition program for seniors in a community development context. *Journal of Nutrition Education* 1992;24(2):91–4.	Non-UK corroborative – excluded due to lack of time.

Nomaguchi KM, Bianchi SM. Exercise time: Gender differences in the effects of marriage, parenthood, and employment. *Journal of Marriage and Family* 2004;66(2):413–430.	Non-UK corroborative – excluded due to lack of time.
Nothwehr F. Attitudes and behaviors related to weight control in two diverse populations. *Preventive Medicine* 2004;39(4)***I;* 674-80**.	Non-UK corroborative – excluded due to lack of time.
Owen N. Strategic initiatives to promote participation in physical activity. *Health Promotion International* 1996;11(3):213–8.	Non-UK corroborative – excluded due to lack of time.
Schnirring L. Survey suggests a decline in obesity counselling: physicians analyze reasons. *Physician and Sportsmedicine* 2004;32(6):18–20, 40.	Non-UK corroborative – excluded due to lack of time.
Sciamanna CN, DePue JD, Goldstein MG. Nutrition counseling in the Promoting Cancer Prevention in Primary Care Study. *Preventive Medicine* 2002;35(5):437–46.	Non-UK corroborative – excluded due to lack of time.
Sherwood NE, Morton N, Jeffery RW, French SA, Neumark-Sztainer D, Falkner NH. Consumer preferences in format and type of community-based weight control programs. *American Journal of Health Promotion* 1998;13(1):12–8.	Non-UK corroborative – excluded due to lack of time.
Tu W, Stump TE, Damush TM, Clark DO. The effects of health and environment on exercise-class participation in older, urban women. *Journal of Aging and Physical Activity* 2004;12:480–96.	Non-UK corroborative.
Verheijden MW, Bakx JC, Delemarre ICG et al. GPs 'assessment of patients' readiness to change diet, activity and smoking. *British Journal of General Practice* 2005;55(515).	Non-UK corroborative – excluded due to lack of time.
Whitaker RC, Sherman SN, Chamberlin LA, Powers SW. Altering the perceptions of WIC health professionals about childhood obesity using video with facilitated group discussion. *Journal of the American Dietetic Association* 2004;104(3):379–86.	Non-UK corroborative – excluded due to lack of time.
Wilson PM, Rodgers WM. The relationship between perceived autonomy support, exercise regulations and behavioural intentions in women. *Psychology of Sport and Exercise* 2004;5:229–42.	Non-UK corroborative.
Wyatt HR, Peters JC, Reed GW, Barry M, Hill JO. A Colorado statewide survey of walking and its relation to excessive weight. *Medicine and Science in Sports and Exercise* 2005; 37(5); 724–730.	Non-UK corroborative.

Excluded reference list

Paper	**Reason for exclusion**
Review: Computerized reminders increase the rate of use of most preventive services. *ACP Journal Club* 1997;126:80.	Review of ambulatory care study.

Review: Most obesity treatment methods are ineffective over the long term. *ACP Journal Club* 1999;131:20.	Review of [143].
Abdul-Ghani MA, Sabah M, Minuchin O, Vardi P, Raz I, Wainstein J. Primary prevention of type 2 diabetes: How do we do it? *Israel Medical Journal* 2004;6:305–7.	Non-systematic literature review.
Ahrens RA, Hower M. Effects of weight reduction interventions by community pharmacists. *Journal of the American Pharmacists Association* 2003; 43(5):583–9.	Overweight and obese subjects only.
Altman DG. Sustaining interventions in community systems: On the relationship between researchers and communities. *Health Psychology* 1995;14(6):526–36.	Expert opinion/discussion paper
Ammerman AS, Lindquist CH, Lohr KN, et al. The efficacy of behavioral interventions to modify dietary fat and fruit and vegetable intake: a review of the evidence. *Preventive Medicine* 2002;35:25–41.	Excluded at critical appraisal: - quality systematic review
Anderson C. Community pharmacy health promotion activity in England: a survey of policy and practice. *Health Education Journal* 1996; 55: 194–202.	No relevant results
Anderson C. Health promotion by community pharmacists: perceptions, realities and constraints. *Journal of Social and Administrative Pharmacy* 1998;15:10–22.	Six respondents only, and replicates results of larger included studies (Keene [324] and Moore [325]).
Andersen RE, Franckowiak, SC, Bartlett, SJ, Fontaine, KR. Physiologic changes after diet combined with structured aerobic exercise or lifestyle activity. *Metabolism: Clinical and Experimental* 2002;51(12):1528–33.	Overweight and obese subjects only.
Andersen RE, Bartlett SJ, Moser CD, Evangelisti MI, Verde TJ. Lifestyle or aerobic exercise to treat obesity in dieting women. *Medicine and Science in Sports and Exercise* 1997;29(Suppl 5):S46.	Abstract only. Obese subjects only.
Anderson A, Cox D. Five a day – challenges and achievements. *Nutrition and Food Science* 2000;30(1):30–34.	Very low quality study. Better evidence available
Anderson AS. How to implement dietary changes to prevent the development of metabolic syndrome. *British Journal of Nutrition* 2000;83(Suppl 1):S165–8.	Narrative overview. Relevant papers obtained.
Anderson JV, Bybee DI, Brown RM, et al. 5 a Day fruit and vegetable intervention improves consumption in a low income population. *Journal of the American Dietetic Association* 2001;101:195–202.	Population already in an intervention programme (WIC)
Aoun S, Rosenbery M. Are rural people getting Heartsmart? *Australian Journal of Rural Health* 2004;12:81–8.	Does not meet inclusion criterion. No control group.
Armitage CJ. Evidence that implementation intentions reduce dietary fat intake: a randomized trial. *Health Psychology* 2004; 23(3):319–23.	Does not meet inclusion criterion. One month follow-up.
Baranowski T, Mendlein J, Resnicow K, Frank E, Cullen KW, Baranowski J. Physical activity and nutrition in children and youth: An overview of obesity prevention. *Preventive Medicine*	Narrative overview. Relevant papers obtained.

2000;31(2):S1–10.	
Baranowski T, Baranowski JC, Cullen KW, De Moor C, Rittenberry LHD. 5-a-day achievement badge for African-American boy scouts: Pilot outcome results. *Preventive Medicine* 2002;34:353–63.	Two-month follow-up
Baranowski T, Baranowski JC, Cullen KW, Thompson DI, Nicklas TA, Zakeri IE, et al. The Fun,Food and Fitness Project (FFFP): The Baylor GEMS pilot study. *Ethnicity and Disease* 2003;13:S30–9.	All African American children. Relevant to Black and Ethnic Minority review.
Baranowski T, Simons-Morton B, Hooks P, Henske J, Tiernan K, Dunn JK, et al. A center-based program for exercise change among Black-American families. *Health Education Quarterly* 1990;17:179–96.	Family and Black and Minority Ethnic Group (BMEG) intervention. Relevant to other review.
Barnard ND, Scialli AR, Turner-McGrievy G, Lanou AJ. Acceptability of a low-fat vegan diet compares favorably to a step II diet in a randomized, controlled trial. *Journal of Cardiopulmonary Rehabilitation* 2004;24(4):229–35.	Overweight and obese subjects only.
Baron M. Fighting obesity: part 1: review of popular low-carb diets. *Health Care Food and Nutrition Focus* 2004;21(10):1–6.	Non-systematic literature review.
Batch JA, Baur LA. Management and prevention of obesity and its complications in children and adolescents. *Medical Journal of Australia* 2005;182:130–5.	Non-systematic literature review.
Bautista-Castano I, Doreste J, Serra-Majem L. Effectiveness of interventions in the prevention of childhood obesity. *European Journal of Epidemiology* 2004;19:617–22.	Largely relevant to Schools and informed Teeside. Unpicked for community studies.
Baxter T, Milner P, Wilson K, Leaf M, Nicholl J, Freeman J, et al. A cost effective, community based heart health promotion project in England: prospective comparative study. *British Medical Journal 1997*;315:582–5.	More relevant to Community 2 review.
Beech BM, Klesges RC, Kumanyika SK, Murray DM, Klesges L, McClanahan B, et al. Child- and parent-targeted interventions: The Memphis GEMS pilot study. *Ethnicity and Disease* 2003;13(Suppl 1):S78–87.	BMEG and family intervention. Relevant to other reviews.
Bessell TL, McDonald S, Silagy CA, Anderson JN, Hiller JE, Sansom LN. Do internet interventions for consumers cause more harm than good? A systematic review. *Health Expectations* 2002;5(1):28–37.	Wide range of studies – only one with weight outcome. Relevant study obtained.
Biem HJ, Turnell RW, D'Arcy C. Computer telephony: automated calls for medical care. *Clinical and Investigative Medicine-Medecine Clinique et Experimentale* 2003;26(5):259–68.	Review with only four potentially relevant papers – all checked and none met inclusion criteria.
Blair SN, Collingwood TR, Reynolds R, Smith M, Hagan RD, Sterling CL. Health promotion for educators: impact on health behaviors, satisfaction, and general well-being. *American Journal of Public Health* 1984;74:147–9.	School-based intervention.
Blair SN, Applegate WB, Dunn AL, Ettinger WH. Activity	Superseded by systematic review

Counseling Trial (ACT): rationale, design and methods. Medicine and Science in Sports and Exercise 1998;30(7):1097–106.	evidence.
Blue CL, Black DR. Synthesis of intervention research to modify PA and dietary behaviours. *Research and Theory for Nursing Practice: An International Journal* 2005;19(1):25–61.	Unpicked – all studies BMEG or overweight subjects.
Borhani NO. Significance of physical activity for prevention and control of hypertension. *Journal of Human Hypertension* 1996;10(Suppl 2):S7–11.	All subjects required to have 'high normal' diastolic blood pressure.
Bowden JM, Shaul MP, Bennett JA. The process of changing health risk behaviors: an Oregon rural clinic experience. *Journal of the American Academy of Nurse Practitioners* 2004;16(9):411–7.	Before and after study. Better evidence available.
Bowen DJ, Beresford SA. Dietary interventions to prevent disease. *Annual Review of Public Health* 2002;23:255–86.	Non-systematic review. Relevant papers obtained.
Bracht N, Finnegan JR, Rissel C, Weisbrod R, Gleason J, Corbett J, et al. Community ownership and program continuation following a health demonstration project. *Health Education Research* 1994;9:243–55.	Statewide intervention and not suitable for local implementation: Minnesota Heart Health Programme.
Braddy BA, Orenstein D, Brownstein JN, Cook TJ. PATCH: An example of community empowerment for health. *Journal of Health Education* 1992;23:179–182.	Evaluation of PATCH Programme.
Browne D. Exercise by Prescription. *Journal of the Royal Society of Health* 1997;117(1):52–55.	Conference paper - general discussion of exercise prescription.
Brownson RC, Smith CA, Pratt M, Mack NE. Preventing cardiovascular disease through community-based risk reduction: the Bootheel Heart Health Project. *American Journal of Public Health* 1996;86(2):206–13.	Country-wide intervention and not suitable for local implementation.
Brug J, Campbell M, van Assema P. The application and impact of computer-generated personalized nutrition education: a review of the literature. *Patient Education and Counseling* 1999;36:145–56.	Overview. Relevant papers obtained.
Brunton G, Harden A, Rees R, Kavanagh J, Oliver S, Oakley A. *Children and physical activity: A systematic review of barriers and facilitators*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London; 2003.	Only three non-school linked studies – check for broader community.
Burke V. Health promotion in couples adapting to a shared lifestyle. Health Education Research 1999;14(2):269–88.	Pilot for Burke (2003).
Burke V. Physical activity and nutrition programs for couples: a randomized controlled trial. *Journal of Clinical Epidemiology* 2003;56(5):421–32.	Same study as Dzator (2004)..
Burke V, Giangiulio N, Gillam HF, Beilin LJ, Houghton S. Changes in cognitive measures in a randomized controlled trial of a health promotion program for couples targeting diet and physical activity. *American Journal of Health Promotion*	Same study as Dzator (2004)..

