

Evaluation of the Phase 2 Snack Right Social Marketing Project – base-line data

A preliminary report

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1. Executive Summary

This report is produced to summarise the findings of the base-line survey of parents/carers attending a children's centre in Cheshire and Merseyside prior to the launch of the Phase 2 Snack Right social marketing intervention. A more comprehensive final report will be produced in March 2009 that will include an analysis of the follow-up questionnaire, quantitative and qualitative feedback from the Snack Right events and qualitative data to give further insight into the social marketing project. Snack Right was conducted in two Phases. Phase 1 took place in 2007 and the intervention was evaluated by Liverpool John Moores University (LJMU). The Phase 2 evaluation is being led by Liverpool Public Health Observatory with the assistance of LJMU.

Social marketing is the application of commercial marketing, theories, principles and practice to achieving change in behaviour likely to improve health. Snack Right was designed to improve the nutritional quality of snacks given to pre-school children in deprived areas of Cheshire and Merseyside, by increasing the intake of fresh fruit and vegetables as a snack of choice. There is considerable government support for the use of social marketing techniques to promote healthy behaviours, whilst the NHS is reorientating itself towards disease prevention and health promotion.

There is evidence that eating habits developed in childhood can influence adult eating patterns and future health. Poor nutrition during the first three years can have short and long-term adverse effects on physical and mental development as well as increasing the risk of chronic adult disease. Research suggests that pre-school children's diets could be improved particularly in more deprived areas where there is a strong link between deprivation and obesity prevalence for children in reception and Year 6. This is particularly the case within nearly all PCTs on Cheshire and Merseyside. Thus the launch of Snack Right is very timely and relevant.

Data collected

A total of 335 questionnaires were collected from parents and carers who attend children centres within Cheshire and Merseyside. The average age of respondents was 32 years.

Overall, there has been an improvement in the more positive responses since the Phase 1 evaluation. For instance, more children have been reported to be snacking mid morning and mid afternoon. Also more respondents considered fresh fruit and vegetables were good for their pre-school child's health and that snacks their child eats were healthy. There was a higher proportion claiming their pre-school child ate vegetables. A smaller proportion claimed that it was hard to get their child to eat fruit and vegetables. Less reported that the barriers to healthy eating were a problem. However, none claimed to have attended a Snack Right event and only a small percentage (13%) had heard of Snack Right, whereas after the Phase 1 intervention 56% were aware of Snack Right. This demonstrates that campaigns need to be continuous, to have a lasting effect on behaviour. Most respondents (49%) were in the middle class grouping (social classes (SC) III non-manual and manual), with equal numbers in the lowest (SC: IV and V) and highest class grouping (SC: I and II).

In contrast more respondents during the Phase 1 evaluation were from the lower social class grouping.

Snacking

Most respondents would give their child snacks mid morning or in the afternoon. The vast majority thought fresh fruit and vegetables were good for their pre-school child's health and their pre-school child was eating healthy snacks. However, almost a half agreed that snacking was vital to their pre-school child's health. Although the average number of fruit and vegetable snacks eaten per day was 3 below the recommended level of 5 portions. Respondents found it easier to give fruit than vegetables to their child.

Significantly more parents with a child under 2 years thought their child ate healthy snacks and more disagreed that it was hard to get their child to eat vegetables.

Food Eaten

The vast majority stated that their children ate fresh fruit and fresh, frozen or tinned vegetables daily. The majority reported that their pre-school child drank water and consumed full-fat milk or yoghurt. Still a relatively high proportion of respondents reported their pre-school child was eating less desirable foods: such as sugared cereals, biscuits/cereal bars, sugared soft drinks, crisps and sweets or chocolates. It is not substantiated how many times a day these are given. It was claimed that fried vegetables and baked beans were consumed less.

Significantly more respondents from the lowest grouping said their child ate sweets or chocolate and fried vegetables. Carers 36-45 were significantly more likely to claim their child had consumed biscuits or cereals bars.

Children 2 years and over were reported as eating more of the less desirable foods: cakes/puddings, sweets/chocolate, crisps, biscuits/cereal bars, sugared soft drinks and breakfast cereals. However, they were said to be consuming significantly more salad, but younger children were claimed to be eating significantly more fresh, frozen or tinned vegetables. Low fat milk and yoghurt can be introduced from around 2 years, so understandably significantly more were consuming it in the 2 years and over group. However, although low fat food is not recommended for those under 2 years, 1 in 5 was consuming it.

The children 2 years and over were consuming significantly more of the 5 sugared foods listed excluding baked beans. For the under 2s the average was 1.5. Only two children (under 2) had the 5 sugared foods listed and nearly a third had only one. For the children 2 years and over, the average was 2.5. Most children in this age-group, just over a third, had 3 sugared foods and eleven had the 5 sugared foods. The average number of sugared foods eaten by all children was 1.7, with most eating 3.

Opinions on fresh fruit & Vegetables

The majority of opinions on fruit and vegetables were very positive in that they were considered good tasting, convenient and varied. However, there were mixed views on the price with about a third considering that fruit was expensive and about a quarter thinking vegetables were.

Barriers to healthy eating

The majority of respondents disagreed with most of the barriers listed to healthy eating particularly that cooking was not important. They felt that they had the time to shop and cook and that they had the necessary skills to prepare food. A small minority agreed with the statements that there were confusing health messages, and that the availability and quality of food locally or child pestering would make healthy eating harder. The two main barriers were that fresh food goes off quickly and the price of healthy food can be expensive. However, significantly more (indeed over a third of respondents in the highest social strata grouping (SC: I and II)) felt that the price of healthy food locally did not make it harder to eat healthily.

Interestingly, significantly fewer respondents with a child under two compared to those with a child 2 and over agreed that children's pestering was a problem.

Incentives to healthy eating

Most respondents agreed with the statements in particular that the price of fruit and vegetables was important and were encouraged to buy fruit and vegetables when they were on special offer in supermarkets. Recipe ideas were also important, advertising the healthy benefits of fruit and vegetables with celebrities or cartoon characters promoting them. Less important but still claimed by the majority of respondents as something they should know is: how to cook fruit and vegetables, what their benefits are and how much of them to eat a day.

Knowledge of Snack Right and healthy start

Only about an eighth of the respondents claimed to be aware of Snack Right. Of those being aware of Snack Right most had heard through their children's centre, with around 1 in 5 having received a Snack Right leaflet. A very small minority had applied for healthy start as a result of Snack Right, which is understandable before the Phase 2 intervention. Nearly a half had not heard of the vouchers, and only a small proportion of respondents claim to use them for fruit and vegetables. However, nearly a quarter of those who use the vouchers for fruit and vegetables are in the lowest social strata. Of those who were aware of Healthy Start vouchers knowledge of where they can be used was quite poor, although the majority were aware that they can be used in major supermarkets. Those respondents from the control group were significantly more aware of where they can be used, but this knowledge should change after the intervention group have had access to the snack right events.

In conclusion

It was interesting that the younger children under 2 years were eating more healthily than children 2 and over. This shows awareness in parents and carers who are trying very hard to give their child a good diet; unfortunately as the child grows more outside influences appear to prevail. The survey has highlighted areas that specifically need attention, some of which are being addressed by Snack Right.

2. Introduction

Background

ChaMPs Social Marketing Group (formerly known as Big Noise) was set up by the Directors of Public Health (DsPH) across Cheshire and Merseyside to assist the PCTs across these counties to understand social marketing to improve health. It was developed in response to the Choosing Health White Paper.¹ Social marketing is the application of commercial marketing, theories, principles and practice to achieving change in behaviour likely to improve health. The DsPH decided in 2005 to focus on a single social marketing intervention 'Snack Right'. The aims of this project were to improve the nutritional quality of snacks given to pre-school children in deprived areas of Cheshire and Merseyside and to gain experience and build capacity in social marketing throughout Cheshire and Merseyside. The evaluation of the project has been undertaken in two phases involving action research and planning meetings that are informing the development of the project. The Liverpool John Moores University (LJMU) have completed an evaluation of the phase 1 intervention.² Liverpool Public Health Observatory are leading the evaluation of phase 2 assisted by LJMU.

Purpose of the Social Marketing Group:

- To gain a better understanding of the process of social marketing across Merseyside and Cheshire.
- To gain social marketing skills and develop capacity and capability in the Public Health Workforce across Cheshire and Merseyside.
- To make a positive difference to some health behaviours across Cheshire and Merseyside through the delivery of a social marketing campaign.
- To evaluate the effectiveness of a social marketing project across the Cheshire and Merseyside region.
- To feedback learning to the Primary Care Trusts across Cheshire and Merseyside, other organisations involved and the National Social Marketing Strategy.
- To agree a long term plan for supporting social marketing activity across the Cheshire and Merseyside region.

Government support for social marketing to promote healthy behaviours

To promote fruit and vegetables as a snack of choice in pre-school children using social marketing is timely, given the Government's reinforcement for its application. The Wanless reviews suggested that spending more on prevention could dramatically improve health and reduce long term health costs.^{3 4} The Select Committee's report on Obesity showed that its growing prevalence, particularly in children, is a major avoidable risk factor in coronary heart disease (CHD), cardiovascular disease generally, type 2 diabetes and some cancers.⁵ Alarmingly, symptoms of type 2 diabetes, which is also implicated in premature cardiovascular and kidney diseases, are being found in children as young as 8 years. Obesity is responsible for more than 9,000 premature deaths a year in England. The estimated cost to the NHS of obesity related diseases in 2007 was £17.2 billion or 6% of the

NHS budget, which is expected to increase to £21.5 billion in 2025 making 11.9% of the NHS budget.⁶ The select committee recommended that tackling children's diets and the obesogenic environment was a key to improving this problem.⁵ Fuelled by the challenges set by the Wanless reviews and Select Committee report, Choosing Health¹ has specifically highlighted the importance of social marketing "to encourage health promoting behaviour." There have followed a number of publications that endorse social marketing. Indeed the use of social marketing to deliver behaviour change in diet now has a proven track record particularly for increasing fruit and vegetable intake.^{7 8} In December 2006, the government launched the National Social Marketing Centre (formerly National Social Marketing Strategy team) to promote the use of social marketing. The Department of Health launched its own social marketing campaign "Change4Life" in October to encourage the public to eat healthily and exercise in a bid to combat obesity.⁹

Pre-School Children's diets

Importance of a good diet in childhood

Consumption of fruits and vegetables plays a vital role in providing a varied and nutritious diet whilst promoting a healthy weight and protecting against a number of diseases, particularly cardiovascular and certain forms of cancer.¹⁰

Poor nutrition and inappropriate diet during the first three years can have short and long-term adverse effects on physical and mental development, as well as increasing the risk of chronic adult disease.¹¹ Young children develop rapidly and require the correct nutrition to ensure that their bodies grow properly and can repair themselves as necessary.¹² A varied and nutritious diet can also improve concentration and support children's learning. It is also the foundation for future physical and mental wellbeing, as eating habits developed in early childhood influence later adult eating patterns and the health of the next generation.¹³

Diet and obesity in childhood

Eating 5 portions of fruit and vegetables a day can help to maintain a healthy weight.¹⁴ According to the latest National Child Measurement Programme of the 83% of school reception children aged 4-5 years participating in England 13% were overweight and 9.9% obese. However, three PCTs within Merseyside and Cheshire recorded higher percentages than the national levels for both overweight and obese children in: Knowsley, Sefton and Halton and St Helens.¹⁵ (See Table 1) However, the participation rate in Halton and St Helens was very low at 66%, although this could represent an under representation of the true picture if overweight or obese children abstained from being weighed.

Furthermore, in England as a whole a strong positive relationship was found between deprivation and obesity prevalence for children in reception and Year 6. Notably in all PCTs, with the exception of Western Cheshire, within Merseyside and Cheshire the combined prevalence of children who are overweight and obese was higher than the National average for England.¹⁵

Table 1: National Child Measurement Programme school year 2006/07

Reception 4-5 year olds	Overweight	Obese	Combined	Participation rate
Primary Care Trust	Prevalence	Prevalence	Prevalence	
CENTRAL AND EASTERN CHESHIRE	13.4%	8.6%	22.0%	79%
HALTON AND ST HELENS	15.8%	13.0%	28.8%	66%
KNOWSLEY	17.0%	13.0%	30.0%	90%
LIVERPOOL	12.6%	10.6%	23.2%	93%
SEFTON	15.6%	11.6%	27.2%	86%
WARRINGTON	13.6%	9.8%	23.4%	97%
WESTERN CHESHIRE	11.8%	9.0%	20.8%	73%
WIRRAL	14.1%	9.1%	23.2%	85%
England Average	13.0%	9.9%	22.9%	83%
North West SHA average	13.8%	10.2%	24.0%	84%

Percentages in italics are worse than the English National Average

Advice on what constitutes a nutritious diet for the pre-school child

At this age, children grow very quickly and are usually very active, so they require plenty of energy and nutrient dense foods. Pre-school children need small frequent meals and snacks throughout the day.¹⁶ This is because they have a small stomach and a relatively under-developed gut which prevents them from consuming large quantities of food at a time and sometimes causes harmless bowel problems. However, they have a high energy and nutrient requirement relevant to their size plus a variable appetite, related to fluctuations in growth rate and level of physical activity.¹⁶ A pre-school diet needs an appropriate intake of foods from the four main food groups: Bread, potatoes and cereal including rice and pasta; fruit and vegetables; milk and dairy foods; and meat, fish and alternatives.¹⁷

As fruit and vegetables provide vitamin C, and other protective vitamins and minerals as well as fibre, it is recommended that under fives have a total of 5 child-size portions of fruit and vegetables a day.^{18 19} That is 5 portions altogether, not 5 portions of fruit and 5 portions of vegetables.¹⁴ A suitable portion size for an under 5 would be the amount a child could hold in the palm of their hand.¹⁸ Examples of child's portions are: $\frac{1}{2}$ apple, $\frac{1}{2}$ pear, $\frac{1}{2}$ banana or $\frac{1}{2}$ orange; 1 peeled Satsuma; 1 tablespoon of fruit salad, tinned or stewed fruit, $\frac{1}{2}$ cup of strawberries or grapes; 1 tablespoon of cooked vegetables and 1 tablespoon of chopped raw or salad vegetables.^{17 19}

Snack and meal combinations should include a variety of, ideally chopped, raw vegetables and fruits.²⁰ Tinned fruit should be in fruit juice not syrup and tinned vegetables in plain water without added salt. Frozen vegetables are high in vitamins, although it is recommended not to overcook them because this will reduce the vitamin content. According to the Health Promotion Agency dried fruit is not recommended as a snack because it is a concentrated source of sugar, which may cause tooth decay.¹⁹

However, excessive intake of fruit and vegetables (and use of wholemeal pasta and brown rice) can result in too little of the other food groups being consumed, as they are high in fibre and too much may overfill a young gut and reduce the minerals they can absorb, such as calcium and iron.¹⁶ There is also no need to add salt to a young child's diet. From the age of 1-3 years children should have no more than 2g a day. A frequent intake of sweet and sticky foods and drinks between meals causes dental decay.¹⁸

Fizzy and sugared drinks are nutritionally poor and can reduce children's appetite so they may miss eating nutrients at mealtimes.²¹ In addition, water quenches thirst more than sugary drinks therefore they encourage children to drink more of them.²² Sweetened drinks including well diluted fresh fruit juice should only be consumed with meals to reduce the risk of dental problems.²³ However, when given with meals the vitamin C in fruit juice will make it easier for pre-schoolers to absorb iron from other foods. Tea and coffee should be avoided, particularly at meal times as this reduces the amount of iron pre-school children can absorb.¹⁸ Whole milk and water are the best drinks to serve between meals.^{16 18} From two years old, semi-skimmed milk can start to be gradually introduced provided that their diet supplies enough energy.²³ Fully skimmed milk is unsuitable as a main drink until a child is five years old, as it does not contain enough energy and vitamin A for their growing needs.^{18 23}

Parental and peer influence on pre-school children's diet

Research suggests that children need to be offered a new or previously rejected food between 8-15 times before they will taste and accept it.^{25 26} Thus if children are reluctant to taste or eat something parents should not assume they will never like those foods and stop trying.²⁶ Children as young as two are more likely to try a new food and develop a preference for it if they see their own mother or peers eat it.^{27 28} Indeed, children's preferences for and consumption of disliked vegetables were enhanced when children had opportunities to observe peers selecting and eating foods that the observing child disliked.²⁹

Dietary intake in pre-school children

National Survey Data

Information on pre-school children's diets suggests that they are inadequate. A survey of British 1½ -4 year olds³⁰, found fat contributed 35.9% of their energy intake and saturated fats 16.2% of intake. Total dietary energy from non-milk extrinsic sugar (NMES) was 18.7%, exceeding the Department of Health's daily limit of 11%.³¹ The main source of NMES was beverages contributing 39%. Of this percentage 32% came from soft drinks. Furthermore, when looking at the energy intake from the main food groups only 12% came from vegetables (including potatoes) and savoury snacks and 3% from consumption of fruit and nuts. Indeed, raw vegetables and salad were eaten by relatively few children. For example, only 10% had eaten raw carrots and 17% raw tomatoes. Only 39% had eaten any green leafy vegetables. From an analysis of the data from this survey³² very few of the pre-school children had diets that meet all the reference nutrient intakes (RNIs) and recommendations for iron, zinc, vitamins C and A and energy from non-milk extrinsic sugars. In addition, 16% of the children were anaemic and 17% had active tooth decay. In

short the children were not eating enough fruit, vegetables and iron-rich foods and too much salt and sugar.³³

Evidence from Phase 1 Snack Right

The evaluation of the Snack Right Phase 1³⁴ found that a substantial number of children, even after the close of the Snack Right Phase 1, were eating large numbers of sugary foods. Indeed at this time fewer children were consuming fruit. There was also a tendency to regard snacks as less healthy and so not an important part of a pre-school child's diet. Neither frozen nor tinned fruit or vegetables were as likely to be perceived as contributing to a healthy diet as fresh produce.

