SESSION IV

PRACTICAL APPLICATION

Chairman: PROFESSOR D. MILLER

A national food policy for prevention of CHD?

A. STEWART TRUSWELL
M.D., M.B., Ch.B., F.R.C.P., M.F.C.M.

Nutrition Department, Queen Elizabeth College, London

Summary
There is an increasing recognition of the importance of diet in the prevention of CHD. Dietary recommendations of various authoritative bodies are summarized. There is now a consensus of opinion concerning certain nutritional changes needed. These have important implications for education, agriculture, food labelling and food subsidies. It is concluded that a national food policy is needed, but that this should come from education and persuasion and not from compulsion.

This year is the silver jubilee of the dietary fat hypothesis: in 1952 Keys reported that human plasma cholesterol can be reduced by eating a diet low in total fat and suggested there might be a relationship between high fat intakes and atherosclerotic diseases. A few years later, the different effects of saturated, monosaturated and polyunsaturated fats on plasma cholesterol in man had been worked out (Bronte-Stewart et al., 1956). In 1959, Pyke introducing Dr Key’s book wrote “There now seems little doubt that coronary heart disease is in some way connected with diet and particularly with the consumption of fat…”

If the authors of this book have proved their case, the consequences are far reaching. To start with, we must abandon the idea that only creamy milk is good milk. Skim milk and butter milk are much better for the adult inhabitants of an industrial community like ours. Then we must accept that cooking with oil is better than using our familiar brands of cooking fats and margarine. It may be too that the children were right after all in trying to avoid eating the fat off the Sunday joint (Pyke, 1959). The author himself has been eating a diet relatively low in saturated fat and high in polyunsaturated fat for about 21 years, but these dietary ideas are taking a long time to catch on in Britain. Indeed the continental author of a recent book on dietary fats refers to Britain in conversation as “the control country”.

Other countries
The first authoritative recommendations that people should modify their dietary fat intake, to reduce plasma cholesterol and hence lower the risk or delay the onset of clinical CHD started in Sweden in co-operation with scientists from Norway and Finland in 1968 with the publication of: ‘Medical points of view on the national diet in the Scandinavian countries’ (Editorial, 1968; Keys, 1968). The recommendations developed into the Diet and Exercise programme in Sweden (Blix, Isaksson and Wretlind, 1973) and the proposed Norwegian food and nutrition policy (Editorial, 1976; Eeg Larsen and Ogrim, 1976). Other authoritative committees were set up and produced recommendations in the U.S.A., the Netherlands, New Zealand and Australia (Truswell, 1976a). Some themes were recurrent, in particular a reduction of total and/or saturated fat and an increase in proportion of polyunsaturated fats (Ball and Turner, 1975).

The first authoritative advice on the subject in Britain was published in 1974 – the COMA Report (Department of Health and Social Security, 1974),
and was chaired by Sir Frank Young. The report gave advice about the national diet (as opposed to people at special risk). The main conclusions were (a) Obesity should be prevented or treated by reduced food consumption or, less easily, an increase in regular exercise. (b) The majority of the members (i.e. not all) recommended that the amount of fat in the U.K. diet should be reduced, especially saturated fat. (c) All the members of the Panel, however, agreed that they could not recommend an increased intake of polyunsaturated fats as a measure intended to prevent CHD. (d) Sucrose should be reduced, “if only to diminish the risk of obesity”. (e) Caution was advised before introducing softening equipment for the drinking water supply. It also stated “Any dietary changes adopted by an adult are likely to affect a family, and our Recommendations may safely apply to children”.

Response to the report was mixed. It had a lukewarm welcome by the British Medical Journal (Editorial, 1974) which concluded: “The official silence about diet and heart disease that has prevailed in this country has now been broken. The implications of the panel’s recommendations for the food industry, for government food regulations and subsidies and even for the EEC agricultural arrangements will need to be carefully studied. . . . Nevertheless, the report is not one of the tablets of stone brought down the mountain by Moses, and the official British recommendations on this important subject will need to be reconsidered at regular intervals – as is being done in the U.S.A. and Australia.” Some members of this present symposium have recorded their disagreement with details of the report (Lewis et al., 1974; Ball and Turner, 1974) especially that the likely preventive value of polyunsaturated fats had been played down too much which was out of line with authoritative committees in other countries.

