

Changing food habits in Scotland

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Following the publication of the Scottish Diet Report in 1993 which detailed specific nutrient and food targets for the year 2005, a wide range of studies relating to eating habits have taken place in Scotland. These include diet survey methodology research to find out more about what people eat, studies to understand more about changing dietary habits (including studies of migrants) and work designed to audit and describe current food initiatives taking place in Scotland, especially those aimed at improving the availability and cost of quality foodstuffs to areas of urban and rural deprivation.

To provide a comprehensive plan of action to activate dietary change, research on food habits has been drawn to the attention of the Scottish Diet Action Group who are currently devising a strategy for change involving food producers, manufacturers, retailers, caterers, health service personnel and health educators.

Current and future food and nutrition research is likely to become increasingly important for the prevention of chronic related medical conditions including coronary heart disease and obesity, all of which the UK government have set targets for reducing.

Priority areas which have been identified range across the lifespan and include understanding decision making for breast feeding in babies, eating habits in pre-school children (especially mid-day meals) and longitudinal changes in food choice throughout the life-span. The influence of nutrition labelling and nutrition education on food choice also requires further exploration, as does the development and implementation of local, regional and national food and health policies.

Changing Food Habits in Scotland

1. Introduction

In December 1993 the UK government "Scottish Office"¹ published a comprehensive overview of food, nutrition, health and disease in a report called The Scottish Diet. This report detailed the prevalence of chronic diet related diseases and their relationship with dietary intake in Scotland. From this report two sets of targets were produced. The first detailed nutrients and the second foods.

The Nutrient targets (Table 1) are similar to those of many European countries with a focus on increasing fibre-rich carbohydrates, fruit and vegetables and reducing % energy derived from fat (especially saturated fat), sugars and alcohol.

The second set of target details proposed dietary changes for the year 2005 (Table 2 and Table 3) and identified major food groups for which consumption should change. Again, these are similar to many European countries with a focus on increasing intake of vegetables, fruit, fish, bread and cereals and decreasing intakes of processed meats, spreading fats, whole milk, sugar, confectionery and savoury snacks.

This report stimulated much discussion and debate and raised issues for the entire food network (Figure 1) ranging from processors, producers, caterers, retailers through to the consumer. The media in so much as it reflects the voice of the people asked one very large question namely how can the population achieve the recommended dietary changes.

2. Current Research

It is principally because of this report that much of my work has been supported. Suddenly, not only was nutrition important in disease prevention but so too were food and eating habits. (Figure 2)

2.i Finding out what people eat

One of the fundamental areas of studying food habits is diet survey methodology and finding out what people actually eat. In the UK, quantitative information surveys on food consumption of individuals and households are conducted regularly by the Ministry of Agriculture, Fisheries and Food and through the National Diet and Nutrition Survey Programme (NDNS).²

These surveys are designed to provide detailed information on nutritional adequacy of the diet and information on food and nutrient intake in order to investigate relationships between nutrients and

health measures (e.g. body mass index, serum cholesterol). Such surveys are large and costly and may not be a truly accurate picture of what is usually eaten.

Attempts to improve diet survey methodology in terms of accuracy and reduced cost have been many and varied and have included different forms of questionnaires, use of photographs, scales with a tape recorder added and barcode technology.

We are currently working on 2 studies in the area.

The first is the validation of the UK FoodMeter system.³ This is a barcode entry system of food and weight information from diet records which allows fast data entry and analysis. This system does not use barcode from packaging but uses barcodes instead of manual code entry into a data base. To further simplify this procedure a data base of 600 foods has been used in designing nutrient analysis programme. Our current study funded by MAFF then compares the nutrient intake estimated by the FoodMeter with that of a conventional dietary assessment approach and by blood and salivary measurements of Vitamin A, C, E. We are testing these assessments in a community sample of 160 Glaswegian adults who have undertaken 7 day weighed dietary.

