The national diet

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Introduction

Food habits are not static and never have been (Braudel, 1973; Burnett, 1979). An enormous number of factors influence both the choice and use of different foodstuffs. To claim that eating habits do not or cannot change (Marr and Morris, 1982; Marr, 1983) is to ignore history.

Since the Second World War the average family has spent a decreasing proportion of the household budget on food—over 30% in the early 1950s compared with less than 20% by the 1980s. More meals are now eaten outside the home, particularly at midday in schools, works canteens, take-away and pubs. The greater number of women going out to work has contributed to both changing meal patterns and content. There has been an enormous expansion in the convenience sector, with the result that the housewife now spends less time preparing meals, and the family eats together less often and at less regular times.

These changes have been accompanied with shifts in the nutritional balance of the British diet, some of which are the continuation of a longer historical trend, while others are of more recent origin.

This paper examines changes in food consumption since the Second World War, and considers the potential for improvement in eating habits necessary for the reduction of coronary heart disease in the U.K.

Sources of data

Annual national food consumption data are presented in two ways by the Ministry of Agriculture, Fisheries and Food: estimates of food supplies moving into consumption (CLE), and records of household purchases from the Household Food Consumption and Expenditure Survey (NFS). Neither set of data is ideal for deriving a detailed breakdown of per capita trends in food or nutrient consumption, and their limitations are well known (Greaves and Hollingsworth, 1966; Buss, 1979). CLE measure quantities of food at the point of supply

from agriculture and the food industry. Allowance is not made for wastage in food processing or in the home. NFS data show what is bought by a stratified random sample of some 7,500 households throughout the year. Meals and snacks eaten outside the home are omitted, as are alcohol and sweet purchases.

Most data used here are the NFS annual average household purchases of foods from 1952, the first complete year of nationally representative sampling, to 1980. In addition, various market intelligence reports are referred to. These help to provide a more complete picture of the national diet, particularly for foods eaten outside the home.

The decline of starchy staple foods

The U.K. diet has become considerably less bulky with 39% less bread, 37% less potatoes, 65% less oatmeal and 34% less flour purchased by households since 1955, the first full year after the end of rationing (Table 1). This is part of a long-term trend, interrupted by the second world war and rationing, towards a more industrialized and refined diet with greater emphasis on 'added value' within the agricultural and food processing industries.

The 'value' added refers not to the nutrients of the product, but to the production process itself. For example, since 1955, CLE data show almost no change in the quantity of raw potatoes disappearing into retail and industrial outlets (106.2 kg per head per year in 1955; 105.5 kg in 1980), yet NFS data show a 37% drop in purchases up to 1980. While this discrepancy is in part accounted for by increased out-of-home consumption, it is also a reflection of the drive to produce more expensive and more wasteful potato products. One-thousand kilograms of raw potatoes eaten as such produce few jobs. Turned into only 270 kg crisps (Darrington, 1983) they produce machinery, jobs, advertising—'added value'. In nutritional terms, the value is less apparent. Such products are fatty and salty and are usually devoid of much of their natural dietary fibre.

TABLE 1. Changes in household consumption of foods from 1955 to 1980 (National Food Survey, Ministry of Agriculture, Fisheries and Food)

	1955 oz/head/week	1980 oz/head/week	Change (%)
All milk and cream (pint)	5.09	4.47	-12
Cheese	2.83	3.88	+37
Carcase meat			
beef	9.36	8.08	-14
lamb	6.55	4.47	-32
pork	2.32	4.11	+77
Chicken	0.48	6.38	+1229
Other meat and meat products	15.71	16.95	+8
All meat	34.42	39.99	+16
Fish	5.95	4.74	-21
Eggs (number)	4.19	3.58	-15
Butter	4.47	4.05	-9
Margarine	4.68	3.83	-18
Lard and fats	2.69	1.81	-33
All fats and oils	11.88	11.22	-6
Sugar	17.64	11.17	-37
Jams, honey, preserves	4.09	2.71	-34
Fresh green vegetables	14.63	9.11	-38
Potatoes (fresh)	59.90	37.77	-37
Other fresh vegetables	14.64	13.88	-5
Processed vegetables	7.89	16.16	+105
All vegetables	97.06	76.92	-21
Fresh fruit	16.11	18.57	+15
All other fruit	5.80	7.23	+25
All fruit	21.91	25.80	+18
White bread	44.36 (1956)	21.84	-51
Brown bread	2.38 (1956)	4.01	+68
Wholemeal bread	1.60 (1956)	1.55	-3
All bread	51.08 (1956)	31.07	-39
Rice	0.86	0.99	+15
Flour	8.57	5.67	-34
Chocolate biscuits	0.80 (1958)	1.12	+40
Biscuits (not chocolate)	4.78 (1958)	4.05	-15
Breakfast cereals	1.69	3.50	+107
Oatmeal and products	1.19	0.42	-65
Cakes, pastries, buns, scones	5.56	3.73	-33

