Supplementary Table 1: Search strategies and details of evidence sources for community-based dietary and physical activity intervention studies for low-SES groups in the UK, 1990-2009

Element	Details
List of Databases Searched	Medline via OVID Embase via OVID CINAHL via EBSCO British Nursing Index via OVID Cochrane Library via Wiley Science Citation Index via Web of Knowledge Social Science Citation Index via Web of Knowledge PsycINFO via OVID
Mapping Review Search Strategies	
Sample Search Strategy Search One Mapping Review Medline (via OVID) [1]	1 (prediabetes or pre?diabetes).ti,ab. 2 ((impaired glucose adj (level* or tolerance or regulation or metabolism)) or raised glucose tolerance or IGT or impaired fasting glucose or insulin resistance or metabolic syndrome or hyperinsulinaemia or non diabetic hyperglycaemia or abnormal blood glucose level* or dysglycaemia or intermediate hyperglycaemia).ti, ab. 3 (((type II or type 2) N1 diabetes) or T2D).ti,ab. 4 1 or 2 or 3 5 *prediabetic state/ or *diabetes mellitus, type 2/ 6 (risk* or prevent* or reduce* or protect* or limit* or control*).ti,ab. 7 *risk reduction behaviour/ or *risk factors/ 8 ((prediabetes or pre?diabetes or ((impaired glucose adj (level* or tolerance or regulation or metabolism)) or raised glucose tolerance or IGT or impaired fasting glucose or insulin resistance or metabolic syndrome or hyperinsulinaemia or non diabetic hyperglycaemia or abnormal blood glucose level* or dysglycaemia or intermediate hyperglycaemia) or (((type II or type 2) adj diabetes) or T2D)) adj5 (risk* or prevent* or reduce* or protect* or limit* or control*)).ti,ab. 9 4 and 7 10 6 and 5 11 8 or 10 or 9 12 great britain/ or england/ or scotland/ or wales/ or northern

	ireland/ 13 (uk or united kingdom or britain or gb or england or scotland or wales or northern ireland).ti,ab. 14 13 or 12 15 11 and 14 16 limit 15 to (english language and humans and yr="1990 -Current") 17 from 16 keep 1-912
Sample Search Strategy Search Two Mapping Review Medline (via OVID)[1]	1. (south asia* or black africa* or black caribbean* or pakistan* or bangladesh* or india* or (Ethnic adj1 minorit*)).ti,ab. 2. (blue collar or working class or underclass or low* class or low* income or poverty).ti,ab. 3. social* exclu*.ti,ab. 4. social* inclu*.ti,ab. 5. (depriv* or disadvantage* or inequalit* or underprivilege*).ti,ab. 6. *income/ or *poverty areas/ or *social class/ or *socioeconomic factors/ 7. 1 or 2 or 3 or 4 or 5 or 6 8. *body mass index/ or *obesity/ or *food habits/ 9. (obes* or waist circumference or BMI or nutrition or "bmi > 3?"or “bmi > 24” or diet or overweight).ti,ab. 10. (weight adj (gain or change or retention)).ti,ab. 11. *Motor Activity/ or *Exercise/ 12. (physical* inactiv* or physical* activ* or physical exercise).ti,ab. 13. (sedentary lifestyle* or active lifestyle*).ti,ab. 14. *Physical exertion/ or *Physical fitness/ 15. (blood pressure or cardiovascular disease or blood cholesterol).ti,ab. 16. (history adj5 diabet*).ti,ab. 17. gestational diabetes.ti,ab. 18. *Diabetes, gestational/ or *Genetic predisposition to disease/ 19. (genetic* or hereditary).ti,ab. 20. (behaviour change or social marketing).ti,ab. 21. *social marketing/ or *health behaviour/ or *health knowledge, attitudes, practice/ or *health promotion/ 22. (diabetes education or cultural sensitivity or culturally competent).ti,ab. 23. *cultural competency/ or *communication barriers/

	24. 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 25. great britain/ or england/ or scotland/ or wales/ or northern ireland/ 26. (UK or United Kingdom or Britain or GB or England or Scotland or Wales or Northern Ireland).ti,ab. 27. 25 or 26 28. 7 and 24 and 27 29. limit 28 to (english language and humans and yr="1990 -Current")
Additional Websites searched for Mapping Review[1]	Diabetes UK http://www.diabetes.org.uk/ NHS Evidence specialist collection for Diabetes http://www.library.nhs.uk/diabetes/ NHS Evidence specialist collection for Ethnicity and Health http://www.library.nhs.uk/ethnicity/
Search strategy grounded on evidence capture from the mapping review[1]	1. (south asia* or black africa* or black caribbean* or pakistan* or bangladesh* or india* or (ethnic adj1 minorit*)).ti,ab. 2. (blue collar or working class or underclass or low* class or low* income or poverty).ti,ab. 3. social* exclu*.ti,ab. 4. social* inclu*.ti,ab. 5. (depriv* or disadvantage* or inequalit* or underprivilege*).ti,ab. 6. *income/ or *poverty areas/ or *social class/ or *socioeconomic factors/or *gypsies/or *vulnerable populations/ 7. hard to reach or marginalised communit* or social cohesion or gypsy-travellers or romany or romani or roma or gipsy or seldom heard 8. OR 1-7 9. food skill* or food project* or cook* skill* or cook* project* or exercise on prescription or healthy eating advice or physical activity intervention or nutritional education or exercise referral scheme* or group based weight management or diet therapy or community dietetic service* or community cook* class* or cook* class* or food class* or cook* club* or food club* 10. *food services/ or *food habits/ or *food labelling/ or *swimming pools/ or *exercise therapy/ or *diet therapy/ 11. OR 9-10 12. population level or community health or retail intervention or non-

	health care intervention or peer education programme* or public awareness campaign* or family counselling or behaviour* counselling or mass education or health education or behaviour goal* or healthy living centre* or cultural collaboration or relaxation or partnership or holistic or ecological or ICT or new media or “men’s health clinic” 13. community adj2 (participation or project or approach or engagement or care or intervention or strategy) 14. *communications media/or *leisure activities/ or *social marketing/ or *program development/ or *health education/ or *behaviour therapy/ or *community health planning/ or *persuasive communication/ or *internet/ or *holistic health/ or *relaxation/ or *family therapy/ 15. OR 12-14 16. dietary change or healthy eating or wellbeing or weight management 17. ((lifestyle or behaviour*) adj change) 18. exercise/ or diet/ or nutritional physiological phenomena/ 19. OR 16-18 20. 15 AND 19 21. 11 OR 20 22. 8 AND 21 23. leisure provision or pool provision or language barrier* or access to care or food choice* or participation or nutritional knowledge or community level barrier* or dietary intake or motivation or eating behaviour or dietary belief* or dietary perception* or fatalistic outlook or cultural heritage or views or food related experience* or lifestyle health impact or food consumption patterns or awareness or food desert or illness belief* or religious leader* or questionnaire or interview or focus group or participant observation or delphi study or group meeting* or feedback or video-tape instruction or video tape instruction or role-play or role play or telephone survey 24. (gender) adj3 weight 25. ((environment* or cultur* or religious) adj factor) 26. (physical activity) adj2 (attitudes or behaviour or perception) 27. *religion/ or *multilingualism/ or *cultural diversity/ or *choice behavior/ *cookery/ or *culture/ or *cultural characteristics/ or *perception/ or *social support/ or *communication barriers/ or *self

