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Policy initiatives to address low-income households' nutritional needs in the UK

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Members of low-income households in the UK are more likely to have patterns of food and nutrient intakes that are less inclined to lead to good health outcomes in the short and long term. Health inequalities, including the likelihood of child and adulthood obesity, have long been documented in the UK and show little sign of improving so far, despite 10 years of attention from a government that has committed itself to addressing them. Following the Acheson Inquiry into Inequalities in Health (1998) in England a number of initiatives to tackle inequalities in food and diet were established, both nationally and within the devolved nations of Scotland, Wales and Northern Ireland. Nevertheless, until recently, there has been no overall strategic policy addressing the food and nutritional needs of low-income households. The present paper reviews how the problems have been constructed and understood and how they have been addressed, briefly drawing on recent evaluations of food and nutrition policies in Scotland and Wales. The contemporary challenge is to frame cross-cutting policy initiatives that move beyond simple targeting and local actions, encompass a life-course approach and recognise both the diversity of households that fall into 'low-income' categories and the need for 'upstream' intervention.

UK low-income households: Food and nutritional needs: Policy initiatives

There is now widespread and longstanding recognition in the UK and elsewhere that members of low-income households are more likely to have patterns of food and nutrient intakes that contribute to poor health outcomes in the short and long term[1–4]. These differentials seem to be persistent despite government commitment to reducing inequalities in health and well-being and despite clear improvements in average health indices such as life expectancy. The present paper engages with the challenges thus posed, to those who seek to understand and interpret these findings, to those whose job is to frame policies to address the differentials and to those who live with the daily realities. It begins with a brief summary of rates and characteristics of households on low income, reviews evidence for the nutritional problems in such households and understanding of causes, sets out the policy challenges in addressing so cross-sectoral an issue as the food and nutritional needs of low-income households and discusses some of the policy responses by the UK government over the last decade. Space precludes discussion of historical analysis and experience, but contemporary approaches in the devolved territories within the UK and some allusion to regional and local strategies are included. Discussion of factors driving the conditions that produce and/or maintain the 'low income' in which so many UK households still live is also very limited here; for examination of this aspect, both in general and in relation to nutritional intervention, the reader is directed to the literature[5–8], monitoring sites[9–12] and earlier articles published in *Proceedings of the Nutrition Society*[13,14].

Characteristics of low-income households in the UK

Within the UK and across Europe the most common definition of low household income is one that is $\leq 60\%$ of the median household income in a given year. This measure is clearly relative, identifying a group whose level of income is socially unacceptable for the time and place in which they live[15] and the threshold is used by civil servants,

Abbreviation: LIDNS, Low Income Diet and Nutrition Survey.
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academics, politicians and researchers. Nevertheless, it does not indicate extents of income inequality, how rapidly such inequality might be changing or the length of time households spend in these circumstances, all of which can have profound effects on the capacity of households to manage their inevitable lack of essential goods and services. Thus, it represents a fairly crude indicator of poverty, which is why many surveys use a wider set of deprivation indicators (such as that used in the Low Income Diet and Nutrition Survey (LIDNS), see later) than household income alone. These issues are widely discussed in the social policy literature[16–18].

In 2005–6 there were approximately thirteen million individuals living in UK households whose income was ≤60% of the median household income (22% of the population). The percentage in this category fell during the late 1990s and until 2004–5; about 15% of the population (nine million individuals) had been in this category for 2 of 3 years, i.e. living in what might be termed 'persistent low-income poverty'. Many households also experience intermittent low income; repeated movements in and out of the category, since most do not suddenly become much richer but simply gain or lose a few pounds per week, which is termed 'income churning'[19]. The most common reasons in the short term are rises in or losses of earnings by different household members or changes in receipt of state benefits; in the longer term, changes in household structure (arrival or departure of dependents, marital or partner separation) are more important, particularly for households headed by women[19]. Seemingly minor changes in available income can be critical in determining how much households can afford for food, which is an essential but flexible budget item, in that hunger can be assuaged quite cheaply and nutrients obtained from many different food commodities at very different costs[20–22].

UK households living on low income are typically those containing children or older adults, although, 'over the last decade, the proportion of children and pensioners in poverty has fallen, while the proportion of working-age adults in poverty remained unchanged. As a result, ... more than half the people now in poverty are working-age adults'[23]. In fact, single working-age adults without dependent children (four million) are twice as likely to be poor as working-age couples without children. Adults with disabilities are also twice as likely to be in low-income households as non-disabled adults[24]. Nevertheless, 3.8 million children live in low-income households, half of whom are in households in which one member is in paid work, and children are more likely to be living in low-income households than are adults, especially if they live with a lone parent. About one-sixth of those living on low incomes are pensioners (1.8 million), which is a lower rate than a decade ago, although many of those individuals entitled to state benefits to supplement their pension do not claim it. Low wages and job insecurity characterise those individuals in work who live in low-income households[24].

Evidence of problems: nutrition and health outcomes

Turning to food and nutritional outcomes, differentials in both household and individual dietary patterns, nutrient intakes and blood markers of nutritional status by various socio-economic indicators, in all age-groups and geographical regions, persist in the annual national surveys of household intakes (annual surveys of household food intake and expenditure published by the Ministry of Agriculture, Fisheries and Food until 2000, since then by the Department for Environment, Food and Rural Affairs[25]) and in regular national surveys of individual intakes[26–29]. The importance of these observations for health and well-being is widely discussed[20,30–33]. The differences are particularly marked when intakes and food patterns are compared by household income, economic activity (employed *v*. unemployed and receiving state benefits) or household composition[25,34]. Members of lone-parent households and those with two or more adults and children, which in the UK are more likely to be poor (however defined), are more likely to have lower micronutrient intakes than members of other household types[21,25].

The LIDNS recently published by the Food Standards Agency was a UK-wide survey specifically on the diet and nutrition of low-income households. Using a doorstep-administered questionnaire households who fell into (approximately) the bottom 15% of the population in terms of material deprivation were identified; the questions included receipt of benefits, household composition, car ownership and employment status[35]. The means of measuring food intake was based on intensive piloting of methods appropriate for households living in circumstances typical of those with low incomes[36]. In general, the findings are similar to those of previous surveys, confirming that a considerable section of the population in question still fails to meet population dietary targets, has poor micronutrient intake, high BMI and blood pressure and low reported levels of physical activity. The food patterns are similar to those found in smaller-scale surveys, in that participants were more likely to consume high-fat processed foods or fast foods and snack foods, particularly children and younger adults, and less likely to eat the kinds of foods recommended for health, such as unsaturated-fat spreads and lower-fat milk, wholemeal products, vegetables and fruits and fewer sugary foods. Although average daily intakes of most vitamins and minerals from food sources were found to be above or close to the reference nutrient intakes, there was a proportion of the population whose intakes fell well below the reference nutrient intakes for Fe, Mg, K and Zn, and some were below the lower reference nutrient intake. For instance, about 48% of women <35 years, and about 52% of women aged 35–49 years and approximately 40% of girls aged 11–18 years were found to have Fe intakes below the lower reference nutrient intake[37]. LIDNS was the first to use a food-security questionnaire in a national survey. About 30% of households within this low-income population lived in food-insecure households, which meant that they had said that during the previous year their access to enough food that is both sufficiently varied and culturally appropriate to sustain an active and healthy life had been limited by lack of money or other resources. About 39% of participants reported having worried that their food would run out before money for more was obtained during the previous year and one-fifth reported that they reduced or

skipped meals regularly because of lack of money[38]. In common with other survey findings, a higher proportion of this population were identified as current smokers (45% men and 40% women).

