

Appendix A(1) : Prevention Evidence - Diet and physical activity

Academic Evidence

The following has been used to categorise the quality of the evidence for any intervention

HIGH QUALITY EVIDENCE:

- A. *Systematic review of several randomised control trials*

MIDDLE RANKING EVIDENCE:

- B. *Single randomised control trials*

LOWER RANKING EVIDENCE:

- C. *Non-randomised controlled studies, systematic reviews of non-randomised controlled studies*
- D. *Cohort and case-control studies, Large-scale observational studies, case series studies, systematic reviews of uncontrolled studies*
- E. *Evaluations, descriptive studies, qualitative studies*

** *Short term < 2 years; Medium term 2 - 10 years; Long term >10 years*

Intervention Examples

The Nesta standards of Evidence are used to evaluate practical innovation programmes. A number of physical activity and some dietary intervention projects that have been assessed using the Nesta five standards are included here.

Level 1: Clear description of the intervention

Level 2: Capture data that shows positive changes

Level 3: Demonstrate causality using a control or comparison group

Level 4: One or more independent replication independent evaluations that confirms these conclusions

Level 5: Manual. Systems and procedures to ensure consistent replication and positive impact

	Evidence	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
1	Diet – Children and Young People			
1.1	<p>Breastfeeding Multifaceted approach or a coordinated programme of interventions across different settings with appropriate policies and training</p> <p>Strongest evidence is for breastfeeding peer-support programmes</p> <p>Improvements in breastfeeding (Nationally) varies from £1.9 million to £5.6 million savings</p> <p>Sheffield study found that net investment of £20,000 in a peer support scheme can produce £5,500 net societal benefits. Economic modelling based on the study concluded that an increase in breastfeeding rates over 20% would deem an intervention to be cost effective.</p>	<p><u>Targeted Paid Breastfeeding Peer Support Service, Bristol</u> This targeted peer support service was set up to address health inequalities in breastfeeding in 12 wards in Bristol. Associated with small increases in breastfeeding rates, compared to the rest of the city.</p> <p><u>Wigan Breastfeeding Network peer support service</u> Breastfeeding Network provides a Borough-wide, evidence based, proactive peer support service. The Breastfeeding Initiation rate increased from 45% (2009/10) to 58% (2012/13). The 6 week rate increased from 18% (2009/10) to 29% (2012/13)</p>	<p>Great variation across midwifery, health visiting and children's centres.</p> <p>Some peer schemes but mostly through voluntary agencies. Limited commissioning.</p>	
1.2	Healthy food policy, training and support in the pre-school years	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	Delivered by: pre-school day care settings such as nurseries, crèches	<p><u>Eat Better Start Better Programme</u> Provided by the Children's Food Trust. The Trust worked with five local</p>	Difficult to assess situation but there	

	<p>and playgroups.</p> <p>Food policy which takes a 'whole settings' approach to healthy eating, Policies to support a multi-faceted approach that includes education, activity based learning, behaviour change methods, access to healthy foods</p> <p>High quality evidence indicating changes in bio-medical markers and dietary recall.</p> <p>No economic evidence, difficult to model as effects are over the life course.</p>	<p>authority areas where there were higher than average levels of childhood obesity, higher levels of deprivation and geographical spread. The aim was to develop and pilot integrated food and nutrition training for different settings and families along with an evaluation package. Following successful delivery in Phase 1, the integrated training programme was rolled out nationally to include a further 20 local authorities across England between April 2012- March 2013.</p> <p>This was a programme evaluation, no effect size was measured. The key findings were; Outcome 1: Increased food, nutrition and healthy cooking knowledge, skills and confidence for early years and childcare workforce Outcome 2: Improved healthier food provision for children aged one to five years in childcare settings and at home Outcome 3: Increased food and nutrition knowledge and practical cooking skills for parents and families attending early year's settings. Timescale: There were 2 phases to this programme; both 1 year in duration, follow up to baseline data was collected within a year post intervention.</p> <p>Policy example</p> <p>Guidance for food and drink provision in early years settings (March 2010). The School Food Trust</p>	<p>appears to be few consistent clear policies or schemes across the county</p>	
1.3	Healthy food policy and support in schools	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>As for pre-school</p> <p>Food policy which takes a 'whole settings' approach to healthy eating, Policies to support a multi-faceted approach that includes education,</p>	<p>SPEEDY Study Norfolk (Sport, Physical activity and Eating behaviour: Environmental Determinants in Young people) Identifies the following as being important in influencing children's diets</p> <ul style="list-style-type: none"> • Implementation of National school food standards to help provide children with a good overall diet. Combining teaching about food in the curriculum and the use of school gardens. 	<p>Cambridgeshire: Food for Life Partnership in targeted schools in Cambridgeshire</p>	