	concept/ or *food preferences/ or *risk reduction behavior/ or *motivation/ or *social environment/ or *consumer participation/ 28. OR 23-27 29. 8 AND 28 AND 19 30. 22 OR 29 31. great britain/ or england/ or scotland/ or wales/ or northern ireland/ 32. (UK or United Kingdom or Britain or GB or England or Scotland or Wales or Northern Ireland).ti,ab. 33. 31 OR 32 34. 30 AND 33 ADD DATE LIMIT 1990-2009, ENGLISH LANGUAGE, HUMANS
Additional Sources Searched	**Grey Literature:** British Library Integrated Catalogue, Conference papers index, Medical Research Council and Economic and Social Research Council. **Websites:** Public Health Observatories, NHS Evidence: National Library for Public Health, Joseph Rowntree Foundation, Diabetes UK

[1] This search was conducted simultaneously to inform the current review and another review examining the impact of community-based dietary and physical activity interventions in black and minority ethnic groups in the UK

Supplementary Table 2: Quality assessment of quantitative community-based dietary and physical activity intervention studies for low-SES groups in the UK, 1990-2009

Checklist item	**Ashfield-Watt 2007**	**Baxter 1997**	**Bremner 2006**	**Cochrane 2008**	**Cummins 2005**	**Kennedy 1998**	**Lindsay 2008**	**Lowther 2002**	**McKellar 2007**	**Steptoe 2003**	**Wrieden 2006**	**Wrigley 2003**
1. Is the source population or source area well described?	-	NR	NR	+	-	-	+	-	NR	-	-	NR
2. Is the eligible population or area representative of the source population or area?	-	NR	NR	-	-	-	+	-	-	+	+	NR
3. Do the selected participants or areas represent the eligible population or area?	NR	NR	NR	+	-	-	-	+	-	+	+	+
4. How was selection bias minimised?	NA	+	+	+	++	NA	-	+	-	++	-	NA
5. Were interventions (and comparisons) well described and appropriate?	+	NR	+	+	+	+	+	+	+	++	+	+
6. Was the allocation concealed?	NA	NA	-	NA	NA	NA	NR	NA	NA	-	NA	NA
7. Were participants and/or investigators blind to exposure and comparison?	NR	NA	NR	NR	NR	NR	NR	NR	NR	-	NR	NA
8. Was the exposure to intervention and comparison adequate?	+	NR	NR	+	+	+	+	+	+	+	+	+
9. Was contamination acceptably low?	-	+	NR	-	+	NA	NR	+	++	NR	-	NA
10. Were the other interventions similar in both groups?	NR	NA	+	NR	+	NA	++	+	+	+	NA	NA

11. Were all participants accounted for at study conclusion?	++	NA	-	-	+	+	++	++	+	++	-	-
12. Did the setting reflect usual UK practice?	++	++	++	++	++	+	+	+	+	++	+	++
13. Did the intervention or comparison reflect usual practice?	+	NR	+	+	+	-	+	+	+	-	+	++
14. Were outcomes measures reliable?	+	NR	+	+	+	+	+	++	+	+	+	+
15. Were all outcome measurements complete?	+	NR	+	+	+	+	+	++	+	+	+	+
16. Were all the important outcomes assessed?	+	+	+	+	+	-	+	+	+	+	+	+
17. Were all outcomes relevant?	+	+	++	+	+	-	-	++	+	+	+	+
18. Were there similar follow up times in exposure and comparison groups?	++	+	++	++	++	NA	++	++	++	++	++	NA
19. Was follow-up time meaningful?	+	+	+	+	+	-	+	++	+	+	+	+
20. Were exposure and comparison groups similar at baseline?	+	+	+	+	++	++	-	++	+	+	NR	NA
21. Was intention to treat (ITT) analysis conducted?	-	-	-	NR	-	NR	NR	+	+	++	NR	-
22. Was the study sufficiently powered to detect an intervention effect (if one exists)?	++	++	NR	-	NR	NR	NR	+	NR	++	-	++
23. Were the estimates of effect size given or calculable?	+	++	NR	-	++	-	NR	+	+	++	-	+
24. Were the analytical methods appropriate?	+	++	+	-	+	+	+	++	+	+	+	+
25. Was the precision of intervention effects given or	+	++	+	-	++	-	-	+	+	++	-	+

calculable? Were they meaningful?												
26. Are the study results internally valid (i.e. unbiased)?	+	+	+	+	+	+	+	++	+	++	++	-
27. Are the findings generalisable to the source population (i.e. externally valid)?	+	NR	++	++	++	+	+	++	+	++	++	++
Summary quality rating	+	+	+	+	+	-	+	++	+	++	+	-

Key: ++ All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions are thought very unlikely to alter.

+ Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or adequately described are thought unlikely to alter the conclusions.

– Few or no criteria have been fulfilled. The conclusions of the study are thought likely or very likely to alter.

NR = Not reported

NA = Not applicable

Supplementary Table 3: Quality assessment of qualitative community-based dietary and physical activity intervention studies for low-SES groups in the UK, 1990-2009

Checklist item	**Bremner 2006**	**Cavill 2007**	**Coleman 2008**	**Daborn 2005**	**Dibsdall 2002**	**Dobson 2000**	**Gough 2006**	**Gray 2009**	**Kennedy 1998**	**Kennedy 1999**	**Lawrence 2009**	**Lindsay 2008**	**Nic Gabhainn 1999**	**Parry 2007**	**Peerbhoy 2008**	**Price 2007**	**Rankin 2006**	**Rankin 2009**	**Spence 2005**	**Stead 2004**	**Thomson 2003**	**Wardle 2001**	**Whelan 2002**	**Withall 2009**	**Wood 2010**	**Wormald 2006**
1. Is a qualitative approach appropriate?	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++	+	++	++	++	++
2. Is the study clear in what it seeks to do?	++	++	++	++	++	++	++	++	++	+	++	++	+	++	+	++	++	++	++	++	++	+	++	++	++	++
3. How defensible/rigorous is the research methodology?	+	++	++	++	++	++	+	++	+	+	+	++	+	+	+	+	++	++	+	++	+	++	+	++	++	+
4. How well was the data collection carried out?	+	+	+	++	++	+	+	-	-	+	+	+	+	+	+	+	+	+	-	+	+	+	+	++	+	+
5. Is the role of the researcher clearly described?	+	+	++	+	++	+	-	+	+	+	-	NA	-	+	++	+	+	+	-	-	-	-	-	+	++	+
6. Is the context clearly described?	++	++	++	++	++	++	+	+	+	+	+	+	+	++	++	+	++	++	+	++	++	+	+	++	+	++
7. Were the methods reliable?	+	++	++	++	++	+	-	+	++	+	-	+	-	+	+	++	+	+	+	+	+	-	-	++	++	+
8. Is the data analysis sufficiently	+	+	+	++	++	++	++	+	+	+	+	+	+	-	+	+	+	+	-	+	+	-	+	+	++	+

