The 1st Summer Nutrition Workshop of the International Society for Developmental Origins of Adult Health and Disease in association with the Nutrition Society, Physiological Society and Early Nutrition Academy was held at the University of Nottingham on 4 July 2008

Workshop on 'Changing nutrition behaviour to improve maternal and fetal health'

Food policy and dietary change

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There are a range of government food policies at national and international level. Overall, their aims are diverse but all will have an impact on women and thus impact on the developmental origins of adult disease through their role as mothers of future generations. The present paper describes the approach of the Food Standards Agency to help consumers choose, cook and eat healthy safe food by influencing individuals, products and the food environment. Examples of activity at the national, local and international level are used to demonstrate this approach.

Food choice: Food policy: Food environment

Government health and education policies aim, among other goals, to improve the health and well-being of the UK population. There are a range of policy documents within each of the four countries within the UK that talk about food policy. Similarly, there are food policy documents in Europe and worldwide. These policies are either population wide, e.g. the Department of Health's 'Choosing Health'(1) or the Scottish Government's 'Eating for Health'(2), or may address issues related to specific subgroups of the population, e.g. the Department of Health's 'Healthy Start' (3). While the diversity of these policy documents can be confusing for some individuals, the high profile of nutrition-related policy in the UK at the present time reflects ongoing concerns about the dietary health of the UK and the trends towards increasing ill health in later years that could be preventable.

Taking a population approach provides the basis for improving the dietary health of large groups of the population. In addition, it provides the background activity from which specific approaches to improving the diet of women can be delivered, with impact on the developmental origins of health and disease through their role as mothers of future generations.

About the Food Standards Agency

The Food Standards Agency (FSA) is a non-ministerial Government department with a UK-wide statutory duty to publish independent advice and to restore consumer trust

in food by putting the consumer first. The FSA's remit includes helping to improve the UK diet by making healthier eating easier. The strategy over recent years has been based on an integrated approach that recognises that focusing on consumer behaviour change alone will not deliver the improvements that are needed in the UK diet. A critical element is the need to work with others at a national, regional and local level. The FSA's approach to helping individuals move towards a healthier diet clusters around three areas of activities: influencing products; influencing individuals; influencing the wider environment in which individuals choose and eat those products (see Fig. 1).

The present paper will illustrate through the use of a small number of examples how food policy within the FSA combines to provide a framework of activity that helps individuals to choose, cook and eat safe healthy food.

The importance of food involvement, knowledge and skills

Throughout the present workshop on 'Changing nutrition behaviour to improve maternal and fetal health' (4–8) the issue of education has been a common theme, and the Southampton Women's Survey has identified maternal education as the strongest indicator of the prudent diet scale (9). This finding is a common one for many health inequality areas and an important area for Government action.

Abbreviation: FSA, Food Standards Agency.

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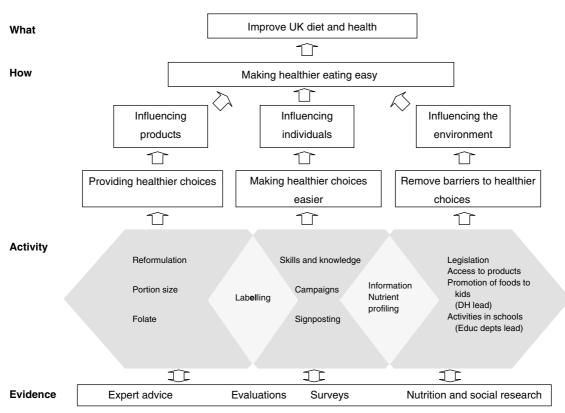