	<p>activity based learning, behaviour change methods, access to healthy foods</p> <p>Middle ranking evidence includes Negative effect of vending machines, positive effects for educational opportunities – food in the curriculum, school gardens, school meals</p>	<ul style="list-style-type: none"> A broad definition of what constitutes the school environment is needed when considering interventions to encourage sustainable behaviour changes. 		
1.3	Interventions that reduce socio-economic inequalities in obesity in children and adults	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Individual, community and societal interventions, interventions that use community empowerment mechanisms.</p> <p>Mixed evidence for range of interventions targeting socio-economic inequalities.</p> <p>Limited evidence for group based counselling and for community empowerment approaches</p> <p>Stronger evidence for more complex workplaces approaches , targeted school based approaches</p> <p>Evidence for primary care-delivered tailored weight loss programmes – monthly face-to-face lifestyle</p>	<p>School Nutrition Policy Initiative A 2-year multifaceted education and environment intervention in some low-income schools in the USA increased nutritional knowledge and the availability of healthy food, and reduced the prevalence of overweight children by 35%.</p> <p>Australian Be Active Eat Well community capacity-building intervention was designed by a number of key organisations to build the community's capacity to create its own solutions to promoting healthy eating, physical activity and healthy weight and was delivered universally in all intervention schools. After 3 years, children in the intervention schools showed significantly lower increases in waist circumference and BMI.</p> <p>CEDAR analysis of Whitehall II Study and Norfolk EPIC Study</p> <ul style="list-style-type: none"> Traditional measures of socioeconomic status do not provide a full picture of how a person's economic situation is associated with their health and weight Data from the Whitehall II Study showed that women who reported 	<p>Developing workplace programme in Cambs. Some community level interventions. School based Food for Life Programme commissioned (CCC) focussing on Fenland. Evaluated well in other areas, too early for evaluation in Cambridgeshire</p>	

	counselling on healthy diet and physical activity behaviours, targeted at low-income women, can be effective in reducing body weight.	<p>persistent financial hardships gained more excess weight compared to those who did not.</p> <ul style="list-style-type: none"> • EPIC-Norfolk data showed a greater likelihood of obesity for older men and women who reported hardships. Financial hardships were also associated with less healthy eating in older women and men. • As well as wider strategies to tackle general health inequalities, interventions such as fuel assistance and money management programmes may be required to reduce the impact of financial hardships on health. 		
1.4	Impact of the food environment: access to healthy food outlets	Intervention Examples		
	Some policy level support acknowledging the influence of the food environment on our health is recognised by a number of policy bodies (NICE and Public Health England). However, the UK evidence on associations between takeaway food outlet exposure, diet and body weight has been mixed, and therefore not yet best placed to support neighbourhood-level environmental interventions	<p>A number of Local Authorities, including Waltham Forest and Barking & Dagenham, regulate the proliferation of new takeaway food outlets</p> <p>CEDAR Fenland Study changed the focus of previous studies which were based on residential exposure which can underestimate exposure on a day to day basis. Key findings were</p> <ul style="list-style-type: none"> • Those most exposed to takeaways were almost twice as likely to be obese than those who encountered the fewest outlets. • Those with the highest exposure to takeaways consumed an additional 40g of calorific food a week (equivalent to half a small serving of French fries), and had a BMI on average 1.21 units greater than those least exposed. <p>Concluded - strong case for regulating the proliferation of takeaway food outlets in order to help people choose healthier foods and maintain a healthy body weight.</p>		
2	Weight Management Interventions			
2.1	Weight Management for before, during and after pregnancy	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments

	<p>Middle ranking and lower ranking evidence Targeted specialist structured information and advice during pregnancy and post delivery</p> <p>Uncertainty around all aspects of the economics of weight management in pregnancy relating to the complexity of costs and poor information about the interventions undermining any robust modelling.</p> <p>QALY £26,454 for a pregnancy intervention costing £100 which achieves a 1Km weight loss.</p> <p>Post delivery QALY £44,144 over a 15 year time span then £9,096 over a lifespan.</p> <p>Weight loss during pregnancy: lifetime effect of 5km weight loss on a cohort of 1000 = £177,787 saving</p>	<p>Pregnancy Plus: Dartford & Gravesham NHS Trust. A 10 week community based health intervention programme, aimed at obese pregnant women with a body mass index of 30kg/m2. The majority of women that attend the programme maintained a gestational weight gain within recommendations.</p> <p>The Monday Clinic: (Doncaster) Midwifery-led service providing support to pregnant obese women to loose weight. Demonstrated a 1% reduction in Lower Segment Caesarean Section rate compared to national data. This 1% reduction equates to a cost saving of approximately £93,000 per annum at the Doncaster site.</p>	Variation in specialist/targeted advice offered to pregnant and post partum women	
2.2	Children's Weight Management Services	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>High quality evidence for community lifestyle and weight management services for overweight and obese children & <18s. (<6s excluded) Parental/carer involvement, whole family approaches, groups, referrals</p>	<p>MEND and other national multi-component programmes have had mixed evaluations. Some of the programmes report improvements in the BMI z scores</p>	<p>ENERGIZE Programme evaluated by MRC weight changes –BMI z scores) comparable to national programmes.</p>	