Royal College of Physicians/British Cardiac Society Report (1976)

Before the COMA panel reported, a working party of the Royal College of Physicians (of London) and the British Cardiac Society (RCP/BCS) had started to meet. Its report gave advice, primarily for medical practitioners about steps to reduce all the well established risk factors for CHD and only some related to diet. Viewed from the international perspective that the average level of the plasma cholesterol in the U.K. showed that we are at considerable risk of CHD, dietary advice was therefore given for the whole community – reduced total and saturated fat, partial replacement by polyunsaturated fat and maintenance of desirable body weight. Sugar and alcohol were named as common sources of excess calories. Some other dietary components, e.g. fibre, were reviewed concisely in the text of the report. The summary predicted that: “There are considerable implications in the dietary recommendations for national food policy, for the producers and the manufacturers of food and for the regulations concerning food labelling. Nutritional practices and catering in schools, hospitals, the Armed Forces and other organizations may require to be reviewed.”

Recent developments

Little publicity attended the DHSS/COMA report and the average journalist and man in the street in Britain may well have assumed that the only dietary factors related to CHD were obesity, and sugar in tea. After the RCP/BCS Report in April 1976 there was an explosion of broadcasts and articles in all the press, especially about dietary advice. The report was sent to every medical practitioner in the country by the DHSS with a covering letter by the Chief Medical Officer which briefly commended the report in general; but explained that the COMA Committee had reconsidered the RCP/BCS advice about partial replacement with polyunsaturated fat but saw no reason to change their earlier position. They did not consider that any fresh evidence had come to light since 1974.

However, the COMA report did not mention the relation between polyunsaturated fat and prostaglandins; that polyunsaturated fats: decrease platelet aggregation; (Nordøy, 1976; O’Brien, Etherington and Jamieson, 1976a; O’Brien et al., 1976b; Hornstra et al., 1973; Renaud, 1977; Baghurst and Truswell, 1977); decrease plasma triglycerides (Lewis, 1976); decrease arterial blood pressure (Iacono et al., 1975); do not lead to cancer (Ederer et al., 1971; Heady, 1974); and may improve the control of patients with diabetes (Houtsmuller, 1975) and improve myocardial function in rats (Ten Hoor, 1977). Men in Stockholm, where the incidence of CHD is one-third the rate in Edinburgh in men in their 40s, have nearly twice as much linoleic acid in their adipose tissue and plasma triglycerides – 11% compared with 7% (Olsson et al., 1973).

The enthusiastic publicity given by the popular media to the RCP/BCS report has been followed by a reaction. In the medical profession there is a dialogue between the enthusiasts and the sceptics (McMichael, 1976, 1977a, b). The secondary drug trials have been very disappointing (Ahrens, 1976). Commercially there is a sales battle between the manufacturers of soft margarine and those of butter. Are the public, politicians, civil servants and general practitioners getting confused by the noise since minority views, if put in an entertaining way, tend to get more than their proportional share of the media in a democracy?

Two recent surveys are of help. Professor K.
Norum, Professor of Nutrition in Oslo sent a questionnaire in December, 1976 (Norum, 1977), to more than 200 experts working in the area of lipids, lipoproteins, atherosclerosis and nutrition, including nineteen in Britain—six members of the COMA panel and five of the RCP/BCS working party. Ninety-nine per cent thought there is a connection between plasma cholesterol level and the development of CHD; 92% thought our knowledge about diet and CHD is sufficient to recommend a moderate change in the diet for the population in an affluent country; 92% said that their own diet is influenced by their knowledge. The order of priority for dietary change was voted as:

(1) less total calories; (2) less total fat; (3) less saturated fat; (4) less dietary cholesterol; (5) more polyunsaturated fat; (6) less sugar; (7) less salt; (8) more fibre. (9) more starchy food (Norum, 1977).