rigorous?																										
9. Is the data 'rich'?	++	+	+	++	++	++	+	+	+	-	+	++	+	+	+	+	+	++	+	++	++	-	+	++	++	++
10. Is the analysis reliable?	+	+	++	+	++	+	++	++	++	+	+	+	+	+	+	++	++	++	-	+	+	+	-	+	+	++
11. Are the findings convincing?	++	++	++	+	++	+	++	++	+	+	+	+	+	+	++	++	++	++	++	++	++	+	+	+	+	++
12. Are the findings relevant to the aims of the study?	++	++	++	++	++	++	++	++	+	+	++	+	++	++	++	+	++	++	++	++	+	+	++	+	++	++
13. Conclusions:	++	++	+	+	++	+	+	++	+	+	+	++	+	+	++	+	++	++	+	++	++	+	+	+	+	+
a) How clear are the links between data, interpretation and conclusions?																										
b) Is there adequate discussion of any limitations encountered?	+	++	+	+	++	+		+	++	+		+		+	+	+	++	++	+	+	+	-		+	+	+
14. How clear and coherent is the reporting of ethics?	NA	NA	++	++	+	NA		+	NA	NA		++		NA	+	+	NA	+	+	NA	NA	NA		+	+	+
Summary quality rating	+	++	++	++	++	+	++	+	++	+	+	+	+	+	+	+	++	++	+	+	+	+	+	+	+	+

Key: ++ All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions are thought very unlikely to alter.

+ Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or adequately described are thought unlikely to alter the conclusions.

– Few or no criteria have been fulfilled. The conclusions of the study are thought likely or very likely to alter.

NA = Not applicable

Supplementary Table 4: Characteristics of quantitative community-based dietary and physical activity intervention studies for low-SES groups in the UK, 1990-2009

Study	n	Design	Delivery setting	Target population	Intervention	Duration of intervention	Control condition	Theoretical base	Recruitment
Ashfield-Watt 2007 +	1554	Non-RCT	Retailers, educators, primary care teams, employers and local media	Residents in five UK deprived areas (not specified).	Initiatives that involved building community networks to increase fruit and vegetable intakes in five deprived communities by improving awareness, attitudes and access to fresh fruits and vegetables, not fully specified.	12 months	No attempts made to influence fruit and vegetable consumption.	None stated	Residents in five UK deprived areas that were on the electoral roll.
Baxter 1997 +	Not report-ed	Non-RCT	Various community settings (details not reported)	Residents in three UK low SES areas in Rotherham	Combination of several recognised health promotion approaches: behaviour change; educational; empowerment; and medical.	4 years	Similar community with no intervention	None stated	Questionnaires mailed to randomly sampled adults from the Rotherham Family Health Services Authority population age-sex register.
Bremner 2006 +	98640	Non-RCT	Community settings not specified.	Residents in 66 (former) UK health authorities with the highest levels of deprivation and poorest health status.	'5-a-day' community intervention to increase fruit & vegetable intake, including home delivery & transport links, voucher schemes, media campaigns, growing & cookery	Not fully specified, it may be assumed that the programme lasted for at least one year.	No intervention, no further detail reported	None stated	PCTs' list of the Electoral Wards in which activities were planned, or the Electoral Wards included within the

					skills & encouraging networking in groups involved in promoting healthy eating				programme area.
Cochrane 2008 +	1532	Non-RCT	Community settings not specified.	Residents in UK deprived areas on the basis of being in the lowest quintile on both the Jarman and Townsend indices of deprivation, the Burngreave and Manor areas of Sheffield.	Community awareness of physical activity campaign including meetings, presentations, events, competitions & dissemination of leaflets & posters. Physical activity introduced included walking, exercise referral, sports, water activities & active leisure pursuits	1 year	No community awareness of physical activity interventions.	That health-enhancing behaviour can be promoted by changing the environment in a deprived urban community	Randomly selected from the Postcode Address File.
Cummins 2005 +	603	Prospective cohort study	Not applicable.	Residents of households in two deprived areas of Glasgow (DEPCAT score of 7).	Provision of a new food hypermarket within the intervention area (natural public health intervention)	1 year	No new food hypermarket within area.	That deprived areas have poorer physical access to food than their more affluent counterparts.	Addresses were drawn from a postcode address file.
Kennedy 1998 -	26	Case series	Community	Low-income mothers with young children living in the low-income area of Deighton, UK.	Friends with food programme – weekly 2-hour sessions focused on translating current dietary recommendations relating to "heart health" into practice & practical activity (guided "hands-on" food preparation and	10 weeks	Not Applicable	No	Posters inviting women or women's groups to discussions on diet and health.

					cookery).				
Lindsay 2008 +	108	RCT	Community	Deprived urban community in Salford	Access to a health promotion Internet portal, Hearts of Salford, that contained discussion forums, plus voluntary drop-in sessions	6 months?	Internet access	None stated	Men and women living in Salford sampled from GP's CHD registries
Lowther 2002 ++	370	Two RCTs	Community	Socially & economically deprived urban community – two housing estates in Kilmarnock	Intervention 1: fitness assessment, used to tailor an exercise plan + vouchers for local facilities Intervention 2: exercise consultation + vouchers for local facilities	Study period overall: 2 months Fitness assessment: Single session, duration not reported Exercise consultation: Single session of 30 minutes' duration	Booklet on PA, vouchers for local facilities, option of receiving intervention at end of study period	Not reported	Application forms mailed to residents of the two housing estates targeted
McKellar 2007 +	130	Non-RCT	Community	Females with rheumatoid arthritis living in urban areas of deprivation in Glasgow	Mediterranean-type diet intervention involving a cookery course, weekly 2-hour sessions	6 weeks	Received readily available healthy eating information only	None stated	Residents within any of the Glasgow social inclusion partnership areas were recruited at 3 hospital sites; no further detail
Steptoe 2003 ++	271	RCT	Primary health centre	Adults aged 18-70 registered at a primary health centre in a deprived urban area	Behavioural dietary counselling	2 x 15min sessions, 2 weeks apart	Brief nutritional counselling (same duration)	Social learning theory and stage of change model	Random recruitment by letter
Wrieden 2006 +	93	Non-RCT	Various community	Urban deprived communities in	Informal food skills and food education	1 session weekly for 10	Informal food education	Not reported	Recruited by community

			settings	Scotland	sessions, following a 'CookWell' manual	weeks	sessions (same duration)		worker at each site
Wrigley 2003 -	1009	Case series	Community	Those living in deprived urban areas of Leeds, Seacroft and Whinmoor	The opening of a large-scale food retail outlet (natural public health intervention)	N/A	N/A	Not reported	Households contacted in person

