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# **Overcoming Barriers to Dietary Change**

## **Report from Food Standards Agency Seminar**

**Tuesday 21<sup>st</sup> January 2003**

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## **Introduction**

The Food Standards Agency's Food Acceptability and Choice Programme investigates the major factors influencing consumers' choice of foods, particularly the barriers that consumers face to eating more healthily. It also evaluates interventions that might help overcome these barriers. The results of programme research are disseminated in a variety of ways, which include seminars and workshops for potential end users and other interested parties.

The purpose of the *overcoming barriers to dietary change* seminar was to present the results of five recently completed research projects funded under the Food Acceptability and Choice programme to a diverse audience, which included health professionals, academics and industry. The seminar also offered an arena for discussion of the research and perspectives of how the results might be used. This is in line with recommendation 30 of the report: *A review of the Food Standards Agency's Research Portfolio and Research Management Systems* (2001).

The seminar was attended by 71 participants from a range of backgrounds and roles (appendix 1).

### **1. Welcome**

The seminar was chaired by Professor Annie Anderson (Professor of Food Choice and Director of the Centre for Public Health Nutrition Research in the Department of Medicine, University of Dundee) who welcomed the audience to the meeting and outlined the aims of the day. Dr Jenny Woolfe (Food Acceptability and Choice Programme Manager, Food Standards Agency) provided an introductory address in which she outlined the Programme's strengths as:

- Innovation;
- Strengthening the evidence base;
- Addressing inequalities;
- Producing practical outcomes and
- Dissemination

### **2. Research presentations**

The presentations were provided as outlined in this section.

Copies of the slides for each presentation are provided on the website [www.food.gov.uk/science/research/NutritionResearch/](http://www.food.gov.uk/science/research/NutritionResearch/) or contact Rufina Acheampong, Nutrition Division, Branch B, Room 808C, Aviation House, 125 Kingsway, London WC2B 6NH, Tel: 020 7276 8925, E-mail: [rufina.acheampong@foodstandards.gsi.gov.uk](mailto:rufina.acheampong@foodstandards.gsi.gov.uk)

## 2.1 'A family based study to determine the acceptability of an increased intake of complex carbohydrate and to explore how change can be achieved'

**Project Team:** Prof. John Mathers, Dr Ashley Adamson, Mr Peter Curtis, Dr Anne Spendiff Human Nutrition Research Centre, University of Newcastle.

Prof. Mathers presented preliminary findings from a study, which has to be finalised and submit a final report to the FSA for peer review. When approved, the report will be publicly available through the Agency's library. Summaries of the outcomes will also be published on the Agency's Website.

### Background

Reducing the intake of total fat (and of saturated fatty acids) remains a core component of the UK's public health nutrition policy. Although progress is being made in achieving the national target of less than 35% of food energy (FE) from fat, the speed of improvement is slow. The evidence base includes:

- Energy intakes have decreased.
- Little change in intake of fat (as %FE)
- Intake of foods rich in starch has decreased.
- Public knows the recommendations for reduction of fat intake but are resistant to change and exhibit optimistic bias.

### Aim

This project aimed to test the hypothesis that a positive message to increase intake of starchy foods would be an acceptable and effective means of enabling people to adopt not only higher starch but also lower fat diets.

Given that the majority of food is eaten within the home and that interactions between family members are likely to modulate the effectiveness of healthy eating interventions, researchers undertook a community-based study among families from the middle three quintiles of the Townsend deprivation index in Newcastle upon Tyne.

### Research questions

- Will a positive message to increase intake of (low fat) starchy food be successful?
- How can barriers to increasing starchy food intake be overcome?

### Research Approach

The unique features of design of this study were:

- Family based
  - 75% of foods are eaten in the home
  - Family dynamics may modulate effectiveness of interventions
- Geographically and socioeconomically defined study

- Tested efficacy of 3 interventions
- Relatively long term follow up at 3, 6 and 18 months post intervention.
- Quantitative and qualitative information

### Recruitment strategy

Contiguous enumeration districts (ED) in Newcastle were identified in the middle three quintiles of the Townsend Deprivation Index. The Health Authority register was used to identify 'families'<sup>1</sup>. 'Consenting' families were identified through a mail out. Families were visited and 'Intervention' families who did not meet dietary targets (<29% FE starch & >35% FE fat) were recruited. 'Achiever' families (>29% FE starch & <35% FE fat) were identified and excluded.

Recruitment to the study took place in 6 Phases over 2 years and there was little evidence of differences in food and nutrient intakes between Phases at baseline.

### **Recruitment by Quintile of Townsend Score**

	Number of families mailed	% of total mailed	% Response to mailing	Number of families recruited into study	% of total recruited into study
Quintile 2	1561	52.4	18.7	145	61.7
Quintile 3	104	3.4	14.4	7	3.0
Quintile 4	1312	44.0	12.6	83	35.3
Total	2977			235	

Where quintile 1 is most affluent and quintile 5 most deprived

### **The Interventions**

- A. Health Fayre - a one-off family health event designed to be interactive and provides plans for personal change, recipes and food samples to eat and to try at home.
- B. Cook & Eat - a series of four cooking groups for adults (plus separate single session for children).
- C. A+B & personalised advice - invites families to participate in all intervention A and B events and receive individualised dietary advice based on baseline food diaries.

In each phase, families were randomised to one of the three interventions in approximately equal numbers. Randomisation was by ED, rather than by

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<sup>1</sup> 'Family' at least one child aged under 16 years living with any number of adults

family so as to minimise any potential “contamination” arising from close neighbours being allocated to different interventions.

### **Data collection was both quantitative and qualitative**

Data collection included anthropometric measurements, 3-day dietary diaries followed by interview, an assessment of knowledge of starchy foods, and a questionnaire. The questionnaire included both qualitative and quantitative questions constructed to gather contextual, knowledge and attitudinal data on issues pertinent to dietary change. Psychological models which may be predictive of change and demographic data questions were also included.

A total of 206 families (709 individuals) completed baseline food diaries of which 35 families were already meeting the dietary targets for fat and starch. Quantitative data on dietary behaviour outcomes were obtained at 3 months, 6 months and 18 months after the end of the interventions. Attempts were made to validate intakes using both 24 hour urine collections and comparison of energy intakes with estimated energy requirements.

Information on the acceptability of the interventions was also gathered. A sub-sample of families was selected at random for in-depth interview (at baseline and 3 months). Interviews explored early life influences and the decision-making process for food choice within the family. An aim was not only to measure any dietary change which may have occurred, but also to determine the process of change by which consumers adapt their diet to one high in complex carbohydrates.

A subsidiary study has measured the initial acceptability of foods rich in starch. Members of 77 families (186 individuals) were recruited, using the method outlined above, to take part in sensory evaluation. Subjects used visual analogue scales to assess the sensory attributes of different forms of bread, pasta and potato.

### **Major outcomes**

#### Attitude to starchy foods

Approx. 90% indicated that starchy foods are ‘Good for you’, good value for money, easy to cook, good nutritional value and quick to prepare

#### But

- 23% indicated that starchy foods are boring and/or fattening
- 34% disagreed that starchy foods should be the main part of meals

Main themes to emerge from qualitative data at baseline:

- Respondents do not have holistic concept of starchy foods
- Overall respondents felt positive about starchy foods
- Some people thought starchy foods were fattening
- Optimum quantities of starchy foods were not clear

Overall, there was a more positive attitude to starchy foods. Statements similar to the following, made by the sample, illustrate the positive change in attitude to starchy foods. *“I used to think ‘ no I can’t have potatoes. I can’t have bread, pasta and all that’s dead fattening.’ But now I know it’s not. If you eat in moderation, it’s a good thing.”*

### knowledge of starchy foods

The sample was tested for knowledge of starch foods at baseline and after the intervention. The results showed an increase in knowledge and some examples are shown in the table below.

Type of Starchy Food	% who know at baseline	% who know after intervention
Baked Beans	18	42
Bread	77	87
Cornflakes	21	42
Kidney beans	13	24
Lentils	18	44
Potato	93	94
Rice	54	64
Spaghetti rings	33	45
Sweetcorn	11	24

### Change in food choice and dietary intake

Data on the change in food choice and nutrient intake made by families, and individuals within families, at 3 months, 6 months and 18 months after intervention will be available.