2004;18(4):300–11.	
Butterfoss FD, Goodman RM, Wandersman A. Community coalitions for prevention and health promotion. *Health Education Research* 1993;8:315–30.	Discussion paper on Community Coalitions.
Buttriss J. Doctors and the provision of advice on nutrition. *Nutrition and Food Science* 1996; July/August: 9–13.	Very low quality study. Better evidence available.
Buttriss J, Stanner S, McKevith B, Nugent A, Kelly C, Phillips F, et al. *A critical review of the psychosocial basis of food choice and identification of tools to effect positive food choice: a summary*. Report No. 9017. UK: British Nutrition Foundation, 2004.	Non systematic review-relevant papers obtained. Check community 2 and workplace database.
Caballero B. Obesity prevention in children: opportunities and challenges. *International Journal of Obesity* 2004;28:S90–5.	Non-systematic literature review.
Cadman L, Wiles R. Nutrition advice in primary care: Evaluation of practice nurse nutrition training programmes. *Journal of Human Nutrition and Dietetics* 1996;9(2):147–56.	Training of nurses.
Calfas KJ, Long BJ, Sallis JF, Wooten WJ. A controlled trial of physician counseling to promote the adoption of physical activity. *Preventive Medicine* 1996;25(3):225–33.	4–6 week follow-up.
Calfas KJ, Sallis JF, Oldenburg B, French M. Mediators of change in PA following an intervention in primary care: PACE. *Preventive Medicine* 1997;26(3):297–304.	6 week follow-up.
Cameron R. Toward the development of self-help health behaviour change programs: weight loss by correspondence. Canadian *Journal of Public Health* 1990;81(4):275–9.	Overweight and obese subjects only.
Campbell K. Interventions for preventing obesity in children. *Cochrane Database of Systematic Reviews* 2004; 4.	One community-based study only.
Campbell MJ, Browne D, Waters WE. Can general practitioners influence exercise habits? Controlled trial. *British Medical Journal* 1985;290:1044–6.	Superseded by systematic review.
Campbell MK, Devellis BM, Strecher VJ, Ammerman AS, DeVellis RF, Sandler RS. Improving dietary behavior: The effectiveness of tailored messages in primary care settings. *American Journal of Public Health* 1994;84(5):783–7.	Superseded by systematic review evidence.
Carroll R, Ali N, Azam N. Promoting physical activity in South Asian Muslim women through 'exercise on prescription'. *Health Technology Assessment* 2002; 6(8): 1-108.	BMEG subjects only. Relevant to other review.
Caserta MS GP. Older women's feelings about exercise and their adherence to an aerobic regimen over time. *Gerontologist* 1998;38(5):602–609.	Overweight and obese women only.
Centres for Disease Control and Primary Prevention Working Group. Primary prevention of type 2 diabetes mellitus by lifestyle intervention: implications for health policy. *Annals of Internal*	Non-systematic literature review.

Medicine 2004;140:951–7.	
Chen AH, Sallis JF, Castro cm , et al. A home-based behavioural intervention to promote walking in sedentary ethnic minority women: Project WALK. *Journal of Women's Health: Research on Gender, Behavior, and Policy* 1998;4:19–39.	BMEG – relevant to other review.
Ciliska D, Miles E, O'Brien M, Turl C, Tomasik HH, Donovan U, et al. *Effectiveness of community interventions to increase fruit and vegetable consumption in people four years of age and older*. Canada: Effective Public Health Practice Project; 1999.	Only two relevant papers – obtained.
Clifford PA, Tan, SY, Gorsuch,RL. Efficacy of a self-directed behavioral health change program: weight, body composition, cardiovascular fitness, blood pressure, health risk, and psychosocial mediating variables. *Journal of Behavioral Medicine* 1991;14(3):303–23.	CCT. Better evidence available.
Coakley J, White A. Making decisions – gender and sport participation among British adolescents. *Sociology of Sport Journal* 1992;9(1):20–35.	Relevant to broader community. Paper filed in Community 2.
Cochrane T, Davey R. Evaluation of exercise prescription for 25 general practices and a large leisure complex in Sheffield. Journal of Sports Science 1998;16(1):17–18.	Small preliminary findings paper - can't locate any further papers.
Coday M. Health Opportunities with Physical Exercise (HOPE): social contextual interventions to reduce sedentary behavior in urban settings. Health Education Research 2002;17(5):637–47.	Preliminary report. Church affiliated. Include in broader community.
Colchio K, Zybert P, Basch CE. Effects of after-school PA on fitness, fatness, and cognitive self-perceptions: a pilot study among urban, minority adolescent girls. *American Journal of Public Health* 2000;90(6):977–78.	Non-UK BMEG.
Coleman KJ GEC. An objective measure of reinforcement and its implications for exercise promotion in sedentary Hispanic and Anglo women. *Annals of Behavioral Medicine* 2000;22(3):229–36.	Validation evaluation of a measure for the assessment of exercise + sedentary activity choices.
Conn VS, Minor MA, Burks KJ, Rantz MJ, Pomeroy SH. Integrative review of PA intervention research with aging adults. *Journal of the American Geriatric Society* 2003;51:1159–68.	Superseded by more recent systematic review.
Coups EJ, Gaba A, Orleans T. Physician screening for multiple behavioural health risk factors. *American Journal of Preventive Medicine* 2004;27(2S):34–41.	Discussion of risk factors only.
Cox DN, Anderson AS, Reynolds J, McKellar S, Lean ME, Mela DJ. Take Five, a nutrition education intervention to increase fruit and vegetable intakes: impact on consumer choice and nutrient intakes. *British Journal of Nutrition* 1998;80:123–131.	Superseded by systematic review evidence.
Crawford D. Can anyone successfully control their weight? Findings of a three year community-based study of men and women. *International Journal of Obesity and Related Metabolic Disorders* 2000;24(9):1107–10.	Same trial as Jeffery (1999).
Crockett SJ, Heller KE, Skauge LH, Merkel JM. Mailed-home	Superseded by systematic review

nutrition education for rural seniors: a pilot study. *Journal of Nutrition Education* 1992;24(312):315.	evidence.
Crookes P, Davies S, McDonnell A, Shewan J. Practice nurses and the prevention of cardiovascular disease and stroke: a literature review to promote evidence-based practice. Part II: hypertension, raised blood cholesterol, lack of exercise and obesity. *Clinical Effectiveness in Nursing* 1997;1(4):198–205.	Review of link between PA and obesity and cardiovascular disease – no relevant outcomes.
Crouch D. How nurse intervention is tackling child obesity. *Nursing Times* 2004;100(31):26.	Review of school-based study.
Cullen KW, Bartholomew LK, Parcel GS. Girl scouting: An effective channel for nutrition education. *Journal of Nutrition Education* 1997;29(2):86–91.	Relevant to broader community review. Paper filed in community 2.
Cummins S, Macintyre S. A systematic study of an urban foodscape: The price and availability of food in Greater Glasgow. Urban Studies 2002;39(11):2115–30.	Survey of food availability – relevant to broader community.
Cutler JA. Randomized clinical trials of weight reduction in nonhypertensive persons. *Annals of Epidemiology* 1991;1(4):363–70.	High diastolic blood pressure required in subjects.
Dallow C.B., Anderson J. Using self-efficacy and a transtheoretical model to develop a PA intervention for obese women. *American Journal of Health Promotion* 2003;17(6):373–81.	Obese subjects only.
De Bourdeaudhuij L, Brug J. Tailoring dietary feedback to reduce fat intake: An intervention at the family level. *Health Education Research* 2000;15:449–62.	6-weeks follow-up only.
De Bourdeaudhuij L, Brug J, Vandelanotte C, Van Oost P. Differences in impact between a family-versus an individual-based tailored intervention to reduce fat intake. *Health Education Research* 2002;17:435–49.	10-weeks follow-up only.
Deal LW. The effectiveness of community-health nursing interventions – a literature-review. *Public Health Nursing* 1994;11(5):315–23.	Discussion Paper (including City and Level Health promotion).
DeHaven MJ, Hunter IB, Wilder L, Walton JW, Berry J. Health programs in faith-based organizations: Are they effective? *American Journal of Public Health* 2004;94(6):1030–6. [32]	Church intervention – include in broader review. Paper filed in community 2.
De Pinto C. Childhood obesity. A review of causes, prevention and the role of the primary care provider. *Maryland Medicine* 2004; Summer: 9–14.	Non-systematic literature review.
Del Prete L., English C, Caldwell M, Banspach SW, Lefebvre C. Three-year follow-up of Pawtucket Heart Health's community-based weight loss programs. *American Journal of Health Promotion* 1993;7(3):182–7.	Cross sectional survey. Better evidence available.
DiPietro L. Physical activity in the prevention of obesity: current evidence and research issues. *Medicine and Science in Sports and Exercise* 1999;31(Suppl 1):S542–6..	Non–systematic review. Relevant papers obtained.

Dittmar H, Blayney M. Women's self-reported eating behaviours and their responses to food and non-food television advertisements. *European Eating Disorders Review* 1996;4(4):217–31.	Eating disorders (anorexia and bulimia).
Dobbins M, Beyers J. *The effectiveness of community-based heart health projects: A systematic overview update*. Canada: Effective Public Health Practice Project; 1999.	Superseded by more recent systematic review.
Donnelly JE, Hill JO, Jacobsen DJ, Potteiger J, Sullivan DK, Johnson SL, et al. Effects of a 16-month randomized controlled exercise trial on body weight and composition in young, overweight men and women: the Midwest Exercise Trial. *Archives of Internal Medicine* 2003 June 9;163(11):1343–50..	All subjects overweight and obese.
Donnelly JE, Smith B, Jacobsen DJ et al. The role of exercise for weight loss and maintenance. *Best Practice and Research Clinical Gastroenterology* 2004;18(6):1009–29.	Non-systematic literature review.
Douketis JD, Feightner JW, Attia J, Feldman WF. Periodic health examination, 1999 update: 1. Detection, prevention and treatment of obesity. *Canadian Medical Association Journal* 1999;160(4):513–25.	Review of studies of mostly obese patients: Relevant papers obtained.
Dunn AL, Andersen RE, Jakicic JM. Lifestyle PA interventions: History, short- and long-term effects, and recommendations. *American Journal of Preventive Medicine* 1998;15(4):398–412.	Possible systematic review of interventions in a variety of settings. Relevant papers obtained and check for broader community.
Dunn AL, Garcia ME, Marcus BH, Kampert JB, Kohl HW, Blair SN. Six-month physical activity and fitness changes in Project *Active*, a randomized trial. *Medicine and Science in Sports and Exercise* 1998;30(7):1076–83.	Final results paper (Dunn [350]) already included.
Dunn AL, Marcus BH, Kampert JB, Garcia ME, Kohl HW, Blair SN. Reduction in cardiovascular disease risk factors: 6-month results from Project *Active. Preventive Medicine* 1997;26:883–92.	Final results paper (Dunn [350]) already included.
Dunt D, Day N, Pirkis J. Evaluation of a community-based health promotion program supporting public policy initiatives for a healthy diet. *Health Promotion International* 1999;14(4):317–27.	Community/city-level intervention and not suitable for local implementation.
Eaton CB, Menard LM. A systematic review of physical activity promotion in primary care office settings. *British Journal of Sports Medicine* 1998;32:11–6.	Superseded by more recent systematic reviews
Ebrahim S, Smith GD. Systematic review of randomised controlled trials of multiple risk factor interventions for preventing coronary heart disease. *British Medical Journal* 1997;314(7095):1666–1674.	Patient at risk and health professional intervention = clinical group.
Edmunds LD. Parents' perceptions of health professionals' responsese when seeking help for their overweight children. *Family Practice* 2005;22:287–92.	Discusses overweight and obesity only.
Edmunds L, Bowler I. Partners in action. *Health Service Journal* 1995;February 9:27.	Review of Biddle (1994).