We are also asking all subjects to complete a Food Frequency questionnaire⁴ (developed by the University of Leeds) which details the main sources of dietary folic acid in order to develop an assessment tool which could be valuable in the pre-pregnancy area. Again these results are being compared with actual blood levels of this important vitamin. This part of the study is funded by the UK Department of Health.

One further area we are exploring is what the situational factors are when people eat. So we have developed food diaries that allow us to collect information on where food is eaten, who it is eaten with and who has prepared it, so that we can try to find out more than just what is eaten.

2.ii Learning lessons from dietary change

The second area of research that we are working in is learning lessons from situations of dietary change, in order to understand more about why people eat what they do, what factors influence food choice and how do they affect nutrient intake.

In conjunction with the MRC Medical Sociology Unit we are currently undertaking a dietary survey of South Asians and Italians living in Glasgow.⁵ Our preliminary results show that 1st generation South Asians have a significant high intake of % energy derived from fat and saturated fat compared to other sub-groups. Data from our detailed semi-structured questionnaires which address issues such as family, socio-economic, religious background and topics related to food choice including history of weight modification and exercise, smoking and alcohol use can now help us to understand these observations in nutrient intake.

Another situation of change occurs when individuals set up home together, either in marriage or co-habitation and may result in negotiating dietary change.⁶ In conjunction with the University of Edinburgh we are currently carrying out in-depth sociological interviews with couples before and after they move in together to find out what changes occur in shopping, food preparation, cooking and eating. Subjects also undertake 7 day weighed surveys and anthropometric measurements so that the impact of food changes on nutrient intake can be assessed.

The influence of household income on food choice has been well described, but again there are many lessons to be learned from what happens to food choice when income increases or decreases.⁷ In conjunction with Institute of Food Research, Reading we are studying changes in food consumption and food preferences on 100 individuals who have experienced an income increase and 100 experiencing an income decrease in the previous 8 weeks, and are tracking these people for 5 months.

Finally, again in conjunction with the Institute of Food Research we have recently completed an intervention study of increasing fruit and vegetables.⁸ 150 subjects were recruited for pre-intervention and post intervention questionnaires, on perceived and actual barriers to increasing fruit and vegetables. Weighed diet surveys were also conducted in order to assess the impact of increasing fruit and vegetable on actual nutrient intake.

2.iii Food Availability and Education

Finally, many studies on eating habits and factors affects individual food choice have little opportunity to assess the impact of Food Availability and Education. We are currently undertaking a review of Community Food Initiative in Scotland. These cover both "bottom up" and "top down" projects and include initiatives directed from local government (such as urban aid programmes, setting up Co-ops, to improve food supply in areas of social deprivation), health boards - (such as running healthy eating classes to schools education programmes), retailers - (to examine their system "provision" which supplies grocery commodities for charities), Churches - which may run soup kitchens and independent agencies which may be involved in food growing, transportation and retailing.

This audit is principally to get an overview of how food action may be co-ordinated with a view towards moving to a food and health policy. Finally the Scottish Office is funding us to undertake a study of how intervention strategies have worked in Norway, Finland and Sweden and how "Food Policy approach may help dietary choice" in Scotland.

National Activities to Change Food Habits

Following the publication of the Scottish Diet Report a Scottish Diet Action Group was set up by the Government Scottish Office to "agree by November 1995, an action plan for delivering the Scottish dietary targets which set out what is required, by whom and on what timescale, and to commission action accordingly". This includes representatives from primary producers, manufacturers, retailers, community representatives, catering, government departments, nutritionists, and physicians.