Socio-economic variables and diet in preschool children

Lower income households spend a greater proportion of their income on food than affluent households, including fruit and vegetables.³⁵ Despite this, research suggests they eat fewer fruit and vegetables averaging half the recommended level of 5 portions.^{36 37} It has been estimated that to eat healthily they would have to spend more than 30% of their income on food.³⁵ Compared with those from non-manual backgrounds, the diet of children aged 1½ to 4½ years from manual backgrounds has less emphasis on fruit juice, fruit and fresh vegetables (especially vegetables) and whole grain cereals and more emphasis on sweet foods and confectionery³⁰

Using data from the National Diet and Nutrition Survey³⁰ researchers have also found that meeting the RNIs recommendations for zinc, vitamins C and A and energy from NMES was related to socio-economic measures.³² Significantly higher proportions of preschool children reaching only one or none of the recommended RNIs were in households that: rented their accommodation; received income support; had an unemployed head of household (HOH); current or most recent job of HOH was manual; had no car; had low levels of maternal education; were located in Scotland or the North of England; and had household incomes less than £25K. The most important predictors of meeting only one or none of the RNIs recommendations were: manual occupational background, lower maternal education and living outside London and the South East.

There were some significant social class differences found during the Phase 1 baseline survey.² The lowest social class group was spending less on fruit and vegetables. Also, more respondents from this group reported their children had eaten less desirable foods such as pre-sugared breakfast cereals, white bread, chocolate biscuits, sweets and sugary fizzy drinks. There was also a lower intake of fruit reported.

3. Methods

Sampling

For the Phase 2 survey non-probability sampling was used to collect data from parents and carers recruited from Sure Start Children's Centres within each of the eight PCTs within Cheshire and Merseyside. Children's centres were chosen for recruitment because they are usually placed in the most deprived areas and forty-nine of these centres were the settings for the Phase 2 Snack Right events. The cohort recruited from the children's centres that were going to have a Snack Right event formed the intervention group. For comparison the cohort recruited from children's centres that were not going to receive a Snack Right event in Phase 2 were known as the control group. For the follow up survey in November and December the same children's centres will be used to recruit subjects. Matched pairs (using the same subjects for the baseline and follow up) will not be used as it would be difficult, given our resources, to trace the same parents and carers again. However, this can lead to considerable increase in variance and the possibility of type II errors: that is false negatives failing to find a significant difference when there is one. In each PCT the centres to be visited were requested from the strategic ambassadors, as they were aware which centres would be holding an event and which centres were willing to participate in the evaluation. Therefore the sample of children's centres could not be selected randomly or the participants within them.

Research Design

This type of design is known as an independent cohort study, where the comparison group is drawn from the same population as the intervention group but will have little or no exposure to the intervention. Thus any statistically significant differences between the groups after exposure are attributed to the influence of the intervention.

To establish cause and effect the best design is the randomised control trial. However for this study it could not be used as it is impossible to control for all the conditions that can influence behaviour and to make a random selection. Subjects in the control group could have been exposed to the Snack Right messages and other similar campaigns through family, friends, professionals and the media, particularly as they live in close proximity to the centres having a snack right event and the media and marketing materials were also used to publicise these events and messages. Unlike subjects in a drug trial they cannot be randomised blind to the intervention or control group and health benefits may be minor and possibly many years in the future. Therefore this intervention should be regarded as an investment in the future.³⁴

Development of the evaluation tools

This was a structured simplified version of the questionnaires used for the Phase 1 baseline study, and follow-up based on the aims, objectives and messages of the snack right intervention, although it was produced ahead of the marketing materials. The baseline reviewed some attitudes and opinions towards fruits and vegetables, snacking, barriers and incentives to healthy eating and included some additional items on knowledge of Snack Right and use of Healthy Start vouchers. It consisted of simple yes/no responses, multiple choice questions and 3 point Likert Scales. (See appendix 1)

Colleagues, members of the social marketing group and some Ambassadors were asked for their feedback on the questionnaire. Then it was piloted on parents in one children's centre on Merseyside, to ensure that the instructions were clear, and the questions were not objectionable or ambiguous and that no major topics were omitted nor that the questionnaire was overly long. Additional questions that were to be included in the final questionnaire were also piloted at this time. Thus the questionnaire was found to be acceptable, with questions that were clear.

Unfortunately, there was insufficient time to conduct a test for reliability. This relates to the ability of the questionnaire to produce the same results if used on the same subjects more than once. This requires testing a small number of subjects twice several weeks apart and a score can then be given for test-retest reliability. A threat to reliability includes the use of ambiguous questions, or questionnaires being overly long. Thus, reliability is more likely if the respondent devotes a consistent degree of concentration and interest throughout the questionnaire completion. This questionnaire was not found to be too long or to have ambiguous questions.

Baseline questionnaire survey

The questionnaire was conducted by eight university students recruited mainly from the Liverpool John Moores University, during the summer of 2008, before the start of the Phase 2 Snack Right events in June, July and September. The students contacted 73 children's centres in Cheshire and Merseyside that covered 75% of centres that were going to hold a Snack Right event. Of these centres 37 were scheduled to hold a snack right event (intervention group) and 36 would not be having a snack right event (control group). Parents or carers of weaned pre-school children between the ages of 6 months to four years were targeted. If the respondent had more than one child within this age group the questionnaire was completed with the oldest child in mind.

Problems in the completion of the baseline survey

The baseline survey for the Snack Right project was initially scheduled to take place in April 2008. Unfortunately, the start of the Snack Right project was postponed by a month as there was an unanticipated delay in recruiting agencies. This meant that the baseline survey was also delayed by a month. The collection phase therefore ran into the students' examination period and the summer vacation with the inevitable holidays and summer jobs. This hindered the collection also because there were fewer parents and carers attending the children's centres during the summer months. The students in some cases had difficulty gaining access to the centres or making arrangements with the appropriate contacts. Although the control and intervention children's centres had been chosen, in most cases, with the Strategic Ambassadors, some of the centres were unaware of Snack Right or the evaluation. Therefore, these centres had to be contacted directly by the researcher to confirm details. All students were instructed to approach centres confirming that they had been recruited to evaluate the NHS Snack Right project and were not carrying out a student project. However, for "security reasons" some centres would not allow the students to collect the data and questionnaire filling had to be conducted by their own staff. Furthermore, in some PCTs it took longer than

anticipated to clarify which children's centres were going to hold an event. Thus, it was late July early August before some centres could be visited.

Socio-economic group – social class

To be consistent with the Phase 1 evaluation social class in the survey is based on declared occupation.³⁸ To calculate social class respondents' present or last job, if not working, was used. From Table 10 (NS-SEC based on SOC2000 simplified and full derivation table: operational categories) in the "National Statistics Socio-economic Classification: User Manual"³⁹ NS-SEC simplified operational category was used and from this code the appropriate Social Class group was derived as in Table 4: (NS-SEC operational categories linked to Social Class). If the respondent was: a full-time parent, a student or unemployed (without a previous occupation), or unable to work they were unclassified. For ease of analysis, where there are small numbers involved, respondents have been put into social class groupings, which are illustrated in Table 5. The highest grouping refers to social classes I and II; middle refers to III non-manual and III manual; the lowest grouping refers to social classes IV and V.

Statistical analysis

The report is based mainly on simple descriptive statistics, such as the Chi-Squared test of association. However, when using the chi-squared test and more than 20% of cells have expected counts less than 5 (or any cells with expected frequencies less than 1) this can invalidate the chi-squared statistic as the sample size requirement for the chi-squared test of association is not satisfied. In this case, exact tests have been applied. For 2x2 contingency tables the Fisher Exact test has been used and for larger contingency tables, Fisher-Freeman-Halton Exact test.

To determine if there is a statistically significant difference between means the t test for independent samples has been used where the data approximates to a normal distribution with equal variances. Where these assumptions cannot be met the non-parametric equivalent Mann-Whitney test has been applied that basically determines if there are statistically significant differences between the medians. The significance level that is used is 0.05. This means that 1 in 20 tests may be significant purely by chance. However, no adjustment has been made for multiple comparisons.

Evaluation approval

Evaluation approval was sought and granted from the University of Liverpool Ethics Committee and the relevant PCT committees within Cheshire and Merseyside. NHS ethical approval was not necessary as the study is classed as a service evaluation not research.

4. The intervention

Snack Right is a targeted intervention based on social marketing principles, for the parents and carers of preschool children from deprived neighbourhoods. It has been delivered in two phases and this report is specifically for the evaluation of the Phase 2 baseline data. Improvements were made to the Phase 2 intervention, from observations made during the Phase 1 campaign; feedback from Ambassadors and the Phase 1 evaluation. The aim and objectives for Phase 2 are as follows.

Aim

To increase fruit and vegetables, as a snack of choice from weaned up to the age of 4, for children in the most deprived areas of Cheshire and Merseyside.

Objectives

- Deliver a campaign to achieve a sustained behaviour change - increasing fruit and veg consumption in children from weaning until 5, by replacing an unhealthy snack with a healthy one.
- To target parents and carers of children under 5 to achieve the behaviour change
- Making fruit and veg more accessible to the target audience through partnership working with retailers and Healthy Start
- Signposting target audience to other services that may support the sustained behaviour change
- To use social marketing techniques to plan and deliver the intervention
- Strengthen and improve the network of ‘Snack Right Ambassadors’ and promote communication between Ambassadors in each PCT area
- Gain a better understanding of social marketing across Cheshire and Merseyside
- To gain social marketing skills across Cheshire and Merseyside
- To assess the impact of a social marketing project that is run over the Cheshire and Merseyside footprint

Marketing mix

This has three main elements: 49 Snack Right events, direct marketing and media promotion:

Snack Right Events – The events themselves were similar to Phase 1 but with more interactive games using fruit and vegetables. The key difference was the opportunity to professionally photograph each child who attended with parental consent. From experience with the Phase 1 events it was decided to hold them in Sure Start children’s centres rather than “piggy backing” on other events as messages can get diluted. The target was to reach 2,000 families with an emphasis on sustaining the Snack Right message beyond the events and into the home.

The intention of these events was to be interactive, fun and informative for children and their parents/carers and they could be a small or large event, for parents and carers and their children under 4. The main elements of the event were:

- An opportunity for children to taste a range of fruit and vegetable snacks that are affordable and accessible for parents and carers to buy such as: apple, orange, banana, pears, grapes, strawberries, carrot, tomato, celery and cucumber.
- Fun activities for the children to carry out e.g. fruit faces (making a face out of fruit on a paper plate), smiley faces fruit/veg tasting worksheet, fruit puzzles. Other activities could also be included such as making fruit kebabs on straws or fruit smoothies.
- A person dressed as a fruit character - banana and/or apple - to greet parents and children.
- One to one chat with all parents and carers about the short and long term benefits of snacking right. Also the importance of parents as role models.
- One to one chat with all parents and carers about the Healthy Start voucher scheme and support to fill out the form.
- Health professional at events, such as from the health visiting teams, to provide professional support for families health enquiries and to be available to sign the Healthy Start voucher form.
- Information about the cost of fruit and vegetables and comparisons with unhealthy snacks.
- Information about local suppliers of fruit and vegetables and any local bag a bargain type fruit and vegetable scheme.
- Signposting to local support that would help parents/carers sustain the behaviour – e.g. cooking courses, healthy eating groups, parenting courses etc.

Throughout June, July and September a total of forty-nine children centre events were held across Cheshire and Merseyside. Essentially there were three types of events: 20 agency-run events which were fully supported by Squash Nutrition who supplied a range of fun activities and managed the photography. Included in these agency run events were one exemplar event for each of the 8 PCTs on Cheshire and Merseyside. These provided an opportunity for other children's centres staff planning future events to see how they are delivered and speak to the organisers. Thirdly, 30 ambassador-led events but with the photography element and resources provided by "Squash Nutrition".

A "Snack Right in a box resource pack" was provided to Ambassadors for each event which included:

- Principles of the project
- Snack Right messages
- Planning documents
- Photo permission documents
- Activity suggestions and how to
- Activity documents eg worksheets
- Photos of events
- Publicity materials eg posters/invites to publicise the event

- Promotional materials – stickers, leaflet
- Free fruit and vegetable information
- Health information
- Healthy Start application forms and posters
- Suggested invitation list
- Snack Right DVD
- Evaluation tool

Direct marketing

A direct marketing element was set up, to sustain the relationship with up to 2000 families (3000 children), after the Snack Right events. The trigger for the parent/carers involvement was agreeing to have their child's photograph taken at the snack right event. From experience of Phase 1, photography can act as an enticement to events. Children were then sent calendars and as a reward for completing them children were mailed a wipe-clean placemat that featured fruit and vegetable characters. Their parents/carers were also entered into two prize draws. They also received other communications such as a recipe for a fruit snack. All communications and products were branded with the Snack Right Five. (See Branding below)

The direct marketing schedule was as follows:

- a) Information on the parent/carers and children was taken at the Snack Right event with the promise of child's photo to encourage involvement (communication 1)
- b) Within 2 weeks the photograph was sent mounted on a snack right five photo frame, with a sticker chart (4 week calendar) and stickers that children could put on the chart each day they had a healthy fruit or vegetable snack. A letter to parent/carers included tips to encourage healthy snacking, and a chance to win a prize (communication 2)
- c) After 3 weeks a prompt letter was sent to encourage parents and carers to return sticker chart tear off slip, with further tips (communication 3)
- d) Returned sticker chart entries were entered into a prize draw
- e) Winner to receive prize - all entrants get a reward of a snack right 5 placemat. Further letter sent to parents/carers to encourage healthy snacking habits for their children in the form of a banana flapjack recipe that children can help to make. (communication 4)

Media

The media agency sourced press and radio coverage for the events. Two of the exemplar events were designated phase 2 launches – one for Merseyside and one for Cheshire. Basketball players from Cheshire Jets and Everton Tigers came along to encourage parents/carers to put fruit and vegetable snacks in their shopping baskets. The media communications strategy including case studies of families.

Branding

“The Snack Right Five”, a cartoon group of fruit and vegetables of Narna the banana, Berry the strawberry, Pip the apple, Topper the carrot and Tiny the grape featured in

all the phase 2 materials. The marketing materials ranged from a specially commissioned story book, a bowl , a leaflet were all available at Snack Right events, and other branded stationery including: posters, table mats, and sticker charts to encourage pre-school children to snack more healthily. [See Appendix 2] Two adult size dressing up suits of two of the Snack Right characters – Pip the Apple and Narna the Banana – were also available to attend the events. The Snack Right five have been developed by Corporate Culture a communication agency - to expand the product and brand to encourage pre-school children to snack more healthily.