These national survey findings reflect the many small-scale, often qualitative, studies on the experience of living on a low income, some of which have specifically focused on food or on food insecurity[39], where individuals regularly report an inability to spend as much on food as they would wish or that having sufficient money is what limits their purchase of food they know to be healthier[40–42].

Elevated BMI indicating overweight and obesity are also widely documented as socially patterned; women and, increasingly, men and children from lower socio-economic groups are more likely to be obese or overweight[43–45]. The size of differentials depends on which social indicators are used (whether household income, education level, social class, receipt of means-tested benefits or area-deprivation scores) and childhood socio-economic conditions may contribute to the development of obesity over time[46]. The association between socio-economic status indicators and obesity also need to be interpreted with caution, as obesity may lead to lower educational attainment, lower employment and reduced income[47]. Nevertheless, household income and area deprivation seem to be better predictors of childhood obesity than a binary occupation-based indicator[48–50], the latter implying an ecological effect that has been observed for adults at country levels[51], particularly for incidence of abdominal obesity[52,53]. The recent UK Foresight Report on Trends and Drivers in Obesity has highlighted both the wide range of social, environmental, technological and other drivers of rising incidence of overweight and obesity, and has hinted that these factors can differentially affect those individuals in lower socio-economic groups[54]. The need for a multi-sectoral policy that addresses the wider environment (including the workplace, transport etc.) as well as focusing on individual behaviours was particularly emphasised[54].

Interpreting the problem

These relationships highlight the challenges in interpretation; to what extent is low nutritional status a product of the material conditions of poverty and deprivation (that individuals do not have enough money to spend on appropriate food or cannot easily purchase it in the places where they live, work or go to school) rather than a result of particular circumstances of cultural and social capital, which may include aspects of social status and may more probably be indicated by educational levels or occupationally-based social class?[4,55,56]. Social capital, the 'resources (material, social and in-kind) available to individuals through their social behaviours and membership in community networks'[57], has recently been examined in relation to food and has been shown to have a positive link with food security and a higher social capital leads to a lower risk of hunger at the household level in the USA[58]. European attention to social exclusion, which recognises multidimensional disadvantages for individuals and areas and its role in perpetuating deprivation, has informed recent UK approaches to reducing inequalities (although not specifically related to food), not least in the work of the Social Exclusion Unit and latterly the Cabinet Office Social Exclusion Task Force[59]. The reliance in much contemporary analysis of food patterns and nutritional indices on indicators of socio-economic status such as occupation of household head or education level as proxies for the material conditions of the household (signalled by 'income') are likely to mask both complexities of social differentiation in a society such as the UK (of gender, ethnicity, religion, age, area and community, which are distinct but linked) and also household circumstances alluded to earlier (for how long individuals have been living in deprivation, why, and what characterises their living conditions)[60]. There are further complexities to teasing out the relationships between food and nutritional outcomes and factors such as money, skills, cultural or social capital, in that the effects might vary depending on whether they pertain to the individual or to the household; intra-household management of, and access to, resources of various kinds may not be equal, and this factor may be more important for outcomes in some circumstances[61,62]. Moreover, the relationship between food and nutritional outcomes and indicators of area deprivation may be different in different places and/or times.

These issues of definition and conceptualisation are critical to developing improved understanding of the nature of the problems involved and the framing of appropriate responses; they affect targeting and intervention by the state or other agencies at national and local levels. Beyond these decisions there is also the question of whether what matters are those who live on low(est) incomes (i.e. below a minimum subsistence level or that needed to meet minimum requirements for health[63]: what is described as 'absolute poverty'[14]) or those living on household incomes in the lowest deciles or quintiles of national income distribution or other deprivation indices (as in LIDNS described earlier or in the UK poverty statistics of 'households below average income'[23]). Reducing inequalities is not the same as improving the nutrition and health of those individuals who are worst off in society. In the field of health inequalities there has been considerable work on the theoretical and practical implications of these different approaches and much debate on the salience of social capital and exclusion[64–67]. As yet, this work has not been matched by comparable research within the more specialised fields of nutrition and diet. Nevertheless, the major survey of low income and diet in the UK, the LIDNS report, has been promoted as showing that low-income households are not a distinguishable group with considerably worse nutrition than the rest of the population. It was argued, in the press release and subsequently, that since many UK households do not meet current dietary guidelines, low-income households are no different and do not need special attention[68]. Whether or not this argument strengthens the need for interventions that simply focus on changing the dietary pattern of the majority of the UK population, on the expectation that any benefit would include or even 'trickle down' to low-income households, rather than more targeted intervention in social or nutrition

policy for those on low income (however defined), is an ongoing critical discussion at present (T Lobstein, unpublished results).

In other words, to what extent do problems reside in the particular circumstances and conditions of specific groups, so requiring intervention aimed at them, or is it that problems are more generalised such that the drivers of the outcomes observed affect so many within the population that more general policy approaches are required? The latter does not preclude attention to the needs of specific groups (to ensure their capacity to capture the benefits), but the thinking and approach is different from one that targets by income, area deprivation or some other individual, household or locality indicator. Of course, it may be politically difficult to identify specific groups as experiencing nutritional problems and requiring targeted solutions (whether because of social or racial prejudice, or potential stigmatising).

Evidence of causal understanding: inputs and choice

The earlier caveats notwithstanding, there have been a number of studies trying to elucidate the determinants of the nutritional situation of those individuals who are poor and/or living on low incomes, addressing both material conditions and personal choices and practices. On the structural side, the UK, in common with the USA and Australia, has seen research on access to healthy food choices, with particular interest in the distance needing to be travelled (and means of doing so) to reach shops selling a good range of foodstuffs[69–73]. In Scotland a national map of access to healthy food was commissioned[74] and the salience of 'food deserts' (crudely, areas in which there are few shops selling sufficient healthy food) has been much debated[75–77]. There has been rather less research on other aspects of access, such as how money is managed. Basic expenditures such as rent, fuel and water can absorb a high proportion of outgoings and have the force of mandatory collection; such costs have risen faster than the retail price index in the UK in recent years, and they vary around the country, unlike income from benefits, pensions or the minimum wage[78–81]. The expenditure needs of children, and the cost of food relative to other essentials, can also be very critical in determining purchasing patterns[82], especially when low household income can fluctuate because of factors outside members' control. The cost of food can also vary between shops (and around the country), even for the same commodities. Thus, individuals living in different household circumstances may face very different constraints on how much money they can allocate to food.

The more theoretical approach of budget standards research, which cost diets appropriate for health for different household types, has demonstrated that, on average, UK families living on low incomes with dependent children[83], young single men paid at or below the minimum wage[84] and older individuals living on state old-age pensions[85] are likely to have insufficient money to meet basic needs for healthy living, including food. In that they do not, on the whole, go hungry is testament to immense skill in budgeting and managing limited resources, acceptance of monotonous diets and the probability of having to rely on very cheap food that is unlikely to contribute to a healthy dietary intake. It also offers explanation for the LIDNS findings on food security summarised earlier.