In 1976 a questionnaire was sent to all the members of the (British) Nutrition Society (Brown, 1976; Brown, Brown and Naismith, 1977). Although many members are animal nutritionists, 55% accepted that a high consumption of saturated fat is a major dietary factor in the aetiology of CHD; only 23% accepted the sugar hypothesis.

To sum up on specific nutrition measures to prevent CHD the author thinks that for Britain we should rank them as follows: 1st, reduction of obesity; 2nd, reduction of saturated and total fat, 3rd, partial replacement by polyunsaturated fat and 4th, reduction of dietary cholesterol. The first two (carried out with moderation) cannot do harm and may well do good. Unfortunately on dietary cholesterol the RCP/BCS report was ambiguous. The summary did not recommend a reduction but in the text specified "Eat less meat and fewer egg yolk". Evidence about the effect of dietary cholesterol on plasma cholesterol is still conflicting (Keys, Grande and Anderson, 1974; Mistry et al., 1976; Porter et al., 1977; Kummerow et al., 1977). Elsewhere, the author has expressed doubts about the nutritional wisdom of reducing eggs in the diet of moderate consumers (Truswell, 1976a). Dr Michael Oliver, one of only two who were members of both British committees, has concluded that "Dietary cholesterol is not an important cause of CHD, and a moderate regular intake is not harmful" (Oliver, 1976).

In Britain the present contribution of groups of foods to the saturated fat intake is shown in Table 1. The highest contribution to saturated fat intake is total meats (24.7%) with butter a close second (23%) and liquid milk third (18.5%). Non-specific changes which may be important are more fibre and less sodium.

Meats are major sources of iron, protein and several vitamins; milk a major source of calcium, protein and some vitamins. Clearly the most nutritionally dispensable of these sources of saturated fat in a well-fed population is butter. It is rich in calories and contains very few other nutrients. To reduce the cream content of milk and to eat less fat on or in meat would be the next step. We can look at these items as indices of progress being made with a national food policy for prevention of CHD. These are negative changes. The positive indices would be increased consumption of polyunsaturated margarine and oils.

Some aspects of government and national activity will now be considered to see what progress is being made in changing these indices.

### Consumption figures

Between 1972 and 1976 there was no significant change in the total consumption of saturated or polyunsaturated fats. However, the type of fat is estimated from average analytical figures (not measured directly) and a new set of values for meat fat (with lower values) was used from 1974. During 1976 there was a considerable displacement of butter by soft margarine (National Food Survey, first quarter of 1977). Their respective consumption in households was 4.67 and 2.03 oz in the first quarter of 1977 compared with 5.5 and 1.36 oz/week in

| Table 1. Percentage contribution of fat classes from present British foods (Ministry of Agriculture, Fisheries and Food, 1976a). |
|---------------------------------|----------------|----------------|
|                                | Saturated      | Poly-unsaturated |
| Liquid milk                    | 18.5           | 3.7            |
| Other milk and cream           | 1.7            | 0.4            |
| Cheese                         | 5.3            | 1.0            |
| Beef and veal                  | 4.1            | 1.4            |
| Mutton and lamb                | 4.0            | 2.1            |
| Pork                           | 2.9            | 1.5            |
| Bacon and ham                  | 4.9            | 8.5            |
| Liver                          | 0.2            | 0.5            |
| Poultry                        | 0.6            | 2.4            |
| Sausages                       | 3.4            | 2.3            |
| Other meat                     | 4.5            | 5.1            |
| Total meat                     | 24.7           | 23.7           |
| Fish                           | 0.5            | 3.7            |
| Eggs                           | 2.3            | 4.3            |
| Butter                         | 22.9           | 4.4            |
| Margarine                      | 6.0            | 15.8           |
| Other fats                     | 7.6            | 16.5           |
| Total vegetables               | 0.5            | 6.2            |
| Total fruit                    | 0.3            | 1.2            |
| Total cereals                  | 8.3            | 15.5           |
| Absolute total (g/day)         | 50.7           | 10.6           |
|                                | 39.8           |                |
the first quarter of 1976. The ratio of soft margarine to butter thus changed from 25 to 43%. Only a few years ago there was no polyunsaturated margarine in this country.