Fig. 1. Food Standards Agency's (FSA) approach to influencing the diet of the UK population. Influencing products: this strand is very much about working in partnership with industry. The FSA has been encouraging businesses to reduce the amount of salt they add to food and are pressing for reductions in saturated fat and portion size. The aim is to help the mainstream products become healthier as well as encouraging the development of healthier options. This action is a voluntary action undertaken by companies in support of public health goals. There has been some good progress on salt and *trans*-fats but there needs to be further action on reformulation of salt and saturated fat if the population goals that have been set are to be met. Influencing individuals: through raising consumers' awareness, knowledge and skills they need to choose a healthier diet, e.g. salt campaign. This approach is a long-term one, but raising consumer awareness has helped drive demand for products with less salt, which in turn has helped drive the market. Influencing the wider environment: provision of information and tools, together with influence on the shopping, promotional and consumption environment, aim to help individuals choose products that make the healthier option the easiest one. Work is underpinned by evidence: the FSA undertake research to understand the issues, investigate solutions, then monitor progress and undertake evaluation to assess the impact of FSA policies. DH, Department of Health; Educ depts, education departments.

The FSA has developed a series of principles for its work to help provide information and education on nutrition and food safety. Central to this work is the development of the food competency framework (10), which provides building blocks of knowledge and skills that children and young adults need to acquire to live independent lives. While the building blocks may be appropriate for consideration within the school curriculum, the framework can apply equally outside the curriculum and can be used by anyone working on food-related issues with children and young adults. The food competencies are grouped under the themes of diet and health, consumer awareness, cooking (food handling and preparation) and food safety. The competency framework has been developed through wide consultation, including consultation with young adults, with a view to developing an agreed framework by which organisations can benchmark their interventions and young adults, their parents, families and carers can benchmark knowledge and skills.

The FSA has used this competency framework to underpin its activity with young adults, ranging from the 'What's Cooking?' programme of extended school and community cooking clubs developed in 2004 through to the curriculum support materials associated with the TV programme 'Planet Cook' and as the basis for the communication with teenage girls through Shout, Bliss and Mizz magazines. Evaluation of 'What's Cooking?' has already identified improved knowledge, skill and understanding around the four themes of the competences⁽¹¹⁾. Work with 'Planet Cook' and the teenage magazines commenced in 2008 and will be subject to evaluation in the short- to medium-term future. While the approach is generic, looking in general to inform both boys and young men and girls and young women, specific aspects of this work influence young women who, by the nature of their current and immediate-future diets and through becoming mothers, will impact on the health and longevity of future generations. Additionally, by ensuring that boys and young

218 L. B. Levy

men are also introduced to the skills and knowledge needed for a healthier lifestyle this approach may help to overcome some of the barriers that many women reportedly face when trying to improve their diet, i.e. the likes and dislikes of their children, partners and wider family members (see Lawrence & Barker⁽⁴⁾).

Coordinated efforts to achieve behaviour change

Having information about healthier diets and some of the skills does not necessarily mean that choosing the healthier options is easy in today's society. The FSA's dual approach to salt reduction is a good example of work to raise awareness with consumers while at the same time working with the food industry on product reformulation.

In 2003 the Scientific Advisory Committee on Nutrition published its report *Salt and Health*⁽¹²⁾. In this report the Scientific Advisory Committee on Nutrition conclude that the evidence for a link between salt intake and blood pressure had increased since 1994 (when the Committee on Food and Nutrition Policy had last considered the subject). The current high levels of salt habitually consumed by the population raise the risk of high blood pressure, which increases the risk of stroke and premature death from CVD. The Scientific Advisory Committee on Nutrition confirmed that the population as a whole would benefit from reducing their intake to <6 g/d for adults, with lower levels identified for children.

The FSA developed and consulted on salt targets for eighty-five categories of foods, publishing targets in 2006⁽¹³⁾. Over seventy trade organisations, manufacturers and retailers have and are continuing to take action to reduce the salt levels in food. To maintain progress towards the FSA's target average population intake of 6 g/d the reduction targets will be reviewed on a biennial basis. The FSA expect to publish the first set of revised targets by the end of 2008.

