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Chapter 16

Conclusion

Derek J. Oddy and Peter J. Atkins

When the contributors to ICREFH's tenth symposium assembled in Oslo in September 2007, they met to discuss what, for them, was an unusual research question. Never before had they attempted to consider changes in food consumption over such a short time span – a single century – which assumed that all the countries under consideration experienced similar stages of development within the same period. The question posed was, in essence, how did food consumption change in Europe in the twentieth century and why are so many Europeans now overweight? The outcome of the discussion summarized in these chapters shows a considerable similarity of approach and invites some attempt at comparison by the editors. The criticisms frequently levelled by reviewers at volumes emanating from conferences, namely that there is a lack of coherence in the mix of topics, is hardly valid in this book. Its sections consider the major influences on European food consumption in the twentieth century and invite comparisons across national boundaries. In short, all European countries have been affected by the industrialization of their food industries and, by the end of the twentieth century, every state in Europe had begun to show concern for the extent to which its population had become overweight and to consider the future implications if this weight gain were unchecked.

This volume has assembled evidence from nine European countries which were at different stages of economic development as the twentieth century began and which have followed different paths towards industrialization and economic maturity. They are listed in Table 16.1. Not all were nation states when the century commenced. Only one of the nine was neutral during both World Wars, and only two avoided enemy occupation; however the majority experienced traumatic upheavals leading to loss of life, especially amongst males in the 20–35 age groups, as well as civilian casualties. Continental Europe was a focus for international aid after both World Wars. The Save the Children Fund was formed in London in 1919 to send relief to Europe following the 1914–1918 wartime blockade of Germany and Austria-Hungary. As the principal contributor to the International Save the Children Fund founded in 1920, the British Save the Children Fund also helped in the feeding of famine victims in the Volga region of Russia during the 1921–1922 famine there.¹ During the Second World War the United Nations

1 In August 1921, the International Red Cross in Geneva set up the International Committee for Russian Relief (ICCR) with Dr Fridtjof Nansen as High Commissioner. The main participants were the USA's American Relief Administration (ARA) and the

Relief and Rehabilitation Administration (UNRRA) was set up in 1943 to carry out an aid programme to liberated areas of Europe, principally by providing food. UNRRA did this from 1944 to 1947, as mentioned in Chapters 3 and 4.² Until the mid-twentieth century, therefore, recovery programmes assumed sizable areas of Europe contained undernourished populations. From 1949 to the 1960s, energy and nutrient requirements were debated by nutritionists and physiologists through international committees seeking to establish minimum standards, which applied in Europe as much as in those underdeveloped areas of Africa and Asia coming to be known as the 'Third World'.³ To make international comparisons of a scientific kind required the concept of average physical development – 'reference man' and 'reference woman' – whose body weight was put at 65 kg and 55 kg respectively and whom, if young adult males, would have 12.5 per cent and if young adult females 25 per cent of energy reserves as body fat, or adipose tissue. Between 1957 and 1967, a series of reports from the United Nations agencies, Food and Agriculture Organization (FAO), and FAO jointly with the World Health Organization (WHO), produced standard requirements of energy and nutrients for work, leisure and rest.⁴

By the 1960s there was a growing recognition that populations across Europe were progressively gaining weight. This progression was most noticeable in older age groups, a trend already noted in the USA by the life insurance companies and which, in Europe, had been initiated by the post-rationing surge in eating. Monitoring weight gain has increased during the last thirty years notably by the WHO MONICA Project and the WHO SuRF Reports, as well as the European Commission.⁵

British Save the Children Fund. Fundraising in Britain anticipated modern emergency relief operations by using full-page newspaper advertisements and collections in cinemas based on a fundraising film of the famine area. The first feeding centre was opened in October 1921 in Saratov. Some ten million people were fed by the ICCR of which the ARA provided the overwhelming amount of the funding.

2 UNRRA pre-dated the formation of the United Nations. Originally intended to help refugees and displaced persons in Europe, the chief beneficiaries were Albania, Austria, Byelorussia, Czechoslovakia, Greece, Italy, Poland, the Ukraine, and Yugoslavia.

3 The economist and demographer, Alfred Sauvy, in an article published in the French magazine *L'Observateur* 14 August 1952, coined the term *Third World* to refer to countries that were unaligned with either the Communist Soviet bloc or the North Atlantic Treaty Organization bloc during the Cold War (1945–89).