#### **Recommendations to consumers**

- Low fat high starch foods are already popular foods so use bigger or more frequent servings ‘
- Opportunity to focus on breakfast – in terms of starch-rich foods and balanced diets
- Don’t forget other aspects of diet such as increasing consumption of fruit and vegetables and reducing fat, sugar and salt.

#### **Recommendations to Industry**

- Promote existing starchy foods
- Develop low fat starchy food snacks
- Add more starchy foods to convenience meals
- Counter myth that starchy foods are fattening

- Develop logo for low fat starchy foods

### **Recommendations to FSA for policy**

- Need for clear messages about health benefits of starchy foods
- Opportunity to develop '5+5' message (fruit and veg + starchy foods)
- Acknowledge that 'decision maker' in home faces conflicts
- Continue to promote understanding of concept of 'balanced diet' however it should be noted that this term is not well defined and is not necessarily well understood by the general public

### **Recommendations to FSA for research**

- Focus on the family as unit for research
- Urgent need for better biomarkers of dietary exposure
- Need for research with the more deprived groups in society

## **2.2 Barriers to the Development and Uptake of Reduced Fat Foods**

**Project Team:** Barbara Stewart-Knox with Jennifer Hamilton, Heather Parr, Desmond Hill & Brendan Bunting  
*Northern Ireland Centre for Diet and Health (NICHE) and the School of Psychology, the University of Ulster at Coleraine.*

### **Background**

Despite current dietary advice recommending that consumers reduce the proportion of energy derived from fat in the diet, both reduced fat product innovation and consumer uptake of these products remains low. Other relevant factors are:

- High rate of reduced fat food product failure
- Low rate of reduced fat food product innovation
- Efficient product development process crucial for success - models mostly focus upon industrial product development - modeling of food (and reduced fat) product development process required
- Lack of in-depth information as to consumer view of reduced fat products.

This raises the question “should industry continue developing reduced fat food products and if so, what can be done to help?”

### **Aim**

The main aim of this research was to identify barriers to the development and uptake of reduced fat foods from both industrial and consumer perspectives to define consumer need, determine the viability of producing these products and make recommendations for best practice in reduced fat product development. The study, carried out throughout Northern Ireland and England, was in two parts: the first targeting industry with the second targeting consumers.

#### **A. Industry Studies: Aims & Objectives**

- To identify barriers to the development of reduced fat foods
- To assess factors associated with food product success and failure
- To develop a model of ‘best practice’ for the food industry

### **Method**

Qualitative interviews with key industry product development personnel were carried out. 44 interviews were conducted in 27 food companies throughout Northern Ireland and England. ‘Interviewees’ were asked to describe their experiences and provide insight into problems encountered in the invention, development, launch and marketing of new standard and reduced fat food products. A database was compiled and data from 127 product case histories were coded, screened and modelled through a series of binary logistic regression analyses against company defined product outcome (success/failure).

## **Qualitative Results: Barriers to Reduced-Fat Food Product Development**

Low rate of innovation was attributed to a combination of these reasons:

- Political influences
  - Food scares
  - Legislative labelling restriction
- Technical aspects
  - Lack ingredients innovation
  - Lack of consumer research/involvement in the PD process
- Social issues
  - Restrictive health logos on labels
  - Restrictive time scales
- Economic issues
  - Suppressed retail price
  - High ingredients costs

## **Qualitative Results: Recommendations**

### Labelling issues:

- More flexible health logo criteria
- Wider range of product specific, approved reduced-fat levels

### Technical issues:

- Research and innovation into new ways of replacing fat in food
- Make consumer research available within the public domain
- Allow longer time to market for reduced fat

### Economic issues:

- Pricing that reflects higher cost of ingredients for reduced fat meat and pastry products

## **Analysis**

A logistic regression model was used to look at the likelihood of reduced fat product success. This implied that actions taken during the concept phase of the product development process and the nature of expertise employed are particularly important for product success.

### Factors predicting product success:

- Product carried a reduced fat claim
- Product inspired by a food technologist
- Recipe developed by manufacturer rather than retailer

### Factors predicting product failure:

- Product inspired by sources OTHER than retailers/suppliers/research centres
- Product inspired by trends
- Lack of communication with the retailer
- Texture problems

Researchers recommended that appropriate expertise is enlisted at product conception and that a food technologist is employed to ensure that the texture of the product is acceptable. Whilst it appears to be important to liaise with retailers throughout the process, in order to increase the probability of success manufacturers have to formulate their own product recipes and avoid following trends in food and 'me too' product development.

### **Model of Best Practice in Food Product Development: Conclusions**

#### Important for Product Success:

- Actions taken during the concept stage are particularly important for success
- Advice sourced during the product development process important for success
- Mixed expertise team approach to product development

### **Model of Best Practice in Food Product Development: Recommendations**

- Continue and encourage innovation of reduced fat food products
- Consult with appropriate expertise at the concept stage
- Consult with retailers
- Enlist appropriate technical expertise - get the texture right
- Avoid following fashions and 'me too' products
- Recipe development in-house

## **B. Consumer Studies: Aims and Objectives**

- Understand the perceived barriers preventing uptake of reduced fat products
- Determine perceived issues important to reduced fat product uptake and rejection
- Explore relationships between attitudes and reduced fat consumption
- Assess consumption of reduced fat products
- Define consumer wants and needs in relation to reduced fat foods
- Identify target areas and groups for intervention

### **Method**

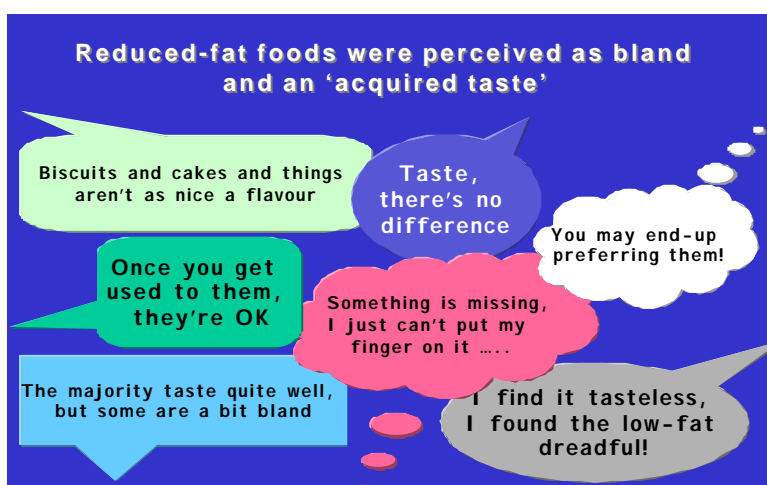
The qualitative consumer research was carried out with 92 consumers in retail outlets in Northern Ireland and England. Dialogue was directed by a topic list beyond which discussants were encouraged to raise issues they considered important. The Sample was made up of 22.5% male and 77.5% female with 63% cohabiting and 6.3% divorced. Social class and education were normally distributed.

Spontaneous dialogue indicated that uptake or rejection of these products is influenced by:

- the preferences of different household members;
- the 'goodness of fit' of these products with individual dietary health strategies; the perceived sensory deficit in these foods and
- scepticism towards reduced fat foods.

Consumers appeared to be particularly sceptical of fat claims and considered reduced fat versions to be less healthy than the standard product because of ingredients added to replace the fat.

Attitude statements were then derived from the qualitative dialogue and tested by subsequent survey by interview (n=1002). The questionnaire was designed including attitudinal items derived from the preliminary qualitative research. There was approximately one third compliance. Some of the attitude statements are shown in the diagrams below.





## Factors Determining Uptake and Rejection of Reduced Fat Foods

The main factors found to influence the uptake and rejection of reduced fat foods are summarised below:

### Rejection

- Male
- Young
- Sceptical of reduced fat foods
- Sceptical of fat claims
- Inferior taste of reduced fat foods
- Expense of reduced fat foods (if low income)

### Uptake

- Belief that reduced fat foods products are healthier
- Concern about health
- Concern about weight
- Adopted a recommended dietary health strategy (apart from fat reduction)

Attitude toward fat claims and belief (or disbelief) in the healthfulness of these foods predicted consumption across the entire range of reduced fat products. This implies that if reduced-fat foods are to achieve universal acceptance, effort must be made to further consumer trust both in the quality of the product content and related fat claims.