	<p>Evidence for reduction BMI z score, improved psychological markers, increased motivation to manage weight improvement in attainment, attainment</p> <p>Estimated that an intervention costing £100 per person would be cost effective if a child or young person could be moved to a lower weight trajectory (as little as 0.5% lower) than it would have been without the intervention. However, this would be the case only if the 0.5% weight difference were to be maintained throughout life. If, on average, they regained the weight within 10 years or less it is estimated that the intervention would no longer be cost effective.</p>			
2.3	Adult Weight Management Services	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Multi-component (behavioural change) lifestyle weight management services (aged 18 and over), courses, clubs or groups.</p> <p>There is high quality evidence that these programmes lead to weight loss over 12/18 month period and can increase physical activity and dietary</p>	<p>Weight management services around the country are provided using different models. There is no clear evidence regarding the model for weight management interventions other than they should include the key components.</p>	<p>LA currently commissions behavioural multi-component weight management services. These have been achieving the NICE recommended outcomes.</p>	

	<p>changes. Weak evidence that they are cost effective</p> <p>12-week programme costing £500 (more for greater weight loss or starting BMI) or less will be cost-effective for adults who are overweight or obese and the weight loss is life long</p> <p>However, if they were to regain the lost weight within 2 to 3 years, few, if any, of these interventions would be cost effective. To be cost effective, they would need to cost less than £100 per person and the average weight lost would need to be in excess of 5 kg.</p>			
3.	<p>Physical Activity Evidence indicates that there a number of interventions that are required to increase physical activity levels which include behavioural, organisational, environmental and the physical environment interventions</p>			
3.1	Physical Activity and Children and Young People	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Middle ranking evidence Programmes are most effective if they include educational, curricular and environmental components Under 5s Opportunities for play inside and outside, creation of appropriate environments</p>	<p>SPEEDY (Sport, Physical activity and Eating behaviour: Environmental Determinants in Young people) is a large study in primary school children in Norfolk. Initial findings and recommendations for multi-component interventions:-</p> <ul style="list-style-type: none"> Schools, communities and parents all have a role in helping children stay active. Playgrounds with good quality sports and play facilities 	<p>No overall programme. History of under 5s physical activity pilot that evaluated well</p>	

<p>Community based interventions - Interventions based in school with a substantive outreach to families and/or community agencies are likely to be effective in promoting short-term physical activity behaviour change.</p> <p>Parental involvement is important for programmes directed towards adolescents.</p> <p>For adolescents (12-18 years) PE-focused programmes targeted at both girls and boys appear only to be effective in promoting physical activity in boys.</p> <p>There is no consistent evidence to suggest that children and adolescents of different ethnicity, socioeconomic status, or initial weight status respond differently to physical activity programmes.</p> <p>Active travel –Children who walk or cycle to school are more physically active overall. Lower ranking evidence for Walk to School schemes that are enhanced with parental/care involvement. (See 4.2 below)</p> <p>Very limited economic evidence with respect to the promotion of physical activity, play and sport</p>	<p>encourage physical activity. However, on wet days children encouraged to play outside are less active during breaks than those allowed to pursue active games indoors.</p> <ul style="list-style-type: none"> • Creating a supportive environment for walking and cycling to school could have positive effects on overall levels of physical activity. (4.2 below) <p>Successful programmes for children GreatFun2Run programme, England, 7-11 year olds. Included CD of resources for teachers; events to give children a goal for increasing physical activity; interactive website www.greatfun2run.org; local media campaign; summer activity wall planner. www.ncbi.nlm.nih.gov/pubmed/19154622 www.ncbi.nlm.nih.gov/pubmed/21767356 Switch-Play programme, Australia, 10 year olds. 3 programmes evaluated, including various combinations of lessons on Behavioural Modification, lessons on Fundamental Movement Skills, and parental info and support. www.ncbi.nlm.nih.gov/pubmed/18253162 KISS Programme, Switzerland, 6 & 11 year olds. Included specialist-delivered PE programmes; physical activity breaks to academic lessons; physical activity homework. www.ncbi.nlm.nih.gov/pmc/articles/PMC2827713</p>		
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3.2	Physical Activity and Adults	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Workplaces Middle ranking evidence for workplace facilitators, supportive physical environment, incentives, flexible working practices, screening (health checks), workplace walking schemes</p> <p>Overall, workplace physical activity counselling and fitness programmes were found to be cost effective. In addition, a workplace physical fitness programme may be broadly beneficial to employers in that it can help reduce absenteeism</p>	<p>CSPN Workplace Challenge, national programme from the County Sports Partnership network funded by Sport England which aims to engage workplaces in sport and physical activity. It is a motivational tool developed to encourage participants to be more active through online activity logging and promotion of offline opportunities for participation</p> <p>NESTA Level 2 captures data that shows positive change.</p> <p>The Well@Work programme is a national workplace health initiative, comprising of nine regional projects encompassing 32 workplaces representing different sized organisations and sectors. It aimed to assess the effectiveness of a broad workplace health programme in promoting and influencing the health and wellbeing of the workforce. Each of the projects implemented a set of interventions and actions aimed at promoting and supporting healthy lifestyles. Initiatives were focussed on three key lifestyle behaviours: increasing physical activity; encouraging healthy eating; and smoking cessation.</p> <p>NESTA Level 2 captures data that shows positive change</p>	Developing countywide workplace programme but little support from workplaces for physical activity interventions	
3.3	Physical Activity in the community	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	Increasing physical activity in the community includes behavioural, accessibility and environmental factors (see Physical Activity and Physical Environment)	These are local authority initiatives which aim to increase activity in local communities by improving the accessibility of existing local facilities and services to certain target populations. Physical activity levels are the primary indicator used to demonstrate impact; this has been measured	Isolated examples of using involvement of local people in the development of programme	