CHD = coronary heart disease; DEPCAT = deprivation category (of Carstairs score); PCT = Primary Care Trust; UK = United Kingdom (of Great Britain and Northern Ireland)

Supplementary Table 5: Characteristics of qualitative studies examining beliefs and attitudes surrounding diet and physical activity interventions and behaviour in low-SES groups in the UK, 1990-2009

Study	n	Design	Delivery setting	Target population	Intervention / Control	Research question
Bremner 2006 +	98640	Evaluation of local food initiatives	Community settings not specified.	Residents in 66 (former) UK health authorities with the highest levels of deprivation and poorest health status.	'5-a-day' community intervention to increase fruit & vegetable intake, including home delivery & transport links, voucher schemes, media campaigns, growing & cookery skills & encouraging networking in groups involved in promoting healthy eating	To explore local people's views about a range of food initiatives
Cavill 2007 ++	23	Evaluation Focus Groups Photographs (2) used to prompt discussion	Liverpool, UK	Members of general public		To explore local people's views about cycling
Coleman 2008 ++	75 in total. 23 aged 18 or over.	Interviews	South East and west Midlands, UK			To explore the leading influences upon physical activity participation among young women.
Daborn 2005 ++	11	In-depth interviews	Norfolk	All male, tenants of Housing Association properties		To explore the attitudes and experiences of a group of low-income males toward food and health.
Dibsdall 2002 ++	14	In-depth interviews IPA	Norfolk, UK	Housing association tenants All female, low-income.		To provide an in-depth account of the beliefs and experiences pertaining to food and health
Dobson 2000	86	Evaluation: In-depth interviews	Leicester UK	Urban / suburban low income	Saffron Food and Health Project	To investigate the processes by which knowledge is

+		Focus Groups Participant observation Diaries				converted into behaviour change.
Gough 2006 ++	24	Semi-structured interviews	Yorkshire (mainly from manufacturing companies)	Men of both white collar & blue collar profession (only blue collar data reviewed)		To provide an analysis of men's accounts of food and health using concepts pertaining to masculinity
Gray 2009 +	16 men and 8 partners	Evaluation 2 Focus Groups	Scotland	Men (almost 50% from deprived areas) with individual risk factors for a range of conditions, including diabetes.	Camelon Model – men's weight management: Men's Health Clinic – weekly and monthly at 2 centres. 40 minutes discussion of lifestyle and health. Given opportunity to discuss with nurse, obtain leaflets, and join programme. Assessment. Description of 12 week programme baseline measurements.	To evaluate the Camelon model during its first 4 years. To consider the extent to which the model has reached its target population, the characteristics of the participants, weight loss outcomes and views of the programme.
Kennedy 1998 ++	26	Evaluation Interviews and nutritional scores	N. England	Mainly low-income, lone parents.	'Friends with Food' nutritional educational programme. 10 weeks; 2 hour sessions **Control:** Pre-programme scores; scores of women outside intervention area	To investigate how and to what extent social and economic constraints were important in determining the response to nutritional education.
Kennedy 1999 +	8 CNAs 1 male, 11 female	Evaluation Interviews and work diaries at two points in time during a six month period.	N. England	Community nutrition assistants and their contacts.	Utilisation of community nutrition assistants	To evaluate the role and impact of community nutrition assistants on access to local community dietetic services, and changes in determinants of healthy eating.
Lawrence 2009	42 (56 in total, including	Focus groups	Southampton	Women of lower educational attainment		To identify and provide an insight into factors that

+	women not of lower educational attainment)			(up to GCSE level)		influence the food choices of women with lower educational attainment
Lindsay 2008 +	108	RCT with qualitative evaluation Data collected from discussion forums on the facilitated website.	Salford UK		New computer and a one-year broadband subscription along with training and access to the project's portal. Drop-in sessions and phone-in support for technical difficulties. **Control:** As above but no access to the project's portal. Drop-in sessions and phone-in support for any technical difficulties	Why might there have been an improvement in the diet of the experimental group?
Nic Gabhainn 1999 +	74	Focus groups	Two workplaces (a local government authority and a local health authority) in Ireland (locality not specified)	Employed people across the socioeconomic spectrum (only low-SES groups' data reviewed)		To assess knowledge of and attitudes to coronary heart disease and associated risk factors reflecting the perspectives of employed people across the socioeconomic spectrum
Parry 2007 +	NR	Evaluation Focus Groups Photographs of relevant features in area	Birmingham; Black Country; UK Community groups		New Deal for Communities designated area	How residents in deprived areas believe that where they live influences their health
Peerbhoy 2008 +	5 families	Evaluation Focus groups with families	Liverpool UK		Intervention: 'Family fit' healthy lifestyle programme for in deprived area (PA and diet) Control: None	Evaluation of the impact of a 14-week community-based initiative which attempts to tackle unhealthy eating/overeating and lack of exercise.
Price 2007 +	30	Interviews		Mothers of a child aged 3 or under		To understand how mothers use their resources and

					overcome constraints to protect and promote their families' health, in particular that of their children**.**
Rankin 2006 ++ (same intervention as Rankin 2009)	6 sites	Evaluation Interviews (single and group) with providers and service users. Observation of activities, services, meetings and daily interactions. Telephone contact to maintain recording of developments.	Scotland	Healthy Living Centre food project to enhance skills To promote social inclusion and to influence food accessibility Control: None	To improve the understanding of the implementation of health-focused Area-based Initiatives in order to contribute to learning and to inform best practice.
Rankin 2009 ++ (same intervention as Rankin 2006)	6 sites	Evaluation: Interviews, discussion groups, documentary analysis, observation of activities, meetings; telephone and e-mail contact.	Scotland	Healthy Living Centre food project to enhance skills To promote social inclusion and to influence food accessibility Control: None	To explore how Healthy Living Centre practitioners conceptualise 'health inequalities' and apply the construct to their work.
Spence 2005 +	6	Evaluation Semi-Structured Interviews over 6 months after participation	Northeast Scotland	'Now you're Cooking'; a community based 'cook and eat' project covering basic cookery skills, budgeting and food hygiene. Led by health promotions assistant for 8 weeks. Aimed to change eating habits of entire families, as well as providing the opportunity to socialise and	To establish participants' motivation and expectations of the project, and the effect of the project on cooking, eating and food budgeting behaviour / skills.