## Conclusions - both industry and consumer studies

Taken together, both the industry and consumer research imply an imperative for further research and development into novel ways of conveying the fat content of foods meaningfully to the consumer. Also indicated by both the consumer and industry research, is a need for technical innovation into new

ways, particularly 'natural'<sup>2</sup> and economic ways of replacing fat in common foods. It is recommended that reduced fat food products be promoted as part of existing dietary strategies.

Health Promotion: - targeting of males, targeting of the young and clear dietary guidelines and strategies

Policy: - standard and comprehensive system of fat claims

Product Technology: - innovation into fat replacers, reduced calories as well as reduced fat , fewer additives and reduced prices

Research: - labelling/information and Risk and food choice

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<sup>2</sup> By 'natural' is meant ingredients that can be easily recognised as food derived.

### **2.3. Development and evaluation of an interactive multi-media CD-ROM for the promotion of nutrition education in secondary schoolchildren.**

**Project Team:** Professor Barbara Livingstone, University of Ulster, Professor Anne Moran, Dr Michelle McKinley, Dr Paula Robson, Dr Carole Lewis (Food and health Communications), Mr Martin Gittins (Interface New Media)

#### **Background**

The background to research which resulted in the interactive multi-media CD-ROM *Dish it Up!* was presented. *Dish it Up!* is a fun-filled, but challenging tool that links to the various areas of the curriculum, and provides young people aged 11-12 years with a range of nutrition and food related information.

Existing evidence indicates that:

- Eating behaviours established in childhood are difficult to change.
- A focus on behaviour, rather than knowledge, is a key determinant in the likely success of nutrition education programmes.
- Interactive multi-media offer enormous potential as a medium to deliver nutrition education interventions.

The primary goal of school based nutrition education should be to help pupils adopt eating behaviours that will promote health and reduce the risk of diet-related diseases in adulthood. Adolescence is a time of particular nutritional vulnerability. In the short term, the characteristic dietary patterns of adolescents may result in low levels of essential nutrients and high intakes of fat, sugar and salt. In the long term, some of the physiological processes that lead to diet-related chronic diseases in adulthood have their antecedents in childhood diet.

#### **Aim**

The aim of the project was to design, develop and evaluate an interactive CD-ROM based on effective, positive and personally relevant models of behaviour change in relation to dietary intake in 12-year-old children across the United Kingdom.

#### **Methods**

The process of developing and evaluating the *Dish it Up!* CD-ROM was undertaken in five consecutive phases: collection of background material; development and testing of storyboards and design ideas; pilot testing of the prototype CD-ROM; modification of the CD-ROM based on feedback from the pilot testing, and finally, evaluation of the effectiveness of the CD-ROM in the school setting. Each phase was carried out in close collaboration with school principals, teachers and pupils using focus group discussions (pupils), structured interviews (principals and teachers) and questionnaires (pupils and parents). In total, 27 different schools throughout the UK participated in one or more phases of the research. These schools were selected to be

representative of the range of demographic (urban/rural), socio-economic, ethnic backgrounds and academic ability.

### **Barriers to consuming a balanced diet**

The barriers to consuming a balanced diet mentioned by the children and some of the reasons they gave are outlined below:

#### Taste

- *“I don’t like school vegetables cos they’re all mushy”*
- *“And the lettuce and like celery and stuff is all mushy”*
- *“Cos see some like unfattening foods – they don’t have like as much flavour in it as fatty foods.”*
- *Appearance*
- *“The colours on the packet”*
- *“When you see other foods like chocolate fudge cake, it looks so nice you want to have it”*
- *“The bowl of fruit looks horrible”*

#### Filling power

*“Yea, cos soup wouldn’t fill you up as much as chips”*

#### Time/effort

- *“...in the canteen there’s two lines, there’s a snack bar at the back, the one on the left its far quicker, but the one on the right, it’s a wee bit healthier but its far too long”*
- *Its time, cos if you were rushing out you couldn’t be bothered to get an apple and wash it and dry it and then go out, you’d just grab a packet of crisps and go out”*

#### Cost

- *“Chicken sandwiches are too expensive. I like them better than chips but they cost too much”*
- *“...and then like if you were to get something like that’s low in fat, like a lasagne and a low-fat lasagne, the low-fat lasagne would probably end up being more expensive”*
- *Choice/availability*
- *“There’s not a great selection of like healthy food, its all really fatty”*
- *“There’s a bowl of apples but its been there for ages...I got an apple there yesterday and it was really soft”*

#### Risk

- *“Sometimes you can get like bad fruit but you never get like bad chocolate”*

#### Rebellion

- *“...its like your parents nagging on and on. They’re all like you must eat apples and you’re like NO, I WANT CRISPS”*
- *“Yea, and you don’t want to give in, you’re like I must not give in to parents. You’re like I want crisps. I don’t care what you say, I want crisps”*
- *“I also think of times when my mum used to say ‘Oh you need to get more exercise’...and then of course she’d start saying ‘You’re not allowed any*

*more biscuits, take an apple or something' and I always used to say NO I don't want it, I WANT A BISCUIT'*

#### Body image/ weight concerns

- *"I used to throw away my potatoes and all, then my mummy caught on and she sat and watched me doing everything"*
- *"I had to go to hospital cos I got too thin"*
- *I'm fastening (fasting) now – I've just started cos I'm going on holidays and I want a good figure"*

**One over-riding barrier** was their perception of healthy eating such as:

- Pay lip-service to concept of 'balance'
- Healthy and unhealthy foods
- Good & bad foods

For this target group, healthy eating is associated with feelings of deprivation: "Diet"; "carrot juice"; "brown bread"; "broccoli"; "disgusting things", "not too much calories".

#### **CD-ROM Format**



The central concept of *Dish it Up!* is a "virtual" school day in the life of a 12-year-old child. The "virtual" day is designed to provide personally relevant situations, environments and dilemmas that face 12-year-olds with respect to food, and provides insights, information, and understanding on food-related issues.

The main theme of *Dish it Up!* is one of achieving a healthy balanced diet: specifically it covers a range of *issues* and *themes*. The *issues* are discrete sections within the typical school day and include those of breakfast, snack foods, school lunchtime and "fast" food in a social setting. In addition, opportunities are provided for children to self-monitor and analyse their food intake, and set goals for themselves.

The *themes* run throughout *Dish it Up!* and include the importance of enjoying food/eating; balance and variety; self-esteem; body image; peer pressure; media pressure; physical activity; motivations for eating well; addressing barriers to choosing a balanced diet and misconceptions about food or particular diets. The "virtual" day is itself divided up into a series of episodes numbered 1-6. As the user moves through the day, and through each

episode, he/she visits a number of locations that are based around a typical school day. Each location contains a number of interactive elements.



The 'balance-a-tron'



Lunch time in school canteen

The pupil is invited to enter all food and drink consumed into a diary which is analysed and the results shown by a 'balance-a-tron' based on the *Balance of Good Health* (a pictorial representation of the recommended proportions of foods in the diet).

In this section the pupil is invited to play a game involving meal-time choices. Here the focus is on barriers such as lack of choice, time pressures, cost and variety.

Some of the scenarios and issues addressed are outlined in the table below:

Scenario	Issues addressed
Breakfast	Lack of time "Breakfast makes you fat"
Bedroom	Body image & self-esteem
Lunch time in the school canteen	Time pressures Cost Lack of choice
Playground	Poor image of 'healthy' snacks
After school	Convenience Filling-power Taste
Supermarket	Misconceptions about what constitutes a balanced diet Image
Bowl-a-rama (Entertainment)	Media / peer pressure

## Evaluation

The effectiveness of *Dish it Up!* for bringing about measurable changes in the target group's nutrition knowledge, attitudes and behaviour towards nutrition was evaluated pre- and post-intervention in 11 schools across the UK - five in Northern Ireland, two in Scotland, two in Wales and two in England.

Within each school, two classes of 12-year olds were selected. One class acted as an *intervention* group (i.e. they were exposed to *Dish it Up!*), and the second class acted as the *control* group (i.e. they were not exposed to *Dish it Up!*) over three consecutive weeks, for approximately 1hr/wk, the intervention group used the *Dish it Up!* CD-ROM according to the comprehensive lesson plans provided for teachers and pupils.