Key to pursuing this agenda, however, has been the coincident awareness campaign, which aimed to stimulate demand for lower salt products. Tracking of the 'Sid the Slug', 'Talking Foods' and 'Full of it?' campaigns has provided evidence of raised consumer awareness and, importantly, claimed behaviour change. Over the three campaigns the FSA undertook wider partnership work, including in 2007–8 that with eight partners delivering the salt reduction message in practical terms to more localised and vulnerable audiences⁽¹⁴⁾. All eight partnership projects were able to demonstrate increased knowledge of the maximum recommended amount of salt for adults and children⁽¹⁴⁾. In addition:

- supermarket store tours increased understanding of food labels and hidden salt in foods. The success of the peer-education approach in Bristol has led to engagement of the peer educators to continue this work and widen it to other areas of healthy eating;
- 2. Healthy Hexagon has been established as an ongoing site on the Hexagon Housing Association's website⁽¹⁵⁾ and time-bank volunteers (The Hexagon Housing Association operates a time bank for residents whereby residents offer assistance and/or advice to other

- residents and receive the same in response. In relation to the salt campaign partnership project, volunteers were provided with knowledge and skills to help other residents understand food labels and work to reduce their salt intake, including through practical food skills and cooking support⁽¹⁵⁾) continue to spread the word;
- 3. children in a Diabetes UK-led school intervention were more likely to identify high- and low-salt foods and the importance of reducing salt in the diet;
- 4. the British Heart Foundation's social cooking project in Sikh and Hindu temples has demonstrated between 7% and 35% reduction in salt in different meal components. Given attendance of between 1000 and 3000 at such eating occasions this project has had a demonstrable and large impact on salt consumption in this community.

Future Government activities on saturated fat and energy balance are currently being planned. While these approaches are again taking a population approach, this campaign will also reach women of child-bearing age, both before and while pregnant. At a recent Nutrition Society meeting several eminent colleagues presented the evidence that women who are heavier when pregnant give birth to heavier babies who in turn are likely to be heavier as they grow (for example, see Uauy *et al.*⁽¹⁶⁾ and Symonds⁽¹⁷⁾). Heavier individuals are prone to increasing ill health. For women this process includes the reinforcement of cycles through pregnancy and childbirth that continue the outcome of the developmental origins of health and disease, which is the focus of this 2008 International Association for Developmental Origins of Health and Disease Workshop^(4–8).

Influencing the environment within which individuals consume food is therefore an essential element of behaviour change without which the positive reinforcement of cycles of adult disease that may have a developmental origin will continue to be seen. Data from the National Diet and Nutrition Survey(18) and Low Income Diet and Nutrition Survey⁽¹⁹⁾ identify that while on average the population consumes about the right percentage of total fat, the highest consumers of fat are eating approximately 50% energy as fat; a level that is far greater than that recommended. These surveys also indicate that on average the population consumes too much saturated fat, salt and nonmilk extrinsic sugars. At the same time different sections of the UK population have intakes of some vitamins and minerals below recommended levels. Addressing this imbalance in dietary intake therefore will require adjustments resulting not just from an individual skill and knowledge approach but wider product reformulation and catering practice.

Eating outside the home

The food eaten outside the home tends to be higher in fat, salt and sugar. For many individuals the food they eat in the workplace forms a large proportion of the food they eat outside the home. Approximately 3×10^6 meals are eaten at work every day, 2×10^6 of which are prepared by contract caterers⁽²⁰⁾. Meals in the workplace are sometimes

the only option for employees and they can account for at least one main meal daily, sometimes more.