Nevertheless, money is not the only determinant of food purchase; skills, taste and culture clearly do shape what individuals buy and how and what they eat, although of course these determinants are not divorced from the material aspects of life. It has been argued that these factors are more important in shaping an individual's purchases than structural aspects of access, such as distance to shops and what is available in them[75,77,86]. When asked through surveys, individuals are shown to rate personal likes, or beliefs over what is appropriate to eat, as more important in their decision making than commodity availability or physical access to large supermarkets[77,86]. Such responses may reflect methodological approaches that ask individuals to rank aspects governing choice in a questionnaire; different answers are sometimes obtained in qualitative inquiry[87–89]. This disparity is partly because the characteristics of the physical and social environment in which individuals live or work may influence and frame the largely unconscious everyday practices of food purchase and consumption, so that 'availability and access' are not 'perceived' as issues, whether relating to the type and location of shops and markets or the provision in schools or workplace canteens. It is nevertheless useful to try to disentangle, for specific communities in any given place, how the complex set of social conditions and practices condition food choice among low-income consumers, and thus dietary and nutritional outcomes, and how different factors may jostle for supremacy day-by-day or from week-to-week. Such understanding can then shape intervention at local level.

Finally, it should be noted that in the UK there has been rather less research on the food and nutritional experience of those individuals whose circumstances fall outside official surveys and responses, particularly those who are roofless, homeless and/or asylum seekers. The few studies that have been done demonstrate that conditions and outcomes in terms of food patterns and nutrient intakes are worse than for those living in accommodation to which they have entitlement, those who have citizenship status and those whose lives are less fragmented and difficult[90–95].

Policy responses

Responses by the state to poor nutritional outcomes in low-income households have varied over the last century[96]. Most recently, in the 1990s in England, the Department of Health has led in setting up a Project Team on low income and diet under the Nutrition Task Force (1993–6). The subsequent report addressed structural and material issues, such as changes in food retailing and the responsibilities of local and national government[97,98], calling for a national network of local initiatives on food and low income and the creation of local public–private sector food partnerships, especially in areas of multiple disadvantage, to

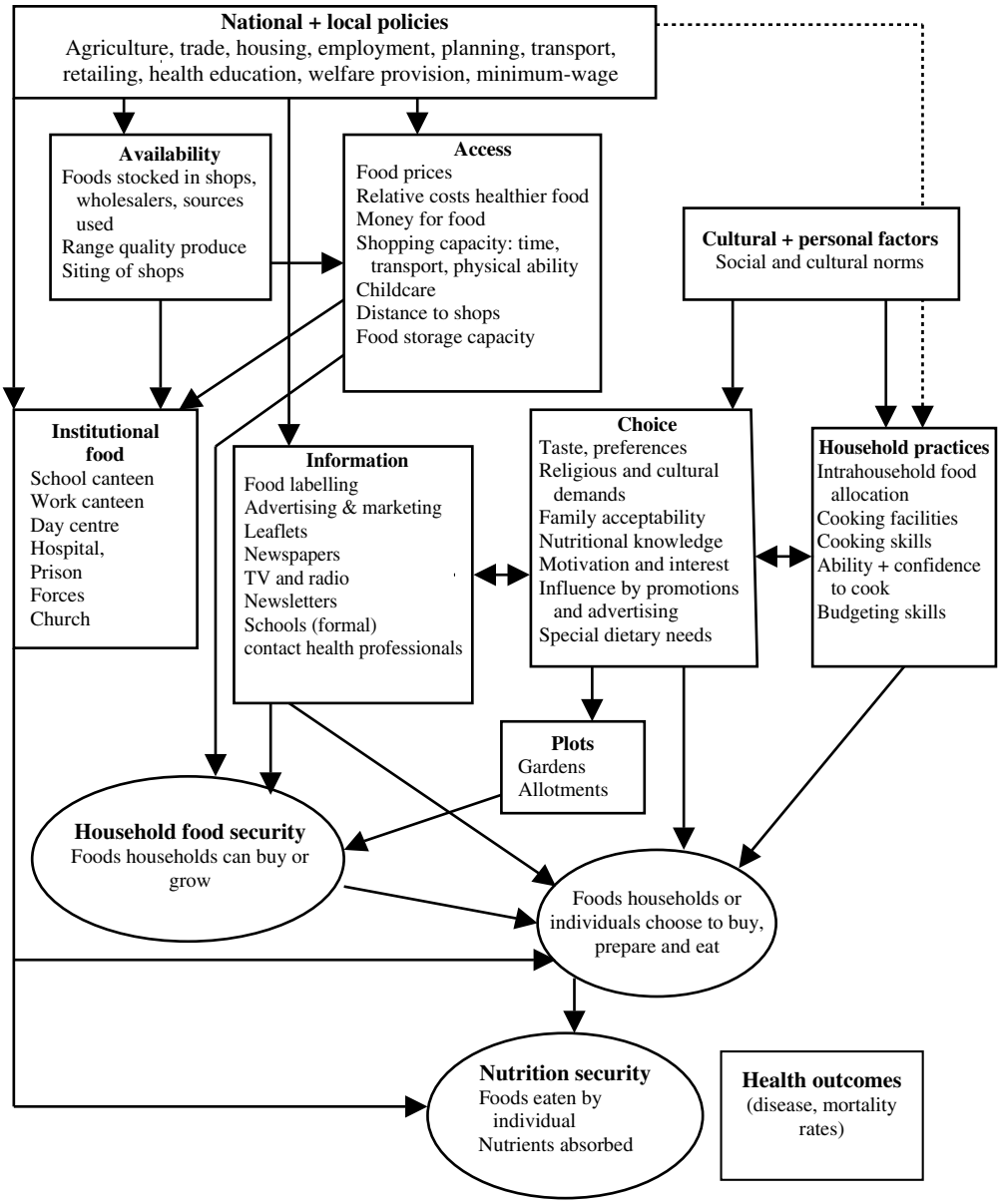

Fig. 1. Main determinants of food and nutritional intake by households and individuals in developed countries. (Adapted from Department of Health[97], Dowler *et al.*[20] and Robertson *et al.*[147].)

regenerate local food economies. Fig. 1, which is modified from a version produced for the Project Team, shows the range of determinants of nutritional intakes that were considered. These ideas informed both the Acheson Inquiry into Inequalities in Health[30] and the early public health White Paper under the new Labour Government (elected in May 1997 with a mandate to reduce inequalities)[99]. The Acheson Report includes within its many recommendations increasing the availability and accessibility of an adequate affordable diet, mentioning the need for policies to ensure adequate retail provision of food to those individuals who are disadvantaged. There is also a call for policies to reduce income inequalities and improve the living standards of households in receipt of social security benefits. The recommendations are linked to policies to improve the health and nutrition of women of child-bearing age and their children, with priority given to the elimination of food poverty and the prevention and reduction of obesity[100].

Since the publication of the Acheson Report a number and range of policy initiatives have been set in train, if not fully implemented. Although in practice the UK government and its devolved institutions have not explicitly addressed the issues in inequalities when applied to food and nutrition discussed earlier and, in fact, embrace most approaches, 'food and nutrition' has been located as a policy issue in different places at different times, particularly when seen as addressing the needs and priorities of low-income households. Indeed, the complexities of Fig. 1 make clear how much the determinants of dietary intake

depend on a range of factors and policy arenas. The Department of Health traditionally led on such initiatives and has continued to do so over the last decade, partly because of a focus on health inequalities. Nevertheless, the former Ministry of Agriculture, Fisheries and Food commissioned research on the needs of low-income households and a scoping study on challenges of surveying their circumstances and conditions of food and nutrition[101]. This role has now been taken over by the Food Standards Agency, the independent Government department set up in 2000 to protect the public's health and consumer interests in relation to food; the Food Standards Agency commissioned the LIDNS discussed earlier[35]. However, at present neither the Food Standards Agency nor any other body coordinates policy focus on low-income households' nutritional needs. Indeed, it is quite difficult to disentangle sectoral responsibilities for aspects of food and nutrition since they have been shifting over recent years and differ in the devolved territories. The following comments are presented broadly under topics to help clarity, but the boundaries between sectors or even substantive areas are not consistent and there are overlapping responsibilities and practices.