		<p>by tracking session attendances or using self-report methods. Social benefits are anecdotally reported through individual case studies. Reported benefits include decreased levels of anxiety and depression and increases in feelings of social inclusion and confidence.</p> <p>Birmingham be Active This is a partnership initiative between Birmingham City Council and the three Birmingham PCTs (CCGs) that aimed to increase physical activity levels among Birmingham residents through providing free access to public leisure centres, green space and structured chronic disease management services.</p> <p>The programme is currently under review and development to consider the inclusion of e.g. smoking, NHS health checks, specialist weight management, etc. Evaluation performed by Birmingham University. Of the participants followed up in the prospective study, 19% were inactive at the time of joining, and 89% of these increased their activity levels to 'moderately' or 'very active' over three months; 40% of members had lower than recommended physical activity levels at baseline, of which 70% increased their activity levels to recommended levels over three months.</p> <p>Higher levels of physical activity at follow up were related to lower levels of anxiety and depression. The results of the cost benefit analysis (CBA) were sensitive to the intervention costs. When costs were adjusted to reflect the revised model of implementation, the net-benefit of Be Active was positive. NESTA Level 2</p> <p>Leeds Let's Get Active Leeds Let's Get Active is a programme of free gym and swim sessions as well as beginner running, family sports activities and health walks. The main aim of LLGA is to support inactive people to become active. LLGA provides a supportive environment for those new to or returning to activity and supports those with medical conditions, those at risk of social isolation and those wanting to lose weight.</p>		
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	<p>Behavioural Change: There is some lower ranking evidence that the act of monitoring and measurement in itself can increase the level of physical activity.</p> <p>The 'measurement effect' suggests that the rise in physical activity self-monitoring tools and mobile apps represents a promising opportunity to support people in trying to achieve more regular physical activity. It also underlines the importance of continued education and information about recommended physical activity levels.</p>	<p>Analysis carried out in March 2014 demonstrated that by using LLGA session attendance data as an indicator, 34.8% (n=3117/8951) of participants reporting ≤ 1 day moderate to vigorous intensity activity per week at baseline had attended at least one session since signing up. Further analysis is ongoing. A free, universal offer in leisure centres would require funding to cover loss of income as well as officer time, marketing and coach/delivery etc. This all depends on the offer that is developed</p> <p>ProActive Study rigorously evaluation of individual-level physical activity interventions showed no difference between the control and intervention groups. However, there was an increase in objectively measured physical activity equivalent to 20 minutes of brisk walking per day across <i>both</i> groups, compared to baseline levels, which suggests that simply being measured may increase physical activity.</p> <p>FAB Study of adults in Cambridgeshire, providing feedback on people's levels of physical activity had no effect on objectively measured physical activity or intention to increase physical activity. However, it did increase participants' awareness of their level of physical activity.</p>		
3.4	Physical Activity and the NHS	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	Exercise Referral Schemes Lower ranking evidence Schemes can lead to improvements in	<p>Northumberland Exercise On Referral Scheme</p> <p>An exercise referral scheme that aims to support weight loss, social cohesion and increase physical activity levels of people who are</p>	Number of exercise referral schemes offered by local	