Eng E, Young R. Lay health advisors as community change agents. *Family and Community Health* 1992;15:24–40..	Discussion paper and planning model.
Engberg, M. General health screenings to improve cardiovascular risk profiles: a randomized controlled trial in general practice with 5-year follow-up. *Journal of Family Practice* 2002;51(6):546–52.	Impact of health screening.
Epstein LH. Integrating theoretical approaches to promote physical activity. *American Journal of Preventive Medicine* 1998;15(4):257–65.	Discussion of integration of theoretical approaches to promote PA.
Epstein LH, Gordy CC, Raynor HA, Beddome M, Kilanowski CK, Paluch R. Increasing fruit and vegetable intake and decreasing fat and sugar intake in families at risk of childhood obesity. *Obesity Research* 2001;9(3):171–8.	Family intervention. Relevant to other review.
Eriksson KF LF. No excess 12-year mortality in men with impaired glucose tolerance who participated in the Malmo Preventive Trial with diet and exercise. *Diabetologia* 1998;41(9):1010–16.	Men with impaired glucose intolerance.
Eriksson J. Prevention of Type II diabetes in subjects with impaired glucose tolerance: the Diabetes Prevention Study (DPS) in Finland. Study design and 1-year interim report on the feasibility of the lifestyle intervention programme. *Diabetologia* 1999;42(7):793–801.	Only subjects with impaired glucose tolerance.
Evans AT, Rogers LQ, Peden JGJ, Seelig CB, Layne RD, et al. Teaching dietary counseling skills to residents: patient and physician outcomes. The CADRE study group. *American Journal of Preventive Medicine* 1996;12:259–65.	High risk sample only.
Fagard RH. Physical activity in the prevention and treatment of hypertension in the obese. *Medicine and Science in Sports and Exercise* 1999;31(11)(Suppl 1):S624–S630.	Hypertension outcomes.
Fitzgibbon ML, Stolley MR, Kirschenbaum DS. An obesity prevention pilot program for African-American mothers and daughters. *Journal of Nutrition Education* 1995;27:93–99. [	BMEG subjects only – relevant to other review.
Fletcher A, Rake C, Health Education Authority. *Effectiveness of interventions to promote health eating in elderly people living in the community: a review*. London: HEA; 1998.	Not all studies included in analysis are relevant – potentially relevant papers checked.
Ford BS, McDonald TE, Owens AS, Robinson TN. Primary care interventions to reduce television viewing in African-American children. *American Journal of Preventive Medicine* 2002;22(2):106–109.	Four-week follow-up. BMEG subjects only.
Foreyt JP, Goodrick K. Evidence for success of behavior modification in weight loss and control. *Annals of Internal Medicine* 1993;119**(7 part 2)**: 698–701.	Brief overview of evidence for success of behaviour modification in weight loss and control. No relevant included papers.
Foreyt JP, Poston WS. What is the role of cognitive-behavior therapy in patient management? *Obesity Research* 1998;6(Suppl 1):S18–22.	Non-systematic overview. Relevant references obtained. Intervention – clinical treatment (CBT).

Foreyt JP. Attributes of successful approaches to weight loss and control. *Applied and Preventive Psychology* 1995;3(4):209–15..	Discussion paper/summary of evidence.
Forster JL, Jeffery RW, Schmid TL, Kramer FM. Preventing weight gain in adults: A pound of prevention. *Health Psychology* 1988;7:515–25.	Pilot study for Jeffery (1999).
Fortmann SP, Winkleby MA, Flora JA, Haskell WL, Taylor CB. Effect of long-term community health education on blood pressure and hypertension control: The Stanford Five-City Project. *American Journal of Epidemiology* 1990;132(4):629–66.	City-Wide Intervention and not suitable for local implementation. Stanford 5-city project.
Fowler-Brown A, Kahwati LC. Prevention and treatment of overweight in children and adolescents. *American Family Physician* 2004;69:25918.	Relevant to school/pre school reviews.
Frable PJ, Dart L, Bradley P. The healthy weigh/El Camino Saludable: A community campus partnership to prevent obesity. *Journal of Interprofessional* Care 2002; 18(4): 447-49	Does not meet inclusion criterion. No control group.
French SA HL. Fast food restaurant use among women in the Pound of Prevention study: dietary, behavioral and demographic correlates. *International Journal of Obesity and Related Metabolic Disorders*. 2000; 24(10):1353–9.	Fast food restaurant use: broader community.
Gahagan S. Child and adolescent obesity. *Current Problems in Pediatric Adolescent Health Care* 2004;34:6–43.	Non systematic literature review
Garcia AW, Sahay A, Grimes C, Henry J, Newkirk N, Kuntzleman C. Physical fitness status of over 2800 preadolescents from a diverse high-risk population. *Journal of Applied Sports Psychology* 1997;9:S94.	Abstract only – unable to trace associated paper.
Gerber JC, Stewart DL. Prevention and control of hypertension and diabetes in an underserved population through community outreach and disease management: a plan of action. *Journal of the Association for Academic Minority Physicians* 1998;9(3):48–52.	Description of community outreach programme. No relevant outcomes.
Ghalamkari H, Rees J, Saltrese-Taylor A. Evaluation of a pilot health promotion project in pharmacies: (3) Clients' further opinions and actions taken after receiving health promotion advice. *Pharmaceutical Journal* 1997;258:909–12.	No interpretable relevant data available.
Gibbins RL, Riley M, Brimble P. Effectiveness of programme for reducing cardiovascular risk for men in one general practice. *British Medical Journal* 1993;306:1652–6.	Before and after study. Better evidence available.
Gibson EL, Wardle J, Watts CJ. Fruit and vegetable consumption, nutritional knowledge and beliefs in mothers and children. *Appetite* 1998;31(2):205–28.	Mother and child corroboration. Relevant to other review.
Glanville J, Glenny AM, Melville A, O'Meara S. The prevention and treatment of obesity. *Effective Health Care* 1997;3(2):1–12.	Only three relevant papers, mainly treatment focussed. Obtain papers (Check for broader community).
Glenny AM, O'Meara S, Melville A, Sheldon TA, Wilson C. The treatment and prevention of obesity: a systematic review of the	Review of studies with overweight and obese subjects – includes

literature. *International Journal of Obesity and Related Metabolic Disorders* 1997;21(9):715–37.	clinical interventions.
Goldberg JH, Kiernan M. Innovative techniques to address retention in a behavioural weight-loss trial. *Health Education Research* 2005;20(4):439–47.	Discussion of retention in trial of overweight/obese participants
Goldstein MG, Whitlock EP, DePue J. Multiple behavioural risk factor interventions in primary care. Summary of research evidence. *American Journal of Preventive Medicine* 2004;27(2S):61–79.	Non-systematic literature review.
Goodman RM, Wheeler FC, Lee PR. Evaluation of the Heart to Heart Project: lessons from a community-based chronic disease prevention project. *American Journal of Health Promotion* 1995;9(6):443–55.	Evaluation of a 'a city-wide' and not suitable for local implementation, chronic disease prevention project Florence, South Carolina.
Gorbach SL, Morrill-LaBorde A, Woods MN *et al.* Changes in food patterns during a low-fat dietary intervention in women. *Journal of the American Dietary Association* 1990;90:802–9.	All subjects at elevated risk for breast cancer.
Gorin A, Phelan S, Tate D et al. Involving support partners in obesity treatment. *Journal of Consulting and Clinical Psychology* 2005;73(2):341–3.	Participants all overweight.
Gould M, Iliffe S, Thorogood M, University College London Medical School. Department of Primary Health Care, London School of Hygiene and Tropical Medicine. Department of Public Health Policy HPSU. *Promoting physical activity through primary health care: an evaluation of the Health Education Authority's guide*. London, UCLMS/LSHTM; 1994.	Not held at British Library. Unable to obtain.
Gorin A, Phelan S, Tate D, Sherwodd N, Jeffery R, Wing R. Involving support partners in obesity treatment. *Journal of Consulting and Clinical Psychology* 2005;73(2):341–3.	Participants all overweight.
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Grant S, Todd K, Aitchison TC, Kelly P, Stoddart D. The effects of a 12-week group exercise programme on physiological and psychological variables and function in overweight women. *Public Health* 2004;118:31–42.	Participants all overweight.
Gray DP. Dietary advice in British general practice. *European Journal of Clinical Nutrition* 1999;53(Suppl 2):S3–8.	Discussion/overview. Relevant papers obtained.
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Hackman RRM, Wagner EL. The senior gardening and nutrition	Superseded by systematic review

project: development and transport of a dietary behavior change and health promotion program. *Journal of Nutrition Education* 1990;22:262–70.	evidence.
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Hankey CR, Eley S, Leslie WS, Hunter CM, Lean MEJ. Eating habits, beliefs, attitudes and knowledge among health professionals regarding the links between obesity, nutrition and health. *Public Health Nutrition* 2004;7(2):337–43.	Survey of knowledge beliefs and attitudes / eating habits of health profs (for treatment of overweight people).
Hardeman W, Griffin S, Johnston M, Kinmonth AL, Wareham NJ. Interventions to prevent weight gain: a systematic review of psychological models and behaviour change methods. *International Journal of Obesity* 2000;24:131–43.	Only four of ninr studies relevant. Relevant papers obtained.
Hariri S. *Multimedia health promotion in community pharmacy*. Department of Pharmacy, King's College London; 1998.	Outcomes not relevant to review.
Harland J, White M, Drinkwater C, et al. The Newcastle exercise project: a randomised controlled trial of methods to promote physical activity in primary care. *British Medical Journal* 1999;319:828–32.	Duplicate of Harland (1999).
Harris HE, Ellison GTH, Clement S. Do the psychosocial and behavioral changes that accompany motherhood influence the impact of pregnancy on long-term weight gain? *Journal of Psychosomatic Obstetrics and Gynecology* 1999;20:65–79.	Causation not intervention. Influences of the impending pregnancy on long-term weight gain.
Harrison RA, Roberts C, Elton PJ. Does primary care referral to an exercise programme increase physical activity one year later? A randomized controlled trial. *Journal of Public Health (Oxford)* 2005 Mar;27(1):25–32.	All subjects either obese, high coronary heart disease risk, previous myocardial infarction or diabetic.
Hartman TJ, McCarthy PR, Park RJ, Schuster E, Kushi LH. Results of a community-based low-literacy nutrition education program. *Journal of Community Health* 1997;22:325–41.	City-wide intervention and not suitable for local implementation. Sample already in an intervention programme.
Harvey-Berino J, Pintauro S, Buzzell P, Di Guilio M, Gold BC, Moldovan C, et al. Does using the Internet facilitate the maintenance of weight loss? *International Journal of Obesity and Related Metabolic Disorders* 2002;26(9):1254–60.	All subjects overweight and obese.
Harvey-Berino J. The feasibility of using Internet support for the maintenance of weight loss. *Behavior Modification* 2002 Jan;26(1):103–16.	All subjects overweight and obese.
Hassell K, Rogers A, Noyce P, Nicolaas G. *The public's use of community pharmacies as a primary health care resource*.	Study looking at pharmacies' management of minor ailments