4 FAO Committee on Calorie Requirements 1950, FAO Nutritional Studies No. 5, Second FAO Committee on Calorie Requirements 1957, FAO Nutrition Studies No. 15, Protein Requirements Report of the FAO Committee 1957, FAO Nutritional Studies No. 16, Protein Requirements. Report of a Joint FAO/WHO Expert Group 1965. The term 'reference man' has been used in the USA since the 1970s in connection with exposure to radiation and its original meaning has become obscured.

5 WHO *Multinational Monitoring of trends and determinants of Cardiovascular Disease*: 'The main hypothesis of the WHO MONICA Project is to assess whether 10-year

Table 16.1 Demographic Data for Selected European Countries, 1965–70

Country	Estimated population 1969 (M)	Birth rate (/000)	Death rate (/000)	Gross national product/ head (US\$)
Austria	7.4	17.4	13.0	1,150
Czechoslovakia	14.4	15.1	10.1	1,010
France	50.0	16.9	10.9	1,730
East Germany	16.0	14.8	13.2	1,220
West Germany	58.1	17.3	11.2	1,700
Norway	3.8	18.0	9.2	1,710
Soviet Union	241.0	18.0	8.0	890
Spain	32.7	21.1	8.7	640
United Kingdom	55.7	17.5	11.2	1,620
Yugoslavia	20.4	19.5	8.7	510
Europe	456.0	18.0	10.0	1,230

Source: Davidson et al. 1975, Table 51.1.

Unfortunately, for comparative purposes no countries collected aggregate statistics that showed physical stature as well as energy intakes. In the middle of the twentieth century few countries could make even general statements about trends in weight gain by their populations. Nevertheless, it is clear that the idea of making any estimate of body weights, however limited or general, did not occur before the 1960s. The national case studies in this volume give only a sketchy outline of the body-weight trend in Europe. In the Austrian Tyrol the suggestion made is that the population in the 1960s was still characterized by weight deficits rather than excess weight, though by contrast its neighbour, Czechoslovakia, categorized its adult male population as 25 per cent obese and its female population as over 50 per cent obese. Czechoslovakia, however, seems to have applied over-zealous standards based on the Broca Index, so that these percentages at the mid-century substantially exceed its current levels based on the Body Mass Index. The application of differing standards makes comparison almost impossible.

trends in incidence and mortality from cardiovascular disease are related to changes in known risk factors. Weight (relative weight, degree of overweight, obesity etc.) was not originally included as one of these risk factors although data on weight and height have been collected from the beginning of the MONICA survey periods. Although the matter is still somewhat under debate, overweight is now considered as one of the risk factors for the main hypothesis.' See the MONICA website: <http://www.ktl.fi/monica/>, and WHO 2005.

In the United Kingdom, following the FAO Second Committee report in 1957, individuals with excessive levels of 'energy reserves' or body fat were classified as obese if they amounted to more than 20 per cent of body weight for young adult males and more than 30 per cent for young females. However, no standard method of assessment was envisaged: nutritionists in the United Kingdom relied principally on the more accurate skin fold measurement to assess amounts of body fat. The Quetelet, or Body Mass, Index was not used.

The fat content of the diet began to attract notice as the incidence of cardiovascular disease increased during the 1950s.⁶ During the next two decades, the beginnings of a secular trend in weight gain were observable and the Body Mass Index became generally accepted as a standard measure of weight variation for individuals. In Norway, the weight of men aged 40 years increased by 9 kg (19 lbs) from the 1970s until the end of the century while the bodyweight of women of the same age increased by 4 kg (9 lbs). In Soviet Russia, it was estimated that 8 per cent of the population were obese by the 1980s, a figure not dissimilar from the United Kingdom's assessment that obesity was rising from 6 per cent in that decade, as shown in Table 16.2. By the end of the twentieth century, further progressive rises were postulated: 6 per cent were said to be obese in Norway; around 13 per cent in Russia, 22 per cent of men and 23 per cent of women in the United Kingdom but fewer than 9 per cent in Austria.

Table 16.2 Percentage of Population Aged 16–64 Defined as Obese in England

Date	Men (%)	Women (%)
1966	1.2	1.8
1972	1.7	1.7
1982	6.2	6.9
1989	10.6	14.0
1999	18.7	21.1
2007	23.6	24.4

Sources: Comptroller and Auditor General 2001; WHO, *Global Database on Body Mass Index*; UK National Statistics

This progressive but uneven rise in body weights can be extended to cover all European Union (EU) countries. Data supplied which cover the years 1996 to 2003 give an EU average of 47.5 per cent of overweight and obese adults aged

⁶ 'Dietary Fat and Cardio-Vascular Disease', *British Food Journal* January 1962: 1–2.