Initiatives broadly under 'health'

As a result of the Acheson Inquiry and the White Paper a number of cross-cutting policy initiatives to address health inequalities have been promoted (although health inequalities have in fact since widened)[102]. Many initiatives were targeted on the basis of area-deprivation indicators; some included food and nutrition activities, such as those begun under the auspices of Health Action Zones[103] and, to some extent, Education Action Zones. The Department of Health '5 A Day' programme in particular promoted intake of fruits and vegetables through a wide range of projects and initiatives[104]; in many instances professionals on the ground particularly focused on areas of deprivation or household types more likely to be on low incomes (such as parents of young children living in certain areas, teenage mothers or lone parents). These projects have had mixed success in improving access, motivation and intakes, although those individuals on the lowest incomes and in most-deprived areas seem to have shown most improvement[105]. Nevertheless, implementation has not been consistently well supported and many interventions have struggled to sustain funding through a mix of local level mechanisms, which means staff often operate on short-term contracts with uncertain security and projects face potential loss of capacity[106–108].

Other health policy initiatives in food, such as the National School Fruit Scheme (which entitled all 4–6-year-old children in Local Education Authority-maintained infant, primary and special schools to a free piece of fruit (and now vegetables) on each school day) have been untargeted and, despite the rhetoric, designed to raise general levels of health and well-being[109]. Early evaluation has emphasised considerable successes in terms of process and results[110–113] but not yet clear evidence of lasting nutritional benefit[114]. Whether benefits have substantially accrued to poorer households and their members is also not certain, and as the current policy agenda switches to addressing obesity continual support for fruit and vegetable promotion is less assured. The inequalities dimension to obesity is acknowledged but not as yet explicitly addressed except under individual aspects of 'lifestyle'[4]. Nevertheless, potential for an upstream more systematic strategy to reshape the food economy and culture has been signalled in the Department of Health Food and Health Action Plan[115]. Although this plan has no explicit inequalities focus, the population-wide interventions advocated, including social marketing, public food procurement and (led by the Food Standards Agency) food labelling, restrictions on food marketing to children and processed food reformulation, potentially benefit low-income households alongside the majority. There is some evidence that young parents on low incomes, for example, find labels on foods confusing, and therefore might benefit from the simplicity of proposed Food Standards Agency labels[88].

The reform of the previous Welfare Food Scheme (under the former Department of Social Security) to emerge in 2004 as 'Healthy Start' under the Department of Health targets pregnant women and families with children under the age of 4 years of age who are in receipt of some key means-tested benefits and all pregnant women under the age of 18 years[116]. This programme now gives entitlement to weekly vouchers to exchange in registered shops for modest quantities of milk, fresh fruit or vegetables, or infant formula, and to vitamin supplements from health distribution points. Advice about healthy eating, breast-feeding, infant feeding and using the vouchers is also included, as are links to 'Sure Start' and Children's Centres[117–119]. The role for these initiatives and 'Healthy Start' as conduit for nutritional intervention aimed at supporting low-income mothers and families is likely to be enhanced in the future[120]. These initiatives, along with some initiatives within the Health Action Zones, also provide the main mechanisms for addressing the low rates of breast-feeding initiation and maintenance, or appropriate weaning, for low-income mothers, particularly through peer-support programmes[13,121,122].

Initiatives broadly under 'education'

Reform of school meals over nutritional standards and quality, sourcing and management, which has been a large-scale undertaking in all devolved territories and England, is covered more fully elsewhere, including the contributory effect to curriculum improvement[123–127]. (School food now comes under the School Food Trust in England, which is a non-departmental body established by the former Department for Education and Skills, now the Department for Children, Schools and Families; in Scotland the Expert Panel on School Meals reported to the (then) Scottish Executive; in Wales, the policy documents have been produced by the Welsh Assembly Government.) However, despite considerable rhetoric, until recently there has been little explicit policy focus on reducing inequalities in intakes and food experience through schools[128] and there is some anxiety that as school food quality improves, costs to parents will increase. About one-fifth of school-aged

children are entitled to free school meals by virtue of their parents' claiming certain means-tested benefits (Income Support; Income-based Jobseeker's Allowance, Child Tax Credit (but not Working Tax Credit; annual income <£14496); support under Part VI of the Immigration and Asylum Act 1999; Guaranteed State Pension Credit[129]), and while some groups argue this entitlement should be wider, many children in fact do not claim their free lunches, partly for reasons of stigma[130]. Children often bring in 'packed lunches' instead or spend their limited cash on cheap fast foods such as chips, often readily available near schools. Current campaigns to improve the healthiness of home-produced lunch and reduce access to commercial alternatives aim to address these problems, but are difficult and time consuming to enforce, especially among older children. There have been calls for universal free primary school meals in Scotland, following the brief example of Hull City Council in England (Child Poverty Action Group in Scotland has a longstanding campaign, producing briefings to government[131] and drawing on the example of Hull City Council's experience of improved take-up and school outcomes). School breakfast initiatives have also been promoted and partially funded by central government, at least initially; some of these initiatives have been framed in terms of problems of access for children from low-income households, although probably more have emerged from recognition of household or parental failure to provide food early in the day.

Initiatives in 'commercial food access' through retailing and regeneration

Following the Acheson Inquiry, the newly-created Social Exclusion Unit has reported on problems in the retail sector in deprived areas in a consultation document that contains useful recommendations about community-based retailing and small businesses strategies[132]. Little central government activity has followed, and again no mechanism for coordinating activity has emerged; until recently, the national regeneration agenda in England and Wales has largely ignored shopping access beyond that provided by the major supermarkets. Some local area partnerships between local government and health, working with New Opportunities or regeneration budgets, have produced useful initiatives on social and retail planning[70,89], but these initiatives are either unevaluated in terms of nutritional benefit or, where a 'natural experiment' has been possible, have given equivocal results[133,134]. Such evaluative research also seldom takes account of household income levels and changes in other expenditure demands. Most initiatives are probably more focused on changing consumer demand by, for example, encouraging the shops in areas in which poorer sections of the population live to stock 'healthier' food ranges than by addressing challenges in the retail system as a whole and the limited provision in areas of deprivation[135].

In recent years there has been something of a shift in consumers' values in shopping for food, as for other commodities, towards more 'ethical' purchasing, in that the local, sustainable (economically and environmentally) and pleasurable aspects are privileged over lowest price, and the means of production or transport that accord with personal values are increasingly important (animal welfare, fairly-traded products etc.)[136,137]. Such shifts are across the board. Lower-income consumers express similar values to those with higher incomes, in terms of both reflective answers and purchasing patterns. Although price inevitably also remains an important determinant of choice for those on low incomes, these trends are no longer a 'middle class niche'[138–140]. Retailers and producers are responding to these trends to varying extents, although the recognition that low-income consumers also seek to express their concern for food quality in what they buy is not as widespread as it could be[141].