Farmers:

- support development of leaner breeds of beef cattle and sheep
- support development of dairy cattle producing milk with a lower butterfat content

Manufacturers (in conjunction with baking industry and retailers)

- examine how to reduce fat, salt and sugar content of products
- develop new "healthy style" produce of high quality making maximum use of basic ingredients
- removal of added milk fat from produce

Retailers

- to develop and provide a choice and balance of healthy products and introduce innovative ways of selling them

Community Action

- to explore the expansion of local food co-operatives
- (in conjunction with retailers) discuss free transport provision to major shops

Catering

- all catering staff should have some nutrition training

General

- ensure that all staff with care responsibilities for children under 5 should be provided with diet and nutrition training
- ensure all trainee teachers receive training in nutrition and diet

In addition, a massive nutrition education programme is anticipated through NHS health boards and health promotion departments.

4. Research of Food Habits in nutrition research, national nutrition society and in nutrition policy

Following the publication of the Scottish Diet Report and the establishment of the Nutrition Task Force in England & Wales, more attention has focussed on reasons for eating behaviours as well as the health consequences. One of the principal areas of concern remains the prevention of obesity, and considerable attention has been drawn to the fact that the UK Department of Health has failed to publish a report prepared for group discussion between the Physical Activity Task Force and Nutrition Task Force.

Due to the increasing levels of obesity in the UK it appears that further work in this area is likely to be seen as high priority. However, other areas of eating behaviour must be clearly seen to relate to health targets identified by the government in order to be considered for mainstream funding.

5. Priority Areas of Food Habit Research

Widespread concern with chronic diet related diseases suggests that eating habits from the cradle to the grave may play an important role in health, well-being and prevention of disease. Within Scotland, areas of particular concern highlighted for study include:

- Understanding mother's decision to breast feed
- Researching how to promote breast feeding

- Understanding the development of eating habits in pre-school children
- Researching how eating habits in children might be changed

- Understanding the provision of mid-day meals for school children, and the factors that influence food choice at this time
- Researching how to influence eating habits of school children, especially at lunch time (eg school meals)

- Understanding the influence of nutritional labelling on food selection in the supermarket, grocery and catering environments
- Understanding the limitations of formal nutrition education on dietary behaviour

- Longitudinal studies on the development and changes in eating habits throughout the lifespan

- Nutrition and food habit research for the development of food and health policy