Analysis of pre- and post-intervention questionnaires showed a significant improvement in nutrition knowledge, but no change in nutrition attitudes, for the intervention compared with the control groups. There was some indication that the intervention group had changed their behaviour with respect to sweets and crisps (decreased intake) and fruit (increased intake).

However, based on this short-term evaluation, no definitive conclusions about the overall effectiveness of *Dish it Up!* for bringing about measurable changes in nutrition knowledge and attitudes are merited. Regular evaluation studies will be important to fully document the longer-term impact and success of this educational tool.

Teachers of Key Stage 3 (in Scotland P7-S2) will find this tool useful across a range of curricular areas such as food technology, home economics, personal, social and health education, science and information technology. Since mid-October 2002 the Agency has provided three free copies of the CD-ROM to all secondary schools across the UK.

Since the Food Standards Agency is making *Dish it Up!* freely copiable by teachers, it can also be used by young people in their home environment and would be ideal for use in after-school clubs.

## **2.4. Assisting dietary change in low income communities: assessing the impact of a community -based practical food skills intervention (CookWell)**

**Project Team:** Dr Wendy L Wrieden, Professor A. S. Anderson, Dr Patricia Longbottom & Karen Valentine, Centre for Public Health Nutrition Research, University of Dundee  
Dr Martin Caraher and Professor Tim Lang, Centre for Food Policy, Thames Valley University  
Dr Martine Stead, Centre for Social Marketing, University of Strathclyde  
Dr Elizabeth Dowler, Department of Sociology, University of Warwick  
Bill Gray, Scottish Community Diet Project.

### **Background**

There is a well-recognised health need to increase intakes of fruit and vegetables, fibre-rich starchy carbohydrates (e.g. bread, cereals, potatoes, rice and pasta) and fish, but many people fail to implement these changes. This is particularly so in low-income communities, where problems of cost, access, cultural norms, and low confidence and skills in food preparation may contribute to a limited intake.

Locally based activities involving food and cooking to change dietary choices have been given a lot of attention in recent years. The most recent edition of the Directory of Scottish Community Food Initiatives lists over 170 community food projects, 50 of which included cooking skills as part of their activities. Several of these projects have indicated the benefits brought about by providing cooking skills classes. Few have the resources to carry out a controlled assessment to see if a cooking skills intervention actually improves nutritional intake and consumption of the key foods or increases confidence and skills in food provision. Food skills and dietary intake studies include:

- Cooking skills positively associated with vitamin C, fruit and vegetable intake (Stokey & Barker 1995).
- Boys (but not girls) increased their F&V consumption after 20-week after school food skills club (Revill *et al.* 2001)
- Participants claimed they changed eating habits and increased F&V following intervention in Glasgow, Grampian and Leicester (Cresswell, 1995; Grampian Health Board, 1998, Dobson *et al.* 2000)

### **Aim**

The overall aim of CookWell was to develop, implement and evaluate a transferable, community-based, food skills initiative aimed at increasing consumption of fibre-rich starchy carbohydrates, fish, vegetables and fruit and decreasing consumption of fat in adults living in areas of deprivation.

## **Method**

The process of establishing the intervention used a community development approach taking account of the perceived needs of the groups, defined dietary targets and resources (money, time, skills and retail facilities). A quasi-experimental design was used with an intervention group and a delayed intervention group served as the control. The following pre- and post-measures were made:

- Budgetary (shopping diary)
- Dietary (food diary and food frequency questionnaire)
- Body weight
- Cooking skills (questionnaire)

This was complemented by qualitative research:

- Exploratory focus groups with potential participants
- Post-intervention in-depth interviews with participants and facilitators.

During the period 2000-2001, the CookWell programme was run in locations throughout Scotland for a period of approximately 2-3 months in 8 communities: Addiewell, Alloa, Dundee, Edinburgh, Ferguslie, Greenock, Hawick and Kirkcaldy. 6-10 participants in, or expected in, the intervention group were recruited and the programme delivery staggered to allow the project research worker to run the classes as necessary (although local instructors led the groups in 4 of the locations). These communities included those based in a Child and Family project in a church in Dundee, a community education centre in Greenock, a community café in Edinburgh, a child and family Centre in Alloa and a community school in Hawick. In nearly all cases a local community worker recruited people to take part.

### **CookWell Intervention**

- A 10-week programme of cooking skills classes
- Community development approach
- Informed by consumer needs

### **What did consumers need?**

There were three groups:

- A. Confident cooks
- B. Basic but fearful cooks
- C. Disempowered cooks

Focus groups were used to inform development on what consumers needed. Their response to potential course topics was yes to sauces, soups and budget cooking. Other responses indicated some interest in:

- Pasta and pasta-based dishes
- Rice and rice-based dishes
- Casseroles and stews
- Cakes
- Cooking for children
- Healthy cooking

The following potential course topics were either unpopular or viewed with indifference: fish, vegetables and vegetarian cooking. Using this information a CookWell manual was designed to enable facilitators to follow a standardised, but flexible, programme in each community.

Evaluation used pre- and post assessments of food intakes (highlighted in dietary targets), cooking skills, household food budgets and expenditure in intervention and delayed intervention groups. A 'delayed intervention' group was necessary in each community to provide a control for comparison with those who had joined the CookWell classes. Quantitative evaluations using food diaries, shopping diaries and questionnaires were carried out in intervention and delayed intervention (thereafter called control) subjects at baseline, immediately after the intervention and 6 months later. Qualitative interviews were also carried out at 6 months in a sample of intervention subjects and a small sample of control subjects.

Participants were given incentives to participate:

- Cooking equipment pack - immediately after the intervention.
- Vouchers - 6 months after the intervention was complete.
- Ingredient packs after each session - intervention group only.

## Results

- Of 93 participants, 50 completed 7-day food diaries at baseline and immediately after the intervention. 40 completed diaries at 6 months.
- Between baseline and immediately after the intervention there was a significant change in fruit consumption between the 2 groups, equivalent to the intervention group consuming 1 extra portion of fruit per person per week ( $p=0.05$ ).
- Non-significant increase in vegetable and salad intake between baseline and immediately after the intervention. Intakes of fish, pasta and rice were unchanged.
- Change in fruit consumption was not found to have been sustained to 6 months after and the mean frequency of consumption was similar to baseline.
- Increase in Cooking Confidence
  - Increased number of intervention subjects reported confidence in following a recipe.
  - Higher percentage of intervention subjects reported confidence in cooking from basic ingredients, cooking lentil soup and white sauce immediately after the intervention and 6 months after. The control group showed little or no increase in confidence.

## What did they get out of CookWell?

### General feedback

- Very positive overall response: *"enjoyable"*, *"really loved it"*, *"excellent"*
- Soup, mince, pasta and cakes were favourites
- Pizza class enjoyable, but seen as impractical

- Tips on budget shopping & cooking appreciated by some
- Enough hands-on experience

### **Some criticisms**

- “School-like”
- Range of recipes: too many tinned tomatoes, oily fish
- ”They did plenty o’ dishes. I just didn’t seem to be keen on any.” (Vicky, Kirkcaldy)
- Small portions
- Too short

However, the project did achieve:

- tasting new things
- personal confidence
- preparedness to experiment
- pride
- Pleasure
- Time out

### **Key Findings**

Of the 113 subjects initially recruited 93 completed the baseline assessments (51 intervention and 42 controls). 6 months after the intervention a total of 63 (36 intervention and 27 controls) completed the interview questionnaire.

Results from the food diaries showed that at baseline the mean frequency of consumption for fruit was approximately twice a week for intervention and control groups. Vegetable and salad consumption amounted to 6 times a week in the intervention group and 7 in the control group. Fish was consumed a mean of once a week with tuna constituting approximately one-third to a half of this. Starchy foods (a total of bread, potatoes (non-fried), pasta, rice and breakfast cereal) were consumed an average of 17 times a week with bread constituting 10 of these occasions and pasta and rice 2 of these occasions. A mean change equivalent to one portion a week was seen in the intervention group immediately after the intervention for fruit, but no other significant changes were seen. This change was not sustained and the mean frequency of consumption of fruit 6 months after the intervention was similar to baseline levels. Estimated energy intakes were very low and suggested underreporting by the majority of subjects. There were no significant differences in the mean changes of energy and nutrients from baseline to immediately after the intervention or immediately after the intervention to 6 months after the intervention between intervention and control subjects.