House of Commons Expenditure Committee (1977)
This important committee has been considering strategy for preventive medicine. They were advised by the British Medical Association that it considered that the fat theory was winning over the sugar theory. The British Dietetic Association also supported the fat theory. The DHSS said that although they did not put a high priority on the need to subsidize butter, believing that margarine was in general the better food, there was no sufficient consensus of opinion among experts for them to give authoritative advice to the Department of Prices and Consumer Protection.

The Expenditure Committee made two clear recommendations in the field of dietary prevention of CHD:

247. We recommend that information about fats should be placed before the public in order to show up clearly the risks from a high intake of saturated fats and to encourage people to moderate their fat intake or switch to polyunsaturated fats.

248. Suggestions were made to us for the clearer labelling of food. One was that the calorie content of processed foods should be clearly marked on the packet. The second was that the proportion of saturated and polyunsaturated fats should appear on the labels of manufactured foods where possible. We endorse both these suggestions and recommend accordingly.

Food prices
The British subsidy on butter has been removed and the threatened EEC tax on imported oilseeds (Editorial, 1976) has not materialized.

Agricultural planning
Food from our own Resources, a Government White Paper (1975), suggested a 300% increased production in Britain of oilseeds, 30% of sugar beet, 21% of milk, 19% of mutton and lamb, 12% of poultry meat, 11% of pig meat, 9% of cereals and of beef. This has been criticized and alternative strategies proposed by Allaby, Baldock and Blythe (1977) who suggest moderate reductions in supplies of fats and oils, sugar and meat, moderate increases in fruit, vegetables and potato production (10–15%) and a 25–30% increase in cereal supplies.

We must not forget that Britain is one of the finest dairy countries in the world. Our grassland is a valuable resource. Proposed changes must be worked through with the farmers. Jollans (1976) has proposed that we might produce half skimmed milk and use this to reduce our butter imports since we are self-sufficient in liquid milk but import about 90% of our butter.

Education
There has been much excellent health education about dietary prevention of CHD in the media and by private enterprise. There was an excellent article "Fats and your health" in Which magazine (Article, 1976), explaining the fat content of different margarines. Two cookery books have appeared, one sponsored by the British Heart Foundation (Evans and Greenfield, 1976) and the other published by Good Housekeeping (1976). Some of our leading home economists are re-thinking their nutrition teaching on education of the young. The present nutritional standards report for school meals has dropped the requirement for fat, and gently recommends vegetable oils for “good culinary reasons” (Department of Education and Science, 1975; Truswell, 1976b). Unfortunately the latest Manual of Nutrition from the Ministry of Agriculture, Fisheries and Food (1976b) does not even quote the DHSS/COMA recommendations.

Food labelling
The Food Standards Committee is taking evidence on labelling of fats and oils, and we can hope that our fats and oils will soon be labelled with their saturated and polyunsaturated fat content as well as their cholesterol.

Do we want a compulsory food policy or a voluntary nutrition policy?
Biorck (1974) once explained some of the problems motivating statesmen to take strong action on preventive measures for CHD. If we consider our attitudes towards education, transport and population policies, we must surely not want nutritional totalitarianism (Dixon, 1977) in this country. A voluntary nutrition policy is both more desirable and more achievable than a compulsory food policy.

Integration with other diets for health
Our nutritional objectives for prevention of CHD will have to be integrated with nutritional goals for promotion of good health of other parts of the body. We must also consider dietary prevention of diabetes, iron deficiency anaemias, diverticulitis, and other conditions. We cannot simply advise people to eat less saturated fats. We must also advise them as to what they can eat as acceptable alternatives, these are starchy foods (such as bread,
Food policy for prevention of CHD


A national food policy for prevention of CHD?

A. S. Truswell

doi: 10.1136/pgmj.54.629.215

Updated information and services can be found at:
http://pmj.bmj.com/content/54/629/215

These include:

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/