Community Pharmacy Research Consortium; 1998.	and illnesses. No relevant data.
Hays NP, Starling RD, Liu X et al. Effects of an ad libitum low-fat high-carbohydrate diet on body weight, body composition and fat distribution in older men and women. *Archives of Internal Medicine* 2004;164:210–17.	Participants all overweight.
Health Education Authority. *Effectiveness of physical activity promotion schemes in primary care*. Report No. 14. London: HEA; 1998.	Full report obtained.
Health Promotion Authority Wales. *Pharmacy health care scheme survey (Wales).* Wales: Health Promotion Authority Wales; 1991.	Not available from British Library. Unable to locate.
Health Select Committee. *Inquiry into obesity*. Written evidence submitted by the Pharmaceutical Services Negotiating Committee (PSNC). Aylesbury Buckinghamshire: PSNC, April 2003.	Discussion of obesity treatment.
Hedberg **GE, Wikstrom-Frisen L, Janlert U.** Comparison between two programmes for reducing the levels of risk indicators of heart diseases among male professional drivers. *Occupational and Environmental Medicine* 1998;55(8):554–61.	Workplace relevant – to check in workplace database.
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Henriksen N, Sogaard AJ, Fylkesnes K. The Finnmark Intervention Study: design, methods and effects of a 2 year community-based intervention. *European Journal of Public Health* 1995;5:269–76.	City-wide intervention and not suitable for local implementation.
Henritze J, Brammell HL, McCloin J. LIFECHECK: a successful, low touch, low tech, in-plant, cardiovascular disease risk identification and modification programme. *American Journal of Health Promotion* 1992;7:129–36.	Relevant to workplace but exclude since no control group.
Henry LL, Royer L. Community-based strategies for pediatric nurses to combat the escalating childhood obesity epidemic. *Pediatric Nursing* 2004;30(2):162–4.	Overview of potential strategies.
Hensrud DD. Tackling obesity in a 15-minute office visit. *Postgraduate Medicine* 2004;115(1):59–61.	General discussion re obese patient.
Heshka S, Greenway F, Anderson JW, Atkinson RL, Hill JO, Phinney SD, et al. Self-help weight loss versus a structured commercial program after 26 weeks: A randomized controlled study. *American Journal of Medicine* 2000;109(4):282–7.	Subjects all overweight and obese in clinical setting.
Hesketh A, Lindsay G, Harden R. Interactive health promotion in the community pharmacy. *Health Education Journal* 1995;54:294–303.	Subjects had upper gastrointestinal disease.
Hills D, Health Development Agency. *Evaluation of community-level interventions for health improvement: a review of experience in the UK*. London: Health Development Agency; 2004.	Review looking at experience of evaluating community interventions in the UK.
Hillsdon M, Thorogood M, Antiss T, Morris J. Randomised	Superseded by more recent

controlled trials of physical activity promotion in free living populations: a review. *Journal of Epidemiology and Community Health* 1995;49:448–53.	systematic review.
Hillsdon M. Promoting physical activity: issues in primary health care. *International Journal of Obesity and Related Metabolic Disorders* 1998;22(Suppl 2):S52–4.	Non-systematic review. Relevant papers obtained.
Hillsdon M, Foster C, Naidoo B, Crombie H. *The evidence on the effectiveness of public health interventions for increasing physical activity among adults: A review of reviews*. London: Health Development Agency; 2004.	Review of reviews. Relevant papers obtained.
Hinkle AJ. Community-based nutrition interventions: reaching adolescents from low-income communities. *Annals of the New York Academy of Sciences* 1997;817:83–93.	Theoretical rationale/overview of the California Adolescent Nutrition and Fitness (CANFit) Program – non-profit, grant-funding organisation.
Hjalmarson A, Rossner S, Ostenson CG. Supervised physical activity in Sweden: in theory and practice. *Patient Education and Counseling* 2000;39(2.3):281–4.	Descriptive evaluation of PA programmes in Sweden.
Hourihan F, Krass I, Chen T. Rural community pharmacy: A feasible site for a health promotion and screening service for cardiovascular risk factors. *Australian Journal of Rural Health* 2003;11:28–35.	Screening. Advice and/or referral to GP.
Hu G, Lakka TA, Barengo NC, Tuomilehto J. PA, physical fitness and risk of type 2 diabetes. *Metabolic Syndorme and Related Disorders*. 2005; 3(1):35–44. [	Discussion of risk factors only.
Humphreys K, Ribisl KM. The case for a partnership with self-help groups. *Public Health Reports* 1999;114(4):322–25 and 328–329.	General discussion of self-help groups.
Iliffe S, Tai S, Gould M, et al. Prescribing exercise in general practice. *British Medical Journal* 1994;309:494–5.	Editorial.
Imperial Cancer Research Fund OXCHECK Study Group. Prevalence of risk factors for heart disease in OXCHECK trial: Implications for screening in primary care. *British Medical Journal* 1991;302(6784):1057–60.	Duplicate of Imperial Cancer Research Fund OXCHECK Study Group (1991).
Imperial Cancer Research Fund OXCHECK Study Group. Prevalence of risk factors for heart disease in OXCHECK trial: Implications for screening in primary care. *British Medical Journal* 1991;302(6784):1057–60.	Descriptive data analysis only no data point before/after.
Imperial Cancer Research Fund OXCHECK Study Group. Effectiveness of health checks conducted by nurses in primary care: Results of the OXCHECK study after one year. *British Medical Journal* 1994;308(6924):308–12.	Duplicate of Muir (1994).
Irwin ML, Tworoger SS, Yasui Y et al. Influence of demographic, physiologic and psychosocial variables on adherence to a yearlong moderate-intensity exercise trial in postmenopausal women. *Preventive Medicine* 2004;39:1080–86.	All participants overweight.

Isacsson A, Lindholm LH, Schersten B, Eklund E, Bjorkman S, Jarhult B, et al. Community intervention against non-insulin dependent diabetes mellitus (NIDDM) and cardiovascular disease: A study based on Swedish health care. *Cardiovascular Risk Factors* 1996;6(3):164–71.	Cross-sectional survey (*n* = 3). Higher level evidence available.
Jakicic JM, Otto AD. Motivating change: modifying eat and exercise behaviors for weight management. *ACSM's Health and Fitness Journal* 2005;1(6):6–12.	Non-systematic literature review.
Jackson C, North Yorkshire Specialist Health Promotion Service, North Yorkshire Health Authority. *Exercise by prescription: evaluation report.* Harrogate: North Yorkshire Specialist Health Promotion Service; 1997.	Uncontrolled before and after study. Better studies (RCTs) available.
Jacobsen DJ, Donnelly JE, Snyder-Heelan, K, Livingston,K. Adherence and attrition with intermittent and continuous exercise in overweight women. *International Journal of Sports Medicine* 2003;24(6):459–64.	Overweight and obese subjects only.
Jago R, Baranowski T. Non-curricular approaches for increasing physical activity in youth: a review. *Preventive Medicine* 2004;39(1):157–163.	Safe routes to school – include in broader community review.
James J. Preventing childhood obesity by reducing consumption of carbonated drinks: cluster randomised controlled trial. *British Medical Journal* 2004;328(7450):1237–39.	School based. Relevant to other review.
Jason LA, Greiner BJ, Naylor K, Johnson SP, Van Egeren L. A large-scale, short-term, media-based weight loss program. *American Journal of Health Promotion* 1991;5(6):432–7.	Statewide, mass media intervention and not suitable for local implementation.
Jebb S, Sritharan N. A nurse's role in promoting weight loss and encouraging healthier lifestyles. *Professional Nurse* 2005;20(7):25–29.	Non-systematic review/discussion paper.
Jeffery RW, Wing RR, Sherwood NE, Tate DF. Physical activity and weight loss: does prescribing higher physical activity goals improve outcome? *American Journal of Clinical Nutrition* 2003;78(4):684–9.	Overweight and obese subjects only.
Jeffery RW, Gerber WM, Rosenthal BS, et al. Monetary contracts in weight control: effectiveness of group and individual contracts of varying size. *Journal of Consulting and Clinical Psychology* 1983;51:242–8.	All overweight and obese subjects.
Jeffery RW, Bjornson-Benson WM, Kurth CL, Johnson SL. Effectiveness of monetary contracts with two repayment schedules of weight reduction in men and women from self-referred and population samples. *Behavior Therapy* 1984;15:273–9.	All overweight and obese subjects.
Jeffery RW. Minnesota studies on community-based approaches to weight loss and control. *Annals of Internal Medicine* 1993;119(7 Pt 2):719–21.	Non-systematic overview of statewide interventions and not suitable for local implementation.
Jeffery RW. Community programs for obesity prevention: the Minnesota Heart Health Program. *Obesity Research*	Statewide intervention and not suitable for local implementation:

1995;3(Suppl 2):S283–8.	Minnesota Heart Health Program.
Jeffery RW, French SA. Preventing weight gain in adults: design, methods and one year results from the Pound of Prevention study. *International Journal of Obesity and Related Metabolic Disorders* 1997;21(6):457–64.	Earlier write-up of Jeffery (1999).
Jeffery RW, Gray CW, French SA, Hellerstedt WL, Murray D, Luepker RV, et al. Evaluation of weight reduction in a community intervention for cardiovascular disease risk: changes in body mass index in the Minnesota Heart Health Program. *International Journal of Obesity and Related Metabolic Disorders* 1995;19(1):30–9.	Statewide intervention and not suitable for local implementation: Minnesota Heart Health Program.
Jeffery RW, Wing RR, Thorson C, Burton LR. Use of personal trainers and financial incentives to increase exercise in a behavioural weight-loss program. *Journal of Consulting and Clinical Psychology* 1998;66:777–83.	Overweight and obese subjects only.
Jeffery RW. Public health strategies for obesity treatment and prevention. *American Journal of Health Behavior* 2001;25(3):252–9.	Non-systematic literature review.
John JH, Yudkin PL, Neil HAW, Ziebland S. Does stage of change predict outcome in a primary-care intervention to encourage an increase in fruit and vegetable consumption? *Health Education Research* 2003;18(4):429–38.	Stage of change sub-group analysis for John (2002).
Johnston LF, Warwick J, De Ste Croix M, Crone D, Sidford A. The nature of all 'inappropriate referrals' made to a countrywide physical activity referral scheme: Implications for practice. *Health Education Journal* 2005;64(1):58–69.	UK corroborative: look at medical reasons for referral and exercise schemes.
Jorgensen T, Borch-Johnsen K, Thomsen TF, Ibsen H, Glumer C, Pisinger C. A randomized non-pharmacological intervention study for prevention of ischaemic heart disease: baseline results Inter99. *European Journal of Cardiovascular Prevention and Rehabilitation* 2003;10(5):377–86.	All subjects at a high risk of HIV.
Kahn EB, Ramsey LT, Brownson RC, Heath GW, Howze EH, Powell KE, et al. The effectiveness of interventions to increase physical activity – A systematic review. *American Journal of Preventive Medicine* 2002;22(4):73–108.	Superseded by better quality systematic review.
Kanders BS, Ullman-Joy P, Foreyt JP, Heymsfield SB, Heber D, Elashoff RM, et al. The Black American Lifestyle Intervention (BALI): a weight loss program for working class African American women. *Journal of the American Dietetic Association* 1994;94:310–12.	BMEG subjects only. Relevant to other review.
Kane RL, Johnson PE, Town RJ, Butler M. A structured review of the effect of economic incentives on consumers' preventive behavior. *American Journal of Preventive Medicine* 2004;27(4):327–52.	Studies from various settings. Relevant studies obtained. Check workplace and broader community.
Karvetti RL HP. A seven-year follow-up of a weight reduction programme in Finnish primary health care. *European Journal of Clinical Nutrition* 1992;46(10):743–52.	Primary care – overweight subjects only.