The percentage of people cooking from basic ingredients increased in the intervention but not in the control group. There was a significant increase in the proportion of intervention (but not control) subjects reporting confidence in

following a recipe over the period of the project, this confidence being maintained 6 months after the intervention.

Post-intervention the qualitative assessments also demonstrated that subjects were cooking more from basic ingredients and buying less convenience food. Popular recipes were soup, scones, tuna bake (incorporating white sauce), and chicken curry, pizza, potato wedges and carrot cake but efforts to encourage fish consumption using smoked mackerel incorporated into kedgeree were not appreciated.

6 months after the completion of the intervention participants reported an increase in their personal confidence and pride, an increased likelihood of tasting and experimenting with new foods, facilitation of new skills and an increased awareness of food preparation and production. It was noted that a separated crèche with familiar workers was also crucial to the attendance of participants with young children. Participants also reported barriers to changing food intake at home including time, demands of looking after young children, taste preferences of family members, and dented confidence if a recipe did not turn out as expected.

## **Interpretation**

The results of the assessments contribute to the evidence base on the contribution and value of food skills to healthy dietary choices at reasonable costs. Overall the fruit and vegetable consumption of the participants in the study was lower (<1.5 portions per day) than that of the average consumption (approximately 2.5 portions per day) in Scotland which itself falls below the recommended intake of 5 portions a day. Although the impact of the programme appears to be small in quantitative outcomes the research confirms that a practical food skills intervention can contribute to improving dietary choice but that interventions of this type need to be ongoing and set alongside other measures to improve access, acceptability and affordability of food in low-income communities.

## **Conclusions**

- Cookwell delivered at a number of levels:
  - Specific cooking skills
  - Confidence and enjoyment around food
  - Personal life skills
  - Community capital
- Cookwell has added to the evidence base of the potential role of community food initiatives in the improvement of the Nation's health.
- Cookwell will aid the development of future community-based practical food skills interventions through the Scottish Community Diet Project and Sustain (UK).
- Impact of the programme may appear small in quantitative outcomes but the research confirms that a practical food skills intervention can contribute to improving dietary choice.

- It is also likely that interventions of this type need to be ongoing and set alongside other measures to improve acceptability, affordability and access to food in low-income communities.

### Further Dissemination

The materials and methods used in the project will be taken forward in conjunction with the Scottish Community Diet Project and for use through the National Food Alliance (Sustain) activities.

The manual (tutors pack and participant recipe book) is available on the Agency's website:

<http://www.food.gov.uk/science/research/NutritionResearch/n09programme/n09projectlist/n09011/cookwellbook>

## **2.5 Do 'food deserts' exist? A multi-level, geographical analysis of the relationship between retail food access, socio-economic position and dietary intake.**

**Project Team:** Dr Martin White, Dr Liz Williams, Dr Simon Raybould, Dr Jane Bunting, Dr Ashley Adamson, Prof John. Health Promotion Research Group, University of Newcastle upon Tyne.

### **Background**

The Government is concerned to reduce inequalities in health and in this context is keen to ensure that those on low incomes can eat healthily. Healthiness of diet is patterned socio-economically and geographically. Initiatives are now afoot to determine practical ways of improving shopping access, including in areas at present deficient in, or poorly served by, food shops (so-called 'food deserts'), since people in these areas may have a less healthy diet. However, insufficient research has been conducted to determine whether food deserts exist, and if so where and in what form. This raises the question: are our diets affected fundamentally by where we live and thus our access to retailed food?

### **Previous published work**

Much research suggests that healthier diets are more expensive than less healthy diets.

- *MacIntyre, Sooman/Ellaway et al* - several papers from Glasgow (1993-2000)
  - Area of residence has independent effects on health.
  - Differential cost and availability of 'healthy vs 'unhealthy' shopping baskets in socially contrasting areas - cultural and supply factors thought to be important.
  - Differences in shopping practices and priorities among residents in socially contrasting areas.
- *Donkin et al, 2000* - methodological research on indices of relative price and availability of 'healthy' and 'unhealthy' shopping baskets.
- *Robinson, Carraher and Lang (2000)* - Key barriers to healthy food shopping - distance, transport and cost.
- *Hitchman et al (2002)* – Qualitative study of food poverty in urban and rural areas – highlighted plight of the poor in terms of time, cost, mobility and social constraints.

## Aim

To determine the relationship, in a geographically defined population, between:

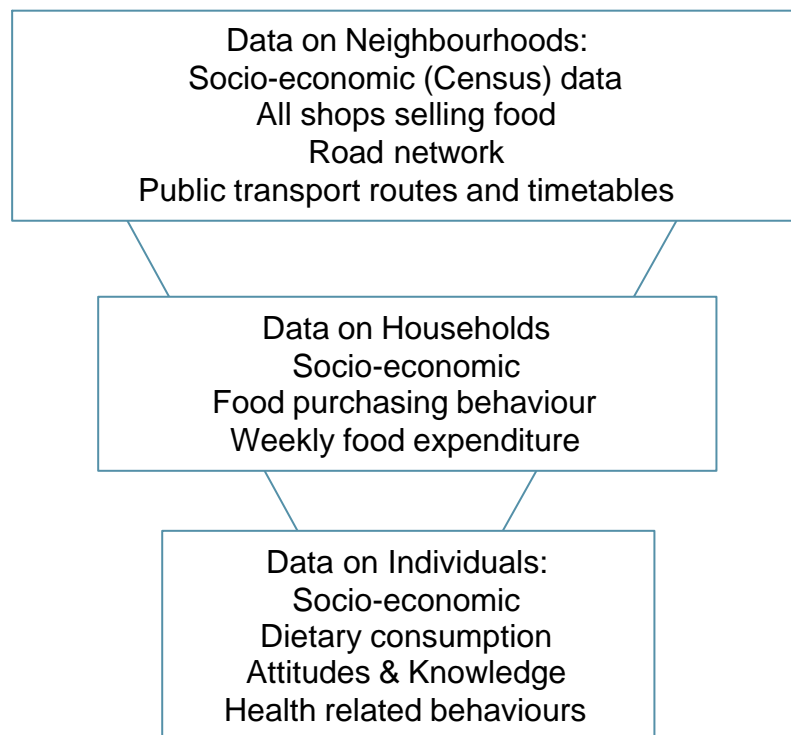
- dietary intake
- socio-economic factors
- retail access to a 'healthy' & affordable diet

## Study Design

- Setting: city of Newcastle upon Tyne
- Cross-sectional studies of dietary and socio-economic factors at individual and household levels
- Cross-sectional survey of retail access to food at local area level
- Derivation of relative indices of dietary intake and indices of absolute and relative retail access to food
- Statistical and spatial analyses of combined data sets to establish relationship between diet, socioeconomic position and retail access to a healthy diet

**Methods:** 3153 households and 5044 individuals provided data on dietary, lifestyle and shopping behaviour, and socio-economic status. The price, availability and quality of 33 food items was assessed in all food retail outlets.