Bread

Sales of white bread have declined rapidly since the ending of government control of the extraction rate of flour in 1956. The Chorleywood Bread Process introduced in the 1960s has not enhanced the public's taste for white bread. Trade estimates indicate that taking into account the considerable amount of bread eaten outside the home (and therefore not included in NFS), consumption has been falling at the rate of 2% per year (Keynote, 1979). Sales of wholemeal and brown bread have recently both increased sharply following publicity about the value of dietary fibre; the two companies providing more than two-thirds of

all U.K. bread have only recently introduced wholemeal bread for sale on a national basis. If proposed legislation is passed by parliament, wholemeal bread will soon be permitted to be made with improvers, paving the way for it to be made by the Chorleywood bread process. It will be interesting to see what effect this will have on sales.

Cakes, biscuits, flour

Ready-made cakes, scones, teacakes and pastries have all declined in consumption since the 1950s, particularly since the 1960s with the decreasing popularity of elevenses and afternoon tea. Home

baking has also declined, as reflected in downward flour purchases, although 60–70% of all cakes eaten are still home-baked (Mintel, 1980).

The Milk Marketing Board is working hard to ensure that half of all the cream produced in the U.K. continues to find its way into the cream cake sector (Mintel, 1980). Their aggressive and highly successful 'save one for yourself' and 'naughty but nice' campaigns have led to the popularity of a product that was almost unknown in the U.K. in the 1950s.

Chocolate and savoury biscuits have shown an overall increase since the 1950s, at the expense of other sweet varieties. This changing national taste is reflected in the top-ten list of best selling biscuits. Whereas in the 1950s these were all sweet varieties, by 1978 they included three savouries (Retail Business, 1978). ('Savoury' biscuits, however, often contain sucrose.)

The contribution of cakes and biscuits to the nutrient composition of the U.K. diet cannot be fairly estimated from NFS data because so many are eaten outside the home. For example, 18% of all biscuits in 1981 were destined for the catering trade (Mintel, 1983a), and a considerable quantity are eaten outside the home as snacks. Such products are usually high in both sucrose and saturated fat, particularly saturated fat, because they are often made with palm and coconut oils (e.g. filled biscuits are made exclusively with these).

Chips, crisps, savoury snacks

The declining popularity of the fresh potato has been partly offset by the rising consumption of potato products, nearly all containing significant quantities of fat and salt. NFS data show a 1240% increase in crisp purchases since 1955. However, at least half of all crisps and savoury snacks are eaten outside the home, with per capita consumption reaching 80 packets per year in 1983 (Darrington, 1983).

The potential for rapid change in the nation's eating habits is well illustrated by the rising popularity of savoury snacks. Pot noodles appeared in the late 1970s, and by 1981 sold 105 million pots.

Pasta

The U.K. has the lowest per capita pasta consumption in Europe (Retail Business, 1982) at 1.8 lb per head per year in 1980. Sales have trebled since 1965, with the first real boost coming with the poor potato harvest of 1976. Sales are dominated by canned spaghetti (50%) and macaroni (20%), but the food industry forecasts rising sales of dry pasta throughout the 1980s.

Breakfast foods

In 1955/6 about half the U.K. adult population had a cooked breakfast, with bacon and eggs the most popular dish (Warren, 1958). Cold cereals were more popular than porridge; tea was drunk by 85%, coffee by 4%. More than 90% of adults ate something.