	<p>self- reported levels of physical activity when compared to receiving advice only.</p> <p>There is some evidence that for patients referred with CHD risk factors, there is more likelihood of increases in levels of physical activity.</p> <p>It is not possible to identify what elements of the intervention support successful uptake of ERS, adherence to ERS and long term behaviour change.</p> <p>A number of exercise referral schemes have been set up in the UK.</p> <p>Insufficient evidence to assess the relative cost effectiveness of the different types of schemes. Some schemes may be cost effective, or may only be cost effective for some subgroups</p> <p>Evidence that exercise referral is only marginally more effective than brief advice and leads to a very small additional gain in quality-adjusted life years (QALYs).</p> <p>Economic evaluation (2014) showed that current GP exercise referrals were <i>not</i> cost effective. The mean estimate for ICER was £76,276 (above NICE £20,000 per QALY).</p>	<p>inactive as well those who have certain medical conditions. The programme receives 2,000 referrals per year with an 80% uptake. Based on analysis of those referred between October 2011 and March 2013, 12-week adherence was 57.6% and 24 week adherence was 46.5%. 2, 233 patients referred from primary and secondary care between July 2009 and September 2010.</p> <p>Intervention: a 24-week program including motivational consultations and supervised exercise sessions for participants. Results: uptake was 81% (n=1,811), 12-week adherence was 53.5% (n=968) and 24-week completion was 42.9% (n=777). Participants who completed the intervention significantly increased their self-reported physical activity levels at 24-weeks $t(638) = -11.55, p < 0.001$.</p> <p>Conclusion: completer's increased physical activity at 24 weeks, although the levels achieved were below the current UK guidelines of 150 min of moderate exercise per week. Leisure site was associated with uptake, adherence and completion.</p> <p>NESTA Level 3 – control trial in place</p> <p>Number of schemes e.g. PALS Practice Activity and Leisure Schemes – LA Leisure Services, health agencies. 45 week schemes which aims to encourage participants to take part in group or individual activity, teaches how to incorporate activity into their daily living</p> <p>NESTA Level 2 captures data that shows some positive change</p> <p>Other examples of partnerships between Leisure Services, LAs and NHS evaluate at NESTA level 2 i.e. capture date showing positive change</p>	<p>authorities combination of funding i.e. LA with patient contribution, public health funded</p>	
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3.5	Physical Activity and Brief Advice	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>High ranking evidence Brief advice for physical activity in primary care is effective, but most or all of the benefit arises from interventions of moderate duration (5 - 20 min). Providing more than brief advice will have cost implications but may have little additional benefit. Evidence found key barriers to success were practitioner views and skills</p> <p>The incremental cost-effectiveness ratio (ICER) of brief advice was £1,730, compared with usual care.</p>	<p>Let's Get Moving UK Government backed Let's Get Moving based on brief advice in primary care has limited evidence and not fully implemented. Barriers focus on staff beliefs and attitudes.</p> <p>McMillan Physical Activity Behaviour Change Pathway This is based on the NHS physical activity care pathway 'Let's Get Moving'. Provides an overarching framework for embedding physical activity into cancer care and works to develop sporting opportunities for people with cancer. Included in this is the delivery of the Get Healthy Get into Sport Macmillan Project and the provision of an evidence based approach to service delivery.</p> <p>A national evaluation is currently taking place to review health, social and economic outcomes of the participants. Local evaluations have also taken place. Results from the evaluation revealed positive trends in physical activity levels and care outcomes for patients. Quality of life and wellbeing outcomes reported: a change in beliefs relating to physical activity, reduced unhealthy behaviours, increased social activity, decreased social exclusion, and increased measures of wellbeing.</p> <p>There are number of ongoing evaluations. Nesta level 3 – control in place</p>	<p>No structured programme operational. Let's Get Moving was introduced several years ago but did not develop due to lack of support in primary care.</p>	
3.6	Physical activity and technology	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	No academic evidence available	There are current studies of the use of technology in increasing physical activity.		