					make new friends. Control: None	
Stead, 2004 +	16	Exploratory Study Focus Groups	Scotland, UK (2 areas, Greenock and Alloa, both having high unemployment rates and deprivation indices)	Mainly female, many with young children (no figures supplied); 2 men.	CookWell Nutrition Educational programme	To inform the content of an intervention designed to address low food skills among low-income communities
Thomson 2003 +	81	Evaluation Focus groups	Two case study areas, socio-demographically similar and classified as deprived. Riverside part of £80m housing led regeneration programme. No similar investment in Parkview.	Individuals residing in the area >4 years.	Modern swimming pool and leisure complex opened in Jan 2000 in one case area (Riverside). In Dec 1999 the other case area (Parkview) pool was closed. Comparison of experiences of a change in two different areas.	To gather a collective community narrative of health, neighbourhood, local amenities, and contextual change. To assess the health impacts of neighbourhood swimming pool and leisure facilities
Wardle 2001 +	956 women 938 men	Evaluation Interview questionnaires	National; UK	UK population	BBC 'Fighting Fat, Fighting Fit' awareness raising campaign	To evaluate the effectiveness of the campaign at raising awareness of the need for obesity prevention.
Whelan 2002 +	23 aged <65 (36 in total)	Focus groups	A deprived area in Leeds	Opportunistic sample of local residents	New food retail outlet (focus groups conducted before this opened)	To develop a deeper understanding of the qualitative nature of 'life in a food desert' using insights that can be obtained by focus groups
Withall 2009 +	46 mothers	Interviews	Llanedeyrn, Wales	Mothers of children aged 16 or less living within a relatively deprived community.		To explore mothers' understandings of health-promotion recommendations for healthy eating.
Wood 2010 +	8 health professionals 27 residents	Interviews with health professionals Focus Groups with residents	UK	Low-income families with existing issues of overweight or obesity		To examine reported barriers to consuming a healthy diet and engaging in regular physical activity
Wormald 2006 +	16	Evaluation focus groups	Kingston-Upon-Hull	Over 12 years Sedentary lifestyle or	Active Lifestyles; PA based	To explore participants' perceptions of the operation

		a range of mild to moderate physical / mental health problems such as overweight, obesity, hypertension, anxiety, depression.	Behavioural change theory	and effectiveness of the Active Lifestyles service

GCSE = General Certificate of Secondary Education; PA = physical activity; SES = socioeconomic status; UK = United Kingdom (of Great Britain and Northern Ireland)

Supplementary Table 6: Effectiveness of community-based dietary and physical activity interventions for low-SES groups by outcome in the UK, 1990-2009

Outcome	Evidence of a positive effect	No evidence of effect / mixed effect	Evidence of a negative effect
Fruit and vegetable intake	• There was a greater increase in average consumption of fruit and vegetables in the intervention group (5 a day community health promotion) relative to the control group (p=0.0354) (Bremner et al., 2006+, DN) • There was a greater increase in average consumption of fruit and vegetables in the intervention group (behavioural counselling) relative to the control group (nutritional counselling) on number of portions of fruit and vegetables consumed a day (p=0.021) and on the percentage of intervention group participants attaining 5 portions a day, relative to the control group (p=0.019) (Steptoe et al., 2003++, DN) • There was a greater increase in average consumption of fruit, vegetables and legumes in the intervention group (Mediterranean-type diet intervention) relative to the control group (healthy eating information) on number of portions of fruit and vegetables consumed a day (p=0.016) (McKellar et al., 2007+, DN)	• There was no significant change in total fruit and vegetable intake in the intervention group (improving awareness, attitudes and access to fresh fruit and vegetables), or in fruit intake in either group, and a significant decrease in total fruit and vegetable intake in the control group (p<0.01); there was a significant decrease in vegetable intake in the intervention group (p<0.05), but there was also a decrease in the control group (p<0.01) (Ashfield-Watt et al., 2007+, DN) • There was a significantly greater increase over the duration of the study in mean fruit consumption in the intervention group (informal educational sessions) relative to the control group at time 2 (p=0.05), however there was no difference across time between the intervention group (informal educational sessions) and control group on mean fruit juice, fruit and fruit juice, vegetable and salad and fruit & vegetables consumption at time 2, or on mean fruit, fruit juice, fruit and fruit juice, vegetable and salad and fruit & vegetables consumption at time 3 (NS) (Wrieden et al., 2006+, DN) • There was no significant change in either the intervention group (large-scale food retailing) or the comparison group on mean fruit intake (NS), or in the intervention group on mean vegetable intake (NS), however there was a significant increase in mean vegetable intake in the comparison group (p=0.01) and mean fruit and vegetable intake in both groups (p=0.003) (Cummins et al., 2005+, FR) • Fruit and vegetable intake significantly increased pre-post in those who switched to the new store (large-scale food retailing) (p=0.034), and of those who switched, in those with lower pre-intervention levels of fruit and vegetable consumption (p<0.001) and among those who did not switch, also in those with lower	

		pre-intervention levels of fruit and vegetable consumption ($p<0.001$) (no comparison group), however there was no significant change in fruit and vegetable intake in those who did not switch to the new store (NS), and among those who did not switch, in those with intermediate pre-intervention levels of fruit and vegetable consumption (NS); among those who switched, there was no significant change in fruit and vegetable intake in those with intermediate and higher pre-intervention levels of fruit and vegetable consumption (NS); in those who did not switch to the new store, fruit and vegetable consumption significantly decreased in those with higher pre-intervention levels of fruit and vegetable consumption ($p=0.005$) (no comparison group) (Wrigley et al., 2003-, FR)
Physical activity	• Intervention group participants (neighbourhood physical activity promotion) were more likely to report being more active than they were a year previously ($p<0.001$) and being in a more advanced stage of change ($p<0.001$) at follow-up than control group participants (Cochrane & Davey, 2008+, PA)	• Levels of physical activity significantly increased from baseline to 1-year follow-up in the exercise consultation intervention group ($p<0.05$), but there were no differences between the intervention and control groups in both the fitness assessment RCT and the exercise consultation RCT at 4-week and 3-month follow-up (NS) or at 3-month, 6-month and 1-year follow-up (NS); in addition, levels of physical activity did not change significantly from baseline to 1-year follow-up in the fitness assessment intervention group (NS) (Lowther et al., 2002 ++, PA) • Exercise frequency did not change significantly in either group (NS) (Lindsay et al., 2008+, MC) • There was no difference between the intervention (incorporating behavioural, educational, empowerment and medical components) and control (comparison area) groups across time on exercise (Estimated effect=2.7, CI -17.2 to 27.3) (Baxter et al., 1997+, MC)
Health	• Intervention group participants (neighbourhood physical activity promotion) were more likely to report better general health ($p=0.001$) and better health compared with a year previously ($p=0.001$) than control group participants (Cochrane & Davey, 2008+, PA)	• Prevalence of fair to poor self-reported health did not change significantly in either the intervention group (large-scale food retailing) or the comparison group (NS) (Cummins et al., 2005+, FR)
Weight control		• No difference between the intervention group (behavioural counselling) and control group (nutritional counselling) on BMI