By the 1970s, things had changed. The survey by Kellogg's into 'Who Eats Breakfast' in 1976 showed that only 18% ate a cooked breakfast. Twice as many people (40%) ate breakfast cereals as in 1956. Seventeen percent of the population ate nothing.

These changes are reflected by NFS data which shows declining bacon and egg sales, and increasing consumption of ready-to-eat cereals at the expense of porridge. Between 1970 and 1980, volume sales of breakfast cereals have risen by 36%, with a recent expansion of bran-enriched varieties (Keynote, 1983). While this is good news as far as dietary fibre consumption is concerned, nearly all breakfast cereals are a vehicle for hidden sugar—some are more than 50% sucrose by weight [viz Sugar Puffs (56% sucrose), muesli (26%), Allbran (15.4%)].

Milk

Liquid milk (Fig. 1) continues to represent the largest single item in most U.K. household food bills (Mintel, 1982b). The U.K. has 20% of the EEC population, yet it consumes over 40% of all the EEC milk produced. However, consumption has declined since an all-time high in 1951, with fluctuations in sales relating primarily to changes in price.

FIG. 1. Per capita milk and cheese consumption 1952–1980 (NFS).

Changing eating habits mean that less milk is now used in custards and evening drinks, there is more competition from soft drinks and fruit juices, and there has been a recent increase in the use of non-dairy coffee whiteners. Only 10% of all milk is now drunk neat, and over one-third is used in beverages.

Changes in legislation in 1971 meant that local authorities were no longer compelled to provide a

third of a pint of milk a day to school children. Since 1980 local authorities have had discretionary power to provide milk again, with an EEC subsidy on full-fat milk to encourage consumption.

Recently there has been some diversification of milk products, with a small but rising proportion being sold through shops, e.g. skimmed and flavoured milks.

Yoghurts and desserts

Yoghurts have shown an 800% increase in NFS purchases since the 1950s. By 1981, 26% of all households bought yoghurt every month (Mintel, 1982a). All but 8% of yoghurt consumed is flavoured, and is invariably sweetened with sucrose.

Dairy desserts are increasing in popularity, although their high price confines them to a smaller market than yoghurts.

Cheese

The apparent increasing preference for savoury foods in the U.K. diet is reflected by a 37% increase in household cheese purchases since 1955 (Fig. 1). Per capita cheese consumption in the U.K. is still less than half that of nearly all northern European countries (Mintel, 1981). The varieties available in the U.K. are also few by comparison, which may account for the recent rising popularity of continental soft cheeses. The introduction of Lymeswold, containing over 40% fat, fresh weight, is an attempt to counteract this trend.

Butter and margarine

Margarine, once the poor man's spread, overtook butter in NFS purchase in 1981. The total amount of butter and margarine purchased rose from 7.18 oz per head per week immediately post-war to over 9 oz per head per week in the 1960s since when it has declined slightly (Fig. 2). Butter has nearly always been at a price disadvantage compared with margarine, particularly since U.K. entry to the EEC, and several subsidies have been imposed to reduce surplus stocks.

The healthy image of soft margarines has also contributed towards butter's declining popularity, although the public has undoubtedly been misled by the association of vegetable oils with low cholesterol and high polyunsaturate content. The latter is not necessarily correct since some 'soft' margarines can contain as much saturated fat as butter.

Lard, oils and other fats

In the 1950s, nearly all cooking was done with lard and other hard fats. These have declined by 33% (Table 1, Fig. 2) with rising popularity of liquid

FIG. 2. Per capita visible fat consumption 1952-1980 (NFS).

vegetable oils. Mintel (1983) considers that 'the negative image of animal fats is firmly established in the public mind', so much so that Flora now claim 20% of the compound cooking fat market with their new White Flora.

The domestic oil market was estimated in 1978 to be growing at the rate of 10% a year on average (Retail Business, 1978). The most important oil by volume is soya frequently sold as 'vegetable oil'.

Mintel (1983) says the public have 'little awareness of ingredients' of cooking oils and fats. This is hardly surprising, given the generally uninformative labelling of such products.