To assist those providing food to consumers in major institutions such as the National Health Service, prisons and residential care, the FSA have developed advice to help address the inconsistencies between current dietary intakes and Government recommendations⁽²¹⁾. Nutrient intake across the day is conventionally divided across four eating occasions, i.e. breakfast, lunch, evening meal and food consumed between meals (snacks). Given that a wider range of foods tend to be consumed in lunch and evening meals when compared with breakfast these foods are conventionally assigned a greater proportion of intake. These proportions (as percentages of dietary reference values) have been identified in the FSA advice as average population requirements. However, given the data from the National Diet and Nutrition Survey⁽¹⁸⁾ the FSA guidance has set a target for total and saturated fat, non-milk extrinsic sugars and salt that is lower than the average population requirement (1% energy lower at both lunch and evening meal) and higher where the National Diet and Nutrition Survey has identified insufficiencies. Insufficiencies are taken to be present when >5% of a stated population group have intakes below the lower reference nutrient intake for that nutrient. This approach provides the basis for ensuring that the average intake is more likely to fall below maximal recommendations (e.g. for salt, fat and non-milk extrinsic sugars) and to achieve minimum recommendations in some cases even before the inclusion of food consumed between meals. To supplement the nutrient guidance, food-based guidance and seven example menus have also been published⁽²¹⁾.

Complementing this work, the FSA is developing a strategy for working with the catering sector, including workplace caterers, employers, restaurants and public houses. The approach encourages catering businesses to commit to activities that will help their customers to make healthier choices; the commitments are both voluntary and public. As part of this work, in January 2008 the FSA published voluntary commitments from seven of the major workplace caterers in the UK⁽²²⁾. Through this approach the FSA are, together with major workplace caterers, making an important first step towards enabling individuals to make sensible informed decisions to help achieve a balanced diet, no matter where they eat⁽²³⁾. The FSA is now extending this work to other parts of the catering sector, and are now in discussions with the major companies in the quick service, 'pub' dining, family dining and coffee shop sectors.

A solid evidence base

Other themes emerging throughout the series of presentations for the present Workshop include the importance of control over life and food choices, social support for healthy eating, belief in the value of healthy eating, involvement in food, psychological well-being, general self-efficacy and food security^(4–8). These themes often emerge from evaluation of effective health promotion and behaviour-change programmes.

While these themes appear to be demonstrating congruence with the determinants of factors that impact on the developmental origins of health and disease, they have for some time provided the basis for the FSA's intervention research, which contributes towards the evidence from which the FSA operates. The FSA's nutrition intervention research requirements note that proposals should be based on well-designed rigorous research practice and must include a clearly-stated hypothesis and objectives, the use of appropriate statistical analyses and justification for all aspects of the proposed research⁽²⁴⁾. In addition, it recommends proposals should take a holistic multidisciplinary approach targeted to a specific stated population group, provide (where appropriate) information and feedback and have a sufficiently long follow-up period to measure a robust outcome.

The FSA's current food choice research requirement on influences on children's and young adult's food choice within the family setting (Programme N14 – Food choice inequalities⁽²⁴⁾) further asks potential applicants to consider the recommendations in the National Institute for Health and Clinical Excellence guidance on behaviour change⁽²⁵⁾, the FSA's food competency framework⁽¹⁰⁾ and the Department of Health's 'Healthy Weight, Healthy Lives'⁽²⁶⁾.

While this research call has the potential to directly impact on the determinants of the developmental origins of health and disease, the use of these kinds of criteria for intervention research also means that other FSAcommissioned research has the same potential. Learning from conducting projects such as the development of an intervention to improve the diet of girls and young women from populations at risk of low birth weight⁽²⁷⁾ as well as ongoing projects such as 'Tees on the Move' (28) (involving a community health challenge) and a 'Healthy Challenge Programme' with children, young adults and their families in the wider school community in Kent⁽²⁹⁾ will provide useful insights and tools for improving the diet of the UK population. In particular, these projects contribute towards provision of the evidence base for policy approaches to influence the diet of the future.

Summary

Food policy means many different things to many different individuals. Within the UK there are a variety of policy papers that are reflected both across Europe and internationally. The Food Standard Agency plays a unique role across UK Government departments and takes a coordinated approach of helping individuals choose, cook and eat safe healthy food through influencing the wider environment as well as the products that individuals choose in that environment. Only through a concerted effort with a range of governmental, food industry, non-governmental organisations and consumers themselves can dietary goals be achieved that will provide healthy lifestyles now and for the future.

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220 L. B. Levy

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