Key messages to be delivered through Snack Right

1. Health benefits– more emphasis on short than long term e.g. behaviour, constipation, etc
2. Parenting benefits e.g. slow release snacks keep children satisfied longer, soothing the discomfort of teething
3. Cost of fruit and vegetable (comparisons with unhealthy snacks)
4. Healthy Start voucher scheme can help cover the cost of fruit and veg
5. Access to fruit and vegetable – bag a bargain schemes, retailers etc
6. Children like fruit and vegetable as a snack – get them to try it
7. Preparing fruit and vegetable to make them appealing to children – how to, recipes etc
8. Support is available to help your family Snack Right – community cookery courses, parenting courses etc
9. Parents as role models
10. Snacking is a good thing in toddlers diets – the healthy snacks

Behavioural goals for Phase 2

1. Children will choose fruit and vegetables as the snack of choice.
2. Parents and carers to attend a Snack Right event with their children
3. Parents and carers at events, overcoming negative perceptions of fruit and vegetables as a snack food for children
4. Children eating fruit and vegetables at Snack Right events
5. Ambassadors are engaged in the process and attend a Snack Right event
6. Ambassadors deliver their own events
7. Children continuing to Snack Right in the future – through work of Ambassadors, PCT's, LA's, Communities etc

Target audience

Primary – children that have been weaned (which is a very variable event usually after 6 months) to the age of 4, and their parents and carers including grandparents and childminders

Secondary – Strategic and Practitioner Ambassadors including-

PCT - health visiting teams, health promotion, obesity and oral health professionals, community cooks
Local authority – children's centre workers, environmental health professionals
Voluntary and community sector - community workers etc

5. Results

Response

Table 2 and 3 shows by PCT which centres were visited and how many completed questionnaires were collected from each. Students were instructed to collect between 5-10 questionnaires from each centre.

Table 2: Questionnaires collected from Intervention Group

Intervention Group				
PCT	Children's Centre	Date Collected	No.	Date of event
C&E Ches	1. Wharton	23 May	10	7 July
	2. Pebble Brook		0	23 June
	3. Oakencloough	Sent 26 June*	0	10 July
	4. Monks Coppenhall		0	2 July
	5. Victoria Road		0	8 July
Halton	6. St. Bebes, Pre-school	8-9 July*	7	10 July
	7. All Saints		0	23 Sept
St Helens	8. Four Ways	16, 19, 23, 24 May	9	6 June
	9. Haydock	23 May	10	5 Sept
	10. Moss Bank	2 June	8	15 July
	11. Parr		0	20 June
	12. Eden	23 May/ 13 Jun	6	9 July
Knowsley	13. Oak Tree	12 June	5	9 July
	14. Southmead	4 July	10	11 July
	15. Pride	22 July	4	11 Sept
	16. The Robins		0	12 Sept
	17. Dingle Lane	22 May	5	13 June
Liverpool	18. Garston	12 May	8	19 Sept
	19. Granby	15, 16 May	12	8 July
	20. Clubmoor	12 May	8	4 July
	21. Stoneycroft	8 May	8	3 July
	22. West Derby	9 May	8	24 June
Sefton	23. Hunts Cross		0	4 July
	24. Linaker	16 June	10	8 July
	25. Cambridge	14 July	11	16 July
	26. The Grange	11 June	8	27 July
	27. Litherland Moss	29 May	3	16 July
Warrington	28. Dallam	18 May. 18 June	8	10 Sept
	29. Beeches		0	9 & 25th Sept
W Ches	30. Westminster	22, 30 May	7	6 June
	31. Stanlaw Abbey	28 May	7	11 June
	32. Blacon	26 June	5	18 Sept
	33. Lache		0	25 Sept
Wirral	34. Seacombe	21 May	7	3 June
	35. Rock Ferry	22 May	6	4 Sept
	36. Bromborough	3 June	10	24 Sept
	37. Ganney's Meadow	14 May	7	1 July
Totals	Nil returns from 9 centres		207	

*These centres had specifically asked to be included in the survey and were sent questionnaires directly by the researcher as no student was available at short-notice to complete the questionnaires.

Of the 37 intervention centres contacted replies were received from 28 making a response rate for the intervention group of 75.7% (28/37).

Table 3: Questionnaires collected from Control Group

Control Group			
PCT	Children's Centre	Date Collected	No.
C&E Cheshire	1. Underwood		0
	2. Greenfields		0
Halton	3. Ditton	24 July	4
	4. Halton Lodge	18 Aug	10
	5. Brookvale	22 Aug	5
	6. Palacefields		0
	7. Warrington Road	10 July/18 August	7
	8. Eccleston	13, 23 June	5
	9. Rainhill	25, 27 May	4
	10. Sutton	3 June	8
	11. Billinge		0
	12. All Saints	5 Aug	7
	13. Seaforth	30 July	7
	14. Mornington	4 August	7
	15. Hudson	30 July	5
	16. Holy Rosary	5, 7 August	10
	17. Netherton		0
	18. St. Chad's	8 July	6
	19. New Horizons	3 June	5
	20. Jubilee	1 July	7
	21. Cherry Tree	11-12 June	6
	22. The Ark		0
	23. Southdene		0
	24. Sherwood		0
	25. Fazakerly	23 May	10
	26. Walton	15 May	8
	27. Croxteth		0
	28. Knotty Ash		0
	29. Vauxhall		0
	30. Westy Sure Start		0
	31. Orchard	14 May	7
	32. Neston		0
	33. Kingsway		0
	34. Leasowe	4 June	5
	35. New Brighton	23 May	8
	36. Liscard	29 May	7
Totals	Nil returns from 14 Centres		148

Of the 36 control centres that were contacted returns were received from 22 making a response rate for the control group of 61.1% (22/36). The response rate from all centres was 68.5% (50/73). A total of 335 questionnaires were collected; 207 from

the intervention group and 148 from the control group. If all centres had returned the minimum of 5 or a maximum of 10 questionnaires each then between 365-730 questionnaires would have been completed. Out of the maximum of 730, the response rate was 46% (335/730) for questionnaires completed. No refusals, to fill in forms, were reported to the researcher.

Demographic characteristics

Chart 1: Working Status of respondents by group (%)

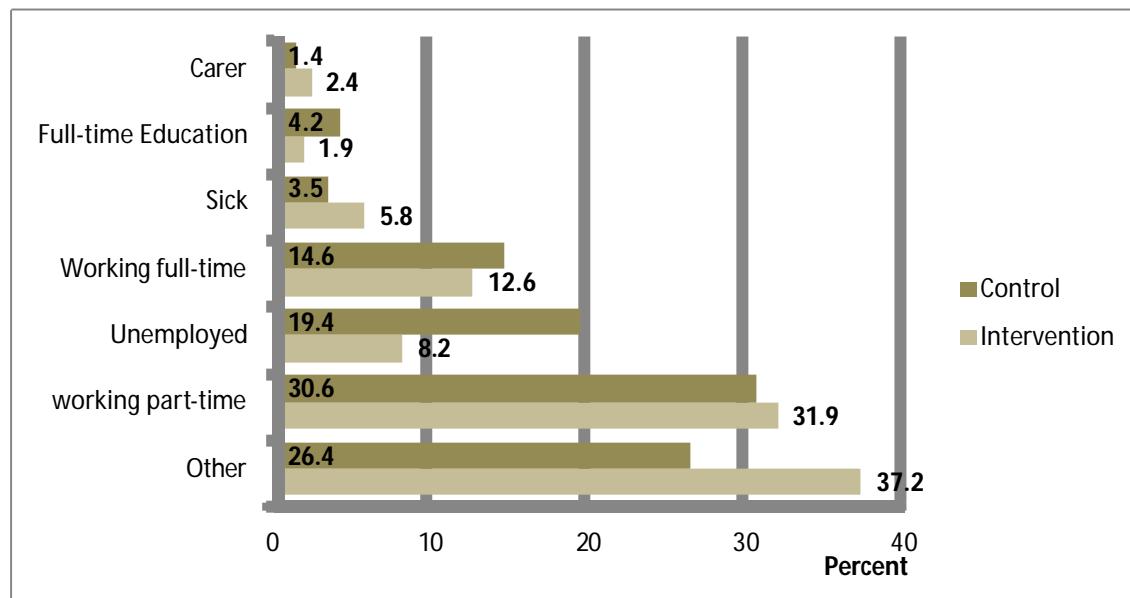


Table 4: Working status – number (%)

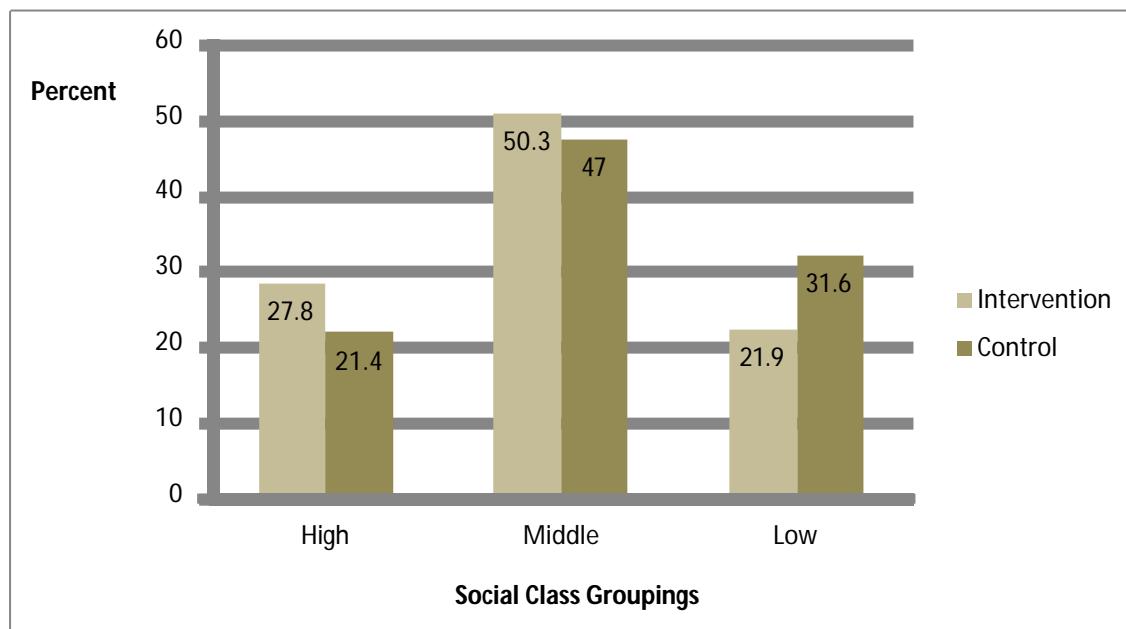
Working Status	Intervention	Control	Total
Full-time	26 (12.6)	21 (14.6)	47 (13.4)
Part-time	66 (31.9)	44 (30.6)	110 (31.3)
Full-time Education	4 (1.9)	6 (4.2)	10 (2.8)
Unemployed	17 (8.2)	28 (19.4)	45 (12.8)
Carer	5 (2.4)	2 (1.4)	7 (2)
Sick	12 (5.8)	5 (3.5)	17 (4.8)
Other (see below)	77 (37.2)	38 (26.4)	115 (32.8)
Total	207 (100)	144 (100)	351 (100)

Significant differences between intervention group and control were found for unemployment and “other” (Fisher-Freeman-Halton Exact Test p=0.025). Significantly more respondents in the control group were unemployed and significantly more in the intervention group were classed as “other” which also implied they were not officially “employed” at present. Of the “other” category 102 (88.6%) were acting as a full-time parent. Nine respondents (8.3%) were on maternity leave, 2 (1.8%) were retired and 1 was doing voluntary work.

Table 5: Social Class Stratification by group

Social Class	I	II	III N	III M	IV	V	unclassified
Grouping:	'High'		'Middle'		'Low'		
Intervention Number (%)	4 (2)	43 (21.1)	75 (36.8)	10 (4.9)	33 (16.2)	4 (2)	35 (17.2)
Control Number (%)	0(0)	25 (17.7)	52 (36.9)	3 (2.1)	32 (22.7)	5 (3.5)	24 (17)
Total (%)	4 (1.2)	68 (19.7)	127 (36.8)	13 (3.8)	65 (18.8)	9 (2.6)	59 (17.1)

Chart 2: Distribution of respondents in Social Class Groupings

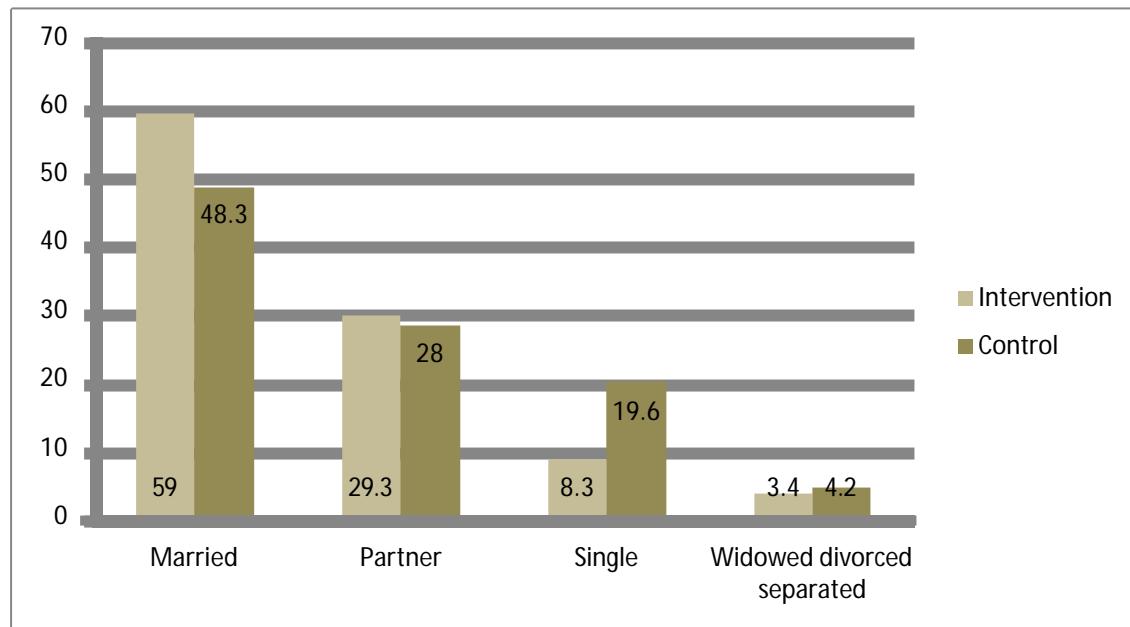


Social class groupings are defined in Table 5 and illustrated in Chart 2. There were equal proportions of respondents in the high and low groupings: 72 (20.9%) and 74 (21.4%) respectively. Nearly half 140 (49%) of respondents were in the middle class grouping. These proportions are what would be expected in the general population. Were possible, respondents were classified according to their present or previous job, even if they were unemployed or unable to work due to ill-health. Respondents were “unclassified” if no current or previous job was listed. Therefore this group would include respondents who were unemployed, unable to work due to sickness, in full-time education or a full-time parent. No significant differences were found between the intervention and control groups for social class.

Table 6: Family Status of respondents – number (%)

Group	Intervention	Control	Total
Married	121 (59)	69 (48.3)	190 (54.6)
Living with partner	60 (29.3)	40 (28)	100 (28.7)
Single	17 (8.3)	28 (19.6)	45 (12.9)
Widowed etc.	7 (3.4)	6 (4.2)	13 (3.7)
Total	205 (100)	143 (100)	348 (100)

Chart 3: Family status of respondents by group



Most respondents (54.6%) were married, 28% were living with a partner, 12.7% were single and only 3.7% were widowed, divorced or separated. There was a significant difference in family status between the intervention and control group as more respondents in the control group were single, as shown in Chart 3. ($\text{Chi}^2=10.278$, $\text{df}=3$, $p=0.016$).