Meat

Consumption of all meats has risen by 16% since 1955, this being due primarily to the huge rise in consumption of poultry, and also pork, at the expense of beef, lamb, bacon and ham. Beef holds the biggest sector of the market, both in terms of weight purchased and consumer perceptions (Retail Business, 1981). Carcass meat has, however, declined since the war, and the traditional joint is not as popular as it once was.

Convenience meat products have increased since the 1950s and provide a significant proportion of total and saturated dietary fat. Growing consumer

awareness about the dangers of eating too much animal fat may soon mean that the meat industry has even greater amounts of it to dispose of unless there are corresponding changes in carcass composition. The meat (or fat) content of most meat products is at present an enigma to most shoppers.

Eggs

Household egg purchases rose immediately post-war and levelled off at 4–5 eggs per person per week (NFS) until the early 1970s, since when they have declined. NFS data underestimate egg consumption because they are also used in food processing (e.g. cakes, biscuits).

Fish

Immediately post-war, when meat supplies were scarce, fresh fish consumption increased, but since then it has declined continuously. Increasing purchases of frozen fish (a 43% increase from 1970 to 1980) and fish products have partly offset this decline, but rising prices, cod wars and herring shortages have all contributed to declining sales.

Vegetables

Fresh vegetables have declined in popularity since the 1950s, whereas processed vegetable consumption has increased (Table 1). Purchases of canned tomatoes have doubled, frozen peas have increased (at the expense of canned) by 250% and frozen beans by 511%. Baked beans have increased by 103% to 4 oz per person per week in 1980, making a significant contribution to national dietary fibre intake. They account for 44% by volume of all canned vegetable purchases, followed by peas (25%) and tomatoes (16%) (Mintel, 1982c; Retail Business, 1982).

Fruit

Consumption of all types of fruit has increased since the 1950s, but U.K. fresh fruit consumption remains one of the lowest in West Europe. Apples, oranges and bananas have lost their value share of the market as consumers try new varieties of stone, soft and other more exotic fruits (Euromonitor, 1981). Canned fruit purchasers have declined since a peak in the late 1960s, and there has recently been a move towards canning in lighter syrup, or even unsweetened fruit juice.

Fruit juice purchases have recently increased by 177% from 3.6 litres per head per year in 1978 to 10 litres in 1982 (Retail Business, 1983), orange juice remaining the most popular with 66% of the total sales volume.

Sugar and sweets

NFS data show a considerable decline in purchases of sugar, jams etc. (Table 1) since 1955. However,

these figures exclude sweets, and they also do not account for the sucrose contained in other products. CLE data indicate that gross consumption in 1980 stood at 47.3 kg per head per year. Less the sugar used in the production of alcoholic drinks, the figure is still 45.1 kg per head per year. Visible sugar consumption is declining, but sugar has found its way into unexpected foods—savoury biscuits and sauces, soups, canned vegetables and meats, 'plain' breakfast cereals, as well as the more obvious vehicles such as cakes, biscuits and soft drinks.

The average U.K. citizen consumed nearly 8 oz of confectionery per week in 1981. Children consume 40% of the total, with their parents actually buying 60% of it for them. The trend is towards more chocolate and less sugar confectionery (Mintel, 1983b; Keynote, 1982). U.K. chocolate contains significant quantities of added saturated fats, as well as sugar and salt.

Alcohol

Per capita consumption of all types of alcoholic drinks has increased by 81% since 1955. Alcohol now provides on average 174 kcal per day, contributing 5.7% and 7.2% of total energy as estimated by CLE and NFS, respectively.

The nutritional value of the post-war U.K. diet

Fig. 3 shows the overall changes in protein, carbohydrate and energy content of the average U.K. diet from 1952 to 1980.

The decline in energy value of the diet is also shown by CLE data. Since the 1950s, CLE energy consumption figures have always been 400–600 kcal higher than NFS although the sharp decline in NFS energy figures during the 1970s, reflecting the greater number of meals eaten outside the home, is not matched so steeply.