15 years and over, of whom 34.1 per cent are overweight and 13.4 per cent obese. Data for selected countries are shown in Table 16.3. Although Table 16.3 provides only a partial coverage of European countries, it does include the two extremes of the range: Norway with the lowest incidence, having 31.5 per cent of overweight and obese and the United Kingdom with the highest at 61 per cent.

Table 16.3 Prevalence of Overweight and Obesity Amongst Adults in Selected European Countries, 2004

	Overweight			Obese		
	Male	Female	All	Male	Female	All
	(%)	(%)	(%)	(%)	(%)	(%)
Austria	37.9	25.6	–	18.5	15.6	–
Czech Rep	42.8	30.4	36.4	13.5	15.3	14.4
France	35.1	21.2	27.8	9.4	9.2	9.3
Germany	48.0	31.3	39.4	18.8	21.7	20.3
Norway	31.4	19.6	25.4	6.4	5.9	6.1
Russia	30.7	27.4	28.9	10.3	21.6	16.0
Slovenia	43.3	29.7	36.2	12.6	12.0	12.3
Spain	44.1	27.8	35.7	13.0	13.5	13.3
UK	43.9	33.6	38.3	22.3	23.0	22.7
EU27	42.8	29.5	–	16.2	18.1	–

Source: European Commission, *Eurostat*.

Notes: (a) Adults aged 15 years and over; (b) Data from National Health Interview Survey 1996–2003; (c) Austrian, Russian and EU27 data from International Obesity Taskforce.

Some care is needed with Table 16.3 because it lists only those countries discussed in the present book. Beyond this selection there are some remarkable variations. According to the International Obesity Taskforce, the peak of male obesity lies in Malta, with 24.3 per cent, and the lowest prevalence is in Sweden at 7.0 per cent.⁷ For women, the extremes are in England (23.2 per cent and a long way ahead of nearest rivals Greece and Lithuania) and Sweden (7.5 per cent). The situation is little different if one combines overweight (BMI 25–29.9) with obesity (BMI \geq 30),

⁷ It is noticeable that percentages for particular countries vary greatly between the WHO, EU and IOTF databases and this is due to the sampling techniques employed, the definition of overweight and obesity, and the age groups included or techniques of age standardization used.

although now the Maltese (70.1 per cent) and English (65.8 per cent) men are more closely challenged by Finland (63.2 per cent), Germany (61.7 per cent) and Greece (61.0 per cent), and the English women (54.3 per cent) are only marginally ahead of Lithuania (53.3 per cent) and Portugal (52.1 per cent). At the low end are two astonishing figures: Swedish men (32.9 per cent), who are more than ten points below that of any of the other EU countries, and Italian women (29.5 per cent), who are nearly 20 points below the EU27 average of 47.6 per cent.⁸

Obesity geographies are notoriously problematic in view of issues of comparability between national statistical services. But a map of European mean BMI is instructive. It does not show a clear correlation with economic development, or with any regional cultural variables. Yet there does seem to be a fragmented tendency in south eastern Europe for BMIs, both male and female, to be high and to match the levels found in the Middle East and north Africa.⁹ More research, at the sub-national scale, is desirable if health messages are to be properly attuned to such variations and their historical roots.

What inferences can be drawn from the diverse figures mentioned above? Postwar Europe has achieved remarkable regularity of food supplies: in part, this has been an outcome of the EU's system of managed agriculture and state subsidies, even if food costs have been higher in the EU than elsewhere. Harvest fluctuations did not cause food consumption to oscillate in the second-half of the twentieth century. If food supplies have been more secure, life has also become more sedentary, both at work and in the home, and this reduction in energy expenditure has been accentuated by the widespread use of mechanized personal transport. Increasing bodyweights and expanding waistlines have been the result of excessive energy intakes, notably in the final thirty years of the twentieth century. In Section 3, several chapters have outlined an attack on energy reserves as fat. The attack on fat arose earliest in the interwar years amongst the middle classes – and amongst the young who were more sensitive to fashion – but made little impression on the working classes. With the increasing security of the food supply, eating to achieve good health as advocated in the late nineteenth and early twentieth centuries became outmoded. Only Chapter 5 reports food consumption as recently as the last decade of the twentieth century – which is appropriate, as the UK was becoming the most overweight nation in Europe. It was a significant outcome given the UK's exposure to the influence of Americanization and the extensive availability of industrialized food products supplied by major food manufacturing companies. This was the ultimate result, reflecting the industrialization of the diet which was becoming widespread across Europe by the end of the twentieth

8 See: <http://www.ietf.org/database/documents/v2PDFforwebsiteEU27.pdf> [accessed: 1 March 2009].

9 The mean BMI data are to be found in the *Surf2 Report*, WHO 2005. Convenient maps are published by the British Heart Foundation: <http://www.heartstats.org/temp/ESSpFigsp10.3aspweb08.pdf> and <http://www.heartstats.org/temp/ESSpFigsp10.3bspweb08.pdf> [both accessed: 20 April 2009].

century. Dishes and meals manufactured by food processors were notably high in sugar, fats and salt, which enabled pleasing flavours to be created at low cost. These foods attracted low-income families across Europe. They required little time or skill to remove from the refrigerator or freezer and heat up. They tended to be low in protein and lack any significant amounts of fruit and vegetables.