Keene JM, Cervetto S, Willson A. Health promotion in the community pharmacy. *Pharmaceutical Journal* 1994;246:240–42.	Quantitative results from [324]
Keller J. Should doctors be more proactive in advising patients to exercise? *IDEA Fitness Journal* 2004; September: 16.	Editorial/discussion doc
Kelley K, Abraham C. RCT of a theory-based intervention promoting healthy eating and PA amongst out-patients older than 65 years. *Social Science and Medicine* 2004;59(4):787–97..	Two-week follow-up only.
Kelsey K, Earp JL, Kirkley BG. Is social support beneficial for dietary change? A review of the literature. *Family and Community Health* 1997;20(3):70–82.	Discussion paper on social support.
Kemmler WK, Lauber D, Engelke K, Weineck J. Effects of single- vs. multiple-set resistance training on maximum strength and body composition in trained postmenopausal women. *Journal of Strength and Conditioning Research* 2004;18(4):689–94.	Subjects were well trained women with osteopenia.
King AC, Rejeski WJ, Buchner DM. PA interventions targeting older adults. A critical review and recommendations. *American Journal of Preventive Medicine* 1998;15:316–333.	No hard data for PA outcomes available.
King AC, Sallis JF, Dunn AL, Simons-Morton DG. Overview of the Activity Counseling Trial (ACT) intervention for promoting PA in primary health care settings. *Medicine and Science in Sports and Exercise* 1998;30(7):1086–96.	Earlier write up of Marcus (1998).
King AC, Friedman R, Marcus B, Castro C, Forsyth L, Napolitano M, et al. Harnessing motivational forces in the promotion of physical activity: the Community Health Advice by Telephone (CHAT) project. *Health Education Research* 2002;17:627–36.	Protocol for RCT. Author emailed to confirm status of trial. Author confirmed trial results are currently under review with a journal.
Kirk-Gardner R, Steven D. Hearts for Life: a community program on heart health promotion. *Canadian Journal of Cardiovascular Nursing* 2003;13(1):5–10.	Before and after study. Better evidence available.
Kirk SF, Harvey EL, McConnon A, Pollard JE, Greenwood DC, Thomas JD, Ransley JK. A randomised trial of an Internet weight control resource: the UK Weight Control Trial. *BMC Health Services Research* 2003;3(1):19.	Pre-trial protocol.
Klem ML Viteri JE, Wing RR. Primary prevention of weight gain for women aged 25–34: the acceptability of treatment formats. *International Journal of Obesity and Related Metabolic Disorders:* 2000;24(2):219–25.	CCT. Better evidence available.
Kligman EW, Pepin E. Prescribing physical activity for older patients. Geriatrics 1992;47(8): 33-34, 37-44 and 47..	Expert opinion.
Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA, Nathan DM, Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *New England Journal of Medicine* 2002;346(6):393–403.	Persons at risk of diabetes (elevated plasma glucose concentration) – comparison with drug therapy.
Kocken PL, Voorham AJJ. Interest in participation in a peer-led senior health education program. *Patient Education and*	Same study as Kocken (1998).

Counselling 1998;34:5–14.	
Kocken PL, Voorham AJJ. Effects of a peer-led senior health education program. *Patient Education and Counseling* 1998;34:15–23.	Peer-led health promotion programme – no relevant outcomes.
Koplan JP, Liverman CT, Kraak VI. Preventing childhood obesity: Health in the balance: Executive summary. *Journal of the American Dietetic Association* 2005;105(1):131–8..	Discussion paper.
Kremers SPJ, Visscher TLS, Brug J. Netherlands Research programme weight gain prevention (NHF-NRG): rationale, objectives and strategies. *European Journal of Nutrition* 2055;59(4):498–507.	Rationale only, study will report in 2007.
Kriska AM, Delahanty LM, Pettee KK. Lifestyle intervention for the prevention of type 2 diabetes: translation and future recommendations. *Current Diabetes Reports* 2004;4(2):113–8.	Sample has impaired glucose tolerance.
Kyle A. Are practice nurses an effective means of delivering dietary advice as part of health promotion in primary health care?: Evaluation of practice nurse training in Somerset. *Journal of Human Nutrition and Dietetics* 1993;6(2):149–62.	Nurse training and knowledge of dietary and nutrition issues.
Laaksonen DE, Lindstrom J, Lakka TA, et al. Physical activity in the prevention of type 2 diabetes. *Diabetes* 2005;54:158–65.	Study population with impaired glucose tolerance in the care of health professionals.
Lasater TM, Sennett LL, Lefebvre RC, DeHart KL, Peterson G, Carleton RA. Community-based approach to weight loss: the Pawtucket 'weigh-in'. *Addictive Behaviors* 1991;16(3/4):175–81.	Major government initiative and citywide intervention and not suitable for local implementation.
Lassner JB. Does social support aid in weight loss and smoking interventions? Reply from a family systems perspective. *Annals of Behavioral Medicine* 1991;13(2):66–72.	Social support family and Spouses only.
Lawlor D, Hanratty B. The effect of physical activity advice given in routine primary care consultations: a systematic review. *Journal of Public Health Medicine* 2001;23(3):219–26.	Very low quality systematic review. Better evidence available.
Leigh JP, Richardson N, Beck R, Kerr C, Harrington H, Parcell CL, et al. Randomized controlled study of a retiree health promotion program: the Bank of America Study. *Archives of Internal Medicine* 1992;152(6):1201–6.	Same study as Fries (1993).
Lewis VJ, Blair AJ, Booth DA. Outcome of group therapy for body-image emotionality and weight-control self-efficacy. *Behavioural Psychotherapy* 1992;20(2):155–65.	Before and after study. Better evidence available.
Lewis BS, Lynch WD. The effect of physician advice on exercise behavior*. Preventive Medicine* 1993;22(1):110–21.	<3 months follow-up.
Linenger JM, Shesson CV, Nice DS. Physical fitness gains following simple environmental change*. American Journal of Preventive Medicine* 1991;7:298–310..	Workplace (Navy sample) - check workplace database.
Lindstrom J, Peltonen M, Tuomilehto J. Lifestyle strategies for weight control: Experience from the Finnish Diabetes Prevention	Study already excluded, all subjects had impaired glucose

Study. *Proceedings of the Nutrition Society* 2005;64(1):81–8.	tolerance.
Little P, Slocock L, Griffin S, Pillinger J. Who is targeted for lifestyle advice? A cross-sectional survey in two general practices. *British Journal of General Practice* 1999;49(447):806–10.	Non-relevant outcomes for UK corroborative evidence.
Little P, Kelly J, Barnett J, Dorward M, Margetts B, Warm D. Randomised controlled factorial trial of dietary advice for patients with a single high blood pressure reading in primary care. *British Medical Journal* 2004;328(7447):1054–7.	Subjects with single high blood pressure reading.
Little P, Dorward M, Gralton S. A randomised controlled trial of three pragmatic approaches to initiate increased physical activity in sedentary patients with risk factors for cardiovascular disease. *British Journal of General Practice* 2004;54(500):189–96.	Less than 3-months follow-up.
Lobstein T, Baur L, Uauy R. Obesity in children and young people:a crisis in public health. *Obesity Reviews* 2004;5(Suppl 1):4–85.	Non systematic literature review.
Logsdon DN, Lazaro CM, Meier RV. The feasibility of behavioral risk reduction in primary medical care. *American Journal of Preventive Medicine* 1989;5:249–56.	CCT. Better evidence available.
Lord JC, Green F. Exercise on prescription: does it work? *Health Education Journal* 1995;54(4):453–64.	Primary care based – at risk and 'overweight' subjects only.
Luepker RV, Murray DM, Jacobs DR, Mittelmark MB, Bracht N, Carlaw R, et al. Community education for cardiovascular-disease prevention – risk factor changes in the Minnesota Heart Health-Program. *American Journal of Public Health* 1994;84(9):1383–93.	State-wide intervention and not suitable for local implementation: Minnesota Heart Health Programme.
Lutz SF, Ammerman AS, Atwood JR, Campbell MK, DeVellis RF, et al. Innovative newsletter interventions improve fruit and vegetable consumption in healthy adults. *Journal of the American Dietetic Association* 1999;99:705–9.	Superseded by systematic review evidence.
Marcoux BC. Social networks and social support in weight loss. *Patient Education and Counseling* 1990;15(3):229–38.	'Social support' of friends, neighbours and family.
Marcus AC, Heimendinger J, Wolfe P, Fairclough D, Rimer BK, Morra M, et al. A randomized trial of a brief intervention to increase fruit and vegetable intake: A replication study among callers to the CIS. *Preventive Medicine* 2001;33(3):204–16.	Superseded by systematic review evidence. Highly motivated sample.
Marcus BH, Owen N, Forsyth LH, Cavill NA, Fridinger F. Physical activity interventions using mass media, print media, and information technology. *American Journal of Preventive Medicine* 1998;15(4):362–78.	Very low quality systematic review. Relevant papers obtained and also possibly relevant for Broader community.
Marcus BH, Bock BC, Pinto BM, Forsyth LH, Roberts MB, Traficante RM. Efficacy of an individualized, motivationally-tailored physical activity intervention. *Annals of Behavioral Medicine* 1998;20(3):174–180.	CCT. Better evidence available.
Marteau TM, Kinmouth AL, Thompson S, Pyke S. The psychological impact of cardiovascular screening and intervention in primary care: a problem of false reassurance? *British Journal*	Psychological impact of screening.