The study of Durnin *et al.* (1974) of the eating habits of 14-year-olds in 1964 and 1971 shows a decline in energy consumption, accompanied by an increase in percentage body fat, suggesting a decrease in physical activity over the years. Apart from decreasing physical activity of the population, other factors likely to influence per capita energy consumption are the increasing proportion of elderly in the population who have a lower energy requirement (unless physical activity is maintained) and more efficient use of household food purchases.

Fat consumption has risen as total carbohydrate has declined. The fatty acid composition of the U.K. diet (NFS) has only been calculated since 1972 (Table 2). Since 1975 there has been a gradual shift upwards of the P:S ratio, brought about as much by a decrease in saturated as an increase in polyunsaturated fatty acids. This is encouraging, particularly

TABLE 2. Fatty acid consumption (g per head per day and % total energy) and P:S ratio of the national diet 1972-1980 (National Food Survey)

	1972	1973	1974	1975	1976	1977	1978	1979	1980
Saturates (g)	52.0	51.5	50.7	51.7	50.1	47.5	47.2	47.8	46.8
% energy	19.3	19.3	19.7	20.3	19.8	18.9	18.8	19.1	18.9
Monounsaturates (g)	42.9	41.9	39.8	39.8	39.7	39.0	39.3	34.7	39.6
% energy	15.9	15.7	15.4	15.6	15.0	15.5	15.6	15.9	16.0
Polyunsaturates (g)	11.5	11.5	10.6	10.1	10.5	10.4	10.6	10.7	11.3
% energy	4.3	4.3	4.1	4.0	4.1	4.1	4.2	4.3	4.6
P:S ratio	0.22	0.22	0.21	0.20	0.21	0.22	0.23	0.23	0.24

ENERGY CONSUMPTION - National Food Survey

FIG. 3. The nutrient composition of the national diet 1952-1980 (NFS).

since there has been no official national campaign for the improvement of diet other than commercial advertising.

The potential for improvement of the British diet

The current British diet does not match up to WHO (1982) guidelines for the prevention of coronary heart disease. It is too high in both total and saturated fat. The high levels of total fat, sucrose and salt, and low level of dietary fibre consumption in the U.K. are also undesirable for the maintenance of good health in general (DHSS, 1981; Royal College of Physicians (RCP), 1981, 1983; RCP/British Cardiac Society, 1976).

Can the national diet be improved? Nutritionists are fond of asserting that the U.K. population is reluctant to change its eating habits, yet the data presented here show that the nation has constantly

been changing its diet since the war. Indeed eating habits have been on the move for centuries. The real question is not whether eating habits *can* change, but whether the food and agricultural industries, and the British population, are prepared to produce and eat a more healthy but less processed type of diet. The food industry has the ability to produce a far wider range of foods than has ever existed before. It does so for reasons which are at present unconnected with the maintenance of long-term health.

Changing the national diet in line with WHO guidelines implies reducing both total and saturated fat. Fig. 4 shows the contribution of U.K. foods to fat intakes in the U.K. Since dairy foods provide 31.6% of total fat and 42.5% of saturated fat, it would seem reasonable to look for some reduction in this area. Semi-skimmed and skimmed pasteurized milks are not promoted widely in the U.K., and are less readily available than in North America and on the Continent. Yet their widespread consumption in the U.K. could have a substantial impact on fat intakes.

Meat provides 27.4% of total and 25.4% of saturated fat, with meat products such as pies and sausages being the largest contributor. A reduction of meat fat does not necessarily imply a more expensive diet. Smaller quantities of leaner cuts, and substitution with chicken and fish would result in a less fatty, but still 'meaty' diet.

Cooking fats, margarines and oils provide 23.8% of total and 18.5% of saturated fats. A reduction in the saturated fat content of these foods is already occurring. A reduction in the quantity used is also desirable.

Biscuits provide 4.5% of total and 4.9% of saturated fat. Manufacturers of these and other products to which fat is added at present have no numerical guidelines on desirable levels of total or saturated fat content. These foods are also inadequately labelled.

A shift in the average national fat consumption would be facilitated by the measures outlined by the Royal College of Physicians report on Obesity (1983): better labelling of foods with fat and energy content, the reduction of fat content of a wide range of manufactured foods, the avoidance of legislation which encourages the consumption of fats.