In recent years, much international emphasis has been placed on weight gain. The use of Body Mass Index has been adopted by WHO, which defines it as 'an interactive surveillance tool for monitoring nutrition transition'.¹⁰ As it stands, that statement is grossly oversimplified. Changes in BMI are more complex than being due to the 'nutrition transition' even though Table 16.4 shows a general increase in energy intakes in the countries studied in this volume. Food historians have been recording the 'nutrition transition' since the 1960s which they have identified as a component of industrialization and urbanization. However, the trends they have documented have made little impact on the formation of public policies or public health management. What is important about the wider acceptance of BMI for food history is that it is confirmation of the extent to which food habits have changed in developed countries, and how changing energy expenditure at work and in the home, together with an increasingly sedentary lifestyle, have become significant causes of present-day health problems.

Table 16.4 Energy Intakes in Selected European Countries (kcal/person/day)

Country	1961	1970	1980	1990	2000
	(kcal/day)	(kcal/day)	(kcal/day)	(kcal/day)	(kcal/day)
Austria	3,190	3,232	3,353	3,485	3,767
Czech Republic	3,301 ¹	3,357 ¹	3,341 ¹	3,649 ¹	3,111
France	3,194	3,301	3,376	3,512	3,594
Germany	2,887	3,146	3,338	3,307	3,430
Norway	3,003	3,021	3,350	3,143	3,365
Russian Federation	3,095 ²	3,354 ²	3,369 ²	3,363 ²	2,919
Slovenia	3,048 ³	3,424 ³	3,662 ³	3,621 ³	3,055
Spain	2,631	2,732	3,062	3,246	3,362
United Kingdom	3,290	3,327	3,159	3,268	3,380

Source: Food and Agriculture Organization, FAOSTAT.

Notes: (1) Czechoslovakia; (2) USSR, (3) Yugoslavia.

10 WHO, *Global Database on Body Mass Index*.

While obesity was known in the nineteenth century, society's response to the condition was to regard it as a matter for the individual. Culturally, refined people were not obese. In as far as it was to be found amongst the upper and middle classes, it reflected new money from trade and industry rather than old money from land and political power. There were opportunities for obesity to be 'treated' by summer visits to spas across Europe from Bath to Bohemia to bathe, drink the waters, take exercise and eat abstemiously. Anyone able to afford it might find themselves mixing with the royal families of the European monarchies. The typical range of treatments has been fully detailed for ICREFH by Sabine Merta.¹¹ Dieting, abstinence and exercise implied a general recognition that individuals had something akin to a moral responsibility to restrain their appetites for food and drink. Nevertheless, Chapter 12 in this volume does present another view, also from the late nineteenth and early twentieth centuries, which hints at the early medicalization of treatments in France for being overweight or obese. This did not mean that physicians were eager to assess their patients by any physiological analysis derived from organic chemistry involving measuring intakes of carbon or nitrogen. Instead, much medical opinion ignored new advances in science and sought to discover non-nutritional causes of obesity. From this viewpoint a range of slimming regimes blossomed during the first forty years of the twentieth century, which began to produce dietary advice on an almost industrial scale. The proponents of various slimming regimes were proprietorial in their advice, as it was necessary to justify their consultation fees. This restricted their influence to the metropolitan middle and upper classes whose lifestyle was supported by unearned incomes. Herein lay the origins of a strand of dietary advice which lasted throughout the twentieth century. In short, it created an excuse-system by which the 'patient' might blame obesity or excessive body weight upon his or her endowment – such as heavy bones, large skeletons or unusual metabolism.