of General Practice 1996;46:577–82.	
Maskarinec G, Chan CLY, Meng L, Franke AA, Conney RV. Exploring the feasibility and effects of a high-fruit and -vegetable diet in healthy women. *Cancer Epidemiology, Biomarkers and Prevention* 1999;8:919–24.	Superseded by systematic review evidence.
Mason V. *Young people and sport in England 1994: The views of teachers and children*. London: The Sports Council; 1995.	Schools based corroboration study – relevant to schools review.
Mayer JA, Jermanovich A, Wright BL, Elder JP, Drew JA, Williams SJ. Changes in health behaviors of older adults: the San Diego Medicare Preventive Health Project. *Preventive Medicine* 1994;23(2):127–33.	Same study as Elder (1995).
McCormick SE, Clarke CI. Prevention and management of overweight/obesity in the community. *Nutrition Bulletin* 2004;29(3):274–9.	Conference report. Check references for broader community review.
McLean N, Griffin S, Toney K, Hardeman W. Family involvement in weight control, weight maintenance and weight-loss interventions: A systematic review of randomised trials. *International Journal of Obesity* 2003;27(9):987–1005.	Review of studies with all overweight subjects in primary care public health settings.
McTiernan A, Ulrich CM, Yancey D, Slate S, Nakamura H, Oestreicher N, et al. The Physical Activity for Total Health (PATH) Study: rationale and design. *Medicine and Science in Sports and Exercise* 1999 Sept;31(9):1307–12..	Rationale and design for PATH Study.
Melnyk MG, Weinstein E. Preventing obesity in black women by targeting adolescents: a literature review. *Journal of the American Dietetic Association* 1994;94(5):536–40.	Literature review of BMEG subjects. Relevant to other review.
Mernitz H, McDermott AY. Exercise and the elderly: A scientific rationale for exercise prescription. *Journal of Clinical Outcomes Management* 2004;11(2):106–16.	Non-systematic review. No relevant outcomes.
Merzel C, D'Afflitti J. Reconsidering community-based health promotion: Promise, performance, and potential. *American Journal of Public Health* 2003;93(4):557–74.	Systematic review of statewide interventions and not suitable for local implementation.
Michie S, Johnston M, Cockcroft A, Ellinghouse C, Gooch C. Methods and impact of health screening for hospital staff. *Journal of Organizational Behavior* 1995;16(1):85–92.	Methods and impact of screening.
Miles A. Using the mass-media to target obesity: an analysis of the characteristics and reported behaviour changes of participants in the BBC's 'Fighting Fat, Fighting Fit' campaign. *Health Education Research* 2001;16(3):357–72.	Mass-media campaign and not suitable for local implementation.
Morss GM, Jordan AN, Skinner JS et al. Dose-response to exercise in women aged 45–75 yr (DREW): Design and rationale. *Medicine and Science in Sports and Exercise* 2004;***36(2)***:336–44.	Overweight and obese participants only. Trial design only.
Mullen PD, SimonsMorton DG, Ramirez G, Frankowski RF, Green LW, Mains DA. A meta-analysis of trials evaluating patient education and counseling for three groups of preventive health	Patients in clinical settings. Relevant to clinical group.

behaviors. *Patient Education and Counseling* 1997;32(3):157–73.	
Munro J. *A randomised controlled trial of exercise in over-65-years-olds: experience from the first year*. Hamburg: Health Promotion Publications; 1997:264–67.	Excluded at critical appraisal. No methodological information.
Murie J, Tuohy AP, Carroll D. Impact of a health promotion program on multiple risk-factors for CHD – A preliminary evaluation. *Scottish Medical Journal* 1994;39(1):12–6.	Before and after study. Better evidence available.
Nader PR. The role of the family in obesity prevention and treatment. *Annals of the New York Academy of Sciences* 1993;699:147–53.	Non-systematic overview. Relevant references obtained.
Nawaz H, Katz D. American College of Preventive Medicine practice policy statement: Weight management counseling of overweight adults. *American Journal of Preventive Medicine* 2001;21(1):73–8.	US Policy Document.
Naylor PJ, Simmonds G, Riddoch C, Velleman G, Turton P. Comparison of stage-matched and unmatched interventions to promote exercise behaviour in the primary care setting. *Health Education Research* 1999;14(5):653–66.	Superseded by systematic review evidence.
Neale AV. Behavioural contracting as a tool to help patients achieve better health. *Family Practice* 1991;8(4):336–42.	80% (*n* = 144/179) of total sample consisted of subjects classified as having 'high cholesterol'.
Neumark-Sztainer D. Physical activity within a community-based weight control program: program evaluation and predictors of success. *Public Health Reviews* 1995;23(3):237–51.	Overweight and obese subjects only.
Newton RL, Perri MG. A randomized pilot trial of exercise promotion on sedentary African-American adults. *Ethnicity and Disease* 2004;14(4):548–57.	BMEG subjects only. Relevant to other review.
Nguyen HQ, Carrieri-Kohlman V, Rankin SH, Slaughter R, Stulbarg M. Internet-based patient education and support interventions: a review of evaluation studies and directions for future research. *Computers in Biology and Medicine* 2004;34:95–112.	Contains only one relevant study – Tate (2001). – already considered for workplace review.
Noble L. Dietitians and the practice nurse. *Practice Nursing* 1998;9(12):33–36.	Discussion paper only.
Norman GJ, Mills PJ. Keeping it simple: Encouraging walking as a means to active living. *Annals of Behavioral Medicine* 2004;28(3):149–151..	No study design. Discussion document.
Norris SL, Grothaus LC, Buchner DM, et al. Effectiveness of physician-based assessment and counseling for exercise in a staff model HMO. *Preventive Medicine* 2000;30:513–23.	Superseded by systematic review evidence.
Nowson CA, Worsley A, Margeison C, Jorna M, Godfrey SJ, Booth A. Blood pressure change with weight loss is affected by diet type in men. *American Journal of Clinical Nutrition* 2005;81:983–89.	All participants overweight or obese
O'Meara S, Glenny A, Sheldon T, Melville A, Wilson C.	Description of the methodology of

Systematic review of the effectiveness of interventions used in the management of obesity. Proceedings from the ASO and BDA symposium held on 25 November 1997 at St. Bartholomew's Hospital, London. *Journal of Human Nutrition and Dietetics*1998;11(3):203–6.	a systematic review, not review itself.
O'Toole ML, Sawicki MA, Artal,R. Structured diet and physical activity prevent postpartum weight retention. *Journal of Women's Health* 2003;12(10):991–8.	Post-partum women only.
Ohrig E, Geiss HC, Haas GM, Schwandt P. The Prevention Education Program (PEP) Nuremberg: design and baseline data of a family oriented intervention study. *International Journal of Obesity and Related Metabolic Disorders* 2001;25(Suppl 1):S89–92.	School and family intervention. Relevant to other review.
Parra-Medina D. Successful recruitment and retention strategies for a randomized weight management trial for people with diabetes living in rural, medically underserved counties of South Carolina: the POWER study. *Journal of the American Dietetic Association* 2004;104(1):70–5.	People with diabetes.
Pate RR, Trost SG, Mullis R, Sallis JF, Wechsler H, Brown DR. Community interventions to promote proper nutrition and physical activity among youth. *Preventive Medicine* 2000;31:S138–49.	Discussion paper/expert opinion. Relevant papers obtained.
Pate RR, Ward DS, Felton G, et al. Effects of a community-based intervention on physical activity and fitness in rural youth. *Medicine and Science in Sports and Exercise* 1997;29:S157. [	Relevant to schools review.
Patrick K, Sallis JF, Long B. A new tool for encouraging activity: project pace. *Physician and Sport Medicine* 1994;22(11):45-55.	Description of project PACE.
Pavlovich WD, Waters H, Weller E, Bass EB. Systematic review of literature on the cost-effectiveness of nutrition services. *Journal of the American Dietetic Society* 2004;104:226–32..	Three weight loss studies included but all with obese patients only.
Perry CL. Getting beyond technical rationality in developing health behaviour programs with youth. *American Journal of Health Behavior* 2004;28(6):558–68.	Non-systematic literature review.
Petrella RJ, Koval JJ, Cunningham DA, Paterson DH. Can primary care doctors prescribe exercise to improve fitness? The Step Test Exercise Prescription (STEP) project. *American Journal of Preventive Medicine* 2003;24(4):316–22.	No relevant outcomes (VO_{2max} and physical fitness).
Petrella RJ, Lattanzio CN. Does counselling help patients get active? Systematic review of the literature. *Canadian Family Physician* 2002;48:72–80.	Overlap with other systematic reviews already included.
Petrella RJ, Koval JJ. Prescription of exercise by physicians improves fitness in elderly people. *Evidence-Based Healthcare* 2003;4(7):172–3.	Commentary on other papers.
Pickett KE, Pearl M. Multilevel analyses of neighbourhood socioeconomic context and health outcomes: a critical review. *Journal of Epidemiology and Community Health* 2001;55(2):111–22.	No relevant outcomes.

Pinto B, Goldstein M, Marcus B. Activity counseling by primary care physicians. *Preventive Medicine* 1998;27(4):506–13.	Behaviour change models/discussion paper.
Pinto BM, Friedman R, Marcus BH, Kelley H, Tennstedt S, Gillman MW. Effects of a computer-based, telephone-counseling system on physical activity. *American Journal of Preventive Medicine* 2002;23(2):113–20.	All subjects overweight and obese.
Potter JD, Graves KL, Finnegan JR, Mullis RM, Baxter JS, Crockett S, et al. The cancer and diet intervention project: a community-based intervention to reduce nutrition-related risk of cancer. *Health Education Research* 1990;5(4):489–503.	Grocery Store Mass media – relevant to broader community.
Price S. Understanding the importance to health of a balanced diet. *Nursing Times* 2005;101(1):30–1.	No study design. Discussion paper.
Prochaska JO, Velicer WF, Redding C et al. Stage-based expert systems to guide a population of primary care patients to quit smoking, eat healthier, prevent skin cancer, and receive regular mammograms. *Preventive Medicine* 2005;41:406–416.	Does not meet inclusion criteria since assesses stage of change. Also complex intervention targeting smoking, sun exposure, mammography relapse as well as high fat diet.
Pronk NP, Boucher JL, Gehling E, Boyle RG, Jeffery RW. A platform for population-based weight management: Description of a health plan-based integrated systems approach. *American Journal of Managed Care* 2002;8(10):847–57.	Baseline data and methods description
Quinn MT. Training lay health educators to conduct a church-based weight-loss program for African American women. *Diabetes Education* 2001;27(2):231–8.	Relevant review evidence table excluded due to lack of evidence.
Rapoport L. Evaluation of a modified cognitive-behavioural programme for weight management. *International Journal of Obesity and Related Metabolic Disorders* 2000;24(12):1726–37.	Sample consisted of overweight subjects only. Weight loss not an outcome of focus. Intervention clinical treatment – cognitive-behavioural treatment (CBT).
Read A, Ramwell H, Storer H, Webber J. A primary care intervention programme for obesity and coronary heart disease risk factor reduction. *British Journal of General Practice* 2004;54(501):272–8.	Overweight subjects only – primary care run.
Rees R, Harden A, Shepherd J, Brunton G, Oliver S, Oakley A. *Young people and physical activity*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London; 2001.	Systematic review of young people and PA. Relevant papers obtained.
Reger B, Wootan MG, Booth-Butterfield S, Smith H. 1% or less: a community-based nutrition campaign. *Public Health Reports* 1998;113(5):410–423.	More relevant to broader community.
Reilly JJ. Physical activity and obesity in childhood and adolescence. *Lancet* 2005;366:268–9..	Comment/editorial.
Resnick B, Magaziner J, Orwig D, Zimmerman S. Evaluating the components of the Exercise Plus Program: rationale, theory and implementation. *Health Education Research* 2002;17(5):648–58.	Hip fracture recovery.