FIG. 4. Contribution of foods to total (a) and saturated (b) fat intakes in the national diet (NFS, 1980).

A less fatty diet is not outside the collective historical experience of the U.K. population. Burnett's (1979) summary of social and nutritional surveys undertaken in the 19th and early 20th centuries show the average diet contained less than 30% of total energy as fat, with that of the very poor substantially below this level. While the diet of the 1980s is undoubtedly better as far as availability of fresh and more varied foods is concerned, the high level of refinement has not brought with it the improvements in health that earlier generations might have expected.

References

- BRAUDEL, F. (1973) *Capitalism and Material Life, 1400-1800*. Weidenfeld and Nicholson, London.
- BURNETT, J. (1979) *Plenty and Want*. Scholar Press, London.
- BUSS, D.H. (1979) The resilience of British household diets during the 1970s. *Journal of Human Nutrition*, **33**, 47.
- DARRINGTON, H. (1983) What else from the potato? *Food Manufacture*, **58**, 28.
- DEPARTMENT OF HEALTH AND SOCIAL SECURITY (1981) *Avoiding Heart Attacks*. London, HMSO.
- DURNIN, J.V.G.A., LONGERMAN, M.E., GOOD, J. & EWAN, E. (1974) A cross-sectional nutritional and anthropometric study, with an interval of 7 years, on 611 young adolescent school children. *British Journal of Nutrition*, **32**, 169.
- EUROMONITOR (1981) *Fresh Fruit*. XXI August.
- GREAVES, J.P. & HOLLINGSWORTH, D.F. (1966). Trends in food consumption in the United Kingdom. *World Review of Nutrition and Dietetics*, **6**, 34.
- KEYNOTE (1979) *Baking*. February.
- KEYNOTE (1982) *Confectionery*. May.
- KEYNOTE (1983) *Breakfast Cereals*. February.
- MARR, J.W. & MORRIS, J.N. (1982) Letter. *Lancet* **i**, 217.

- MARR, J.W. (1983) Putting dietary theory into practice. *British Nutrition Foundation Bulletin*, May, 65.
- Ministry of Agriculture, Fisheries and Foods. Estimates of food supplies moving into consumption—pre-war- 1977. Unpublished summary of statistics.
- MINISTRY OF AGRICULTURE, FISHERIES AND FOOD (1981) Food supplies moving into consumption 1977–1980. *Food Facts*, 9.
- MINTEL (1980) *Cakes*. November.
- MINTEL (1981) *Cheese*. November.
- MINTEL (1982a) *Yoghurt and Dairy Desserts*. February.
- MINTEL (1982b) *Milk and Cream*. July.
- MINTEL (1982c) *Canned Vegetables*. November.
- MINTEL (1983a) *Biscuits*. January.
- MINTEL (1983b) *Sugar Confectionery*. February.
- NATIONAL FOOD SURVEY COMMITTEE (1952–1980) Household Food Consumption and Expenditure Surveys 1952–1980. Ministry of Agriculture, Fisheries and Food. London, HMSO.
- RETAIL BUSINESS (1978) *Biscuits*. March.
- RETAIL BUSINESS (1981) *Beef*. October.
- RETAIL BUSINESS (1982) *Baked Beans*. December.
- RETAIL BUSINESS (1983) *Fruit Juices*. May.
- ROYAL COLLEGE OF PHYSICIANS (1983) Obesity. *Journal of the Royal College of Physicians*, 17, 3.
- ROYAL COLLEGE OF PHYSICIANS (1981) *Report on Medical Aspects of Dietary Fibre*. Pitman Medical, London.
- ROYAL COLLEGE OF PHYSICIANS/BRITISH CARDIAC SOCIETY (1976) Prevention of Coronary Heart Disease. *Journal of the Royal College of Physicians*, 10, 213.
- WARREN, G.C. (1958) *The Foods We Eat*. Cassell. London.
- WORLD HEALTH ORGANISATION (1982) Prevention of Coronary Heart Disease. *WHO Technical Report Series*, 678.