Approaches in the devolved territories

Within the devolved administrations in Scotland, Wales and Northern Ireland some different approaches have been taken, both to food and nutrition in general and to the problems faced by low-income households in particular. In Scotland adoption of the Scottish Diet Action Plan in 1996 (before devolution) had built on a clear statement of inequalities in outcomes reflecting unequal access, availability and behavioural demand[142], with a call to remove 'barriers' to healthy eating for individuals on low incomes. In practice, as a recent evaluation has shown, there has been no reduction in nutritional inequalities (and in fact no improvement in average intakes) in the ensuing decade[34]. The reasons for such policy failure are complex, but part of the explanation is a loss of focus that permitted too many disparate initiatives, particularly at local levels, with insufficient attention to the wide-scale and pervasive impact of changes in the food sector, to food culture and to loss of sustainable local production[143]. This assessment links into the earlier remarks that local projects and initiatives, whether within a health or 'food access' framework, seldom show widespread or systematic success in reducing inequalities. At the time of reporting there was some engagement with possibilities for building inequalities into national nutrition targets; a very recent consultation on the future of food in Scotland signals some recognition of the need for structural shifts, although explicit mention or address to inequalities is conspicuously absent[144]. In Wales an initiative on Food and Well-being was launched in 2003; this initiative included statements about access for low-income groups and the need to address the role of the food industry[145]. A number of initiatives have been set up, some working across sectors, with clear engagement of low-income groups, although much has been short-term project based[108]. In Northern Ireland a recent survey has investigated the food and nutritional circumstances of homeless individuals[93], and the Healthy Food for All initiative has been set up as a cross-sectoral response to food poverty across the island of Ireland[146].

Conclusion

The problems facing low-income households in terms of nutritional outcomes and food experience have been

increasingly recognised in the UK over the last decade or so, and a range of interventions have been initiated at national and local levels by government and civil society. The present paper has briefly reviewed the nature of these problems and given an overview of some policy interventions, including those by devolved governments in recent years. However, the recent LIDNS survey, among other sources of data, shows that nutritional conditions are not good among low-income-household members, despite more than a decade of intervention. Furthermore, annual monitoring of poverty and social exclusion conditions has shown that little lasting improvement in financial or other circumstances has been achieved, despite UK Government commitment to ending child poverty within a decade of being elected. Evaluations of national and smaller-scale interventions have demonstrated some improvements in food patterns, although rather fewer in nutrient intakes, and often show greater enjoyment of, and engagement with, different food commodities and dishes or ways of eating among those who live on low incomes and/or in areas of multiple deprivation. These outcomes are worthy, valuable in themselves and potentially contributing to improving the overall UK food culture. Other signs of a shift from 'cheap and cheerful' towards values of sustainability, enjoyment and health (in the widest sense) have been remarked, and these shifts pertain to low-income consumers as well as others.

Nevertheless, responses remain too focused on 'lifestyle' changes and that individuals should be facilitated to choose food that contributes to their health through local projects and initiatives. For many individuals choice is still proscribed by factors outside their control; the passing reference in policy documents to 'enabling better access' for low-income or vulnerable consumers usually means in practice more volunteer-led food cooperatives, rather than ensuring that individuals have sufficient money to buy food and decent places that are reachable for its purchase. Some upstream initiatives are now being undertaken, particularly in product formulation and means of promoting commodities. Evaluating the impact these initiatives have on low-income consumers' practices and outcomes will pose challenges to the research community, but arguably would ensure that such households are not excluded from consideration. Finally, initiatives that seek to engage with and embrace individuals' aspirations and desires, actively enabling their achievement, are more likely to succeed, particularly if they contribute to regenerating local economies and areas of deprivation. However, the need for better thinking and understanding of factors driving the determinants of food choice and nutritional outcomes is still paramount, as is the need for cross-sectoral but coordinated policy initiative that focuses on addressing the nutritional needs of low-income households in the UK.

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References

1. Davey Smith G & Brunner E (1997) Socio-economic differentials in health: the role of nutrition. *Proc Nutr Soc* **56**, 75–90.
2. James WPT, Nelson M, Ralph A & Leather S (1997) The contribution of nutrition to inequalities in health. *Br Med J* **314**, 1545–1549.
3. Dowler E (2001) Inequalities in diet and physical activity in Europe. *Public Health Nutr* **4**, 701–709.
4. Dowler E, Caraher M & Lincoln P (2007) Inequalities in food and nutrition: challenging 'lifestyles'. In *Challenging Health Inequalities: from Acheson to 'Choosing Health'*, pp. 127–155 (E Dowler and N Spencer, editors). Bristol: Policy Press.
5. Brewer M, Browne J & Sutherland H (2006) *What Will it Take to End Child Poverty?* York: Joseph Rowntree Foundation.
6. Whelan CT, Layte R & Maître B (2003) Persistent income poverty and deprivation in the European Union: An analysis of the first three waves of the European Community Household Panel. *J Soc Policy* **32**, 1–18.
7. McKendrick JH, Mooney G, Dickie J & Kelly P (editors) (2007) *Poverty in Scotland 2007*. London: CPAG.
8. Child Poverty Action Group (2007) Poverty: the facts. http://www.cpag.org.uk/publications/extracts/PtheFsumm07.pdf
9. New Policy Institute (2008) The poverty site. www.poverty.org.uk/
10. Joseph Rowntree Foundation (2008) Research, policy and practice. www.jrf.org.uk/research-and-policy/
11. Department for Work and Pensions (2008) Child poverty. http://www.dwp.gov.uk/childpoverty/
12. Townsend Centre for International Poverty Research (2008) Poverty. http://www.bristol.ac.uk/poverty/
13. Anderson AS (2007) Nutrition interventions in women in low-income groups in the UK. *Proc Nutr Soc* **66**, 25–32.
14. Dowler E & Dobson B (1997) Nutrition and poverty in Europe: an overview. *Proc Nutr Soc* **56**, 51–62.
15. New Policy Institute (2008) Choice of low income thresholds. http://www.poverty.org.uk/summary/income%20intro.shtml
16. Gordon D, Adelman L, Ashworth K *et al.* (2000) *Poverty and Social Exclusion in Britain*. York: Joseph Rowntree Foundation; available at http://www.jrf.org.uk/bookshop/eBooks/185935128X.pdf
17. Dorling D, Rigby J, Wheeler B, Ballas D, Thomas B, Fahmy E, Gordon D & Lupton R (2007) *Poverty, Wealth and Place in Britain, 1968 to 2005*. York: Joseph Rowntree Foundation.
18. Church J (2004) Income. In *Focus on Social Inequalities 2004*, pp. 41–54 (P Babb, J Martin and P Haezewindt, editors). London: The Stationery Office; available at http://www.statistics.gov.uk/downloads/theme_compendia/fosi2004/SocialInequalities_full.pdf
19. New Policy Institute (2008) Persistent low income. http://www.poverty.org.uk/03d/index.shtml
20. Dowler E, Turner S & Dobson B (2001) *Poverty Bites: Food, Health and Poor Families*. London: Child Poverty Action Group.
21. Dowler E (1997) Budgeting for food on a low income: the case of lone parents. *Food Policy* **22**, 405–417.

22. Dowler E & Calvert C (1997) Budgeting for food on state benefits: poor lone parents in the United Kingdom. In *Poverty and Food in Welfare Societies*, pp. 307–315 (B Köhler, E Feichtinger, E Barlösius and E Dowler, editors). Berlin: Wissenschaftszentrum Berlin für Sozialforschung.
23. Palmer G, MacInnes T & Kenway P (2007) Monitoring poverty and social exclusion 2007. http://www.poverty.org.uk/reports/mpse%202007.pdf
24. New Policy Institute and Joseph Rowntree Foundation (2008) The poverty site. http://www.poverty.org.uk/index.htm
25. Department of Food, Environment and Rural Affairs (2007) *Family Food – A Report on the 2005–06 Expenditure and Food Survey*. London: The Stationery Office.
26. Gregory J, Collins DL, Davies PSW, Hughes JM & Clarke PC (1995) *National Diet and Nutrition Survey: Children Aged 1.5 to 4.5 Years*. London: H. M. Stationery Office.
27. Finch S (1998) *National Diet and Nutrition Survey People Aged 65 Years and Over*. vol. 1: *Report of the Diet and Nutrition Survey*. London: The Stationery Office.
28. Gregory JR (2000) *National Diet and Nutrition Survey: Young People Aged 4–18 Years*. vol. 1: *Report of the Diet and Nutrition Survey*. London: The Stationery Office.
29. Hoare J, Henderson L, Bates CJ, Prentice A, Birch M, Swan G & Farron M (2004) *National Diet and Nutrition Survey: Adults Aged 19 to 64 Years*. vol. 5: *Summary Report*. London: The Stationery Office.
30. Acheson D (1998) *Independent Inquiry into Inequalities in Health*. London: Department of Health.
31. Bartley M (2004) *Health Inequality: An Introduction to Theories, Concepts and Methods*. Cambridge: Policy Press.
32. Graham H (2007) *Unequal Lives: Health and Socioceonomic Inequalities*. Maidenhead, Berks.: Open University Press.
33. Press V & Mwatsama M (2004) *Nutrition and Health Toolkit*, London: National Heart Forum; available at www.heartforum.org.uk/Publications_NHFreports_NutritionToolkit.aspx
34. Wrieden WL, Barton KL, Armstrong J & McNeill G (2006) *A Review of Food Consumption and Nutrient Intakes from National Surveys in Scotland: Comparison to the Scottish Dietary Targets*. Aberdeen: Food Standards Agency Scotland.
35. Nelson M, Ehrens B, Bates B, Church S & Boshier T (2007) *Low Income Diet and Nutrition Survey. Summary of Key Findings*. London: The Stationery Office.
36. Holmes B, Dick K & Nelson M (2007) A comparison of four dietary assessment methods in materially deprived households in England. *Public Health Nutr* (Epublication ahead of print version).
37. Nelson M, Ehrens B, Bates B, Church S & Boshier T (2007) *Low Income Diet and Nutrition Survey*. vol. 2: *Food Consumption Nutrient Intake*. London: The Stationery Office; available at http://www.food.gov.uk/multimedia/pdfs/lidnsvol02
38. Nelson M, Ehrens B, Bates B, Church S & Boshier T (2007) *Low Income Diet and Nutrition Survey*. vol. 3: *Nutritional Status Physical Activity Economic, Social and Other Factors*. London: The Stationery Office; available at http://www.food.gov.uk/multimedia/pdfs/lidnsvol03.pdf
39. Tingay R, Tan C, Tan N, Tang S, Teoh P, Wong R & Gulliford M (2003) Food insecurity and low income in an English inner city. *J Public Health* **25**, 156–159.
40. Hitchman C, Christie I, Harrison M & Lang T (2004) *Inconvenience Food: The Struggle to Eat Well on a Low Income*. London: Demos; available at http://www.demos.co.uk/publications/inconveniencefood
41. Save the Children (2007) *Robbing Peter to Pay Paul: How Limited Access to Affordable Credit Hurts Children Living in Poverty*. *Briefing*. London: Save the Children; available at http://www.savethechildren.org.uk/en/docs/robbing-peter.pdf.
42. McKendrick JH, Cunningham-Burley S & Backett-Milburn K (2003) *Life in Low Income Families in Scotland*. University of Edinburgh: Centre for Research on Families and Relationships.
43. House of Commons Health Committee (2004) *Obesity. Third Report of Session 2003–4*. vol. 1: *Report, Together with Formal Minutes*. HC 23–1. London: The Stationery Office; available at http://www.publications.parliament.uk/pa/cm200304/cmselect/cmhealth/23/23.pdf.
44. Wardle J, Waller J & Jarvis MJ (2002) Sex differences in the association of socioeconomic status with obesity. *Am J Public Health* **92**, 299–304.
45. Drewnowski A & Specter SE (2004) Poverty and obesity: the role of energy density and energy costs. *Am J Clin Nutr* **79**, 6–16.
46. Okasha M, McCarron P, McEwen J, Durnin J & Davey Smith G (2003) Childhood social class and adulthood obesity: findings from the Glasgow Alumni Cohort. *J Epidemiol Community Health* **57**, 508–509.
47. Lobstein T & Millstone E (2006) *Policy Options for Responding to Obesity: Evaluation the Options*. Brighton: Science & Technology Policy Research, University of Sussex; available at http://www.sussex.ac.uk/spru/documents/porgrow_complete.pdf
48. Stamatakis E, Primatesta P, Chinn S, Rona R & Flascheti E (2005) Overweight and obesity trends from 1974–2003 in English children: what is the role of socio-economic factors? *Arch Dis Child* **90**, 999–1004.
49. Kinra S, Nelder RP & Lewendon GJ (2000) Deprivation and childhood obesity: a cross sectional study of 20,973 children in Plymouth, United Kingdom. *J Epidemiol Community Health* **54**, 456–460.
50. Kinra S, Baumer JH & Davey Smith G (2005) Early growth and childhood obesity: a historical cohort study. *Arch Dis Child* **90**, 1122–1127.
51. Pickett KE, Kelly S, Brunner E, Lobstein T & Wilkinson RG (2005) Wider income gaps, wider waistbands? An ecological study of obesity and income inequality. *J Epidemiol Community Health* **59**, 670–674.
52. Kahn HS, Tatham LM, Pamuk ER & Heath CW Jr (1998) Are geographic regions with high income inequality associated with risk of abdominal weight gain? *Soc Sci Med* **47**, 1–6.
53. Ellaway A, Anderson A & Macintyre S (1997) Does area of residence affect body size and shape? *Int J Obes (Lond)* **21**, 304–308.
54. Government Office for Science (2007) *Foresight. Tackling Obesities: Future Choices – Summary of Key Messages*. London: Department for Innovation, Universities and Skills; available at http://www.foresight.gov.uk/Obesity/obesity_final/20.pdf
55. Crotty P & Germov J (2004) Food and class. In *A Sociology of Food and Nutrition: The Social Appetite*, 2nd ed., pp. 241–62 (J Germov and L Williams, editors). South Melbourne, Victoria: Oxford University Press.
56. Dahl E, Fritzell J, Lahelma E., Martikainene P, Kunst A & Mackenbach JP (2006) Welfare state regimes and health inequalities. In *Social Inequalities in Health: New Evidence and Policy Implications*, pp. 193–222 (J Siegrist and M Marmot, editors). Oxford: Oxford University Press.

NS Proceedings of the Nutrition Society

57. Kawachi I (1999) Social capital and community effects on population and individual health. *Ann New York Acad Sci* **896**, 120–130.
58. Martin KS, Rogers, BL, Cook JT & Joseph HM (2004) Social capital is associated with decreased risk of hunger. *Soc Sci Med* **58**, 2645–2654.
59. Cabinet Office Social Exclusion Task Force (2008) Social exclusion task force. http://www.cabinetoffice.gov.uk/social_exclusion_task_force/
60. Graham H & Kelly M (2004) *Health Inequalities: Concepts, Frameworks and Policy*. London: Health Development Agency.
61. Goode J, Callender C & Lister R (1998) *Purse or Wallet? Gender Inequalities and Income Distribution within Families on Benefits*. London: Policy Studies Institute; summary findings available at http://www.jrf.org.uk/knowledge/findings/socialpolicy/spr468.asp
62. Lister R (2005) The links between women's and children's poverty, *Poverty* **121**, 9–12.
63. Morris J, Donkin A, Wonderling D, Wilkinson P & Dowler E (2000) A minimum income for healthy living. *J Epidemiol Community Health* **54**, 885–889.
64. Lynch JW, Smith GD, Kaplan GA & House JS (2000) Income inequality and mortality: importance to health of individual income, psychosocial environment and material conditions. *Br Med J* **320**, 1200–1204.
65. Wilkinson RG (1997) Socioeconomic determinants of health: Health inequalities: relative or absolute material standards? *Br Med J* **314**, 591–595.
66. Kawachi I, Kennedy BP, Lochner K & Prothrow-Smith D (1997) Social capital, income inequality and mortality. *Am J Public Health* **87**, 1491–1498.
67. Baum FE & Ziersch AM (2003) Social capital. *J Epidemiol Community Health* **57**, 320–323.
68. Food Standards Agency (2007) FSA publishes findings of the Low Income Diet and Nutrition Survey. Press release Sunday 15 July 2007. http://www.food.gov.uk/news/pressreleases/2007/jul/lidns
69. Donkin AJM, Dowler EA, Stevenson SJ & Turner SA (2000) Mapping access to food in a deprived area: the development of price and availability indices. *Public Health Nutr* **3**, 31–38.
70. Rex D & Blair A (2003) Unjust des(s)erts: food retailing and neighbourhood health in Sandwell. *Int J Retail Distribution Manag* **31**, 459–465.
71. Rampton L (2002) *Food Access and Social Exclusion in London: A Research Report, Framework and Action Plan for London. Report to the Greater London Authority*. London: GLA.
72. O'Neill M (2005) *Putting Food Access on the Radar: How to Target and Prioritise Communities at Risk*. London: National Consumer Council.
73. Scottish Community Diet Project (2005) *On Track*. Glasgow: SCDP; available at http://www.communityfoodandhealth.org.uk/fileuploads/scdp-ontrack.pdf
74. Food Standards Agency (2008) Accessing healthy food: A national assessment and sentinel mapping study of food retailing in Scotland (SO4005). http://www.foodstandards.gov.uk/science/research/researchinfo/devolvedadmins/scotlandresearch/scotlandresearch/ScotlandProjectList/s04005/S04005r/ (accessed February 2008).
75. Cummins S & Macintyre S (2002) 'Food deserts': evidence and assumption in health policy making. *Br Med J* **325**, 436–438.
76. Wrigley N (2002) Food deserts in British cities: policy context and research priorities. *Urban Stud* **39**, 2029–2040.
77. White M, Bunting J, Williams E, Raybould S, Adamson A & Mathers JC (2004) *Do 'Food Deserts' Exist? A Multilevel, Geographical Analysis of the Relationship Between Retail Food Access, Socio-Economic Position and Dietary Intake*. London: Food Standards Agency.
78. Kempson E & Bennett F (1997) *Local Living Costs*, London: Policy Studies Institute; summary available at http://www.jrf.org.uk/knowledge/findings/socialpolicy/pdf/sp123.pdf
79. Government Statistical Service (1999) Households below average income. http://www.dwp.gov.uk/asd/hbai/hbai99.html
80. Modlock S (2008) Winners and losers in the energy bill lottery. http://uk.biz.yahoo.com/15012008/389/winners-losers-energy-bill-lottery.html
81. BBC News (2003) Water rates to 'rise regionally'. http://news.bbc.co.uk/1/hi/england/cumbria/3103524.stm
82. Dowler E (2003) Food and poverty in Britain: Rights and responsibilities. In *The Welfare of Food: Rights and Responsibilities in a Changing World*, pp. 140–159 (E Dowler and C Jones Finer, editors). Oxford: Blackwell Publishing.
83. Parker H (editor) (1998) *Low Cost but Acceptable: A Minimum Income Standard for the UK*. Bristol: Policy Press.
84. Morris J, Donkin A, Wonderling D, Wilkinson P & Dowler E (2000) A minimum income for healthy living. *J Epidemiol Community Health* **54**, 885–889.
85. Morris J, Dangour A, Deeming C, Fletcher A & Wilkinson P (2005) *Minimum Income for Health Living: Older People*. London: Age Concern England.
86. Dibsdall LA, Lambert N, Bobbin RF & Frewer LJ (2003) Low income consumers' attitudes and behaviours towards access, affordability and motivation to eat fruit and vegetables. *Public Health Nutr* **6**, 159–168.
87. Beresford P, Green D, Lister R & Woodard K (1999) *Poverty First Hand: Poor People Speak for Themselves*. London: Child Poverty Action Group.
88. Dobson B, Kellard K & Talbot D (2000) *A Recipe for Success? An Evaluation of a Community Food Project*. Loughborough, Leics.: Centre for Research in Social Policy, Loughborough University.
89. Kyle R & Blair A (2007) Planning for health: generation, regeneration and food in Sandwell. *Int J Retail Distribution Manag* **35**, 457–473.
90. Evans N (1996) What do homeless people eat and can Crisis FareShare help improve their diet? *Nutr Food Sci* **96**, 15–17.
91. Evans N & Dowler EA (1999) Food, health and eating among single homeless and marginalized people in London. *J Hum Nutr Diet* **12**, 179–199.
92. Kershaw A, Singleton N & Meltzer H (2000) *Survey of the Health and Well-being of Homeless People in Glasgow*. London: Office of National Statistics.
93. Deloitte MCS Ltd (2006) *Research into Food Poverty and Homelessness in Northern Ireland: Final Report*. Belfast: Food Standards Agency.
94. Coufopoulos AM (2008) Homeless mothers and their children: The experience of two generations at nutritional risk in the UK. In *Infant and Young Child Feeding: Cultural Challenges* (V Hall Moran and F Dykes, editors). Chichester, West Sussex: Wiley-Blackwell (In the Press).
95. Sellen D, Tedstone A & Frize J (2002) Food insecurity among refugee families in East London: results of a pilot assessment. *Public Health Nutr* **5**, 637–644.
96. Smith DF (editor) (1996) *Nutrition in Britain: Science, Scientists and Politics in the Twentieth Century*. Abingdon, Oxon.: Routledge.