### The levels of data collection



### Development of questionnaires

- Household and individual questionnaires developed and pre-tested on university staff

- EPIC<sup>3</sup> Food Frequency Questionnaire modified for Newcastle diet, pre-tested and validated
- Methods of sampling & data collection, and versions of income and benefits questions, tested in two pilot studies
- Sample of non-respondents interviewed from first pilot

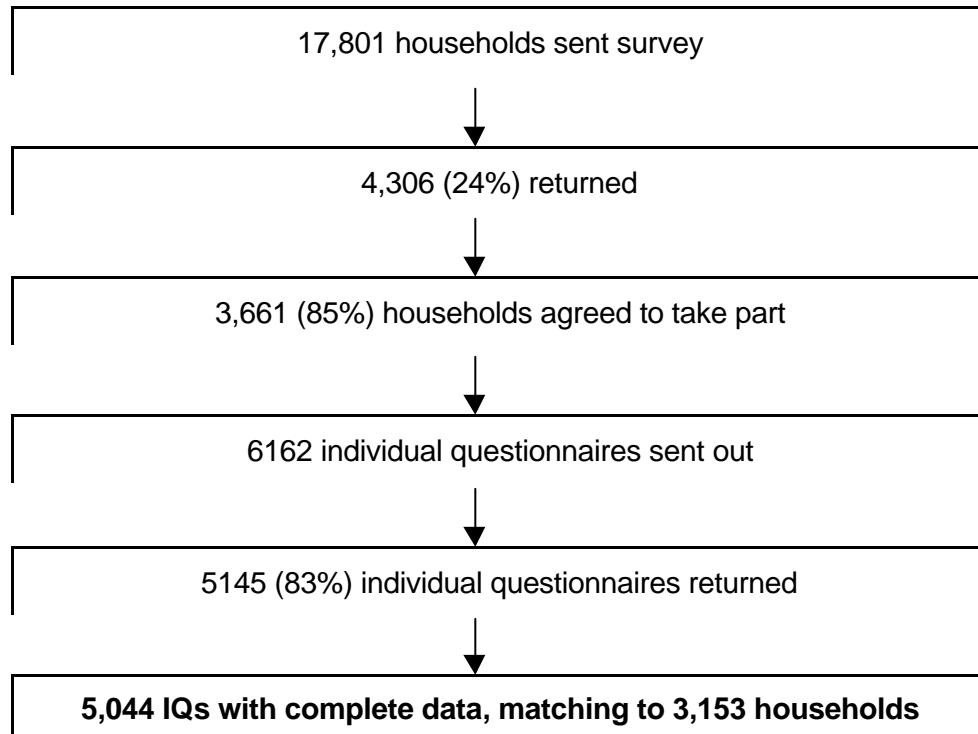
### Survey implementation

- Each household sent a *household questionnaire* to be completed by the main food shopper (+ reminder)
- Other adult members of each household consent to take part in the second phase - *individual questionnaire*
- Each adult volunteer from the household sent an *individual questionnaire* (+ reminder)

### Household sampling

- Central postcode directory used as the sampling frame for households
- Cases selected at random to generate 17,801 addresses (in two phases, June and September 2001)
- Response bias to be dealt with by weighting in analyses

### Survey Response Rates



The social & demographic characteristics of the sample were:

<sup>3</sup> EPIC - The European Prospective Investigation of Cancer

- 69% of household questionnaire respondents ('main food shoppers') female
- 59% of individual questionnaire respondents female
- Age range 16-97 years, mean age 49 years (SD 18.1)
- Most respondents either married (53%) or single (22%)
- Majority (94%) White European, and Christian (70%) or no religion (25%)
- 54% in paid employment
- 29% retired
- 7% in education
- 4.6% unemployed

### Retail survey

- Food retail outlets identified from local planning database + street by street observational survey
- Data collection at retail outlets:
  - Type of outlet – (multiple, discounter, local store, etc.)
  - Position - grid reference to 10m (GPS)
  - Number of checkouts
  - Opening hours
  - Availability & cost of 33 commonly consumed food items – list derived from literature and local research
  - Quality of fresh/frozen produce – observation, refrigeration and sell-by-dates

### 33 Foods surveyed in retail outlets

Fresh Fruit and vegetables	'Healthier' foods	'Less healthy' foods	'Neutral' foods
Apples	Chicken	Sausages	Cheddar cheese
Oranges	Tuna (in brine)	Tinned meat	Eggs
Bananas	Semi-skimmed milk	Whole milk	
Tomatoes	Wholemeal bread	White bread	
Cucumber	Weetabix	Frosties	
Lettuce	Pure fruit juice	Carbonated drink	
Peppers	Frozen peas	Crisps	
Broccoli	Tinned tomatoes	Biscuits	
Carrots	Baked beans	Kit Kat	
Onions	Pasta	White sugar	
	Low fat yoghurt		

Availability and cost of 'baskets' was analysed spatially, by store type and by characteristics of those who shop in them.

### **Cost and availability analyses**

- Availability and cost of 'baskets' analysed spatially, by store type and by characteristics of those who shop in them:
  - 10 fresh fruit and veg
  - 14 fruit and veg (including: tinned tomatoes, baked beans, fruit juice & frozen peas)
  - 6 pairs of comparable 'healthier and 'less healthy items' (highlighted in table above)
  - 10 'less healthy' items
  - 21 'healthier' items
  - All 33 items
- Quality of fruit and veg assessed by observation

Extensive analysis has been carried out to provide data on various situations/relationships including the following:

- Household composition
- Car and home ownership
- Annual household income
- Frequency of food shopping by mode of travel
- Food shops used regularly
- Main shop type by Socio-Economic Index (SEI)
- Types of shops selling food in Newcastle
- Distribution of shops in and around Newcastle
- Location of multiples and discounters
- Location of greengrocers and freezer centres
- Reasons for choice of main food store
- Travel to and from main food store
- Type of main store by car ownership
- Travel distances to main food store
- Median No. of foods available by type of store
- Availability of selected food items
- Availability of fruit & vegetables
- Availability of 'healthier' and 'less healthy' items in multiple supermarkets
- Availability of 'healthier' and 'less healthy' items in convenience stores
- Newcastle: Townsend Deprivation Score quintiles for Eds
- Median cost of weekly shopping

- Usual cost of weekly food shopping and percentage of annual income spent on food per adult equivalent

### **Relationship between retail factors and consumers**

- The availability, quality and cost of food is associated with the type of store and its size - but not the socio-economic characteristics of the area where it is found.
- The majority of households buy their food at stores where 100% of the basket items identified are available (e.g. 78%- 33 items, 90%- 10 F&V) - but availability is socio-economically patterned (rich = more).
- Paradoxically, the poor live closer to shops selling most basket items (e.g. multiples), but are more likely to shop where the prices are lower (e.g. discounters), and thus where the availability and quality are also poorer.

### **Conclusions – shopping**

- People from different socio-economic backgrounds have different shopping patterns and expenditure, and use different types of food store.
- The majority of the sample shop at a large multiple supermarket and travel there by car.
- Amount spent on weekly shopping and access to a car are strongly patterned socio-economically.
- Having difficulty shopping is more common among the poor, sick and old.

### **Conclusions – access**

- Different types of shops are found in different areas, with discount and small local stores more often found in poorer areas.
- Poorer people are less likely to travel by car and tend to shop nearer to home.
- Availability of foods varies by type of store, with multiples more likely to sell a better range of foods and higher quality produce than discount or local stores.
- Discount stores provide good value for money, as do multiples and greengrocers but small local stores, of which there many, do not.

### **Conclusions – diet**

- Diet was strongly patterned demographically and socio-economically.
- In univariate analyses the strongest predictors of 'healthier' eating are age, sex and dietary knowledge.
- A range of socio-economic factors also predict fat consumption.
- Fat consumption is also predicted by type of food shop and weekly food expenditure.

- In multivariate analyses, healthy eating is predicted primarily by dietary knowledge, physical activity, gender and ethnicity.

### **Conclusions – food deserts**

- Any simplistic, geographical definition of food deserts is untenable – but food poverty exists and retail provision almost certainly contributes to it.
- Retail factors were not shown to predict healthiness of diet, although lifestyle and variables only predicted a small percentage of variance in dietary indices.
- Poor people have to work harder to feed themselves - ‘food deserts’ are as much a product of poverty as retail geography.

### **3. Workshops**

Three afternoon workshops were arranged to discuss (i) key issues arising from the projects and (ii) the practical issues that these raise. There were three workshops of approximately 23 delegates. Full summaries of discussions in the workshops are provided below.

#### **3.1 Food Deserts Workshop**

Participants in this workshop came from all regions of the UK and represented a variety of policy, strategy, health/health professionals, Government and consumer stakeholders.

The group discussed the research presented in the morning session and identified that the issues of food access were complex and did not relate specifically to the geographical location of shops within communities. Rather the complex association between many factors, including social factors that are less easily controlled, should be the focus of activity and action.

The group also discussed whether the findings from the research in Newcastle, while representative of the UK population, could be applied directly to other towns/areas. While the Newcastle population is representative of the UK, areas with greater ratios of specific sub-population groups are unlikely to be exactly the same as this study population. Care should be taken in directly applying the results but the results from Newcastle would provide a basis for understanding similar issues in other areas.