Riddoch C, Puig-Ribera A, Cooper A, Exercise and Health Research Unit . *Effectiveness of physical activity promotion schemes in primary care: a review*. London: Health Education Authority; 1998.	Superseded by more recent systematic review.
Reilly JJ. Physical activity and obesity in childhood and adolescence. *Lancet* 2005;366:268–69. [	No study design/discussion paper.
Rippe JM, Price JM, Hess SA, Kline G, DeMers KA, Damitz S, Kreidieh I, Freedson P. Improved psychological well-being, quality of life, and health practices in moderately overweight women participating in a 12-week structured weight loss program. *Obesity Research* 1998;6(3):208–18.	RCT with no follow-up. Pre-post only. Better evidence available.
Rissanen A, Fogelholm M. Physical activity in the prevention and treatment of other morbid conditions and impairments associated with obesity: current evidence and research issues. *Medicine and Science in Sports and Exercise* 1999;31(11)(Suppl 1):S635–45.	No relevant outcomes.
Rissel C, Finnegan J, Bracht *N*. Evaluating quality and sustainability:Issues and insights from the Minnesota Heart Health Program. *Health Promotion International* 1995;10:199–207.	Statewide intervention and not suitable for local implementation: Minnesota Heart Health Programme.
Robinson TN, Killen JD, Kraemer HC, Wilson DM, Matheson DM, Haskell WL, et al. Dance and reducing television viewing to prevent weight gain in African-American girls: The Stanford GEMS pilot study. *Ethnicity and Disease* 2003;13(1 suppl.1): S65-77.	All African American children and relevant to black and ethnic minority review.
Roe L, Hunt P, Bradshaw H, Rayner M. *Health promotion interventions to promote healthy eating in the general population: a review*. London: Health Education Authority; 1997.	Superseded by more recent systematic review. Weight outcome papers obtained.
Rogers A, Adamson JE, McCarthy M. Variations in health behaviours among inner city 12-year-olds from four ethnic groups. *Ethnicity and Health* 1997;2(4):309–16.	Schools-based. Relevant to other review.
Rose MA. Evaluation of a peer-education program on heart-disease prevention with older adults*. Public Health Nursing* 1992;9(4):242–7.	All African American and relevant to black and ethnic minority review.
Rossner S. Physical activity and prevention and treatment of weight gain associated with pregnancy: current evidence and research issues. *Medicine and Science in Sports and Exercise* 1999 Nov;31(11)(Suppl 1):S560–3..	Weight gain associated with pregnancy.
Royal College of General Practitioners, Buttriss J. *Nutrition in general practice: 2 promoting health and preventing disease.* Exeter: RCGP; 1995.	Manual for GPs and health Professionals for dietary advice to patients.
Rubak S, Sandboek A, Laurtizen T, Christensen B. Motivational Interviewing: a systematic review and meta-analysis. *British Journal of General Practice* 2005;55(513):305–12.	Can't extract studies looking at weight issues from other (drinking, smoking, subs abuse etc). Ref list check and weight studies either included or re obese or other (eg. diabetic, high cholesterol) patients.

Russell NK, Roter DL. Health promotion counseling of chronic-disease patients during primary-care visits. *American Journal of Public Health* 1993;83(7): 979–82.	Chronic disease sample analysis of interaction (audio tapes) between GPs and patients with chronic disease to review health promotion discussions.
Ruxton C. Obesity in children. *Nursing Standard* 2004;18(20):47–52.	No study design. Training/discussion document
Saarilehto S, Lapinleimu H, Keskinen S, Helenius H, Simell O. Body satisfaction in 8-year-old children after long-term dietary counseling in a prospective randomized atherosclerosis prevention trial. *Archives of Pediatric and Adolescent Medicine* 2003;157(8):753–8.	Before and after intervention. Better evidence available.
Sallis JF, Patrick K, Frank E, Pratt M, Wechsler H, Galuska DA. Interventions in health care settings to promote healthful eating and physical activity in children and adolescents. *Preventive Medicine* 2000;31(2):S112–20.	Discussion paper/expert opinion. Relevant papers obtained.
Sarraf-Zadegan N. Isfahan Healthy Heart Programme: a comprehensive integrated community-based programme for cardiovascular disease prevention and control. Design, methods and initial experience. *Acta Cardiologica* 2003;58(4):309–20.	City-wide intervention. Mass media. Not suitable for local implementation.
Schapira DV, Kumar NB, Lyman GH, Baile WF. The effect of duration of intervention and locus of control on dietary change. *American Journal of Preventive Medicine* 1991;7:341–7.	Superseded by systematic review evidence.
Scheuermann W, Ploch M, Morgenstern W, Nussel E. Changes in cholesterol and body weight at midpoint of the German Cardiovascular Prevention Study: Attempts at an interpretation. *Annals of Epidemiology* 1993;3(Suppl 5):S28—35.	City-wide intervention and not suitable for local implementation
Schmitz MK, Jeffery RW. Public health interventions for the prevention and treatment of obesity. *Medical Clinics of North America* 2000;84(2):491–512.	Non-systematic review.
Schooler C, Farquhar JW, Fortmann SP, Flora JA. Synthesis of findings and issues from community prevention trials. *Annals of Epidemiology* 1997;7(7):S54–68.	City-wide intervention and not suitable for local implementation.
Schroder E-M, Stocksmeier U. Long lasting weight reduction in overweight children by a follow-up-treatment at home after cure. *Zeitschrift fur Physikalische Medizin Balneologie Med Klimatologie* 1990;19(2):80–8.	Not available in English language.
Schulze MB, Hu FB. Primary prevention of diabetes: What can be done and how much can be prevented? *Annual Review of Public Health* 2005;26:445–67.	Non-systematic literature review.
Scottish Intercollegiate Guidelines Network. *Obesity in Scotland: Integrating prevention with weight management*. Edinburgh: Scottish Intercollegiate Guidelines Network (SIGN); 1996. Report No. 8.	Scottish Guidelines – very little on prevention.
Segal L, Mortimer D, Dalziel K. *How to reduce the burden of harm from poor nutrition, tobacco smoking, physical inactivity and alcohol misuse: cost utility analysis of 29 Interventions. Research*	General review covering several review topics. Reference list

Paper 2005 (1). Monash University: Centre for Health Economics, April 2005. http://www.buseco.monash.edu.au/centres/che/pubs/RP1.pdf	checked.
Shelley E, Daly L, Collins C, Christie M, Conroy R, Gibney M, et al. Cardiovascular risk factor changes in the Kilkenny Health Project: A community health promotion programme*. European Heart Journal* 1995;16(6):752–60.	Included in Community 2 review.
Shelley E, et al. The Kilkenny health project: a community research and demonstration cardiovascular health programme. *Irish Journal of Medical Science* 1991;160(Suppl 9):10–6.	Further information on Shelley (1995).
Shepherd J, Harden A, Rees R, Brunton G, Garcia J, Oliver S, et al. *Young people and healthy eating: a systematic review of research on barriers and facilitators*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London; 2001.	Systematic review of young people and healthy eating - relevant papers obtained.
Simkin-Silverman L. Prevention of cardiovascular risk factor elevations in healthy premenopausal women. *Preventive Medicine* 1995;24(5):509–17.	Same study as Simkin-Silverman (1998).
Simkin-Silverman LR, Gleason KA, King WC et al. Predictors of weight control advice in primary care practices: patient health and psychosocial characteristics. *Preventive Medicine* 2005;40:71–82.	Participants all overweight or obese.
Simons-Morton DG, Calfas KJ, Oldenburg B, Burton NW. Effects of interventions in health care settings on physical activity or cardiorespiratory fitness. *American Journal of Preventive Medicine* 1998;15(4):413–30.	Very low quality systematic review. Better evidence available.
Skotniski E, Cook. Winning at losing (A community-wide project in Northern Canada to lose weight and generally promote a healthy lifestyle). *Canadian Nurse/Infirmiere Canadienne* 1991;87(2):24.	9-week follow-up. Short narrative evaluation.
Sloth B, Krog-Mikkelsen I, Flint A, et al. No difference in body weight decrease between a low-glycemic-index and a high-glycemic-index diet. *American Journal of Clinical Nutrition* 2004;80:337–47.	Participants all overweight.
Smith BJ, Merom D, Harris P, Bauman AE. *Do primary care interventions to promote physical activity work? A systematic review of the literature.* Sydney: NSW Centre for Physical Activity and Health; 2002.	Overlap with other systematic reviews already in review.
Smith F, Iliffe S. Exercise prescription in primary care. *British Journal of General Practice* 1997;May:272–73.	Brief non-systematic overview of current policy and research. Relevant references obtained.
Smith M. A course of fitness. *Practice Nurse* 1997;13(3):141–2.	Evaluation/case study of exercise prescription. Better evidence available.
Smith PA, Iliffe S, Gould MM, See Tai S. Prescription for exercise in primary care: is it worth it? *British Journal of Health Care Management* 1996;2:324–7.	Evaluation/case study. Better evidence available.

Sorensen G, Emmons K, Hunt MK, Johnston D. Implications of the results of community intervention trials. *Annual Review of Public Health* 1998;19:379–416.	Non-systematic review. Broad discussion paper and what might work in community intervention studies.
Sothern MS. Obesity prevention in children: physical activity and nutrition. *Nutrition* 2004;20:704–8.	Non-systematic literature review
Sports Council. *Active life styles. Post-school sports participation: A case study in Coventry. Participation demonstration projects*. Manchester: Sports Council Research Unit; 1991.	School based and follow-up corroboration. Relevant to schools review.
Sports Council for Wales. *A matter of fun and games: children's participation in sport.* Cardiff: Sports Council for Wales; 1994. [330]	Corroborative study of children and no relevant studies in efficacy section of review.
Steptoe A. Behavioural counselling in general practice for the promotion of healthy behaviour among adults at increased risk of coronary heart disease: randomised trial. *British Medical Journal* 1999;319(7215):943–7.	Increased risk subjects.
Steptoe A, Kerry S, Rink E, Hilton S. The impact of behavioral counseling on stage of change in fat intake, physical activity, and cigarette smoking in adults at increased risk of coronary heart disease. *American Journal of Public Health* 2001;91(2):265–9.	At risk subjects.
Stevens W, Hillsdon M, Thorogood M, et al. Cost-effectiveness of a primary care based physical activity intervention in 45–74 year old men and women; a randomised controlled trial. *British Journal of Sports Medicine* 1998;32:236–41.	Superseded by systematic review evidence.
Stewart KJ, Bacher AC, Turner KL et al. Effect of exercise on blood pressure in older persons. A randomized controlled trial. *Archives of Internal Medicine* 2005;165:756–62.	Subjects with hypertension in the care of health professionals.
Stewart KJ, Lipis PH, Seemans CM, McFarland LD, Weinhofer JJ, Brown CS. Heart healthy knowledge, food patterns, fatness, and cardiac risk factors in children receiving nutrition education. *Journal of Health Education* 1995;26(6):381–90.	School-based programme.
Stuart WP, Broome ME, Smith BA, Weaver M. An integrative review of interventions for adolescent weight loss. *Journal of School Nursing* 2005;21(2):77–85.	All subjects overweight.
Stolley MR, Fitzgibbon ML. Effects of an obesity prevention program on the eating behavior of African American mothers and daughters. *Health Education and Behavior* 1997;24(2):152–64.	BMEG subjects only. Relevant to other review.
Stone EJ, McKenzie TL, Welk GJ, Booth ML. Effects of physical activity interventions in youth – Review and synthesis. *American Journal of Preventive Medicine* 1998;15(4):298–315.	Systematic review including seven community based studies of under 18s (after school). Relevant to broader community review.
Strong WB, Malina RM, Blimkie CJ et al. Evidence based physical activity for school-age youth. *Journal of Pediatrics* 2005;146:732–7.	No study details provided and more relevant to schools review.