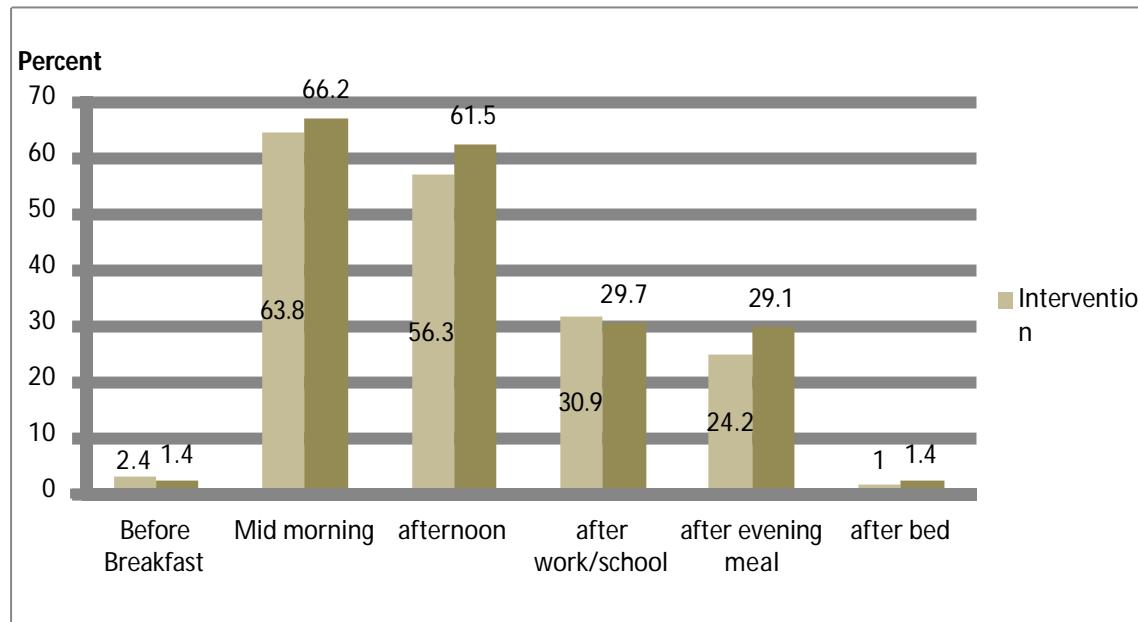
Table 7: Age group of carers – number (%)

Group	Intervention	Control	All respondents
25 or under	29 (14.7)	23 (16/1)	52 (15.3)
26-35	114 (57.9)	78 (54.5)	192 (56.5)
36-45	44 (22.3)	39 (27.3)	83 (24.4)
46 and over	10 (5.1)	3 (2.1)	13 (3.8)

The mean age of respondents was 32.4 years ($\text{sd } 8$, range 18-64). These age-groups were used to test associations with age. Using the Mann-Whitney test, there were no significant differences between the groups in age of carer/parent or the number of pre-school children being looked after by the respondents. ($p>0.05$) The vast majority 235 (68.1%) were looking after one child and 101 (29.3%) were looking after two. The mean age of the eldest pre-school child was 1.35 years ($\text{sd } 0.5$, range 0-5). Only one child was under 6 months and two were 5.

Snacking

Chart 4: When are snacks given



The majority (64.8%) of respondents would give their child snacks mid morning or in the afternoon (58.5%). There were some significant differences according to social class grouping. Although very few respondents reported giving snacks before breakfast more than expected in the highest group (4, 5.56%) and none in the middle group gave snacks at this time (Fisher-Freeman-Halton test p=0.01). Significantly more in the high (57, 79.2%) and less than expected in the middle (86 61.4%) gave snacks mid morning. ($\chi^2=7.379$, df=2, p=0.025). Less than expected in the low grouping (32, 43.2%) gave snacks in the afternoon. There were no significant differences between the intervention and control groups.

Chart 5: Views on snacking % of all respondents

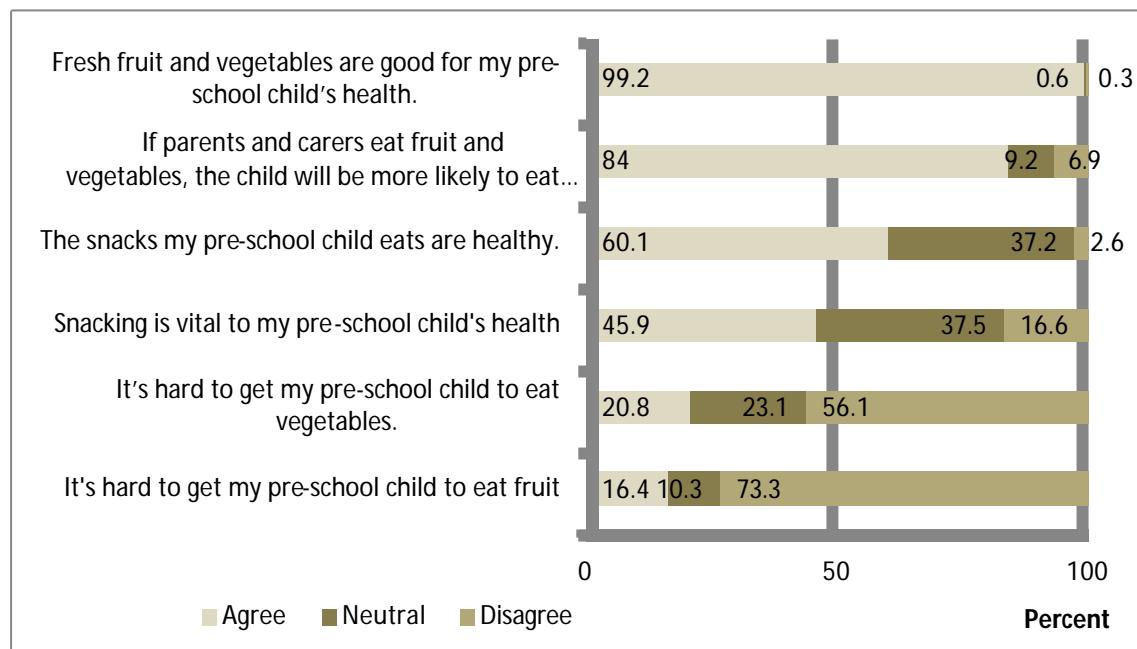


Table 8: Views on snacking by group – number (%)

		Agree	Neutral	Disagree
Fresh fruit & veg. are good for my child's health	Intervention	205 (99)	1 (0.5)	1 (0.5)
	Control	147 (99.3)	1 (0.7)	0
If parents/carers eat fruit & veg children will be more likely to	Intervention	175 (85.4)	21 (10.2)	9 (4.4)
	Control	118 (81.9)	11 (7.6)	15 (10.4)
Snacks my pre-school child eats are healthy	Intervention	127 (62.3)	72 (35.3)	5 (2.5)
	Control	83 (57.2)	58 (40)	4 (2.8)
Snacking is vital to my pre-school child's health	Intervention	95 (46.6)	72 (35.3)	37 (18.1)
	Control	63 (45)	57 (40.7)	20 (14.3)
It's hard to get my pre-school child to eat fruit	Intervention	36 (17.5)	25 (12.3)	143 (70.1)
	Control	21 (14.6)	11 (7.6)	112 (77.8)
It's hard to get my pre-school child to eat vegetables	Intervention	43 (21.1)	43 (21.1)	118 (57.8)
	Control	29 (20.4)	37 (26.1)	76 (53.5)

Respondents were asked whether they agreed or disagreed with the above statements on snacking. The vast majority of respondents 99.2% thought fresh fruit and vegetables were good for their pre-school child's health. Sixty percent thought their pre-school child was eating healthy snacks. However, less than 50% thought snacking was vital to their pre-school child's health. Respondents found it easier to give fruit than vegetables to their child. There were no significant differences between the intervention and control groups for views on snacking.

With regard to giving vegetables there were some significant social class grouping differences. Less than expected in the lowest grouping (30, 42.3%) disagreed that it was hard to give vegetables. More than expected in the middle grouping (88, 63.8%) disagreed with this statement. ($\chi^2=11.534$, df=4, p=0.021)

Table 9: Significantly different views on snacking by age-group of child – number (%)

	Age-group	Agree	Neutral	Disagree
Snacks my pre-school child eats are healthy	Under 2	63 (72.4)**	22 (25.3)	2 (2.3)
	2-5 years	140 (55.6)**	105 (41.7)	7 (2.8)
It's hard to get my pre-school child to eat vegetables	Under 2	12 (13.6)	14 (15.9)	62 (70.5)***
	2-5 years	58 (23.3)	65 (26.1)	126 (50.6)***

p=0.02; *p=0.006

Significantly more parents with a child under 2 years thought their child ate healthy snacks and more disagreed that it was hard to get their child to eat vegetables.

Table 10: Number of fruit and vegetable snacks eaten each day – number (%).

How many fruit and vegetable snacks would your pre-school child usually eat each day?							
Group	None	1	2	3	4	5	6 or more
Intervention	6 (3)	19 (9.5)	66 (33)	62 (31)	15 (7.5)	20 (10)	12 (6)
Control	4 (2.8)	11 (7.7)	34 (23.9)	44 (31)	15 (10.6)	26 (18.3)	8 (5.6)
Total	10 (2.9)	30 (8.8)	100 (29.2)	106 (31)	30 (8.8)	46 (13.8)	20 (5.8)

No significant differences were found between intervention and control groups for numbers of fruit and vegetable snacks consumed. The mean number of fruit and vegetable snacks eaten per day was 3 (sd 1.5, range 0-8). If this includes all the fruit and vegetables eaten per day then this is not equivalent to the recommended five portions a day.

Food Eaten

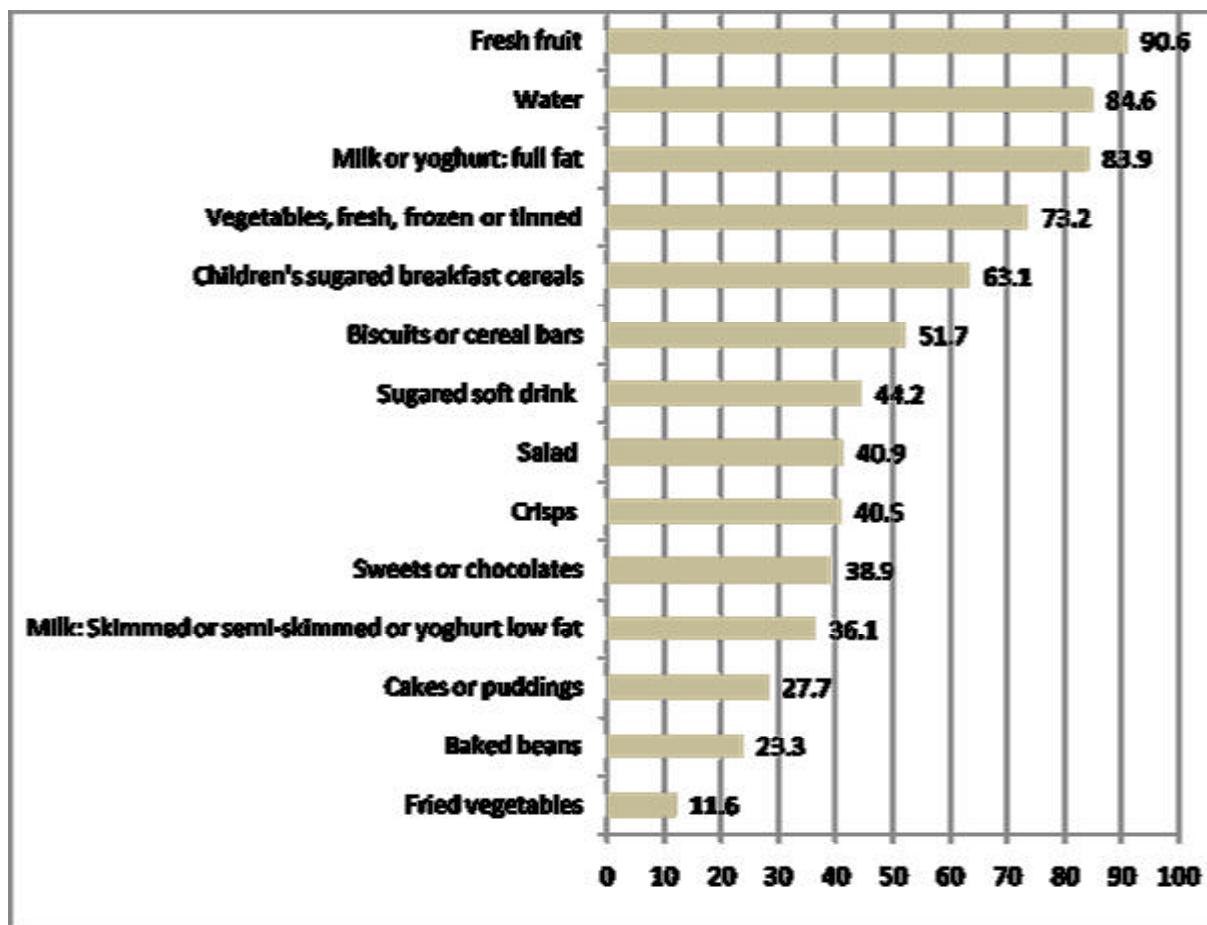
Table 11: Proportion of respondents (%) who agreed that their child had eaten the following foods the previous day

	Intervention	Control
Did your pre-school child eat any of these things yesterday?	Yes	Yes
Children's Breakfast Cereals - with added sugar	131 (63.6)	91 (62.3)
Biscuits or cereal bars	108 (53.2)	72 (49.7)
Cakes or puddings	42 (21.1)**	53 (36.8)**
Sweets or chocolates	70 (34)*	67 (45.9)*
Crisps	79 (38.7)	61 (43)
Sugared soft drink	88 (43.1)	64 (45.7)
Water	172 (85.6)	119 (83.2)
Fresh fruit	183 (88.8)	136 (93.2)
Baked beans	47 (23.3)	33 (23.2)
Salad	79 (39.1)	62 (43.4)
Fried vegetables	25 (12.3)	15 (10.6)
Vegetables, fresh, frozen or tinned (not fried or salad)	147 (72.8)	107 (73.8)
Milk or yoghurt: full fat	165 (82.5)	126 (85.7)
Milk: Skimmed or semi-skimmed or yoghurt low fat	80 (40.2)	43 (30.3)

** Significant at the 0.001 level. *Significant at the 0.02 level.

There were only two significant differences between the two groups for reported foods eaten by their child on the preceding day. Using the Chi² test, it was found that for cakes or puddings, and sweets or chocolate significantly more in the controls answered yes to their children eating these sugary foods. (p=0.001, p=0.02 respectively).

Chart 6: Proportion of respondents reporting their child had eaten certain foods and drinks



The vast majority 90.6% claimed that their children had eaten fresh fruit and 73.2% said their children consume fresh, frozen or tinned vegetables daily. The majority of 84.6% reported that their pre-school child drank water and 83.9% consumed full-fat milk or yoghurt. Fried vegetables and baked beans had the lowest reported consumption. Still a relatively high proportion of respondents reported that their child ate less desirable foods: such as sugared cereals (63.1%); biscuits/cereal bars (51.7%); sugared soft drinks (44.2%); crisps (40.5%) and sweets or chocolates (38.9%). These could be given several times a day.

There were some significant social class differences in the foods eaten. Significantly more respondents (40, 54.1%) from the lowest grouping said their child ate sweets or chocolate compared with the high and middle groupings (21, 30% and 51, 36.4% respectively). ($\chi^2 = 9.760$, $df=2$, $p=0.008$). Significantly more from the lowest grouping claimed to eat fried vegetables (14, 20%) compared to the high and middle groupings (4, 5.7% and 15, 10.8% respectively) ($\chi^2 = 7.134$, $df=2$, $p=0.028$).

