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**On the European Commission's Green Paper
"Healthy Diets and Physical Activities"**

Briefing Note

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Executive summary

Overweight (pre-obesity) and obesity (body fatness) today affect more than half of the adult population in most if not all EU member states, and prevalence rates as high as about 75% of the population are reached in some EU countries. Obesity begins in childhood, when obesity rates are also rapidly increasing. Obesity is a major cause of avoidable disease and reduced life expectancy. In addition to the human suffering, obesity causes high costs for health care and for loss of productivity. Thus effective prevention of obesity is of major importance in the EU.

Obesity has a high prevalence in disadvantaged socioeconomic groups, but its increase affects all parts of the population to a similar extent. Thus, prevention strategies should address both high risk groups and the whole population.

While the prevention of obesity requires a multi-level strategy, EU actions may add considerable value. The EU Platform on Diet, Activity and Health has raised awareness and achieved commitments for action from various stakeholders, and it offers further opportunities in setting best practice standards. The EU might collect and disseminate information on successful activities in member states, and thus further promote such strategies and a more harmonized approach. The development of European food-based dietary guidelines may help to effectively promote healthy dietary habits which contribute to obesity prevention. A reconsideration of the EU agricultural policy might put stronger emphasis on the production and EU wide distribution of affordable fruits and vegetables which can play a significant role in obesity prevention.

Structural funds have potential to address also the obesity problem - which is a recognized obstacle to economic progress and the creation of wealth - given that obesity rates are highest in areas with poor socioeconomic conditions.

The EU research funding particularly in the area of Food Quality and Safety has contributed tremendously to obesity prevention and is considered a success story. Research funding in this area deserves to be strengthened.

The energy imbalance causing the marked increase of obesity is primarily due to a decline in physical activity and energy expenditure over time, while mean energy intakes from food and drinks have not decreased to the same extent but remain fairly stable. Thus, promotion of regular physical activity should be an important part of obesity prevention. While a large variety of activities exist in EU Member States, little systematic information is available. EU initiatives to encourage physical activity, to collect and disseminate information on successful strategies, and to establish minimum goals for physical education in schools may be helpful.

Many promising educational and behavioural programmes are being developed and used. Often only limited information is available on the programmes and their evaluation. It would be useful to collect such information in an EU wide database.

National policies in Member States follow a variety of different approaches, including both voluntary and regulatory concepts which address in particular educational measures, food labelling and marketing. There appears to be relatively little emphasis on policy addressing physical activity, which could be strengthened.

A systematic analysis of the available evidence revealed that advertising has a clear impact on what children eat. There is strong evidence that television advertising influences food and beverage preferences and purchase requests of children aged 2–

11 years, while there is insufficient evidence about its influence on the preferences of teens aged 12–18 years.

Most children aged 8 years and under do not effectively comprehend the persuasive intent of marketing messages, and most children aged 4 years and under cannot consistently discriminate between television advertising and programming. The advertised diet tends to be an unhealthy diet, high in salt, sugar and fat. From the available data it can be concluded that television advertising influences children to prefer and request high-calorie and low-nutrient foods and beverages. