

Nutrition, physical activity and health status in Europe: an overview

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Abstract

Introduction: The European diet is characterized by a wide variation in every aspect of eating from the timing of meals to the composition of meals. In general, there is a tendency in terms of dietary advice towards lower fat intakes in order to reduce saturated fatty acid intake and to reduce the risk of obesity. Such diets are most successful and yield the most favourable metabolic profile when there is an adequate level of physical activity.

Objective: The aim of the present paper was to explore how the composition of dietary fat changes across the EU with low- and high-fat diets and to explore levels of physical activity and attitudes to physical activity across the EU.

Design: The paper draws on data contained in reports and supplements of the Institute of European Food Studies in the EU.

Results: There is a clear trend for southern EU states to have higher MUFA intakes and lower SFA intakes than northern EU states. However, for both geographic regions, the fatty acid composition of dietary fat was similar in groups with lower or higher dietary fat intakes. Physical activity was ranked low by consumers ($n=15,000$) for its importance in relation to health and the prevention of weight-gain. Some 47% agreed that their present level of physical activity is sufficient. 78% agreed that being 13 kg heavier would not be detrimental to health and 30% agreed that the main benefit of physical activity was to relieve stress.

Conclusions: (i) The present strategy of lowering dietary fat intake does not alter dietary fat composition and (ii) there is a high level of ignorance among consumers of the benefits of physical activity and the adverse effects of excess body-weight.

Keywords
Nutrition
Physical activity
Attitudinal studies

Key message

- At present in all parts of the EU, lower fat diets are associated with the same fatty acid composition as high fat diets. The proposed adverse effects of low fat diets are confounded by a largely sedentary population and the adverse effects can be overcome with modest levels of physical activity. However physical activity is poorly rated by the population for its health benefits and is not perceived to be beneficial unless it leads to weight loss. Clearly, there is enormous scope for a Pan EU promotion of the benefits of physical activity, independent of weight control.

Introduction

The purpose of this article is to provide an overview of diet, physical activity and health in Europe. In the context of the present symposium which seeks to examine the interactive effects of diet and physical

activity on health, a number of diseases and conditions are being discussed: obesity, diabetes, hyperlipoproteinaemia, hypertension, stroke, osteoporosis, cancer and impaired cognitive function. To begin to document the prevalence and incidence of such conditions and to comment on their rates of change is beyond the scope of a single scientific paper. However, it can be taken as a fact that across Europe, such diseases and conditions significantly contribute to the public health burden. The relative importance of each vary and the rates of change in each also vary. Thus the present paper sets out to examine the variation in diet and physical activity across the European Union (EU).

Dietary variation across the EU

The European diet is characterized by marked variation in every aspect of eating from the timing of meals to the foods composing those meals. Many studies have compared dietary patterns across the EU using intake data, blood biochemical data or data on biomarkers of

Table 1 Typical energy and percent distribution of energy in northern and Southern EU member states

	Energy MJ/d	% energy				Reference
		Carbohydrate	Protein	Fat	Alcohol	
Southern EU						
Italy	8.7	48	17	33	3	8
Spain	8.9	40	20	38	3	9
Greece	7.6	44	14	40	2	10
Portugal	9.7	49	18	29	6	11
Northern EU						
Finland	9.0	48	16	34	3	12
Germany	9.6	39	15	41	4	13
Sweden	8.8	46	15	37	2	14
Ireland	9.4	48	15	35	2	15

nutrient intake¹. In a symposium that seeks to examine the interaction between diet and physical activity, there is little value in a descriptive comparison of variation in dietary patterns across the EU since many publications already exist on this topic². However, given the quite public debate on the relative wisdom in terms of public health nutrition strategies of, on the one hand reducing total fat intake, particularly saturated fatty acids (SFA) or, on the other hand of maintaining dietary fat levels at their present intakes but replacing SFA with either polyunsaturated (PUFA) or monounsaturated (MUFA) fatty acids, it would seem worthwhile to explore this issue in terms of variation in the EU diet. This is examined in Table 1 which compares typical northern states for dietary macronutrient composition. Energy intakes are about 9.0 MJ/d and fat energy ranges from 29 to 40% in the south to 35 to 41% in the north. The true north-south divide is seen in Table 2. In three typical southern countries, the % energy from SFA ranges from 9 to 13% which compares with a range of 14–18% in the north. In contrast, the % energy from

MUFA is higher in the south (range 12–20) than in the north (range 11–15). The intake of PUFA is similar across Europe. However, when the composition of dietary fat is examined to exclude variation in percent energy from fat i.e. % wt/wt of dietary fat, it is clear that there is a marked and consistent north-south difference.