Carers between 36-45 years were significantly likely to have a child that had biscuits or cereals bars on the previous day compared to those aged 26-35 (50, 61.7%; 85, 44.7% respectively). ($\chi^2 = 8.758$, $df=3$, $p=0.33$)

Chart 7: Proportion of children by age-group consuming certain foods

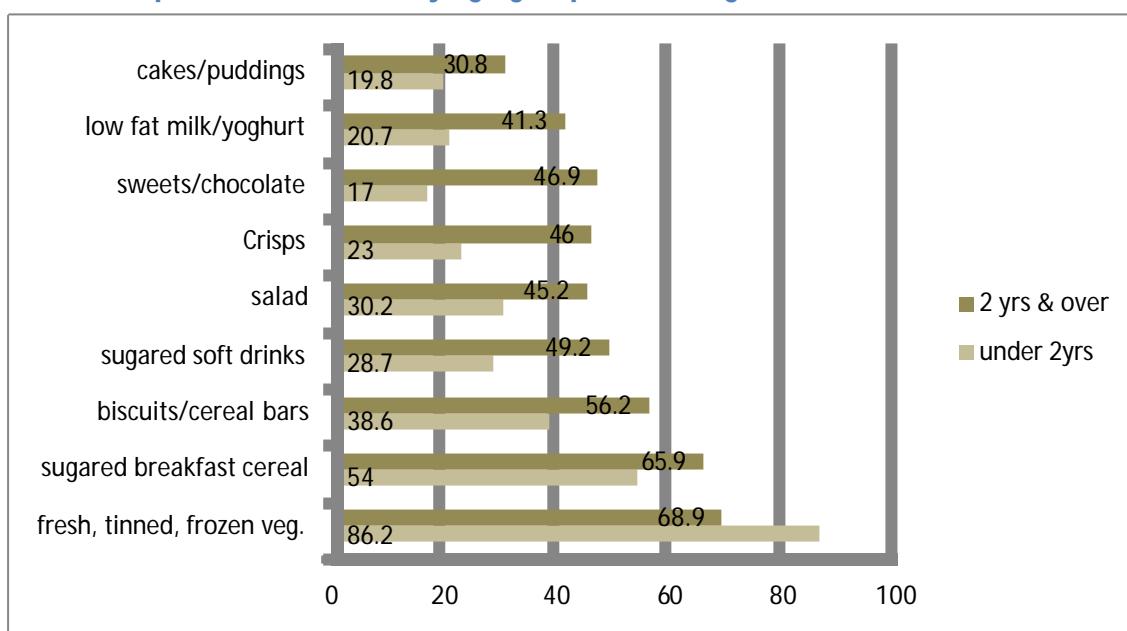


Table 12: significant differences in foods consumed by age-group of child – number (%)

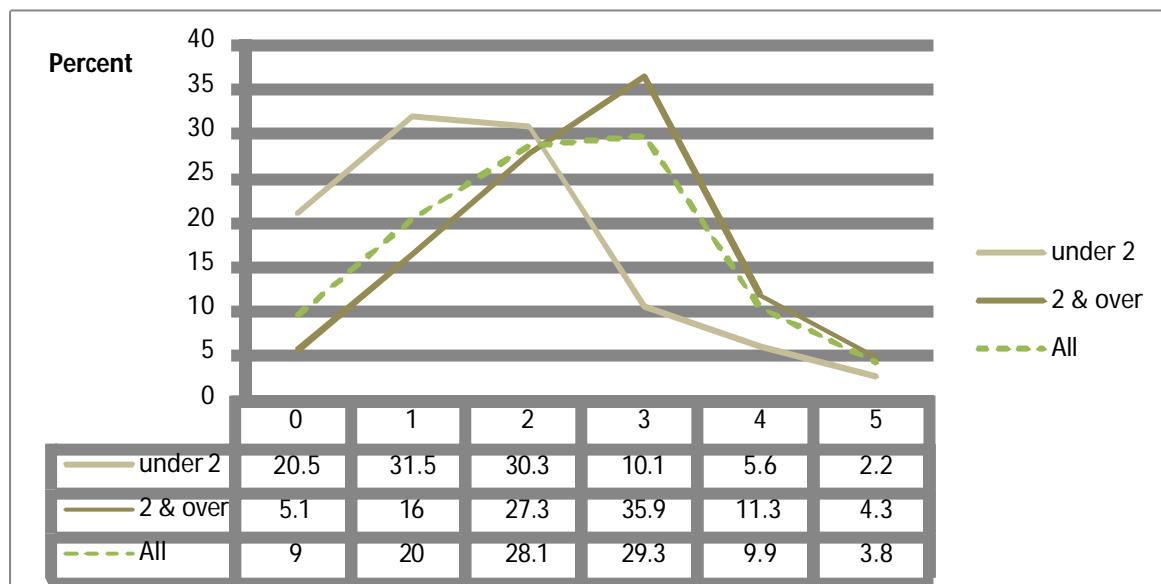
Foods consumed	Under 2 years	2 years & over	Significance level
Cakes/puddings	17 (19.8)	76 (30.8)*	p=0.05
Low fat milk/yoghurt	18 (20.7)	102 (41.3)*	p=0.001
Sweets/chocolate	15 (17)	119 (46.9)*	p<0.001
Crisps	20 (23)	115 (46)*	p<0.001
Salad	26 (30.2)	113 (45.2)	p=0.015
Sugared soft drinks	25 (28.7)	122 (49.2)	p=0.001
Biscuits/cereal bars	34 (38.6)	141 (56.2)	p=0.005
Sugared breakfast cereals	47 (54)	168 (65.9)	p=0.048
Veg –fresh, frozen, tinned	75 (86.2)	173 (68.9)	p=0.002

There were some highly significant differences in the foods claimed to be consumed by children according to age-group as shown in Chart 7 and Table 11. More children 2 years and over were reported to be eating more of the less desirable foods: cakes/puddings, sweets/chocolate, crisps, biscuits/cereal bars, sugared soft drinks and breakfast cereals. However, they were eating more salad, but more younger children were reported to be consuming more fresh, frozen or tinned vegetables. Low fat milk and yoghurt can be introduced from around 2 years, so understandably significantly more were consuming it in the 2 years and over group. However, although low fat food is not recommended for those under 2 years, 20.7% claimed their child was consuming it.

The number of sugary foods consumed from those listed was examined. Baked beans have not been included as a sugary food as the sugar in them is harmless to teeth as the beans are otherwise savoury (and eaten with other foods). For the same reason they will have a low GI. Therefore baked beans should be regarded as a neutral or positive item in the diet (except when they displace other vegetables).⁴⁰ Using the t-test for independent samples, there was a highly significant difference between the two age groups in the number of sugared foods claimed to be

consumed ($p<0.001$). For the under 2s the mean was 1.5, $sd\ 1.215$, range 0-5. Two children (under 2) had the 5 sugared foods listed and most (28, 31.5%) had only one. For the children 2 years and over, the mean was 2.5, $sd\ 1.167$, range 0-5. Eleven children in this age-group had the 5 sugared foods. Most children in this age-group had 3 sugared foods (92, 35.9%). The difference is displayed visibly in Chart 8 below. The mean number of sugared foods eaten by all children was 1.7, ($sd\ 0.438$, range 0-5), with most eating 3.

Chart 8: Number of sugared foods consumed by age-group



There were no significant differences found between the intervention and control groups for number of sugared foods eaten.

Opinions on Fruit and Vegetables

Chart 9: Opinions regarding fresh fruit as percentage of all respondents

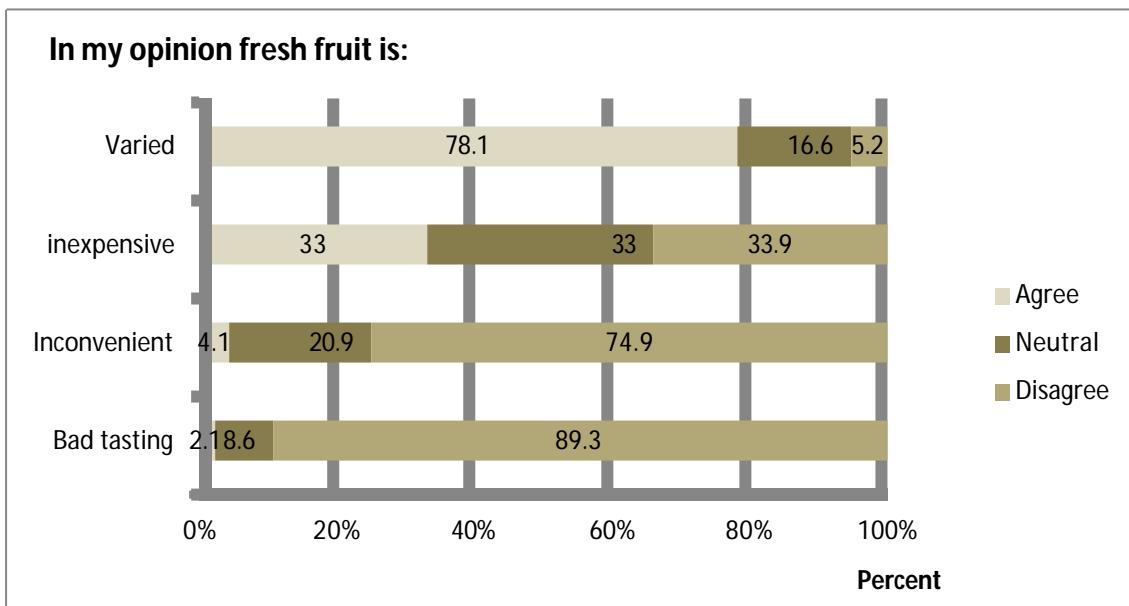


Table 13: Opinions on Fresh Fruit by group – number (%)

In my opinion fresh fruit is...		Group	Agree	Neutral	Disagree
Inexpensive	Intervention	74 (35.9)	65 (31.6)	67 (32.5)	
	Control	42 (29)	51 (35.2)	52 (35.9)	
Inconvenient	Intervention	10 (5)	49 (24.4)	142 (70.6)	
	Control	4 (2.9)	22 (15.9)	112 (81.2)	
Varied	Intervention	155 (76)	38 (18.6)	11 (5.4)	
	Control	113 (81.3)	19 (13.7)	7 (5)	
Bad tasting	Intervention	5 (2.5)	21 (10.6)	173 (86.9)	
	Control	2 (1.4)	8 (5.8)	129 (92.8)	

No differences were found between intervention and control groups for opinions on fresh fruit. As shown in Chart 9, the majority of opinions on fruit were very positive in that they were considered good tasting (89.3%), convenient (74.9%) and varied (78.1%). However, there were mixed views on whether fruit was considered expensive. Just over a third of respondents considered that it was expensive.

Although most respondents consider fresh fruit was convenient, more than expected in the 36 and over age-group of carers (9, 9.8%) considered that fresh fruit was inconvenient or were neutral (11, 12%) (Fisher-Freeman-Halton $p= 0.009$). More than expected in the 26-35 age-group (153, 81.8%) considered fruit was varied. ($\chi^2 = 14.037$, $df=4$, $p=0.007$).

Chart 10: Opinions on fresh vegetables as percentage of all respondents

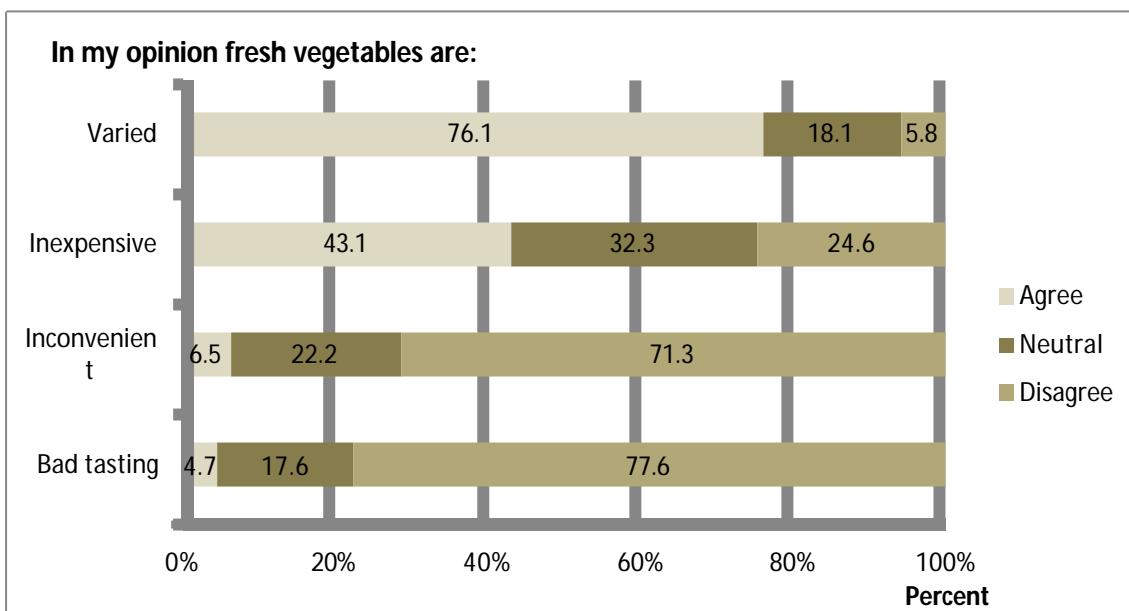


Table 14: Opinions on Fresh Vegetables by group – number (%)

In my opinion fresh vegetables are...		Group	Agree	Neutral	Disagree
Inexpensive	Intervention	90 (43.7)	66 (32)	50 (24.3)	
	Control	61 (42.4)	47 (32.6)	36 (25)	
Inconvenient	Intervention	14 (7)	48 (24)	138 (69)	
	Control	8 (5.8)	27 (19.6)	103 (74.6)	
Varied	Intervention	155 (76.4)	35 (17.2)	13 (6.4)	
	Control	106 (75.7)	27 (19.3)	7 (5)	
Bad tasting	Intervention	13 (6.5)	41 (20.5)	146 (73)	
	Control	3 (2.1)	19 (13.6)	118 (84.3)*	

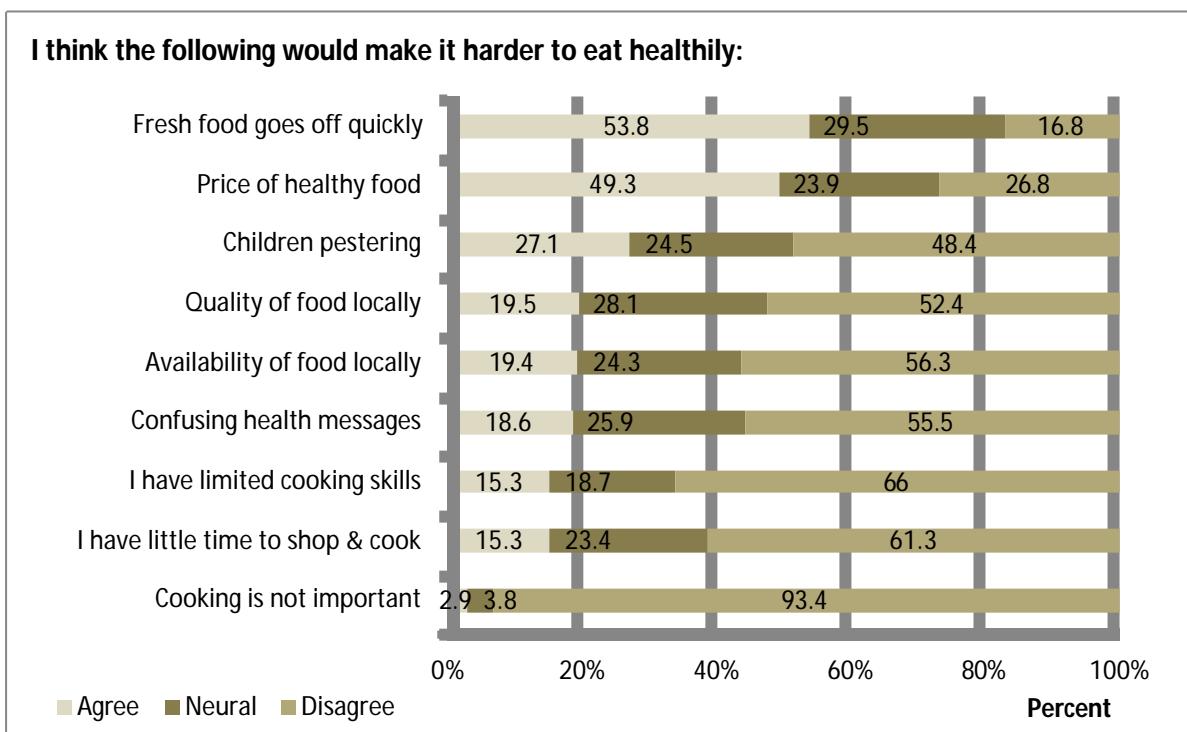
*Significantly more than expected in the control group disagreed that vegetables tasted bad. ($\chi^2 = 6.913$, df=2, p=0.032.). More than expected in the 26-35 age group (151, 80.7%) considered vegetables were varied. ($\chi^2 = 14.037$, df=4, p=0.007).

The vast majority of respondents thought vegetables tasted good (77.6%), were varied (76.1) and convenient (71.3%). There were more mixed responses about the price of vegetables but 43.1% agreed that they were inexpensive.

Healthy Eating

Barriers to Healthy eating

Chart 11: Perceived barriers to healthy eating as a percentage of all respondents



As illustrated in Chart 11, the majority of respondents disagreed with most of these barriers to healthy eating particularly that cooking was not important. They also felt that they had the time to shop and cook and that they had the necessary skills to prepare food. A small minority agreed with the statements that there were confusing health messages (18.6%), and that the availability and quality of food locally (19.5%) or child pestering (27.1%) would make healthy eating harder. The two main barriers that were agreed with were that fresh food goes off quickly (53.8%) and the price of healthy food can make it harder to eat healthily (49.3%).

Table 15: Barriers to healthy eating by group – number (%)

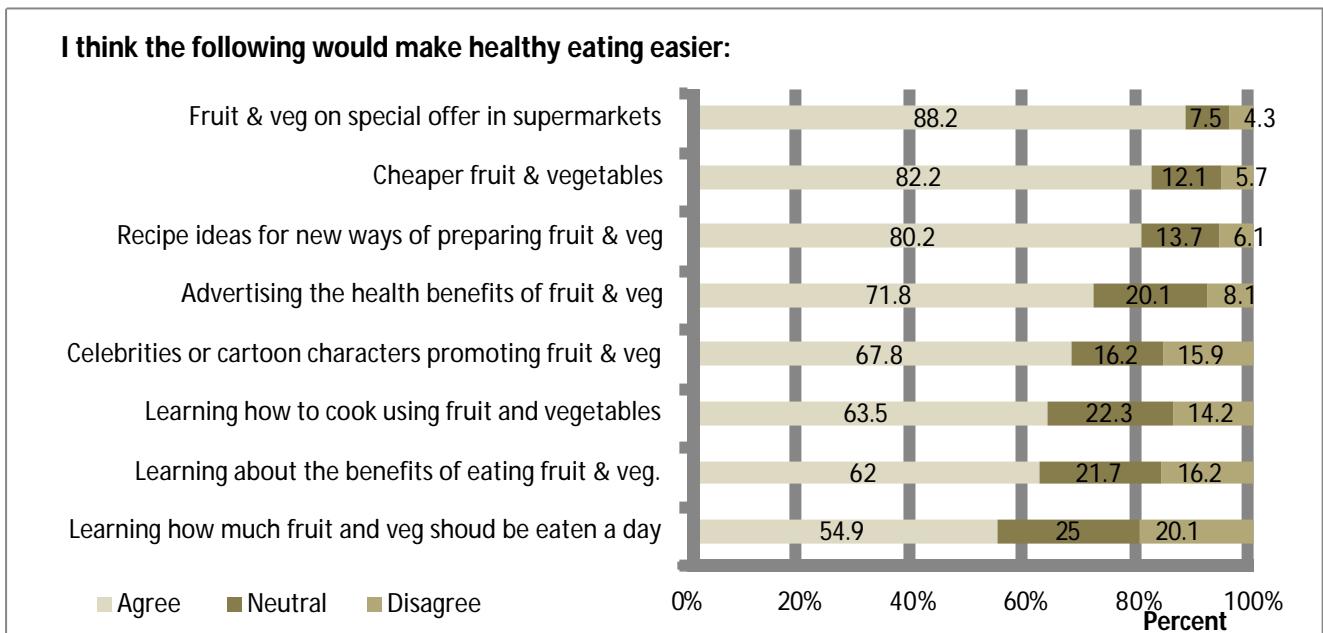
I think the following things make it harder to eat healthily...	Group	Agree	Neutral	Disagree
Quality of healthy food locally	Intervention	36 (17.7)	57 (28.1)	110 (54.2)
	Control	32 (21.9)	41 (28.1)	73 (50)
Availability of healthy food locally	Intervention	34 (16.7)	50 (24.5)	120 (58.8)
	Control	34 (23.3)	35 (24)	77 (52.7)
Price of healthy food	Intervention	100 (49.3)	50 (24.6)	53 (26.1)
	Control	71 (49.3)	33 (22.9)	40 (27.8)
Fresh food goes off quickly	Intervention	110 (54.7)	58 (28.9)	33 (16.4)
	Control	76 (52.4)	44 (30.3)	25 (17.2)
I have limited cooking skills	Intervention	25 (12.4)	30 (19.3)	138 (68.3)
	Control	28 (19.3)	26 (17.9)	91 (62.8)
I have little time to shop & cook	Intervention	31 (15.3)	44 (21.8)	127 (62.9)
	Control	22 (15.3)	37 (25.7)	85 (59)
Cooking is not important	Intervention	6 (3)	8 (4)	188 (93.1)
	Control	4 (2.8)	5 (3.5)	135 (93.4)
Confusing health messages	Intervention	35 (17.5)	50 (25)	115 (57.5)
	Control	29 (20.1)	39 (27.1)	76 (52.8)
Children pestering	Intervention	58 (28.4)	43 (21.1)	103 (50.5)
	Control	36 (25.2)	42 (29.4)	65 (45.5)

No significant differences were found between intervention and control groups for barriers to eating healthily. However, significantly more respondents (36.1%) in the highest social strata grouping than expected disagreed with the statement that the price of healthy food locally made it harder to eat healthily and less than expected were neutral about this statement (9.7%) ($\text{Chi}^2 = 10.596$, $\text{df}=4$, $p=0.03$)

Interestingly, significantly fewer respondents with a child under two compared to those with a child 2 and over (17, 19.3%; 75, 30% respectively) agreed that children pestering was a problem. ($\text{Chi}^2 = 5.872$, $\text{df}=2$, $p=0.05$)

Incentives to healthy eating

Chart 12: Perceived incentives to healthy eating as a percentage of all respondents



The majority of respondents agreed with the above statements in Chart 12 particularly that the price of fruit and vegetables was important and were encouraged to buy fruit and vegetables when they were on special offer in supermarkets. Recipe ideas were also important and advertising the health benefits of fruit and vegetables.

Table 16: Incentives to healthy eating – number (%)

I think the following things would make healthy eating easier...	Group	Agree	Neutral	Disagree
Cheaper fruit & vegetables	Intervention	172 (84.7)	21 (10.3)	10 (4.9)
	Control	114 (76.6)	21 (14.5)	10 (6.9)
Learning about benefits of eating fruit & vegetables	Intervention	126 (62.4)	44 (21.8)	32 (15.8)
	Control	88 (61.5)	31 (21.7)	24 (16.8)
Fruit & veg on special offer in supermarkets	Intervention	183 (90.1)	14 (6.9)	6 (3)
	Control	124 (85.5)	12 (8.3)	9 (6.2)
Learning how much fruit & veg to eat per day	Intervention	110 (54.7)	48 (23.9)	43 (21.4)
	Control	79 (55.2)	38 (26.6)	26 (18.2)
Learning how to cook using fruit & vegetables	Intervention	130 (64.7)	41 (20.4)	30 (14.9)
	Control	89 (61.8)	36 (25)	19 (13.2)
Recipe ideas for new ways of preparing fruit & veg	Intervention	156 (79)	30 (15)	12 (6)
	Control	117 (81.8)	17 (11.9)	9 (6.3)
Celebrities or cartoon characters promoting F&V	Intervention	129 (63.9)	36 (17.8)	37 (18.3)
	Control	106 (73.4)	20 (14)	18 (12.6)
Advertising the health benefits of fruit and veg.	Intervention	144 (71.6)	41 (20.4)	16 (8)
	Control	103 (72)	28 (19.6)	12 (8.4)

No significant differences were found between intervention and control groups for incentives to eating healthily.

Snack Right

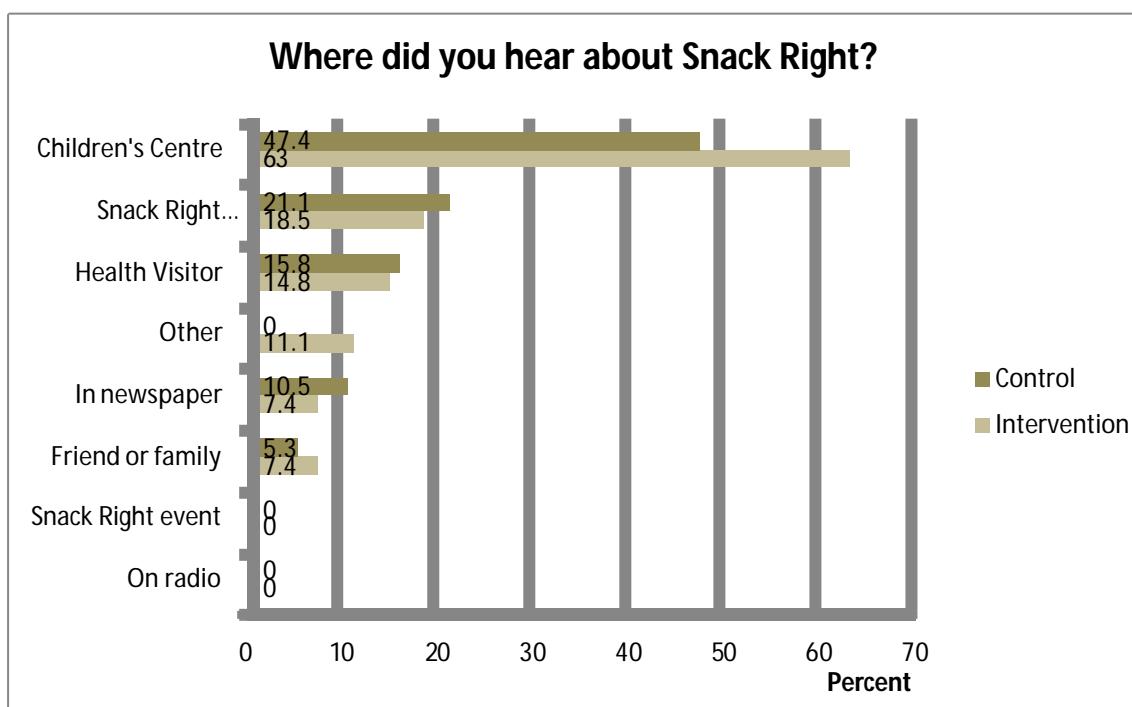
Knowledge of Snack Right

Table 17: Knowledge of Snack Right by group - number (%)

Have you heard of Snack Right?	Yes	No	Total
Intervention	27 (13)	180 (87)	207 (100)
Controls	19 (12.9)	128 (87.1)	147 (100)
Total	46 (13)	308 (87)	354 (100)

Interestingly, although there are no significant differences between the groups (or social class groupings) in their knowledge of Snack Right, still only 46 (13%) of respondents had heard of the project including 19 (12.9%) in the control group before the beginning of Phase 2. This awareness might increase after the Snack Right events.

Chart 13: Where respondents heard of Snack Right by group



There were no differences in where respondents had heard of Snack Right according to group or social class grouping. In Table 17, of the 46 respondents who said they were aware of Snack Right the majority of 26 (56.5%) had been informed through their children's centre, followed by 9 (19.6%) who had received a Snack Right leaflet. Of the 3 respondents answering the other category 2 had heard

through Sainsbury's and one from a shop window which may imply that there may have been some confusion with another snacking promotion.

Table 18: Sources of information about Snack Right – number %

	Intervention	Control	Total
Snack Right leaflet	5 (18.5)	4 (21.1)	9 (19.6)
In Newspaper	2 (7.4)	2 (10.5)	4 (8.7)
Health Visitor	4 (14.8)	3 (15.8)	7 (15.2)
Children's Centre	17 (63)	9 (47.4)	26 (56.5)
Friend or family	2 (7.4)	1 (5.3)	3 (6.5)
On radio	0	0	0
Attended a Snack Right event	0	0	0
Other	3 (11.1)	0	3 (6.5)

The majority of 26 (85%) of respondents, only quoted one source of information about Snack Right, 4 (9.8%) quoted 2 sources; 1 person quoted 3 and 5 sources. There were no significant differences in the number of sources quoted for groups or social class groupings.

Healthy Start Vouchers

Table 19: Have you applied for Healthy Start Vouchers as a result of the Snack Right Project? – number (%)

Group	Yes	No	Total
Intervention	3 (7)	40 (93)	43 (100)
Control	6 (28.6)	15 (71.4)	21 (100)
Total	9 (14.1)	55 (85.9)	64 (100)

Respondents were asked to fill in this question only if they had heard of the Snack Right Project. In the previous question 46 respondents said they had heard of Snack Right, but 100 have replied to this question. However, only 9 respondents (from the original 46), including 6 from the controls, had applied for Healthy Start vouchers as a result of Snack Right. This poor response is understandable as this was before the start of the Phase 2 events. Surprisingly, using Fisher Exact Test, there was significantly more in the control group who had applied for the vouchers as a result of Snack Right. ($p=0.049$). There were no social class differences in the application for Healthy Start vouchers as a result of Snack Right.

Table 20: Do you use Healthy Start Vouchers for fruit and vegetables by group – number (%)

Group	Yes	No	Not heard of vouchers	Total
Intervention	22 (11.5)	80 (41.9)	89 (46.6)	191 (100)
Control	22 (15.5)	50 (35.2)	70 (49.3)	142 (100)
Total	44 (13.2)	130 (39.0)	159 (47.7)	333 (100)

When asked if they use Healthy Start vouchers for fruit and vegetables there was no difference in responses between the intervention and control group. However, as would be expected, significantly more from the lowest social class grouping (16, 22.5%) reported that they use Healthy Start vouchers for fruit and vegetables ($\chi^2=14.338$, df=4, p=0.006). There were only 2 respondents from the highest grouping that currently do not work, using vouchers for fruit and vegetables.

Significantly more than expected in the 25 years and under carers/parents (22, 43.1%) were using Healthy Start vouchers. Significantly more in the 26-35 age-group of carers had not heard of vouchers (92, 52%). ($\chi^2=45.418$, df=4, p=0.0001)

Chart 14: Knowledge of where Healthy Start vouchers can be exchanged

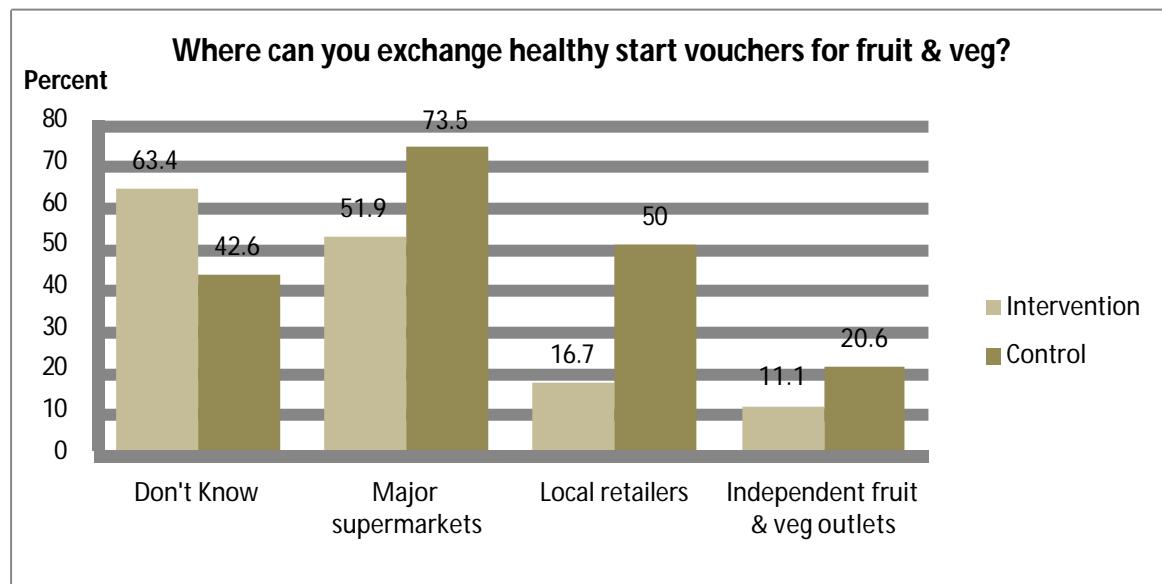


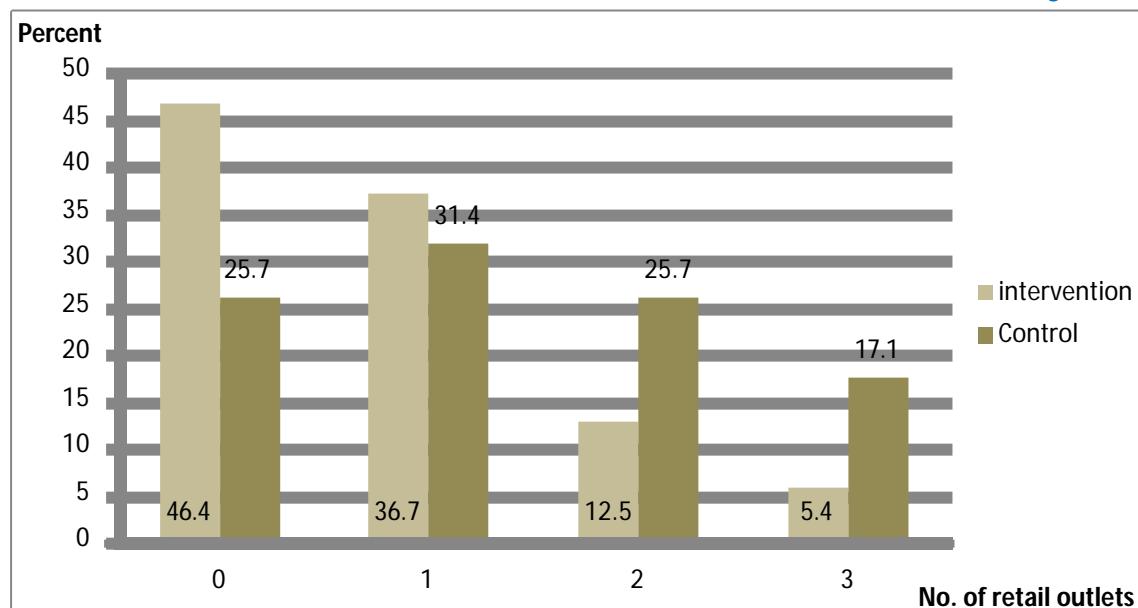
Table 21: Knowledge of where Healthy Start vouchers are used? Number (%)

	Intervention	Control	Total
Independent Fruit & Veg outlets	6 (11.1)	7 (20.6)	13 (14.8)
Local retailers	9 (16.7)	17 (50)	26 (29.5)
Major Supermarkets	28 (51.9)	25 (73.5)	53 (60.2)
Don't know	52 (63.4)	20 (42.6)	72 (55.8)

Chart 14 and 15 gives the percentage of responses from those who were aware of Healthy Start vouchers. Vouchers can be exchanged at any retail outlets provided they are taking part in the scheme. Those in the control group have significantly

greater knowledge than those in the intervention group about where the vouchers can be used such as major supermarkets ($\chi^2 = 4.093$, df=1, p=0.043) and local retailers ($\chi^2 = 11.136$, df=1, p=0.001). The control group also had greater knowledge that vouchers can be used in independent fruit and vegetable outlets although this was not statistically significant. Furthermore, significantly more in the intervention group did not know where they could be used. ($\chi^2 = 5.272$, df=1, p=0.022). However, this awareness may change after the intervention group has access to the Snack Right events. There were no significant social class awareness differences in responses.