Strock GA, Cottrell ER, Abang AE, Buschbacher RM, Hannon TS. Childhood obesity: a simple equation with complex variables. [Review] [119 refs]. *Journal of Long-term Effects of Medical Implants* 2005;15(1):15–32.	Non-systematic lit. review
Summerbell C, Kelly S, Campbell K. The prevention and treatment of childhood obesity. *Effective Health Care* 2002;6(7):1–12.	Children aged 2–5 years. Relevant to other review.
Summerbell CD, Ashton V, Campbell KJ, Edmunds L, Kelly S, Waters E. *Interventions for treating obesity in children*. The Cochrane Library, Issue 3, 2003.	Overweight children only.
Summerbell CD, Waters E, Edmunds LD, Kelly S, Brown T, Campbell KJ. Interventions for preventing obesity in children (review). *The Cochrane Database of Systematic Reviews* 2005, Issue 3.	Studies all school based or BMEG.
Sun WY, Sangweni B, Chen J, et al. Effects of a community-based nutrition education program on the dietary behavior of Chinese-American college students. *Health Promotion International*. 1999;14(3):241–9.	Non-UK BMEG – passed to Teesside.
Swinburn BA, Caterson I, Seidell JC, James WPT. Diet, nutrition and the prevention of excess weight gain and obesity. *Public Health Nutrition* 2004;7(1A):123–46.	Non-systematic literature review.
Swinburn BA, Walter LG, Arroll B, Tilyard MW. The green prescription study: a randomized controlled trial of written exercise advice provided by general practitioners. *American Journal of Public Health* 1998;88(2):288–91.	Follow-up less than 3 months.
Sykes K. Accumulating aerobic exercise for effective weight control. *Journal of the Royal Society for Health* 2003;124:24–8..	All participants overweight. 8-week programme.
Taitano RT. Development and evaluation of a nutrition curriculum to prevent obesity in inner-city teens. *Dissertation Abstracts International Section A: Humanities and Social Sciences* 1998;59(5-A):1476.	Abstract only.
Tate DF, Wing RR, Winett RA. Using Internet technology to deliver a behavioral weight loss program. *Journal of the American Medical Association* 2001;285(9):1172–7.	Workplace study.
Taylor AH. *Evaluating GP exercise referral schemes: findings from a randomised controlled study*. Report No. 6. Brighton: Chelsea School Research Centre; 1996.	All subjects overweight and obese.
Taylor AH, Doust J, Webborn N. Randomised controlled trial to examine the effects of a GP exercise referral programme in Hailsham, East Sussex, on modifiable coronary heart disease risk factors. *Journal of Epidemiology and Community Health* 1998;52(9):595–601.	Write up of Taylor (1996).
Taylor CB, Fortmann SP, Flora J, Kayman S, Barrett DC, Jatulis D, et al. Effect of long-term community health education on body mass index. The Stanford Five-City Project. *American Journal of Epidemiology* 1991;134(3):235–49.	City interventions and not suitable for local implementation: Stanford 5-City.

Taylor WC, Baranowski T, Young DR. Physical activity interventions in low-income, ethnic minority, and populations with disability. *American Journal of Preventive Medicine* 1998;15(4):334–33.	Excluded at critical appraisal – quality systematic review. Relevant studies obtained.
Teixeira PJ, Going SB, Sardinha LB, Lohman TG. A review of psychosocial pre-treatment predictors of weight control. *Obesity Reviews* 2005;6:43–65.	Predictors of weight loss in overweight/obese participants.
Thomas J, Sutcliffe K, Harden A, Oakley A, Oliver S, Rees R, et al. *Children and healthy eating: a systematic review of barriers and facilitators*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London; 2003.	Systematic review of children and healthy eating. Relevant to other review. Check for broader community.
Thomas KJ, Tomsic JB, Martin MS. Does participation in light to moderate strength and endurance exercise result in measurable physical benefits for older adults? *Journal of Geriatric Physical Therapy* 2004;27(2):53–58.	CCT. Better evidence available.
Thompson RL, Summerbell CD, Hooper L, Higgins JPT, Little PS, Talbot D, et al. Relative efficacy of differential methods of dietary advice: a systematic review. *American Journal of Clinical Nutrition* 2003;77(4)(Suppl):S1052–7.	Health care professional interventions, i.e. clinical group and cholesterol as outcome measure.
Thompson R, Summerbell C, Hooper. Dietary advice given by a dietitian versus other health professional or self-help resources to reduce blood cholesterol. *Cochrane Database of Systematic Reviews* 2004;4..	Blood cholesterol reduction outcome.
Toobert DJ Glasgow RE, Radcliffe JL. Physiologic and related behavioral outcomes from the Women‘s Lifestyle Heart Trial. *Annals of Behavioral Medicine* 2000;22(1):1–9.]	Postmenopausal women with coronary heart disease.
Tsai AG, Wadden TA, Womble LG, Byrne KJ. Commercial and self-help programs for weight control. *Psychiatric Clinics of North America* 2005;28:171–92.	Non systematic literature review of overweight/obese studies.
Tromans P. Health Promotion in the Pharmacy: Pharmacy Health Care Scheme Survey. *Health Promotion Wales* 1993;1–17.	More recent Pharmacy Survey available.
Tudor-Smith C, Nutbeam D, Moore L, Catford J. Effects of the Heartbeat Wales programme over five years on behavioural risks for cardiovascular disease: quasi- experimental comparison of result from Wales and a matched reference area. *British Medical Journal 1998*;316(7134):818–22.	Very large city-wide Study and not suitable for local implementation – Heartbeat Wales.
Van der Bij AK, Laurant MG, Wensing M. Effectiveness of PA interventions for older adults: a review. *American Journal of Preventive Medicine* 2002;22:120–33.	All relevant references superseded by systematic review evidence.
Vandongen R, Jenner DA, Thompson C, Taggart AC, Spickett EE, Burke V, et al. A controlled evaluation of a fitness and nutrition intervention program on cardiovascular health in 10–12 year old children. *Preventive Medicine* 1995;24(1):9–22.	School and family study – relevant to other review.
VanWormer JJ. Pedometers and brief e-counselling: increasing physical activity for overweight adults. *Journal of Applied Behavior Analysis* 2004;37:421–5.	Three overweight adults

Verheijden M, Bakx JC, Akkermans R et al. Web-based targeted nutrition counselling and social support for patients at increased cardiovascular ris. *Journal of Medical Internet Research* 2005;6(4):e44.	All subjects at CHD risk under the care of health professionals.
Wadden TA, Stunkard AJ. Obesity in black adolescent girls: a controlled clinical trial of treatment by diet, behavior modification, and parental support. *Pediatrics* 1990;85(3):345–52.	BMEG and family intervention – Relevant to other reviews.
Ward M. *Slimswim: An evaluative summary of 3 community-based weight management programmes conducted between 1999–2003*. Wales: National Public Health Service for Wales; 2003.	All subjects overweight and obese.
Wardle J. Mass education for obesity prevention: the penetration of the BBC's 'Fighting Fat, Fighting Fit' campaign. *Health Education Research* 2001;16(3):343–55.	Mass-media campaign. Paper filed in community 2.
Wareham NJ, van Sluijs EMF, Ekelund U. Physical activity and obesity prevention: a review of the current evidence. *Proceedings of the Nutrition Society* 2005;64:229–47.	Non-systematic literature review. Reference list checked.
Watt RG, Sheiham A. Towards an understanding of young people's conceptualisation of food and eating. *Health Education Journal* 1997;56(4):340–9.	School-based sample. Relevant to other review.
Weinehall L, Westman G, Hellsten G, Boman K, Hallmans G, Pearson TA, et al. Shifting the distribution of risk: Results of a community intervention in a Swedish programme for the prevention of cardiovascular disease. *Journal of Epidemiology and Community Health* 1999;53(4):243–50.	City-wide intervention and not suitable for local implementation. Paper filed in community 2
Weisbrod RR, Pirie PL, Bracht NF. Impact of a community health promotion program on existing organizations: the Minnesota Heart Health Program. *Social Science and Medicine* 1992;34(6):639–48.	Statewide Intervention and not suitable for local implementation: Minnesota Heart Health Project.
Will JC, Farris RP, Sanders CG, Stockmyer CK, Finkelstein EA. Health promotion interventions for disadvantaged women: overview of the WISEWOMAN projects. *Journal of Women's Health 2004*;13(5):484–502.	Baseline data only. No useable outcome measures.
Willaing I, Ladelund S, Jorgensen T, simonsen T, Nielsen LM. Nutritional counselling in primary health care: a randomized comparison of an intervention by general practitioner or dietician. *European Journal of Cardiovascular Prevention and Rehabilitation* 2004;11:513–20..	Study population at high risk of IHD under the care of health professionals
Williams DM, Anderson ES, Winett RA. A review of the outcome expectancy construct in physical activity research. *Annals of Behavioral* Medicine 2005;29(1):70–9.	Non-systematic literature review and no relevant outcomes.
Williamson DF, Vinicor F, Bowman BA, Centers for Disease Control and Prevention Primary Prevention Group. Primary prevention of type 2 diabetes mellitus by lifestyle intervention: implications for health policy. *Annals of Internal Medicine* 2004;140(11):951–7.	Non-systematic literature review.
White E, Shattuck AL, Kristal AR, Urban N, Prentice RL,	All women were of moderate and

Henderson MM, et al. Maintenance of a low-fat diet – follow-up of the Women's Health Trial. *Cancer Epidemiology Biomarkers and Prevention* 1992;1(4):315–23.	increased risk of breast cancer.
White J. Minority patients: clinical strategies to promote exercise. *Physician and Sportsmedicine* 1993;21:136–44.	BMEG subjects only. Relevant to other review
White M, Carlin L, Rankin J, Health Education Authority, Meyrick J. *Effectiveness of interventions to promote healthy eating in people from minority ethnic groups: a review*. Report No.12. London: HEA; 1998.	BMEG subjects only. Relevant to other review.
Wiesemann A, Metz J, Nuessel E, Scheidt R, Scheuermann W. Four years of practice-based and exercise-supported behavioural medicine in one community of the German CINDA area. Countrywide Integrated Non-Communicable Diseases Intervention. *International Journal of Sports Medicine* 1997;18(4):308–15.	Uncontrolled before and after study, using four cross-sectioned surveys in sequential years. Also countrywide.
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