Looking at this research among other recently completed studies it was becoming clearer that the lower 10% of the poorest individuals in populations were likely to be of greater interest in how they manage budgets to buy food. It was likely that the shopping patterns adopted by this group were different to that of the majority of people. Different interventions would be appropriate to this group compared to those that have been undertaken or initiated with whole population groups – directed at the majority of the population rather than those in most need.

Although the results presented in the morning study suggested that in some areas where the majority of people have cars the idea of a food desert being linked with geographical access to shops was inappropriate, there was concern that those non-car drivers would be paying higher prices for less food. As such this could be a definition of a food desert. The discussion continued around diversity within communities and access to different ranges of products within areas covered by multiple retailers and convenience shops. It was also noted that the retail sector was very dynamic and that individual types of shops changed their business with time to reflect the needs of the local community. This led to discussion on the issues as they affected rural areas, in particular village shops.

The issues of the relationship between higher prices and unhealthy diet were considered. This relationship was not an independent predictor in the

Newcastle study. However, it was noted that those on lower income continue to spend a greater amount of their income on food compared to higher income individuals even though these higher earners may be paying more for their food. It was also noted that poorer individuals tended to shop more frequently particularly when compared to those with cars who tended to do one big shop per week. Other factors to bear in mind were thought to be the physical and psychological stress associated with managing a low income/family budget.

Discussion then led to the available data. While it was noted that there was considerable amount of data available to individual stores/multiple retail groups on point of sale information, this was not available to researchers or other policy people. There was a suggestion that Government might wish to raise this with retailers to discuss whether this information could be made available in an anonymised format. Similarly, it was suggested that there is no robust information on what types of shops are available to communities given the rate of turnover of individual businesses in the retail sector and the change in products sold under current guidelines. It was thought that an annual survey/surveillance to determine local food economy provision would be useful.

Further suggestions about the need for dialogue at the national level with the larger players to identify their plans in this area and determine the impact on local economies of the plans were raised.

In summary,

- The issue of food deserts is hugely complex and further work looking at issues such as methods of payment may be of interest to identify specific groups where action is required.
- Similar work in rural areas would be needed given that the communities in these areas are likely to have different issues/ factors of influence.
- There is a need to focus on the poorest in communities; the 70% who have a car and go to multiple supermarkets for their weekly shop are sufficiently catered for. Issues to consider would include:
  - The role of multiple-stores
  - The need for national level discussions on these results but bear in mind the commercial sensitivities this would need to address
  - Making available point of sale data in an anonymised format to overcome commercial sensitivity in the data
- Simplistic action on food deserts is unlikely to work. It's not just about access to shops.

### 3.2 Strategies to Reduce Fat in the Diet Workshop

The discussion ranged around 2 key issues: positive messages to increase starchy foods and the efficacy of reduced or low fat foods to help reduce total fat intake.

There was considerable discussion around the topic of whether consumers know where the fat in their diets is coming from. Surprisingly there were contrasting views on this based on participants previous research experiences. However, the overriding feeling was that people were not very confident and that individual feedback information could be helpful.

There are already a lot of reduced fat foods available from the food industry so where is fat now coming from? The population's fat and energy intakes have reduced, but the percent energy from fat has hardly changed. Evidence from the USA where reduced fat foods are numerous shows that per cent energy from fat has gone down, but energy intake has gone up so absolute fat may have gone up. Are people therefore over eating on low fat products? We still don't know whether eating reduced fat foods brings about an overall reduction in fat consumption. There was some discussion about the disincentive to further production of reduced fat foods due to the lack of flexibility in labelling and the demand that the product also satisfies the need to be low in salt and sugar. It was further pointed out that consumers do trade offs between reduced fat foods and higher energy foods (e.g. a reduced fat main course being combined with a high fat pudding). It was also suggested that though it was worth pursuing further production of reduced fat foods in some categories of foods (e.g. milk, yogurt etc) there were some items such as biscuits where consumers don't like the reduced fat version and don't see a need for it since they regard them as a treat. There was a feeling by some people that there should not be a concentration on a particular class of food in the diet such as high fat or high starch, but by concentrating on bringing about a change in the diet as a whole, lower fat would follow.

With regard to the promotion of starchy foods, people felt that since recognition of starchy foods, their role and associated misconceptions about them, more should be done by the Agency to inform people about them and help to promote them. Lack of knowledge about 'starch = good' should be addressed. It was suggested that 5 a day should be extended to 5 (fruit and veg) + 5 (starchy foods) a day. The difference in people's level of understanding needs to be addressed and information needs to be culturally appropriate. The need for consistency of messages was stressed and also the need for practical cookery skills to be taught in school.

It was suggested that the quantity of starchy food in a ready meal should be increased. At the moment they are thought not to be filling or satisfying enough for boys or men. However, the reverse side is that people perceive a ready meal with a lot of pasta or rice as poor value and that it should contain more of the 'value' protein foods like meat.

It was suggested that breakfast provides a good opportunity to promote starchy foods. Manufacturers could look at producing tasty, healthy items that people can eat quickly for breakfast. Since the trend appears to be for less people eating breakfast, encouraging this could be hard as it goes against the trend. Instead breakfast cereals as such could be encouraged for whatever time of day.

It appears to be easier to get people to eat more of familiar starchy foods than encourage them to eat foods that are new to them.

#### Main points from reducing fat workshop

- Many consumers still do not understand where the main sources of fat in their diet are to be found.
- Although reduced fat foods are found increasingly on sale, fat intakes are reducing only slowly. We do not know whether reduced fat foods are bringing about any significant overall reduction in people's fat intakes.
- People make 'trade offs' in reduced fat foods and high fat foods, which may result in no overall reduction of fat intake.
- Reducing fat is more acceptable to consumers in some products like dairy products than in others such as biscuits.
- Consumers are well aware that reduced fat foods may be high in sugar and similar in energy content to full fat equivalents.
- Inflexibility in labelling of reduced or low fat foods and demands that they should also be low in salt and sugar reduces manufacturers' incentive to produce more.
- Agency has a role in overcoming people's suspicion of processed foods and additives.
- Recognition by the public of starchy foods and their role is still poor and there are associated misconceptions about them. More should be done by the Agency to inform people about them and help to promote them.
- Promotion should address differences in people's levels of knowledge, consistency of messages, and be culturally appropriate.
- Government should explore promoting the concept of 5 (portions of fruit and veg) + 5 (portions of starchy food) a day.
- Opportunities for promoting breakfast should be explored. There may also be opportunities for manufacturers to produce new, tasty, quick and healthy breakfast foods.
- Industry could explore the possibility of increasing the quantity of starchy food in ready meals such as curry and rice.

### 3.3 Main Points from Influencing Healthier Eating by Teaching Cooking Skills to Low-Income Groups Workshop

- Training of facilitators – it is important to give some sort of accredited qualification as an incentive.
- Sustainability - there are limited resources for motivation / keeping people interested. We need to look at the possibility of partnerships with retailers for funding.
- Recruitment of target groups - “healthy eating” puts some people off. Therefore it is important to package cooking classes to suit the target groups. For example, ‘the winning weigh’ is the title of sessions offering nutritional advice for weight management offered in the community.
- Interventions should be transferable; i.e. easy to modify and adapt.
- The wider community development issue should be promoted as well as healthy eating issues.
- Capacity – how much you can do and how many can you reach?
- Why didn’t researchers of CookWell look at what people were already cooking and look for healthier ways of improving the food? *The recipes used in CookWell had to be standardised for all groups and needed to meet the aims of increasing fruit and vegetables as well as fish consumption etc.*
- Use of questionnaires could be difficult because people’s answers may be different from what they express in reality.

#### What practical issues do these raise?

- Availability – time to hold classes should be suitable. People are usually free for only one hour a day and may be limited to attend by school hours/nursery times.
- Separate creche facilities should be provided for parents.
- What should people be learning and for how long? Do you concentrate on budgeting and shopping first or cooking skills and teaching new recipes?
  - Optimum length of course – Depends on age group/ background of participants (schoolchildren may need more time). CookWell was for 7 weeks and others have organised classes to last for 20 weeks.
  - Course content – e.g. Asian cooking club in Luton for reducing fat & salt. Skills such as shopping / reading labels.