Chart 15: Number of retail outlets mentioned were HS vouchers can be exchanged



In Chart 15 there were no significant differences between the intervention and control groups in the number of retail outlets mentioned. Only 9 (9.9%) of 91 respondents answering this question, were aware of all the outlets listed where Healthy Start vouchers could be exchanged; 16 (17.6 %) were aware of two, 31 (34.1%) of 1 and 35 (38.5%) were not aware of any.

6. Discussion

Limitations of the evaluation

There would have been some sampling bias as the intervention centres and therefore the few remaining control centres could not be randomly sampled as the Strategic Ambassadors working with the children's centres decided where the Snack Right events were to be held. The sample is a convenience sample as the data would have been collected at a time and day selected by the key contacts at the children centres. Therefore there may have been some members of the population who attend children's centres that are less likely to be included than others, if they attend at different times and days.

Social desirability bias⁴¹ is the tendency for respondents to want to represent themselves in the most favourable way either consciously or unconsciously and it is difficult to account for this bias or eliminate it. Although no personalised data was collected on the questionnaires, it was necessary for ethical reasons to ask people to fill in a consent form and they may have felt that they could be traced. Also employing an interviewer, although this helps with responding to all questions particularly for those who have literacy problems, there is another person viewing responses. There may have also been a "healthy volunteer effect"⁴² whereby people who volunteer for studies tend to be healthier or more health conscious than the general age-specific population and this will also tend to lead to an under-estimation of problems.

From the answers to the questions there was some evidence of a residual effect of Phase 1 – that is some respondents from the control centres were aware of Snack Right. However, this is difficult to avoid with such interventions.

Given the collection difficulties encountered, the sample size was smaller than intended. Also, matched pairs (using the same subjects for the baseline and follow up) was not used as it would be difficult to trace the same parents and carers again. These difficulties can lead to considerable variance and the possibility of type II errors: that is false negatives failing to find a significant difference when there is one.

There may have been some inaccuracies of the social class grouping which was based purely on the respondent's brief description of their occupation – which may have put some individuals into the wrong group. Also as 17% did not give a present or previous occupation which means they had to be "unclassified". All respondents with an occupation were classified. However, there were expected significant social class differences such as in the use of Healthy Start vouchers

Given the time constraints there was no opportunity to conduct a test-retest reliability check whereby a sample of respondents fill in the survey more than once, to see how much their answers vary. Thus we cannot calculate how much respondents answers would vary over time without any intervention. These problems limit the generalisability of findings.

Questionnaire findings

Demographic data

Most respondents (54.6%) were married, working part-time (31.3%) or classed themselves as “other” (32.8%) which included mostly those who were a full-time parent (88.6%). There were equal proportions of respondents in the high and low social class groupings: 72 (25.2%) and 74 (25.8%) respectively. Nearly half 140 (49%) of respondents were in the middle class grouping. These proportions are what would be expected in the general population, but they are disappointing in terms of Snack Right that aims to target specifically disadvantaged groups.

However, this may have been a failure of the collection not targeting less affluent areas sufficiently.

The average age of respondents was 32.4 years. The vast majority 235 (68.1%) were looking after one pre-school child and 101 (29.3%) were looking after two. The average age of the eldest pre-school child was nearly 1½ years.

Snacking

The majority of respondents (64.8%) would give their child snacks mid morning or in the afternoon (58.5%). There were some significant differences according to social class grouping. Although very few respondents reported giving snacks before breakfast more than expected in the highest grouping (4, 5.56%) and none in the middle grouping gave snacks at this time. Significantly more in the highest grouping (57, 79.2%) and less than expected in the middle grouping (86 61.4%) gave snacks mid morning. Less than expected in the lowest grouping (32, 43.2%) gave snacks in the afternoon.

Respondents were asked whether they agreed or disagreed with a series of statements on snacking. The vast majority 99.2% thought fresh fruit and vegetables were good for their pre-school child’s health. Sixty percent thought their pre-school child was eating healthy snacks. However, less than 50% thought snacking was vital to their pre-school child’s health. Respondents found it easier to give fruit than vegetables to their child.

With regard to giving vegetables there were some significant social class grouping differences. Less than expected in the lowest grouping (30, 42.3%) disagreed that it was hard to give vegetables. More than expected in the middle grouping (88, 63.8%) disagreed with this statement.

Significantly more parents with a child under 2 years thought their child ate healthy snacks and more disagreed that it was hard to get their child to eat vegetables.

The average number of fruit and vegetable snacks eaten per day was three.

Food Eaten

The vast majority 90.6% stated that their children eat fresh fruit (which gives very limited scope for change) and 73.2% said their children ate fresh, frozen or tinned vegetables daily. The majority of 84.6% gave their pre-school child water to drink

and 83.9% would give their child full-fat milk or yoghurt. Still a relatively high proportion of respondents are giving less desirable foods: such as sugared cereals (63.1%); biscuits/cereal bars (51.7%); sugared soft drinks (44.2%); crisps (40.5%) and sweets or chocolates (38.9%). These could be given several times a day. Fried vegetables and baked beans were the least reported foods eaten.

There were some significant social class differences in the foods eaten. Significantly more respondents (40, 54.1%) from the lowest grouping said their child ate sweets and chocolate compared with the high and middle groupings (21, 30% and 51, 36.4% respectively). Significantly more from the lowest grouping consumed fried vegetables (14, 20%) compared to the high and middle groupings (4, 5.7% and 15, 10.8% respectively).

Carers/parents in the 36-45 age-group were significantly likely to have a child that had biscuits or cereals bars on the previous day compared to those aged 26-35 (50, 61.7%; 85, 44.7% respectively).

More children 2 years and over were reported to be eating more of the less desirable foods: cakes/puddings, sweets/chocolate, crisps, biscuits/cereal bars, sugared soft drinks and breakfast cereals. However, they were eating more salad, but more younger children were eating more fresh, frozen or tinned vegetables. Low fat milk and yoghurt can be introduced from around 2 years, so understandably significantly more were consuming it in the 2 years and over group. However, although low fat food is not recommended for those under 2 years, 20.7% were consuming it.

The children 2 years and over were reported to be consuming significantly more of the 5 sugared foods listed excluding baked beans. For the under 2s the average was 1.5. Only two children (under 2) had the 5 sugared foods listed and nearly a third had only one. For the children 2 years and over, the average was 2.5. Most children in this age-group, just over a third, had 3 sugared foods and eleven had the 5 sugared foods. The average number of sugared foods eaten by all children was 1.7, with most eating 3.

Opinions on fresh fruit & Vegetables

The majority of opinions on fruit were very positive in that they were considered good tasting (89.3%), convenient (74.9%) and varied (78.1%). However, there were mixed views on whether fruit was considered expensive. Just over a third of respondents considered that it was expensive, perhaps because of wastage as just over a half (53.8%) thought fresh food goes off quickly.

Although the majority (74.9%) of respondents consider fresh fruit was convenient more than expected in the 36 and over age-group of carers (9, 9.8%) considered that fresh fruit was inconvenient or were neutral (11, 12%). More than expected in the 26-35 age-group (153, 81.8%) considered fruit was varied.

There were no significant social class differences in responses. More than expected in the 26-35 age group (151, 80.7%) considered vegetables were varied.

The vast majority of respondents thought vegetables tasted good (77.6%) were varied (76.1%) and convenient (71.3%). There were more mixed responses about the price of vegetables but 43.1% agreed that they were inexpensive. Unfortunately,

between January and August this year food prices have increased with parents having to pay 14.7% more during this period for fruit and vegetables.⁴³

Barriers to healthy eating

The majority of respondents disagreed with most of the barriers listed to healthy eating. In particular that 93.4% of respondents disagreed that cooking was not important. They felt that they had the time to shop and cook and that they had the necessary skills to prepare food. A small minority agreed with the statements that there were confusing health messages (18.6%), and that the availability and quality of food locally (19.5%) or child pestering (27.1%) would make healthy eating harder. The two main barriers were that 53.8% reported that fresh food goes off quickly and 49.3% that the price of healthy food can be expensive.

Significantly more respondents (36.1%) in the highest social strata grouping than expected felt that the price of healthy food locally did not make it harder to eat healthily and less than expected were neutral about this statement (9.7%)

Interestingly, significantly less respondents with a child under two compared to those with a child 2 and over (17, 19.3%; 75, 30% respectively) agreed that children pestering was a problem.

Incentives to healthy eating

The majority of respondents agreed with the statements in particular that the price of fruit and vegetables was important (82.2%) and were encouraged to buy fruit and vegetables when they were on special offer in supermarkets (88.2%). Recipe ideas were also important for 80.2% of respondents and advertising the healthy benefits of fruit and vegetables for 71.8%.

Knowledge of Snack Right

Only 46 respondents (13%) said they were aware of Snack Right. However, after the Phase 1 intervention 56% of respondents claimed they were aware of Snack Right. This demonstrates a possible “wash-out effect” as campaigns cannot be expected to permanently change behaviour therefore this intervention needs to be repeated on a regular basis.

Of those who were aware of Snack Right in Phase 2 most (56.5%) had been informed through their children’s centre, followed by 19.6% who had received a Snack Right leaflet. The majority of respondents (85%) only quoted one source.

Healthy Start Vouchers

Nine respondents claimed to have applied for Healthy Start vouchers as a result of Snack Right. This poor overall response is understandable as this was before the start of the Phase 2 events. However, even after the Phase 1 intervention, only 7 reported applying for Healthy Start vouchers as a result of Snack Right.

Forty-four (13.2%) of respondents reported that they use Healthy Start vouchers and 159 (47.7%) have not heard of the vouchers. As would be expected, significantly more from the lowest social class grouping (16, 22.5%) reported that they use Healthy Start vouchers for fruit and vegetables.

Significantly more than expected in of carers/parents aged 25 or younger (22, 43.1%) were using Healthy Start vouchers. Significantly more in the 26-35 age-group of carers had not heard of vouchers.

Only 9.9% of all respondents were aware of all the outlets listed where Healthy Start vouchers could be exchanged. However, this awareness may change after the intervention group has access to the Snack Right events.

Significant differences between the Control and Intervention groups

There were some significant differences (listed below) between the control and intervention groups which will be adjusted for, as far as possible, in the analysis of the follow up survey:

1. Demographic characteristics: more respondents in the control than intervention group were unemployed (19.4% and 8.2%, respectively). However, more in the intervention than control group were classed as “other” (37% and 26% respectively). The “other” category also implied they were not officially employed at present, as the vast majority (88.6%) in this category were a full-time carer/parent. More respondents in the control group were single. (28, 19.6% compared with 17, 8.3% in the intervention group).
2. Cakes and puddings and biscuits/cereal bars: more in the controls answered yes to their children eating these sugary foods.
3. Vegetables tasted bad: more than expected in the control group disagreed with this statement.
4. Healthy Start Vouchers: More in the control group (6 out of 9) had applied for the vouchers as a result of Snack Right. Those in the control group also had greater knowledge than those in the intervention group about where the vouchers can be used such as major supermarkets and local retailers. Furthermore, more in the intervention group did not know where they could be used.

7. Conclusions

A total of 335 questionnaires were collected from parents and carers who attend children centres in Cheshire and Merseyside. The average age of respondents was 32 years. Overall, there has been an improvement in the more positive responses for snacking, opinions on fruit and vegetables and their claimed consumption since the Phase 1 evaluation, although none claimed to have attended a Snack Right event and only a small percentage had heard of Snack Right and a reduced proportion had heard of Healthy Start. Almost a half of respondents were in the middle class grouping (SC III non-manual and manual), with just over a quarter in both the lowest (SC IV and V) and highest (I and II) class grouping. In contrast, during the Phase 1 evaluation respondents were mainly from lower social class groupings which may have also accounted for some of these differences.

It was interesting that the younger children under 2 years were reported to be eating more healthily than children 2 and over. This shows awareness in parents and carers who are trying very hard to give their child a good diet; unfortunately as the child grows more outside influences may prevail.

The survey has highlighted areas that specifically need attention, some of which are being addressed by Snack Right:

1. The importance of snacking for the pre-school child's health needs emphasising.
2. Suggestions on how to make vegetables more appealing for snacks.
3. Suggestions on when to give snacks.
4. There is still a sizeable minority that do not consider that their child is eating healthy snacks.
5. Support in maintaining healthy snacking as the child grows as children two and over were eating significantly less healthy food than younger children and they were more likely to pester for unhealthy snacks.

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Glossary

Glycemic Index (GI)	The glycemic index or GI ranks carbohydrates according to their effect on blood glucose levels. Low GI carbohydrates produce only small fluctuations in blood glucose and insulin levels.
Ambassador	A health or early years professional, either on a strategic or practitioner level who is supporting the Snack Right project.
Generalisable	Findings are generalisable if they can be used to predict what will happen in new and different situations.
Healthy Start	NHS initiative which replaces the welfare food scheme. It helps families from low income and disadvantaged households by giving vouchers for free milk and fresh fruit and vegetables to children and mums-to-be. The scheme also encourages earlier and closer contact with health professionals who can give advice on pregnancy, breastfeeding and healthy eating.
Non milk extrinsic sugar	Non milk extrinsic sugar (NMES) is the type of sugar in foods that is not part of the cellular structure of foods – includes sugar added to foods as well as sugar in fruit juices and other drinks. This type of sugar can cause tooth decay and it is recommended that children have sugar containing foods and drinks at meals times and in small amounts. The sugar naturally found in milk is not counted as NMES as it is not harmful to teeth.
Non-probability Sampling	Nonprobability sampling does not involve random selection. Therefore we may or may not represent the population well, and it is hard to know how well this has been done. However, in applied social research, such as this evaluation, it may not be feasible, practical or theoretically sensible to do random sampling. For example where we sample with a <i>purpose</i> in mind and would have one or more specific predefined groups we are seeking.
NS-SEC	National Statistics Socio-economic Classification. A new social strata classification, with a defined conceptual basis, that has been developed to replace Social Class and Socio Economic Group for national surveys.
Reliability check	To test how consistent replies are from a questionnaire completed more than once by the same respondents.
RNIs	Reference nutrient intakes RNIs are used for protein, vitamins and minerals, and are an estimate of the amount that should meet the needs of most of the group to which they apply.
Significant difference	Refers to a statistically significant difference whereby the difference noted is more than expected and unlikely to have occurred by chance.
Social Class based on occupation	Formerly Registrar General's Social Class. A scale for classifying people into five groups (represented by roman numerals), one sub-

divided. The composition of the classes groups people together according to occupational skill.