		(NS) and on body weight (NS) (Steptoe et al., 2003++, DN) • No significant difference across time for the intervention group (Mediterranean-type diet intervention) or control group (healthy eating information) on weight (NS) or on BMI (NS) (McKellar et al., 2007+, DN) • There was no difference between the intervention (incorporating behavioural, educational, empowerment and medical components) and control (comparison area) groups across time on obesity or overweight (Estimated effect=9.7, CI -15.1 to 41.6) (Baxter et al., 1997+, MC)
Consumption of high fat foods	• There was a greater increase in the ratio of monounsaturated to saturated fats consumed in the intervention group (Mediterranean-type diet intervention) relative to the control group (healthy eating information) (p=0.022) (McKellar et al., 2007+, DN)	• No difference between the intervention group (behavioural counselling) and control group (nutritional counselling) on fat intake (NS) (Steptoe et al., 2003++, DN) • Frequency of 'bad' foods eaten significantly increased over the duration of the study in the control group (p=0.04), but did not change significantly over the duration of the study in the intervention group (access to an internet portal) (NS) (Lindsay et al., 2008+, MC) • The intervention group incorporating behavioural, educational, empowerment and medical components) significantly increased their consumption of low-fat milk relative to the control group (comparison area) across time (Estimated effect=42.5, CI 14.8 to 77.0; Chi^2=10.3, p<0.001), but there was no difference between the intervention and control groups across time on consumption of low-fat spread (Estimated effect=-1.1, CI -19.4 to 21.5) (Baxter et al., 1997+, MC)
Physiological measurements		• No difference between the intervention group (behavioural counselling) and control group (nutritional counselling) on systolic blood pressure, diastolic blood pressure and cholesterol (NS) (Steptoe et al., 2003++, DN) • No significant difference across time for the intervention group (Mediterranean-type diet intervention) or control group (healthy eating information) on diastolic blood pressure (NS), total cholesterol (NS), high-density lipoprotein (HDL) cholesterol (NS), total cholesterol to HDL ratio (NS) or glutathione (NS), however there was a significant reduction in the systolic blood

		pressure of the intervention group (p=0.016) with no change in the control group (McKellar et al., 2007+, DN) • There was no difference between the intervention (incorporating behavioural, educational, empowerment and medical components) and control (comparison area) groups across time on blood pressure (Estimated effect=28.8, CIs -4.6 to 73.9) or cholesterol (Estimated effect=-2.4, CIs -25.1 to 27.3) (Baxter et al., 1997+, MC)
Psychosocial variables	• Prevalence of poor psychological health decreased pre-post in intervention (large-scale food retailing) (p=0.017) but not comparison group (NS) (Cummins et al., 2005+, FR)	• Social support score (p=0.02) and mental health score (p=0.004) significantly decreased over the duration of the study in the control group, however social support score (NS and mental health score (NS) did not change significantly in the intervention group (access to an internet portal), and internal health locus of control (NS) and total health sources of information (NS) did not change significantly in either group (Lindsay et al., 2008+, MC)
Nutrition knowledge		• Two out of the four (nutrition education) groups scored significantly higher at post-test than at pre-test on nutrition knowledge (p<0.05), however two out of the four groups did not score significantly higher at post-test than at pre-test on nutrition knowledge (NS) (no comparison group) (Kennedy et al., 1998 -, DN)
Other eating habits		• No difference across time between the intervention group (informal educational sessions) and control group on mean consumption of tuna, total fish, total bread, pasta and rice and all starchy foods at time 2 and time 3 (NS) (Wrieden et al., 2006+, DN) • No difference between the intervention group (behavioural counselling) and control group (nutritional counselling) on fibre intake (NS) (Steptoe et al., 2003++, DN) • Number of new healthy foods eaten did not change significantly in either the intervention group (access to an internet portal) or the control group (NS) (Lindsay et al., 2008+, MC) • There was no difference between the intervention (incorporating behavioural, educational, empowerment and medical components) and control (comparison area) groups across time on consumption of wholemeal bread (Estimated effect=9.2, CI -

11.7 to 35.1) (Baxter et al., 1997+, MC)

BMI = body mass index; CI = confidence interval; DN = dietary/nutritional intervention; FR = food retail intervention; HDL = high density lipoprotein [cholesterol]; MC = multicomponent intervention; NS = not statistically significant; PA = physical activity intervention

Supplementary Table 7: Barriers and facilitators for community-based dietary and physical activity interventions and lifestyle change in low-SES groups in the UK, 1990-2009

Category	Theme	Barriers (& possible ways of overcoming them)	Facilitators	Quotes	References
Available resources		Lack of funding, labour	Funding, labour		Bremner et al.,, 2006+ Dobson et al.,, 2000+ Kennedy et al., 1998++ Lindsay et al., 2008+ Peerhboy et al., 2008+
Awareness of interventions			Word of mouth	*"I came because my friend went to the last one and she loved it.."* (Dobson *et al.*, 2000) *"it's only been by word of mouth really we've heard of it"* (female, overweight. 44-54 years; Withall et al., 2009)	Dobson et al., 2000+ Withall et al., 2009+
Acceptability of interventions	Attributes of health workers		Skills, knowledge, personal attributes (empathy, trustworthiness), knowledge of the community	"*…being able to ask questions and getting an answer you understand is what I like. She [Family Nutrition Worker] explains things and isn't telling you not to eat this or that…"* (Dobson et al., 2000)	Dobson et al., 2000+ Gray et al., 2009+ Kennedy et al.,1998+ Kennedy et al., 1999+ Peerhboy et al., 2008+ Spence & van Teijlingen 2005+ Wormald et al., 2006+
	Delivery and		Practical demonstrations,	"*..they won't eat garlic so what we*	Gray et al., 2009+