		<p>Myzone MYZONE® is a chest strap and monitoring system that transmits heart rate, calories and effort in real time to a live display and wirelessly uploads the data to a logbook that can be accessed online or via the free MYZONE® Lite app.</p> <p>MYZONE® collects data to the benefit of physical activity stakeholders, and enables health and fitness professionals to stay connected with their users.</p> <p>The ukactive Research Institute used MYZONE in a yearlong study 'Project Get UK Active' and found clinical and statistically significant reductions in body mass, body fat, body fat percentage, waist circumference & BMI.</p> <p>Sheffield Hallam University evaluated the product and concluded the MYZONE belt is an effective way of increasing frequency and duration of physical activity undertaken by those referred through a physical activity referral scheme.</p> <p>Nesta level 2 captures data that shows positive change, has undergone an evaluation</p>		
3.7	Physical Activity and Walking	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Community-wide walking programmes that offer a variety of routes, paces and distances at different times of the day and offer encouragement and support to individuals who are not active enough to take part.</p> <p>Middle to lower ranking evidence Walking school bus: increases in</p>	<p>Milton Keynes Health Walks - Walking for Health MK walks is a local programme which is part of the national project Walking for Health. Walking for Health is targeted at those wishing to improve their health, this could be due to being inactive or due to existing medical conditions (including Cancer patients - as funded nationally by Macmillan Cancer Support). Walking for Health Milton Keynes offers a range of walking groups, to suit walkers of all fitness levels. Walks are led across the whole city to provide the opportunity for participants to see the wide range of parks and open spaces available</p>	<p>Examples of Healthy Walks schemes organised through LAs, Health Trainer Service, GP practices, Public Health</p>	

	<p>physical activity levels of up to 25%, and sustained increases in walking levels for up to 30months post intervention.</p> <p>Inconsistent evidence for Individual-level change in community-based led walking group interventions:</p> <p>Individual-level change in interventions to increase independent community-based walking Weak evidence suggesting that interventions increase individual level walking for up to 13 weeks post intervention.</p> <p>Walking bus intervention study showed incremental cost per QALY to be approximately £4,007.</p> <p>Two organised walking group interventions showed a cost per QALY of £301 and £475.</p>	<p>in Milton Keynes.</p> <p>There were observed increases in self-reported physical activity levels with many participants increasing the frequency of walking from once to three times a week. Participants also reported an increase in social inclusion and decreases in depression and anxiety while maintaining and improving their health (helping with weight loss, controlling blood pressure) and level of fitness. Those who are newly retired find the volunteering aspect of the walking groups a new challenge to keep their minds active and provide a purpose for their week. The University of East Anglia is currently undertaking a research study led by Macmillan to evaluate the programme; research includes questionnaires and pedometer readings.</p> <p>MK walks is a local programme which is part of the national project</p> <p>Nesta Level 2 – captures data that sows positive change</p> <p>Fitter For Walking Fitter for Walking is a community based project delivered by Living Streets in conjunction with local authorities to support community groups and residents in making improvements to their neighbourhood environment to promote walking as a mode of travel for local journeys. Areas were selected to participate in the project by Living Streets based on reported low levels of physical activity.</p> <p>Impact evaluation performed externally by the BHF National Centre for Physical Activity and Health, and Loughborough University. Residents and communities all reported perceptions of improvements in community cohesion and social interaction in most of the projects. The Health Economic Assessment Tool (HEAT) for walking found the projects were generally likely to result in significant financial savings from decreased mortality as a result of an increased number of people walking. The benefit to cost ratios (BCRs) were positive between 0.9 and 46:1 for all the FFW interventions using at least one measure of</p>		
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		<p>walking level (duration or distance). 68% of respondents indicated that they felt fitter, 55% felt less stressed, 80% said that the amount of walking they do had increased and 69% of those respondents reported walking more for leisure.</p> <p>Nesta Level 2 – captures data</p> <p>10,000 Steps Use of pedometers and group approaches used to engage people in walking www.10000stepsuk.com</p>		
4	Physical Activity and the Physical Environment			
4.1	Physical activity and planning	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Lower ranking evidence Ensure planning applications for new developments always prioritise the need for people (including those whose mobility is impaired) to be physically active. Ensure local facilities and services are easily accessible on foot, by bicycle and by other modes of transport (Active Travel) involving physical activity. Ensure children can participate in physically active play'</p>	<p>RESIDE (Australia) One recent controlled longitudinal study; the RESIDE study from Western Australia found that implementing community design principles of 'liveable' developments resulted in a net increase in walking of 27 min/week over three years. The size of the increase in walking was associated with the degree of compliance with these policies.</p>	Variable across the County	