- Did the CookWell research look at individual work with families etc.? *No; there are health and safety issues that would limit such one-to-one lessons in homes.*
- Some people prefer 'drop-in' centres without commitment to a course.
- Language used in the manual should be easy enough for people who are not used to cookery books (i.e. for something generic).
- Using equipment such as scales and blenders may exclude some people. Need to look at adapting recipes so that people can cook without using such equipment as well.

#### How does this link to policy?

There is the need to bring back cookery classes into schools.

## **4 Summary by Chairman**

### **Aspects of N09 Programme Research Discussed**

- Identifying, exploring, measuring barriers to dietary change (e.g. food access-food deserts, barriers to low fat foods)
- Designing interventions to address barriers identified (poor knowledge, negative attitudes- *Dish it up*)
- Designing interventions and measuring effects of interventions (Family study, Cookwell)

### **Findings to ponder and reflect upon**

- Changes in dietary behavior- eating familiar foods including breakfast
- Involving consumers in product development research
- Using community groups - building on existing networks and providing foundation for future work in community
- Secondary children - self esteem, dietary feedback, risk, rebellion
- Food deserts should we focus first on food access issues around poor, sick and old

### **Research Challenges**

- Recruitment, response rates, retention, representativeness
- Tensions between research, action, control groups
- Using valid and reliable questionnaires
- Modest dietary change effects at individual level but at population level may be highly relevant
- Linking reported dietary change with independent marker of change

## **Future Research Issues**

- Children as agents of dietary change
- Linking consumers with product development
- Practical food skills - varying approaches, linking with other interventions and optimal intervention time
- Food access and provision in people with reduced retail access e.g. poor, old and sick

## **5. Seminar Evaluation**

All presentations were considered useful and interesting. As might be expected participants found different presentations of most interest according to their specific interests. There were indications that information from the reduced fat food project would be fed back to a participant's company. A range of practical issues helpful to participants was identified from the projects. Participants also indicated some possibilities for taking ideas forward.

The day was considered useful for sharing up to date research findings as well as networking with others. The balance between presentations and discussions was generally liked although some would have preferred less presentations and more time for discussion of each project. Some also felt that there should have been more information in the form of copies of presentations or more detailed abstracts, available to delegates.

In general comments commended the Agency for holding workshops such as these. They are considered valuable and an important aspect of the dissemination of the research. There was a specific request for publication of a report of the meeting which include enough detail to be of value to those unable to attend.

Nutrition Division  
February 2003

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### Publications and presentations

#### CookWell

- Stead M, Caraher M, Wrieden W, Longbottom, P, Valentine K, Anderson AS. The CookWell food skills intervention to assist dietary change in low income communities: qualitative research findings. Presented at the UK Public Health Associations Conference, Glasgow, March 5-7<sup>th</sup>, 2002
- Presented at the joint ACERO/Nutrition Society symposium on Physical activity, energy expenditure and obesity, University of Aberdeen, 23-24 July 2002:
- Valentine K, Longbottom PJ, Wrieden WL, Anderson AS and Dowler E. Does a community-based practical food skills intervention (CookWell) assist dietary change?
- Wrieden WL, Stead M, Caraher M, Longbottom PJ, Valentine K and Anderson AS. The impact of a community-based practical food skills intervention (CookWell) on assisting dietary change: qualitative findings.

#### Papers submitted for publication:

- Stead M, Caraher M, Wrieden WL, Longbottom PJ, Valentine K, Anderson AS. Confident, fearful and hopeless cooks: findings from a food skills initiative. Submitted to *British Food J.*, June 2002.

#### Reduced fat foods

- Hamilton J, Knox B, Hill D and Parr H (2000) Reduced fat products: consumer perceptions and preferences. *British Food Journal* 102 (7), 494-506.
- Knox B, Hill D and Hamilton J (2001) Consumers talking about reduced fat foods. *Food Industry Journal* 4 (1), 12-25.
- Parr H, Knox B and Hamilton J (2001) Problems and pitfalls in the reduced fat food product development process. *Food Industry Journal* 102 (7), 50-60.
- Hamilton J, Knox B, Hill D and Parr H (2001) Reduce the fat and reduce the flavour. What do consumers really think? *Proceedings of the British Psychological Society* 9 (1), 21.
- Hill DS, Knox B, Hamilton J, Parr H & Stringer M. (2002) Reduced-Fat Foods: the shoppers viewpoint. *International Journal of Consumer Studies* 26 (91): 58-61.

- Stewart-Knox B, Parr H, Bunting B and Mitchell P. A model for reduced fat food product development success. *Food Quality and Preference* (in press).
- Stewart-Knox B and Mitchell P. What separates the winners from the losers in new food product development? *Trends in Food Science and Technology* (in press)
- Hill D, Bunting B, Stewart-Knox B, Stringer M. Why do consumers purchase reduced-fat foods. *Appetite* (accepted with revisions).
- Stewart-Knox B, Hamilton J and Bunting B. Why do consumers reject reduced fat foods. *Appetite* (under review).

### Starchy foods

- Loughridge JL, Beard CM, Adamson AJ and Mathers JC. Bear-ing it all. Starting with starch. Article in British Dietetic Association Advisor magazine Winter 98.
- Spendiff A and Stacy R. Factors affecting the consumption of starchy foods: a model derived from qualitative data. Oral presentation at the 28<sup>th</sup> Annual Scientific meeting of the Association of University Departments of General Practice, London, July 1999.
- Denby N, Adamson AJ, Curtis PJ and Mathers JC. What are starchy foods? Poster presentation at the XIIIth International Congress of Dietetics, Edinburgh, July 2000.
- Adamson AJ, Curtis P, Loughridge J, Rugg-Gun A, Spendiff A, Mathers JC. 2000. A family-based intervention to increase consumption of starchy foods. *Nutrition and Food Science* 30: 19-23.
- Curtis P, Adamson AJ, and Mathers JC. 2001. The relationship between starch and fat consumption. *Proceedings of the Nutrition Society* 60: 70A.
- Spendiff A, Adamson AJ, Curtis PJ, Jones A and Mathers JC. 2001. Relationship between consumer attitudes to starchy foods and starch consumption. *Proceedings of the Nutrition Society* 60: 184A.
- Tohill UR, Curtis PJ, Adamson AJ, Mathers JC. 2001. Individual's perception of diet with regard to health compared with recorded intake. *Proceedings of the Nutrition Society* 60: 181A.
- Curtis PJ, Adamson AJ, Mathers JC. 2001. Associations between fruit and vegetable, starch and fat consumption? *Proceedings of the Nutrition Society* 60: 183A.
- Stacy R, Spendiff A, and Adamson AJ. Dietary change and perceptions of self: a qualitative study. Oral presentation at the 30<sup>th</sup> Annual Scientific

Meeting of the Association of University Departments of General practice, University of Leeds, July 2001.

- Carlin L, Tohill U, Adamson AJ. Who me? Participation in a dietary intervention program. Presented at the American Anthropological Association 100<sup>th</sup> Annual meeting, Washington DC, December 2001.
- Curtis PJ, Webster S, Adamson AJ and Mathers JC. 2002. Proceedings of the Nutrition Society. In press.

### **Food deserts**

Presentations:

- October 2002 - Human Nutrition Research centre, University of Newcastle upon Tyne (seminar series)
- November 2002 - Department of Social Medicine, Bristol University (seminar series)
- January 2003 - FSA seminar/workshop of food acceptability and choice

Future presentations:

- A similar seminar here in the School of Population & Health Sciences, University of Newcastle upon Tyne on 4th April 2003.
- An abstract has been accepted for the International Poverty Food and Health & Welfare Conference (supported by the British Council) in Lisbon, July, 2003 <http://www.pfh2003.org>

### **Dish it Up**

Two manuscripts in preparation

Presentation to Food and Drink Federation meeting held in London on 6th February 2003

Presentation to teachers of home economics. Meeting held at the Girls Model School, Belfast on 12th October 2002

Abstract submitted to the Second Conference of the International Society for Behavioural Nutrition and Physical Activity (ISBNPA). Conference to be held in Quebec, Canada in July 2003.