Virtually half of the dietary fatty acids in the south are MUFA while in the north, SFA almost approach this. In the context of obesity, the prevailing wisdom is that lower fat diets of 30–35% fat energy will help prevent the steady rise in weight gain which has been witnessed in some European countries³. This argument is countered by others who argue that the dietary fat-obesity link is unfounded and, moreover, that low fat diets have adverse metabolic effects such as elevated plasma triacylglycerol (TAG) levels, reduced plasma high-density lipoprotein (HDL) cholesterol and increased peripheral insulin resistance⁴. These effects are certainly observed in some, but not all, studies of low-fat diets. However, they can be countered by an

Table 2 Compositions of dietary fat expressed (a) as a% of energy and (b) as dietary fatty acid categories as a % (w/w) of total dietary fatty acids in typical southern and northern EU member states

	Total fat	SFA	MUFA	PUFA	Reference
(a) Dietary fatty acids as a % of energy					
Southern					
Spain	38	13	17	5	9
Greece	40	12	20	5	10
Portugal	29	9	12	5	11
Northern					
Finland	34	14	11	5	12
Germany	41	18	15	6	13
Netherlands	38	15	14	7	16
(b) Dietary fatty acids as a % of dietary fatty acids					
Southern					
Spain	100	37	49	14	9
Greece	100	32	54	14	10
Portugal	100	35	46	19	11
Northern					
Finland	100	47	37	16	12
Germany	100	46	38	15	13
Netherlands	100	42	39	19	16

adequate intake of n-3 PUFA which will lower plasma TAG⁵ and by exercise which will raise HDL cholesterol and will improve insulin function⁶.

Lower fat diets are unquestionably associated with lower intakes of SFA but as can be seen in Table 3a, there are also reductions in MUFA and PUFA on lower fat diets. When the composition of dietary fat is considered, (Table 3b), it is clear that lower fat diets have the same fatty acid composition as higher fat diets in both the north and south of Europe. People who choose a lower-fat diet simply eat less of the same balance of fats. If those who advocate a lower SFA, higher MUFA diet wish to attain their objectives, then they must seek to alter the fatty acid composition of many foods which will pose a difficult technological problem. It is evident that the foods which make up the fat portion of low- and high-fat diets are the same. Otherwise the fatty acid compositions would be different. Since in northern EU states, most SFA comes from dairy produce, meat and meat products, eggs and egg dishes and the like, it is difficult to see how the fatty acid composition of these products could be altered. If a reduced intake of these foods is associated with a simultaneous lowering of MUFA or PUFA, then candidate foods for enrichment in MUFA and PUFA will have to be found if the idea is to lower saturates but to keep fat levels constant by replacing displaced SFA with PUFA and MUFA and that is technologically difficult. Only a major shift in food selection would achieve this desired objective. The cultural barriers to that are considerable. The more sensible option would be to promote low-fat diets in the context of broader dietary advice to increase oily fish, rich in n-3 PUFA, and to promote moderate physical activity, both of

which will negate the proposed adverse health effects of a low fat diet.

Physical activity and attitudes to physical activity across the EU

In the development of a public health nutrition programme to promote physical activity, it is necessary to understand consumer attitudes to physical activity. This was done recently in a study which ascertained the attitudes of 1000 adults in each EU member state to physical activity, bodyweight and health⁷ and the key findings are as follows.

- (i) In terms of factors perceived to be most important for health, body-weight was cited by only 9% as being one of the two most important factors. This contrasts with the % citing smoking (41%), food (38%), stress (33%), alcohol intake (20%), physical activity (18%) and the environment (16%).
- (ii) In terms of the two most important factors for preventing weight gain, physical activity (17%) ranked below food (44%), fat (39%), sugar (22%) and genetics (18%).
- (iii) 78% agreed with the statement "Being 13 kg heavier than I am would be detrimental to my health" and 47% agreed with the statement "I do not need to do more physical activity than I already do".
- (iv) Among the perceived motivating factors for participation in physical activity/exercise, "to maintain good health" was highest (42%) followed by "to release tension" (30%), "to get fit" (30%), "to be out of doors" (20%), "to socialise" (14%) and "to control weight" (13%).

Table 3 Dietary fat composition expressed as (a) a % of energy or (b) as dietary fatty acid categories as a % (w/w) in upper and lower quartiles/tertiles of % energy from fat in typical southern and northern EU states

	Low-fat diets			High-fat diets		
	SFA	MUFA	PUFA	SFA	MUFA	PUFA
(a) dietary fatty acids as a % of energy						
Southern						
Spain	11	15	4	14	19	9
Greece	8	12	4	15	28	10
Portugal	6	10	4	11	15	11
Northern						
Finland	11	8	4	18	14	12
Germany	14	12	5	21	17	13
Netherlands	12	11	5	17	17	16
(b) dietary fatty acids as a % of dietary fatty acids						
Southern						
Spain	37	50	13	37	50	9
Greece	34	51	15	30	50	10
Portugal	32	48	20	35	47	11
Northern						
Finland	47	37	17	48	38	12
Germany	45	40	15	46	39	13
Netherlands	41	39	19	40	40	16

Table 4 BMI categories (%), active: inactive hours, weight change and attitude to weight-loss benefits of physical activity from a survey of 15,000 EU adults⁷

	Under-weight	Normal-weight	Over-weight	Obese
BMI (kg/m ²)	< 20	> 20–25	> 25–30	> 30
% of subjects	11	48	31	10
(EU range)	(8–17)	(46–53)	(24–35)	(7–12)
Ratio of hours Active : inactive				
Week-end	1 : 0.9	1 : 1.1	1 : 1.4	1 : 1.20
Week-day	1 : 1.6	1 : 2.1	1 : 2.9	1 : 4.4
Weight change in recent 6 months				
% gaining	13	19	27	31
% losing	19	13	16	20
% no change	66	66	57	47
Statement “unless physical activity / exercise results in weight loss, I am not really benefiting”				
% agreeing	22	23	28	32
% disagreeing	74	72	65	59

These data highlight the level of antipathy toward exercise and physical activity, a belief that present levels of sedentary behaviour are acceptable, and they also highlight the widespread ignorance of the adverse effects of over-weight and obesity. The scale of the problem is shown in Table 4 where 31% of EU subjects are over-weight and 10% are obese, the table also shows that inactivity is a stronger feature among the over-weight and obese and that there is a high percentage of the population who are gaining or losing weight. Perhaps the most worrying data in this table is that about 20–30% of subjects (increasing with increasing BMI) agree that unless physical activity brings weight loss, there is no personal benefit. The strategy recommendations of the study were as follows.

- (i) “Increase awareness of the health benefits of physical activity irrespective of body-weight”

It is evident from the study that there is a high level of ignorance about both the adverse effects of obesity and overweight and the health benefits of exercise. In terms of factors that are important for health, physical activity is ranked below stress and in terms of factors influencing weight gain, physical activity is ranked below genetics. The study suggests the possibility of decoupling the health benefits of physical activity from the issue of obesity.

- (ii) “Increase awareness that physical activity means all sorts of activities such as gardening, walking, dancing, golf, football etc and not just “sport”.

This means conveying the message that most of the health benefits of physical activity are gained by moving from a sedentary lifestyle to one with a moderate level of daily physical activity”.

One in three people are not engaged in any voluntary physical activity and one in four excuse this because they are not the “sporty type”. There is a need to stress that the health benefits of physical

activity can accrue from such everyday activities as walking or gardening since the two biggest barriers to engaging in physical activity were not having enough time and not being the sporty type.

- (iii) “Promote the concept of physical activity to relieve stress and increase awareness among employers and trade unions that the work/study environment should promote and facilitate increased physical activity”.

Stress was selected by one third of the EU subjects as an important influence on health. Relief of stress was also seen as an important motivating factor for taking part in physical activity. These surprising results suggest that stress management should be one basis for promoting physical activity. Since work/study commitments are major sources of stress in most people’s lives, the relief of that stress in a caring work environment which facilitates exercise would seem not unreasonable.

- (iv) “Ensure that health professionals understand the benefits of physical activity and have access to appropriate advice to promote increased physical activity and provide quantitative advice on options for increasing physical activity targeted at specific sub-groups on the population”.

The results of the survey show that 75% of the population believe that health professionals are good sources of information on the health benefits of physical activity. Moreover this is consistent across all member states which would suggest that a Pan EU campaign to involve and inform health professionals would be a possible option.

Conclusions

At present in all parts of the EU, lower fat diets are associated with the same fatty acid composition as high

fat diets. The proposed adverse effects of low fat diets are confounded by a largely sedentary population and the adverse effects can be overcome with modest levels of physical activity. However physical activity is poorly rated by the population for its health benefits and is not perceived to be beneficial unless it leads to weight loss. Clearly, there is enormous scope for a Pan EU promotion of the benefits of physical activity, independent of weight control.

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