4.2	Physical activity and transport	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Lower ranking evidence Active Travel: Ensure pedestrians, cyclists and users of other modes of transport that involve physical activity are given the highest priority when developing or maintaining streets and roads (this includes people whose mobility is impaired).</p> <p>A modelling study by Jarrett et al (2012) estimated the NHS costs that could be averted by a large shift towards active travel in England and Wales. A shift now in walking from 0.6 km/day to 1.6 km/day, and in cycling from 0.4 km/day to 3.4 km/day (similar to current levels in Copenhagen) could result in changes in the costs of treating eight health conditions related to physical activity. The study estimated that over 20 years, the expenditure averted would be over £17 billion (see graph below).</p>	<p>The following methods for increasing Active Travel are included in the evidence;</p> <ul style="list-style-type: none"> • re-allocate road space to support physically active modes of transport • restrict motor vehicle access • introduce road-user charging schemes • introduce traffic-calming schemes to restrict vehicle speeds (using signage and changes to highway design) <p>Key methods for children</p> <ul style="list-style-type: none"> • reduce the convenience of the car and improving the convenience of active modes, and improving the safety of routes to school • improve the cycling infrastructure, crossing guards (lollipop people), and safe places for children to cross the road. • availability of a 'Park and Stride' schemes, and provision of pedestrian training (found in boys only in this study) • increasing support from parents and friends, and living in a supportive environment (See above 3.1 and 3.7) <p>iConnect study of Sustrans-back walking and cycle routes in Cardiff, Kenilworth and Southampton Showed that adults whose active travel increased over the course of a year reported about two hours more physical activity per week on average, whereas those whose active travel decreased reported about two hours less. There was no evidence of a compensatory decrease in recreational physical activity.</p> <p>CEDAR</p>	Variable across the county	

		<p>In Cambridgeshire, commuters who included active travel as part of their car journeys through the use of offsite car parks or park-and-ride sites reported an average of 12 minutes of walking or 17 minutes of cycling to and from work per day. Emerging findings also indicate on average 20% of the journey to work for those travelling with by bus, park-and-walk or park-and-cycle, is spent in physical activity of at least moderate intensity. The current rise in public transport fares relative to the cost of motoring is, therefore, unlikely to support increases in physical activity.</p> <p>Cycling in Hackney Research showed more residents commuted by bike than car. Cycling has risen in 29 out of 33 London Boroughs since 2001, with Hackney having the highest proportion of commuter journeys taken by bike at over 15%.²² A number of factors have contributed to the rise of cycling in London – the congestion charge (introduced in 2003), significant investment in cycle infrastructure across the city, and the introduction of the Barclays cycle hire scheme. In Hackney cycling increase is associated with a strong pro-cycling community and support from the local authority, which has prioritised cycling and walking over private car use for a number of years through changes to the physical environment.</p>		
4.3	Physical activity and cycling	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Lower ranking evidence Address infrastructure and planning issues that may discourage people from wanting to cycle.</p>	<p>Implement town-wide programmes to promote cycling for both transport and recreational purposes. These should be linked to existing national and local initiatives. Programmes could include provision of information, including maps and route signing, cycle hire schemes (among other components) Key factors are:</p> <ul style="list-style-type: none"> • Ensure cycle parking and residential storage issues are addressed. 	Variable across the county	

		<ul style="list-style-type: none"> • Ensure travel by cycle and public transport is integrated to support longer journeys. • Programmes could include provision of information, including maps and route signing, cycle hire schemes (among other components) • Ensure cycle parking and residential storage issues are addressed. • Ensure travel by cycle and public transport is integrated to support longer journeys.' 		
4.4	Physical activity and walking	Intervention Examples	Specific Cambridgeshire information/recommendations	Comments
	Lower ranking evidence. Address infrastructure issues that may discourage people from walking, for example, motor traffic volume and speed, lack of convenient road crossings, poorly maintained footways or lack of dropped kerbs, where needed.	<p>Ensure walking routes are integrated with accessible public transport links to support longer journeys.</p> <p>Multi component initiative Cheshire village of Poynton built a radical shared-space road infrastructure. Some 27,000 vehicles, 6% of them HGVs, were passing through the village each day, making life a misery.³³</p> <p>Rather than use traditional traffic engineering, the local council employed shared-space designers to create a sequence of informal crossings based on pedestrian desire lines where people actually choose to cross, a central reservation to help pedestrians cross narrow traffic lanes and keep vehicle speeds low, and repaved footways, including private shop forecourts, to enhance the pedestrian environment. Initial signs are that the scheme has revitalised the village and been welcomed by motorists and pedestrians.³⁵ It has received a number of design awards. A full evaluation is will assess whether levels of walking and cycling in the scheme and surrounding area</p>	Variable across the county	
4.5	Physical Activity and Public Open Spaces	Intervention Examples	Specific Cambridgeshire information/recommendations	Comments
	Lower ranking evidence Intervention: 'Ensure public open spaces and public paths can be		Variable across the county	