NS Proceedings of the Nutrition Society

97. Department of Health (1996) *Low Income, Food, Nutrition and Health: Strategies for Improvement. A Report from the Low Income Project Team to the Nutrition Task Force*. London: Department of Health.
98. Nelson M (1997) Developments in the UK: work of the Low Income Project Team. *Proc Nutr Soc* **56**, 91–100.
99. Department of Health (1999) *Saving Lives: Our Healthier Nation*. London: The Stationery Office.
100. Spencer N & Dowler E (2007) Challenging health inequalities: introduction. In *Challenging Health Inequalities: from Acheson to 'Choosing Health'*, pp. 1–16 (E Dowler and N Spencer, editors). Bristol: Policy Press.
101. Dowler E, Draper A, Thomas R, Dobson B & Nelson M (1998) *Scoping Study for a Proposed Survey of Diet and Nutritional Status in Low-income Households. Report to Ministry of Agriculture, Fisheries and Food, Joint Food Standards and Safety Group*. London: MAFF.
102. Dowler E & Spencer N (editors) (2007) *Challenging Health Inequalities: from Acheson to 'Choosing Health'*. Bristol: Policy Press.
103. Barnes M (2005) *Health Action Zones: Partnerships for Equity*. London: Routledge.
104. Department of Health (2008) 5 a day. http://www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/FiveADay/fs/en
105. Bremner P, Dalziel D & Evans L (2006) *Evaluation of the 5 A Day Programme: Final Report*. London: Big Lottery Fund.
106. Dowler E & Caraher M (2003) Local food projects – the new philanthropy? *Polit Q* **74**, 57–65.
107. Caraher M & Dowler E (2007) Food projects in London: Lessons for policy and practice. *Health Educ J* **66**, 188–205.
108. Davis L, Dowler E, Morgan K, Lang T & Hunter D (2007) *Mid-term Evaluation of Food and Wellbeing Wales*. Cardiff: Food Standards Agency Wales; available at http://www.food.gov.uk/multimedia/pdfs/fwbsummaryenglish.pdf
109. Department of Health (2002) *The National School Fruit Scheme*. London: Department of Health.
110. Blenkinsop S, Bradshaw S, Cade J, Chan D, Greenwood D, Ransley J, Schagen S, Scott E, Teeman D & Thomas J (2007). *Further Evaluation of the School Fruit and Vegetable Scheme*. London: Department of Health.
111. MacGregor A & Sheehy C (2005) Evaluation of free fruit in schools initiative. http://www.scotland.gov.uk/Publications/2005/12/21110322/03222
112. Health Promotion Agency (2005) Fresh fruit in schools evaluation 2002–2004: summary report. http://www.healthpromotionagency.org.uk/Resources/nutrition/freshfruit05.htm
113. Ransley JK, Greenwood DC, Cade JE, Blenkinsop S, Schagen I, Teeman D, Scott E, White G & Schagen S (2007) Does the school fruit and vegetable scheme improve children's diet? A non-randomised controlled trial. *J Epidemiol Community Health* **61**, 699–703.
114. Wells L & Nelson M (2005) The National School Fruit Scheme produces short-term but not longer-term increases in fruit consumption in primary school children. *Br J Nutr* **93**, 537–542.
115. Department of Health (2005) *Choosing a Better Diet: A Food and Health Action Plan*. London: Department of Health.
116. National Health Service (2008) Healthy start. http://www.healthystart.nhs.uk/
117. Department for Children, Schools and Family (2008) Sure start. http://www.surestart.gov.uk/
118. Department for Children, Schools and Family (2008) Sure start children's centres. http://www.surestart.gov.uk/surestartservices/settings/surestartchildrenscentres/
119. Spencer N & Law C (2007) Inequalities in pregnancy and early years and the impact across the lifecourse: progress and future challenges. In *Challenging Health Inequalities: from Acheson to 'Choosing Health'*, pp. 69–94 (E Dowler and N Spencer, editors). Bristol: Policy Press.
120. National Institute of Health and Clinical Excellence (2008) *Guidance to Improve the Nutrition of Pregnant and Breastfeeding Mothers and Children in Low-income Households. NICE Public Health Programme Guidance* 3. London: NICE; available at http://www.nice.org.uk/nicemedia/pdf/MaternalandChildNutritionDraftGuidance.pdf
121. Dyson L, McCormick F & Renfrew MJ (2006) Interventions for promoting the initiation of breastfeeding. *The Cochrane Database of Systematic Reviews 2006*, issue 3, CD001688. Chichester, W Sussex: John Wiley & Sons Ltd.
122. Phipps B (2006) Peer support for breastfeeding in the UK. *Br J Gen Pract* **56**, 166–167.
123. Nelson M, Lowes K, Hwang V & members of the Nutrition Group, School Meals Review Panel, Department for Education and Skills (2007) The contribution of school meals to food composition and nutrient intakes of young people aged 4–18 years in England. *Public Health Nutr* **10**, 652–662.
124. School Food Trust (2008) School Food Trust: eat better do better. http://www.schoolfoodtrust.org.uk/index.asp
125. Welsh Assembly Government (2006) *Food and Fitness: Promoting Healthy Eating and Physical Activity for Children and Young People*. Cardiff: Welsh Assembly Government.
126. Department for Children, Schools and Family (2008) Teacher net: school food and drink. http://www.teachernet.gov.uk/wholeschool/healthyliving/schoolfoodanddrink/
127. Expert Panel on School Meals (2002) *Hungry for Success: A Whole School Approach to School Meals in Scotland*. Edinburgh: The Stationery Office.
128. Morgan K (2006) School food and the public domain: The politics of the public plate. *Polit Q* **77**, 379–387.
129. Central Office of Information (2008) Nutrition and school lunches. http://www.direct.gov.uk/en/Parents/Schoolslearninganddevelopment/SchoolLife/DG_4016089
130. Hurley C & Riley A (editors) (2004) *Recipe for Change: A Good Practice Guide to School Meals*. London: Child Poverty Action Group.
131. Child Action Poverty Group Scotland (2008) Campaign for free school meals. http://www.cpag.org.uk/scotland/meals_bill_main.htm
132. Department of Health (1999) *Improving Shopping Access. Policy Action Team Report* 13. London: Department of Health.
133. Wrigley N, Warm D, Margetts B & Whelan A (2002) Assessing the impact of improved retail access on diet in a 'food desert': A preliminary report. *Urban Stud* **39**, 2061–2082.
134. Sparks L, Findlay A, Cummins S, Petticrew M & Higgins C (2005) Large scale food retailing as an intervention for diet and health: quasi-experimental evaluation of a natural experiment. *J Epidemiol Community Health* **59**, 1035–1040.
135. Caraher M (2005) Food policy and regeneration: food for thought. *Local Work: Voice*, LW64, pp. 1–4. Manchester: Centre for Local Economic Strategies.
136. Institute of Grocery Distribution (2007) *Ethical Shoppers: Keen to be Green*; *Consumer Attitudes to Animal Welfare*. Watford: IGD.
137. Mintel (2003) *Attitudes Towards Buying Local Produce – UK – January 2003*. London: Mintel.

NS Proceedings of the Nutrition Society

138. Dowler E & Calvert C (1995) Looking for 'fresh' food: diet and lone parents. *Proc Nutr Soc* **54**, 759–769.
139. Gribben C & Gitsham M (2007) The transformation of food consumption. *360° The Ashridge Journal*, Autumn issue, pp. 12–16. http://www.ashridge.org.uk/website/content.nsf/FileLibrary/EDF5B02FE8D844C580257377004F7A70/$file/360_Sept07.pdf
140. Kneafsey M, Holloway L, Cox R, Dowler E, Venn L & Tuomainen H (2008) *Reconnecting Consumers, Producers and Food: Exploring Alternatives*. Oxford: Berg (In the Press).
141. Dibb S (2006) *Greening Supermarkets: How Supermarkets Can Help Make Green Shopping Easier*. London: National Consumer Council.
142. The Scottish Office (1994) *The Scottish Diet. Report of the Scottish Health Service Advisory Council Working Group on the Scottish Diet*. Edinburgh: The Scottish Office.
143. Lang T, Dowler E & Hunter D (2006) *Review of the Scottish Diet Action Plan: Progress and Impacts 1996–2005*. Edinburgh: NHS Health Scotland; available at www.healthscotland.com/understanding/evaluation/policy-reviews/review-diet-action.aspx
144. Donnelley RR (2008) *Choosing the Right Ingredients: The Future for Food in Scotland. Discussion Paper*. Edinburgh: The Scottish Government; available at http://www.scotland.gov.uk/Resource/Doc/209658/0055448.pdf
145. Food Standards Agency and Welsh Assembly Government (2003) *Food and Well Being*: *Reducing Inequalities Through a Nutrition Strategy for Wales*. Cardiff: Food Standards Agency; available at http://www.nutritionnetworkwales.org.uk/docmetadata.cfm?orgid=499&id=43708
146. Healthy Food for All (2008) What is Healthy Food for All? http://www.healthyfoodforall.com/
147. Robertson A *et al.* (editors) (2004) *Food and Health in Europe: A New Basis for Action. WHO Regional Publications European Series* no. 96. Copenhagen, Denmark: WHO European Regional Office.

NS Proceedings of the Nutrition Society