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Figure 1

The Food Network

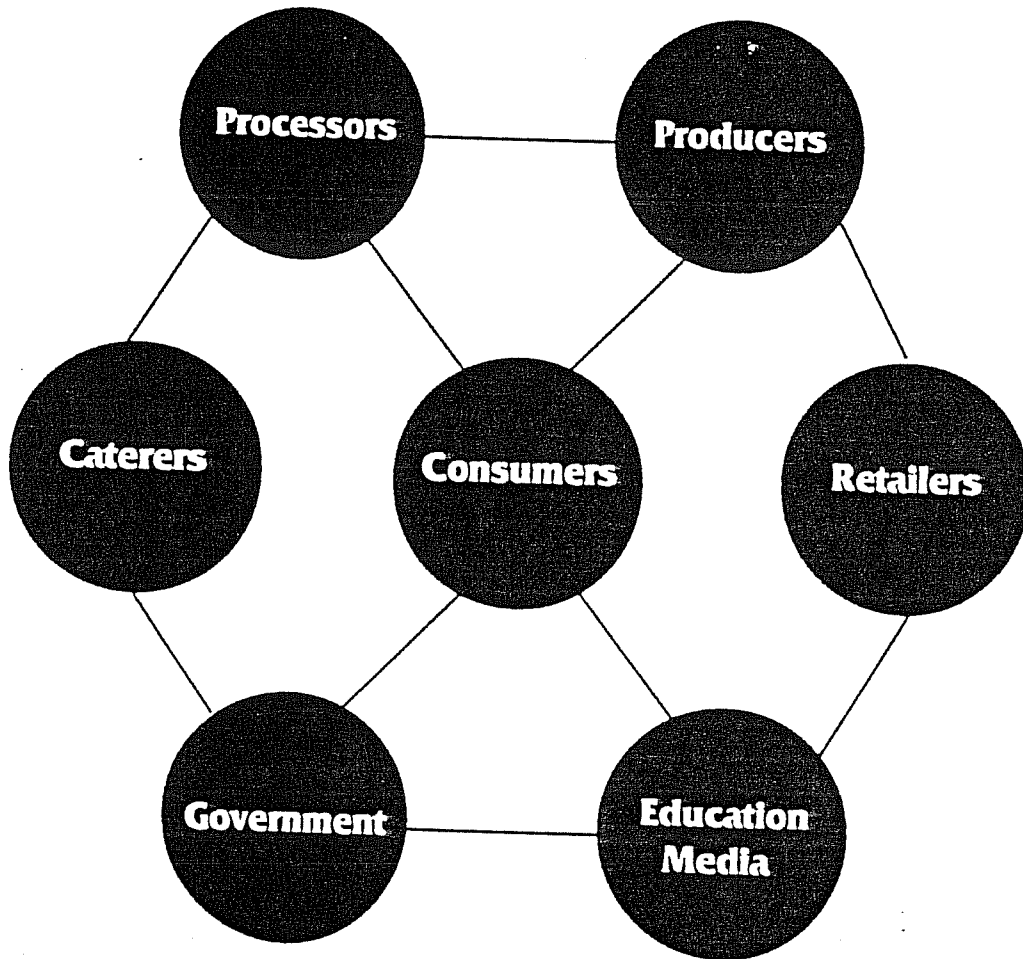


Table 1:

Summary of Scottish Nutrient Targets for 2005

	Current average intake	Direction of change	Proposed average for the Scottish diet
Vegetables and fruit (excluding potatoes) g.d	181.0	↑	>400
Carbohydrates			
Starch % E	25.3	↑	>40
Fibre (as non-starch polysaccharide) g.d	10.5	↑	>16
Sugars % E	16.3	↓	<10
Total Fat % E	40.7	↓	<35
Saturated	16.6	↓	<11
Salt consumption as sodium mmol.d	163.0	↓	100
Potassium consumption as mmol.d	62.0	↑	80

Table 2:

Summary of proposed dietary changes for 2005 - Increases

Vegetables	Consumption inadequate	a) Fresh and frozen vegetable intake to double b) Potato intake to increase by 25%
Fruit	Consumption inadequate	Fresh fruit intake to double
Fish	Maintain white fish Oily fish consumption inadequate	Oily fish intake to double Maintain white fish
Bread	Maintain white bread consumption Wholemeal and brown bread consumption inadequate	Increase total bread intake by 45% mainly using wholemeal and brown bread Manufacturers to reduce salt content
Cereals	Consumption inadequate	Breakfast cereal intake to double Manufacturers to reduce salt and sugar content

Figure 2:

Areas of Research relating to Food Habits

Finding out what people eat

- Foodmeter system
- Food Frequency questionnaires
- Food diaries with situational variables

Learning lessons from dietary change

- Migrant studies
- Marriage
- Income change
- Intervention

Food Availability and Education

- Community Food Initiatives
- Dietary Intervention Strategies 1970 - 1995
Scotland compared to Norway, Finland, Sweden

Table 3:

Summary of proposed dietary changes for 2005 - Decreases

Cakes & Pastries	Consumption too high	Cakes, biscuits and pastry intake to reduce by half
Meat	No further increase in lean meat consumption	Processed meat and sausage intake to reduce by half
	Processed meat products consumption too high	Bacon and ham intake to reduce by 20%
Fats	Consumption of total fat and saturated fats too high	a) Butter intake to reduce by two-thirds b) Replacement of saturated fat margarines and spread with low saturated fat equivalents
Milk	No change in total milk consumption	Whole milk replaced by semi-skimmed milk except for infants age 1-2 years
Sugar	Consumption too high	Average intake of NME sugars in adults not to increase Average intake of NME sugars in children to reduce by half
Confectionery, soft drinks, savoury snacks	Consumption too high, especially by children and adolescents	Cut adult intake by 33%, 50% for children and adolescents