Social Marketing

The systematic application of marketing along with other concepts and techniques to achieve specific behavioural goals for a social good.

**Sure Start
Children's Centres**

They are service hubs where children under five years and their families can receive integrated services and information to provide children with the best start in life. Originally developed in the most disadvantaged neighbourhoods and by 2010 they will be situated in every community.

8. Appendices

Appendix 1: Baseline Questionnaire

Appendix 2: Snack Right marketing materials

Appendix 1: Baseline Questionnaire



Baseline Questionnaire – Parents/carers

No

This research is being carried out by Liverpool University for ChaMPs (Cheshire and Merseyside Public Health Network). We are trying to understand more about the feelings of local people about children's healthy snacking (eating small amounts of food between meals). This is for pre-school children who have been weaned (eating solid food instead of only baby formula or breast milk) between the ages of 6 months to four years. Please would you answer the following questions? Your replies will be kept confidential.

If you have more than one pre-school child between the ages of 6 months to four years please answer the questions with the oldest child in mind.

1. When do you give your child snacks or treats to eat between meals? (Please tick ALL that apply)				
Before breakfast		Afternoon		After evening meal
Mid morning		After work/school/nursery		After going to bed

2. Please tick the box nearest to the way you feel.	Agree	Neutral	Disagree
Fresh fruit and vegetables are good for my pre-school child's health.			
I t's hard to get my pre-school child to eat fresh fruit.			
I t's hard to get my pre-school child to eat vegetables.			
If parents and carers eat fruit and vegetables, the child will be more likely to eat them.			
Snacking is vital for my pre-school child.			
The snacks my pre-school child eats are healthy.			

3. How many fruit and vegetable snacks would your pre-school child usually eat each day?	
--	--

4. Did your pre-school child eat any of these things yesterday?	Yes	No
Children's Breakfast Cereals (e.g. Frosties, Sugarpuffs, Rice crispies, [not Ready brek])		
Biscuits or cereal bars		
Cakes or puddings		

Question 4 continued. Did your pre-school child eat any of these things yesterday?	Yes	No
Sweets or chocolates		
Crisps		
Sugared soft drink (e.g. Ribena, orange squash, lemonade, soda stream, Coca-Cola etc.)		
Water		
Any fresh fruit such as apples, oranges (any type), pears, bananas, plums etc		
Baked beans		
Any type of salad e.g. celery, tomatoes, lettuce, cucumber, etc		
Any fried vegetables e.g. Fried onions, fried mushrooms or fried tomatoes etc		
Any other vegetables, fresh, frozen or tinned e.g. peas, cabbage, carrots, leeks green beans, kidney beans, parsnips, tinned tomatoes, cauliflower, leeks, turnips or sprouts etc.		
Milk or yoghurt: full fat		
Milk: Skimmed or semi-skimmed or yoghurt low fat		

5. In my opinion fresh fruit is... (Tick the box that is nearest to the way you feel)

	Agree	Neutral	Disagree
Inexpensive			
Inconvenient			
Varied			
Bad tasting			

6. In my opinion fresh vegetables are... (Tick the box that is nearest to the way you feel)

	Agree	Neutral	Disagree
Inexpensive			
Inconvenient			
Varied			
Bad tasting			

7. I think the following things make it harder to eat healthily. (Please tick the box that describes your feelings)

	Agree	Neutral	Disagree
Quality of healthy food locally			
Availability of healthy food locally			
Price of healthy food			
Fresh food goes off quickly			
I have limited cooking skills			
I have little time to shop & cook			
Cooking is not important			
Confusing health messages			
Children pestering			

8. I think the following would make healthy eating easier. (Please tick the box that describes your feelings)			
	Agree	Neutral	Disagree
Cheaper fruit and vegetables			
Learning about the benefits of eating fruit and vegetables			
Fruit and vegetables on special offer in supermarkets			
Learning about how much fruit and vegetables should be eaten each day			
Learning how to cook using fruit and vegetables			
Recipe ideas for new ways of preparing fruit and vegetables			
Celebrities or cartoon characters promoting fruit and vegetables			
Advertising the health benefits of fruit and vegetables			

9. Have you heard of Snack Right?	Yes	No	
-----------------------------------	-----	----	--

If no, please go to question 12.

10. Where did you hear about Snack Right? (Please tick all that apply)			
Snack Right Leaflet	In newspaper	From Health Visitor	
On radio	Attended a Snack Right event	From Children's Centre	
Friend or family	Other please specify:		

11. Have you applied for Healthy Start Vouchers as a result of the Snack Right Project?	Yes		No	
---	-----	--	----	--

12. Do you use Healthy Start Vouchers for fruit and Vegetables?	Yes		No		Not heard of vouchers	
---	-----	--	----	--	-----------------------	--

If you have not heard of Healthy Start vouchers, please go to question 14.

13. Where can you exchange Healthy Start Vouchers for fruit & vegetables? (Please tick ALL that applies).			
Major supermarkets	Local retailers	Independent fruit and vegetable outlets	
Don't Know			

14. Your age:		15. Eldest preschool child's age: [4 or under]	
---------------	--	--	--

16. Number in family aged 4 or under	
--------------------------------------	--

17. Working Status (Please tick only one)	
Working full time (30+ hours per week)	
Working part time (8-29 hours per week)	
In full-time education	
Unemployed (seeking work)	
Working as a carer	
Unable to work due to illness	
Other (please state)	

18. What is your job? (If you are not working what did you do in your last job?)	
--	--

19. Family status (Please tick only one)	
Married	
Living with partner	
Single	
Widowed/divorced/separated	

20. Place of residence	District/Suburb/small area: [eg <u>Everton</u> or <u>Anfield</u> as in Liverpool]	First part of postcode:
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For interviewer, please fill in:

Name of children's centre		Today's date:
---------------------------	--	---------------

Name of Primary Care Trust (PCT on list of contacts)	
--	--



Please check that all of the questions have been answered.

Thank you very much for your time and attention. Please return the questionnaire to the person who gave it to you to fill in; they will return it in the stamped addressed envelope provided.

Appendix 2: Snack Right marketing materials

Snack Right Photograph Presentation Card

Why not buy healthy treats instead of sugary or salty snacks the next time you go shopping?

You may even be able to get free Healthy Start **HEALTHY START** vouchers which give you money off fruit and veg.

You can use them in any supermarket, greengrocer or other shop that has the Healthy Start sticker in the window.

Call 0845 607 6823 or visit www.healthystart.nhs.uk to see if you qualify, and you'll be sent a simple form to fill in.

Easy ways to Snack Right:

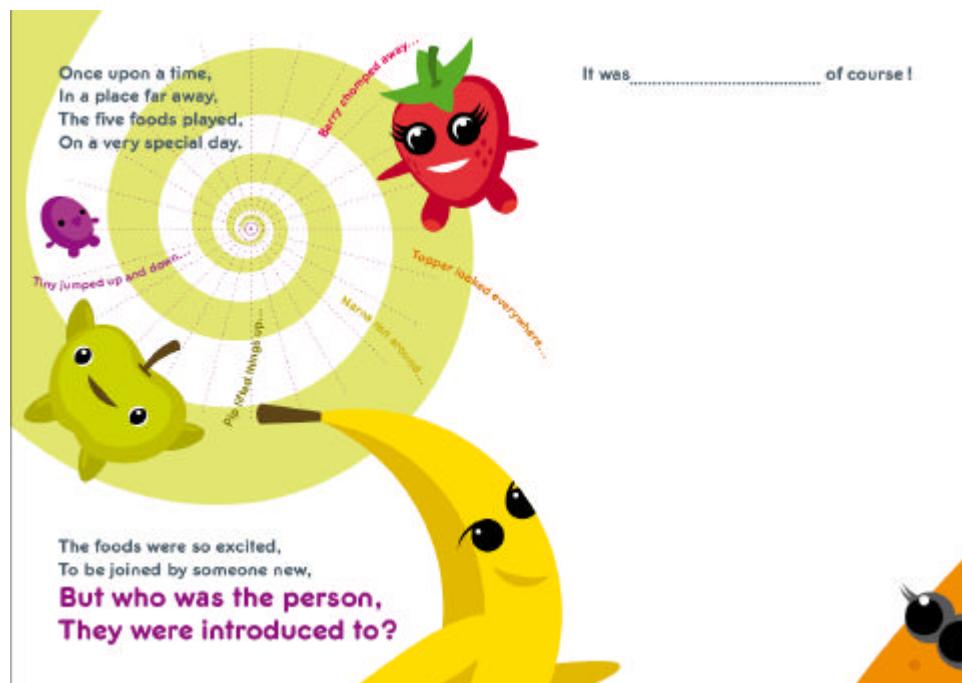
- Swap a sugary or salty food for a fruit and veg snack once a day – this may improve kids' behaviour.
- Involve your kids in shopping and preparation – it's a great way to spend quality time together.
- Try fruit and veg tinned in water or their own juices – they offer fantastic value and are often as good as fresh.



Snack Right 

Published by Cheshire Public Health Network, 31 Castle Street Hospital, 2nd Floor, Ashton Brook, Birkenhead, CH42 0LG. Phone 0151 481 7770. Web: www.cheshire-for-health.co.uk. Working together towards a healthier Cheshire and Merseyside. www.snackright.co.uk.

The Snack Right Five meet a special friend



Snack Right Leaflet

Getting started

Why not buy healthy treats instead of sugary or salty snacks the next time you go shopping? You may even be able to get free Healthy Start vouchers which give you money off fruit and veg. 
You can use them in any supermarket, greengrocer or other shop that has the Healthy Start sticker in the window.
Call 0845 607 6823 or visit www.healthystart.nhs.uk to see if you qualify, and you'll be sent a simple form to fill in.

I used to think fruit and veg cost a fortune, but it actually saves me money on the weekly shop.
Alison, Neston

Getting my little boy into different tastes and textures early made it loads easier to give her fruit and veg when she was older.
Liz, Crewe

Your health visitor's contact details:



Published by Champs Public Health Network, St Catherine's Hospital, 2nd Floor, Admin Block, Birkenhead, CH42 0LQ. Phone: 0161 488 7776. Web: www.champs-for-health.net.
Working together towards a healthier Cheshire and Merseyside. www.snackright.co.uk

Ready to Snack Right?

Healthy snacking is good for under 4s, and helps them grow up strong.

This leaflet explains why people everywhere are giving kids a fruit and veg treat each day, instead of chocolate or crisps. Whether it's half a banana or a slice of apple, healthy snacks are affordable, take very little time to prepare, and taste delicious. They also bring big benefits for kids and their parents.

So why not Snack Right, and get the family feel good factor?

I thought it would be hard to get my girl into veg, but by just trying one thing a day she loves it now... even sprouts! Vicki, Ellesmere Port

I make fruit smoothies with my granddaughter instead of giving her sugary drinks. It's dead easy and keeps her teeth healthy.
Steve, Haydock



Snack Right

Great reasons to give under 4s healthy snacks

It's right for kids

Compared to unhealthy snacks, fruit and veg treats:

- Release energy slowly, which may improve kids' behaviour and make them less hyperactive.
- Can benefit the stomach when taken with a drink, easing common problems like constipation.
- Are fun to make with kids, and a great way to spend quality time together.

It's right for you

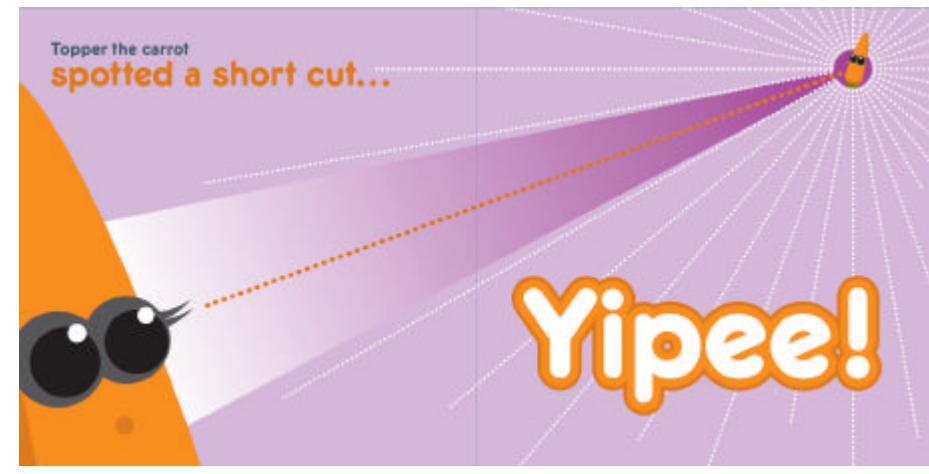
Compared to unhealthy snacks, fruit and veg treats:

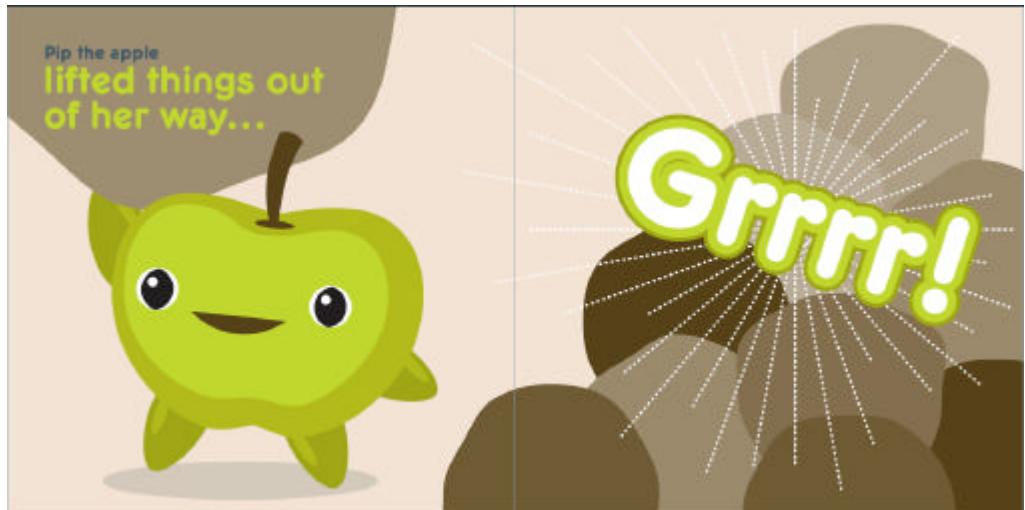
- Are often cheaper, with fruit and veginned in water or their own juices great value.
- Take little time or effort to prepare, with most eaten raw.
- Can soothe the discomfort of teething, when chewed under careful supervision.

With ice cream he'd be up 'til 11 at night. Since he's eating fruit instead, he's less hyper and in bed on time.
Dave, Algburth

I involve my lad in the shopping. I ask him to get bananas while I get apples.
Sandra, Warrington

Snack Right Story Book

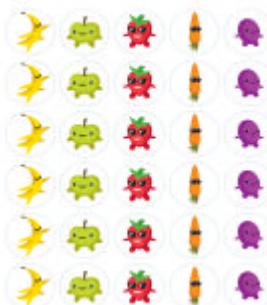




Snack Right Stickers and Chart

Your snack time adventure stickers!

Snack Right



My name is: _____

My age is: _____

Your snack time adventure!

Great taste!

Energy boost!

Fun to make!

Easy to prepare!

Affordable!

day 1

day 2

day 3

day 4

day 5

day 6

day 7

day 8

day 9

day 10

day 11

day 12

day 13

day 14

day 15

day 16

day 17

day 18

day 19

day 20

day 21

day 22

day 23

day 24

day 25

day 26

day 27

day 28

Snack Right

Are you ready?

Each day you have a fruit and veg treat instead of a sugary or salty snack, choose a sticker and add it to the chart.

Can you complete the adventure?

Did you finish?

Well done! The sticker chart is yours to keep.

You can also claim your free gift and be entered into the Snack Right free prize draw. One lucky winner will receive £1000 worth of Co-op Travel holiday vouchers and a fruit hamper, while eight runners-up will get £100 worth of High Street vouchers and a fruit hamper.

Just ask an adult to fill in the details below, read the terms and conditions on the back, and post this slip using the prepaid envelope.

Name of parent/guardian: _____

Name of child: _____

Age of child: _____

Address: _____

Postcode: _____

Contact no: _____

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Working together towards a healthier childhood and neighbourhoods.

Snack Right Placemat



"Can you name each snack time treat?"



Berry is a...



Pip is an...

**Snack
Right**



Nana is a...



Topper is a...



Tiny is a...

"Which of the foods are
you about to eat?"