Wartime rationing, food shortages, and even famines in the first-half of the twentieth century, halted the progress of the slimming and dieting industry. By 1950, many people in Europe in the forties to sixties age groups, whose weight would have been rising with age before 1939, were instead physically worn and haggard. However, the surge of compensation eating which followed during the postwar economic recovery caused populations across Europe – particularly in the west and central regions – to begin putting in weight. Subsidized agriculture resulting from the Common Agriculture Policy (CAP) led to the over-supply of food in Europe.¹²

There was little opportunity in the early 1950s for the diet advisers to influence people who were enjoying freedom of consumption again. No one wanted to cut back on food. Fashion-conscious younger women looked to their foundation garments to enhance their silhouettes rather than restrict their food intakes. But

11 See Merta 2005.

12 The CAP was adopted in 1960 and came into force in 1962. The UK also subsidized food prices through a system of agricultural managed prices from 1947 to 1973.

people of the postwar era soon began to notice the way that 'diseases of affluence' were being discussed, not just in professional science journals but also in newspapers which introduced medical terms such as atherosclerosis and coronary heart disease in their news items. Initially blame fell on food habits such as the high level of sugar consumption – encouraged during the Second World War – and which could also be blamed for the widespread incidence of dental caries, especially amongst children. Attention soon turned to the amount of fat in the diet. In the United Kingdom, by the 1960s the medical profession was in general agreement that the rising fat content of the diet was contributing to the increase in coronary disease. Some debate ensued on the relative culpability of animal fats which were 'saturated' and plant and fish oils which were largely composed of 'unsaturated' fats. It led to an advertising war between margarine and butter producers and shattered the conventional view held for generations that animal foods – meat, eggs, and dairy produce – were 'protective'.¹³ It also meant that the last quarter of the twentieth century was notable for the growth of a 'health foods' industry which generated concern over the inadequate control of labelling claims to promote health.

Contributors to this volume have identified an increasing tendency for populations to become overweight or obese in the last quarter of the twentieth century. In Britain, a longitudinal birth cohort study of children born in 1958 has provided measured obesity rates for almost 8,000 children who had reached the age of 33 years in the early 1990s.¹⁴ By that age, 12.9 per cent were already obese. While research had previously suggested that poor cognitive function in childhood has been associated with obesity and type 2 diabetes in adults, this study claimed that poorer physical control and coordination in childhood also has an association with obesity in adults.¹⁵ Such evidence reinforces the now generally held view that obesity is unequally distributed between and within countries: 'in affluent societies excess weight is more common among socially disadvantaged groups but the reverse is true in low income countries'.¹⁶ Indeed medical management of obesity has recently looked beyond clinical treatment to 'the causes of obesity – genetic, hormonal, and environmental'.¹⁷ Trying to solve the problems of obesity from a wider perspective than pharmaceutical or surgical approaches brings medical practitioners to behavioural, nutritional and physical exercise solutions. Epidemiologists have been amongst the first to note the extent to which the normalization of being overweight or obese is taking place, as there is now evidence that heavier people are 'less likely to think that they were overweight in

13 See Oddy 2003: 210–11.

14 *British Medical Journal* 2008: 337, a699. Measurements were based on BMI >30.

15 *British Medical Journal* 2008.

16 *British Medical Journal* 2007, 335: a347.

17 *The Lancet* 2003: 362, 1085.

2007 than in 1999'.¹⁸ Such rationalization of body-size image indicates a growing resistance to any modification of eating habits, in particular by restricting intakes of alcohol, snacks, fast-foods and ready meals.

Policymakers have little to offer, because prescriptive measures will arouse opposition from vested interests such as the food industries. The European Commission has, in theory, promoted a campaign targeting children to reduce obesity by 'healthy' eating. Its Direction générale de la santé et des consommateurs has created the Sanco de la Commission Européenne, by sponsoring the French programme Ensemble Prévenons l'Obésité des Enfants (EPODE) which started in 2004 and operates in over 160 towns in France. EPODE was extended to Belgium as VIASANO in 2007 and to Spain as THAO Salud Infantil.¹⁹

Ultimately, the problem of excess bodyweight and obesity comes down to an energy equation: if energy intake is greater than energy expenditure, the excess will be laid down as adipose tissue. Whilst this volume has shown the effects of that imbalance in various European countries over the last hundred years, it will be up to future historians of diet to record and analyse how the resulting obesity epidemic progresses.

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¹⁸ *British Medical Journal* 2008: 337, a347, citing *British Medical Journal* 2008: 337, a494. There is as yet no evidence to support the perception that clothing manufacturers have increased the size dimensions of their women's garments.

¹⁹ *British Medical Journal* 2007: 335, 1238. See also www.epode.fr. The European network is a 'partenariat public / privé' which has attracted the food industry to its membership: Ferrero, Mars and Nestlé have joined. Nestlé France's slogan for its partnership is 'Manger bien pour vivre mieux'. In addition, the Belgian programme is supported by Carrefour and Unilever.

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