	reached on foot, by bicycle and using other modes of transport involving physical activity. They should also be accessible by public			
4.6	Public Open Spaces and Public Paths	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	Lower ranking evidence Intervention: 'Ensure public open spaces and public paths are maintained to a high standard. They should be safe, attractive and welcoming to everyone	Some lower ranking evidence linking park refurbishment with increased walking within the park. Some lower ranking evidence (a) linking the upgrading and maintaining community playgrounds with increased physical activity in local schoolchildren, perhaps restricted to those with a lower BMI, and (b) linking the attractiveness of coastal and woodland trials with increased frequency or duration of visits	Variable across the county	
4.7	Physical Activity and Workplaces	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	Middle and lower ranking evidence Intervention: Provide or improve facilities for walking, jogging or cycling at workplace and other campus developments based on evidence	See 3.2 above	Variable across the county	
4.8	Physical Activity and School Playgrounds	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	Middle and lower ranking evidence Ensure school playgrounds are designed to encourage varied, physically active play, for instance by using different colours.	Studies showing that designing school playgrounds in this way promoted physical activity in children; not possible to summarise an overall effect size. Some evidence to support providing a greater number and variety of play facilities. (See 3.1 above)	Variable across the county	

5	Older People			
5.1	Older People and Malnutrition	Intervention Examples	Specific Cambridgeshire information/ recommendations	Comments
	<p>Raising awareness & screening for malnutrition in community & care settings</p> <p>Impact of increased screening, early intervention & appropriate treatment could lead to a saving of £71,800 per 100,000 people.</p>	<p>EPIC-Norfolk Study Key factor is Lack of social relationships affects many health behaviours and outcomes, including eating well.</p> <p>Single, widowed & divorced over-50s ate less healthily than those with partners, with reduced variety being worse in men, those living alone and the socially isolated.</p> <p>Recommendations: strengthen social ties in older people, and suggest that tailored interventions need to consider more than a single social factor when addressing healthy eating e.g. the 50s are more likely than other groups in the population to experience changes in their social relationships. These moments of change are important to target in assessment and intervention. For example, around the time of widowhood, assessment of risk to healthy eating needs to consider gender, living arrangement and friend contact.</p>	No formal requirements for care homes	
5.1	Older People and Physical Activity	Interventions	Specific Cambridgeshire information/ recommendations	Comments
	Occupational therapy and physical activity interventions to promote the mental wellbeing of older people in primary and residential care.	The programmes evaluated were generally community-based, well organised and run by trained instructors. The findings apply to similar populations (relatively healthy and independent, and motivated to take	Some LAs leisure services offer bespoke sessions for older people, Fall prevention	

	<p>High quality evidence that mixed exercise has small to moderate effects on mental health, physical health, and psychological well being.</p> <p>A number of studies indicated strength and resistance exercise had positive mental health effects for frail older people living in the community.</p> <p>Middle and lower ranking evidence for walking and toning & stretching. Improved effect on mental health time limited to one year.</p> <p>Middle ranking evidence for occupational therapy (OT) interventions that promote a range of activities including physical activity.</p> <p>Two studies provided good evidence about the cost-effectiveness of interventions and showed a 2-hour group session of preventive advice from an OT per week is cost effective in the USA with an incremental cost per QALY of \$10,700.</p> <p>Twice-weekly exercise classes led by qualified instructors are probably cost effective in the UK with an incremental cost per QALY of £12,100</p>	<p>exercise) in similar community settings in the UK. The sole qualitative study highlights the importance of appropriate facilities and good supervision.</p> <p>Well elderly intervention model The 'Well elderly' study (RCT, USA) evaluated the efficacy of preventative occupational therapy to reduce health-related decline among urban, multi-ethnic independent-living older adults.</p> <p>The focus of the programme was health through occupation, e.g. grooming, exercising and shopping. The programme was delivered in weekly (6–10 people, 2 hours) and monthly (one to one, 1 hour) sessions over a 9-month period.</p> <p>The key outcome was to help participants better appreciate the importance of meaningful activity in their lives, as well as to impart specific knowledge (didactic teaching) about how to select or perform activities (direct experience) so as to achieve a healthy and satisfying lifestyle across a broad range of activities.</p> <p>Lifestyle matters intervention model (Mountain et al. 2006) The 'Lifestyle matters' study was an adapted version of the 'Well elderly'</p>	programme	
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	<p>Limited economic analysis. The most cost-effective intervention was a thrice-weekly community-based walking programme, delivered to sedentary older people who are able to walk without assistance. Modelling gave incremental cost per QALY of £7400 after 6 months; Modelling was also used to enhance three RCTs of advice about physical activity. Such advice had an estimated incremental cost per QALY of £26,200. The estimated incremental cost per QALY rose to £45,600 for proactive health promotion by nurses in Canada in addition to usual home care for people over 75.</p>	<p>intervention piloted in the UK to determine feasibility in a UK setting. The programme ran for 8 months. A mix of qualified OT's working with others is considered the best arrangement. The programme is delivered through a combination of group sessions, individual sessions and visits or outings, giving participants the opportunity to put their ideas into practice. Twenty-nine sessions are included in the manual based around a number of themes that reflect the current body of literature on ageing and quality of life.</p>		
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