	content		progressive small steps, single-sex classes, accessible (at weekend, free, free childcare), free food, tailored recipes, useful and enjoyable activities, use of familiar and affordable food, delivered by community members rather than health professionals	*came up with was adding more herbs to give it some flavour and not bothering with garlic…*" (Dobson et al., 2000)	Dobson et al., 2000+ Kennedy et al., 1998+ Peerhboy et al., 2008+ Rankin et al., 2006++ Spence & van Teijlingen 2005+ Stead et al., 2004+ Wormald et al., 2006+
	Social inclusion		social interaction, informal atmosphere, opportunity to chat, humour		Gray et al., 2009+ Lindsay et al., 2008+ Peerhboy et al., 2008+ Rankin et al., 2006++ Rankin et al., 2009++ Thomson et al., 2003+
	Associated image	Negative associations with behaviours (PA – clothing) and terminology ('healthy eating' associated with government policy and boring and not filling food)			Coleman et al., 2008++ Rankin et al., 2006++ Stead et al., 2004+
Views and experiences of health professionals and health workers	Knowledge	Lack of knowledge of target groups	Health professionals' knowledge of target groups		Rankin et al., 2009++
Information	Available information	Extent and nature – information bombardment, confused	TV, when used positively	*"Like this Jamie Oliver, he's made people sort of sit up and think, oh*	Daborn et al., 2005+ Dibsdall et al.,

		messages, distrust of information		*yeah what is going on, what is going into our food and all that. So I think people are more aware"* (social class IV, age 38 years, divorced, 4 children; Wood et al., 2010)	2002++ Wood et al., 2010 +
	Understanding messages	Food messages seen as complex (e.g. compared with stop smoking message), misinterpretation of terms such as 'balanced diet' (seen as a balance of 'good' and 'bad' food rather than of different food groups), misinterpretation of 5-a-day message as 5 portions of fruit instead of fruit and vegetables		"*Woman 1: …we'll usually have at least a piece of fruit a day, but we never eat five.* *Woman 2: No, that would be masses.*" (Focus Group 3; Lawrence et al., 2009)	Gray et al., 2009+ Lawrence et al., 2009+ Stead et al., 2004+ Wardle et al., 2001+ Wood et al., 2010+
Attitudes to health	Existing attitudes	Causes of overweight – attributed to flawed metabolism and genetics, no clear perceived link between food and health, seeking cheap, healthy food less of a concern to some	Cheap, healthy food was seen as positive by some and actively sought	"*A big bag of rice—it doesn't cost anything, and it goes forever and pasta, and that. We didn't used to cook pasta at one time, but now, we eat lots.*" (Low-SES woman with older school-aged children; Whelan et al., 2002) "*When you've got kids and you've got to work, and you've got that many things to do, you need something quick. It takes hours to prepare a decent meal, a healthy decent, home-cooked meal.*" (Low-SES woman with older school-aged children; Whelan et al., 2002)	Dibsdall et al., 2002++ Lawrence et al., 2009+ Nic Gabhainn et al., 1999+ Whelan et al., 2002+ Withall et al., 2009+ Wood et al., 2010 +
Perceived capabilities		Perceived lack of fitness/sporting capabilities, perceived lack of cooking skills, lack of confidence in cooking meals from scratch, lack of confidence about being able to eat the recommended amount of fruit and vegetables –	Confidence in experimenting with food and cooking	"*I don't think we're taught it to be honest. 'Cos I wouldn't know how to start from scratch*." (Focus Group 5; Lawrence et al., 2009) "*And they're like 'ooh what did you do to this' and I was like 'I put a bit of this in and a bit of that' and I do*	Coleman et al., 2008++ Lawrence et al., 2009+ Peerhboy et al., 2008+ Stead et al., 2004+

	can be inhibiting and demotivating – can be countered by enhancing skills in a non-threatening way and using peer and family support	*and it turns out alright and other times it's 'ooh we'll put that in the bin then'! But you've just got to, and it's like then that's the way you explore and you find new meals and think 'oh that was alright actually'.*" (Focus Group 3; Lawrence et al., 2009)	
Lifestyle (current)	Commitments and responsibilities, lack of time, stress, comfort eating, being stuck in a rut, embarrassment, depression, boredom	"*Because I'm at home, you are always by the fridge. There's more opportunities to snack. Then when you're at work you're not even thinking about it 'cos you're doing other stuff… You're thinking about different kinds of things, so you're not thinking about food as much as I think about food now. Food is something I think about a lot.*" (Focus Group 4; Lawrence et al., 2009) "*I don't know why, sitting here now… I don't work and (I say) that I haven't got the time to cook. I don't know why I haven't.*" (Focus Group 6; Lawrence et al., 2009)	Gough & Conner 2006++ Gray et al., 2009+ Lawrence et al., 2009+ Nic Gabhainn et al., 1999+ Peerhboy et al., 2008+ Price 2007+ Whelan et al., 2002+ Withall et al., 2009+
Affordability	Buying food, transport, cooking different meals to suit family preferences, fear of financial risk, lack of prioritisation of healthy food over convenience food when shopping, marketing strategies promoting unhealthy foods, wasting money buying food that the family won't eat, cost of physical activity – could be overcome by covering budgeting in nutrition education	"*if they weren't buying some of those other fatty, high salt expensive ready meals then they could afford …things like fruit and veg"* (dietitian; Withall et al., 2009) "*If you're living on benefit… you've got two pound, what do you do, get some exercise or get some bread and milk for the kids*" (female, overweight 35-44 years; Withall et al., 2009) "*It's all these buy-one-get-one-free*	Dibsdall et al., 2002++ Gough & Conner 2006++ Kennedy et al., 1998+ Lawrence et al., 2009+ Parry et al., 2007+ Peerhboy et al., 2008+ Price 2007+

	programmes and physical activity referral schemes		*on big bars of chocolate and big cakes… but you never see buy-one-get-one-free by big bags of fruit.*" (Focus Group 9; Lawrence et al., 2009) "*Karen: It depends on money a lot of the time, if you've had times in your life where you haven't been able to afford to eat properly, then healthy doesn't matter, if you can just eat, then you eat. You just want to stop that hunger, so you eat. But then if you get more affluent or you get better off, then you start eating healthier. You're concerned about this more.* *Mags: I think if you're sensible, though, even when there's not a lot of money … you can eat healthily!* *Jo: Yes.* *Mags: You can. 'Cos I know we've got hardly any money at the moment, but fruit and and veg is quite cheap.*" (Low-SES women with older school-aged children; Whelan et al., 2002)	Whelan et al., 2002+ Withall et al., 2009+
Environmental factors	Lack of local amenities in shopping for healthy foods, food shopping with children and pushchairs, including getting on and off transport and getting to upstairs flats, fear of crime and attack, dark evenings and poor weather for physical activity			Cavill & Watkins 2007 ++ Lawrence et al., 2009+ Parry et al., 2007+ Peerhboy et al., 2008+
Social norms, preferences, habitual	'Bad' food seen as a treat and healthy food seen as 'boring' and unsatisfying, traditional food	Women motivated to cook healthy food to enhance the health of their children,	*"It's a short life that we lead, and I think if you haven't got a little of a vice in your life, it's a bit boring,*	Daborn et al., 2005++ Dibsdall et al.,

behaviours and lifestyle	tastes and preferences of family members prioritised, men prefer to be overweight than 'thin', parental influence and habit in unhealthy shopping and eating, living alone, wanting to uphold the right to personal choice through eating unhealthily, unhealthy habits not seen as unhealthy in the light of positive health status, lack of family support, control and perceived self-importance	participants in interventions can positively influence the health behaviours of family and friends, men motivated to engage in 'masculine' behaviours like physical activity to compensate for an unhealthy diet	*isn't it? …I mean, you know, you can't be like, what's the name, uhm, that woman on "You Are What You Eat" [a UK television program]. Blimey! I'd kill myself, I think, if I had to eat that diet all the time.."* (social class II, age 35 years, single, child aged 7 years; Wood et al., 2010) "*[Interviewer: Would you say your diet is healthy or unhealthy?] It's reasonably healthy. [Interviewer: Why is that?] No problems. I never suffer from anything. Quite well. I've had six days off sick in 13 years.*" (blue collar worker, age 49 years; Gough & Conner 2006). "*I won't ever cook a chicken because it would only be me eating it, because Liam doesn't eat it and you couldn't really get him to try it.*" (Focus Group 10; Lawrence et al., 2009)	2002++ Gough & Conner 2006++ Gray et al., 2009+ Kennedy et al., 1998+ Lawrence et al., 2009+ Lindsay et al., 2008+ Nic Gabhainn et al., 1999+ Peerhboy et al., 2008+ Spence & van Teijlingen 2005+ Stead et al., 2004+ Whelan et al., 2002+ Withall et al., 2009+ Wood et al., 2010+ Wormald et al., 2006+

SES = socioeconomic status; UK = United Kingdom (of Great Britain and Northern Ireland)

Supplementary Table 8: Presence of themes identified in qualitative review in community-based dietary and physical activity interventions for low-SES groups in the UK, 1990-2009 (shaded columns indicate studies finding effectiveness on one or more outcome/s)

Category	Theme	Facilitator	Barrier	Ashfield-Watt +	Baxter +	Bremner +	Cochrane +	Cummins +	Kennedy -	Lindsay +	Lowther ++	McKellar +	Steptoe ++	Wrieden +	Wrigley -
Available resources		Money, labour													
Awareness of interventions		Word of mouth													
Acceptability of interventions	Attributes of health workers	Skills, knowledge													
		Personal attributes (empathy, trustworthiness)													
		Knowledge of the community													
	Delivery and content	Practical demonstrations				✓			✓			✓			
		Progressive small steps single-sex classes									✓				
		Accessible (at weekend, free, free childcare)													
		Free food												✓	
		Tailored recipes							✓						
		Useful and enjoyable activities													
		Use of familiar and affordable food							✓						
		Delivered by community members rather than health professionals												✓	
	Social inclusion	Social interaction							✓			✓		✓	
		Informal atmosphere												✓	

		Opportunity to chat						
		Humour						
Views and experiences of health professionals and health workers	Knowledge	Health professionals' knowledge of target groups						
Information	Available information	TV, when used positively	✓	✓				
Attitudes to health		Cheap, healthy food was seen as positive by some and actively sought						
Perceived capabilities		Enhancing skills in a non-threatening way (to counter related barriers)			✓			
		Using peer and family support (to counter related barriers)		✓		✓		
		Confidence in experimenting with food and cooking		✓	✓		✓	✓
Affordability		Covering budgeting in nutrition education programmes (to overcome related barriers)						
		Physical activity referral schemes (to overcome related barriers)		✓				
Social norms, preferences, habitual behaviours and lifestyle		Women motivated to cook healthy food to enhance the health of their children						
		Participants in interventions can Positively influence the health behaviours of family and friends						
		Men motivated to engage in 'masculine' behaviours like						

		physical activity to compensate for a healthy diet						
Acceptability of interventions	Associated image		Negative associations with behaviours (PA – clothing)					
			Negative associations with terminology (‘healthy eating’ associated with government policy and boring and not filling food)					
Information	Available information		Information bombardment			✓		
			Confused messages			✓	✓	✓
			Distrust of information					
	Understanding messages		Food messages seen as complex (e.g. compared with stop smoking message)			✓		
			Misinterpretation of terms such as ‘balanced diet’ (seen as a balance of ‘good’ and ‘bad’ food rather than of different food groups)					
			Misinterpretation of 5-a-day message as 5 portions of fruit instead of fruit and vegetables	✓	✓			
Attitudes to health	Existing attitudes		Causes of overweight – attributed to flawed metabolism and genetics					
			Seeking cheap, healthy food less of a concern to some					
Perceived capabilities			Perceived lack of fitness/sporting capabilities				✓	
			Perceived lack of cooking		✓	✓	✓	✓

	skills							
	Lack of confidence in cooking meals from scratch		✓		✓		✓	✓
	Lack of confidence about being able to eat the recommended amount of fruit and vegetables	✓	✓				✓	✓
Lifestyle (current)	Commitments and responsibilities							
	Lack of time							
	Stress							
	Comfort eating							
	Being stuck in a rut				✓			
	Embarrassment							
	Depression							
	Boredom							
Affordability	Buying food	✓	✓	✓			✓	✓
	Transport		✓	✓				✓
	Cooking different meals to suit family preferences							
	Fear of financial risk							
	Lack of prioritisation of healthy food over convenience food when shopping	✓	✓					
	Marketing strategies promoting unhealthy foods	✓	✓					
	Wasting money buying food that the family won't eat							
	Cost of physical activity					✓		
Environmental factors	Lack of local amenities in shopping for healthy foods	✓	✓	✓			✓	✓
	Food shopping with children and pushchairs,		✓					

	including getting on and off transport and getting to upstairs flats					
	Fear of crime and attack for physical activity					
	Dark evenings and poor weather for physical activity					
Social norms, preferences, habitual behaviours and lifestyle	'Bad' food seen as a treat					
	Healthy food seen as 'boring' and unsatisfying	✓		✓		
	Traditional food tastes and preferences of family members prioritised					
	Men prefer to be overweight than 'thin'					
	Parental influence and habit in unhealthy shopping and eating					
	Wanting to uphold the right to personal choice through eating unhealthily					
	Unhealthy habits not seen as unhealthy in the light of positive health status					
	Lack of family support, control and perceived self-importance				✓	

✓ = theme addressed by intervention; PA = physical activity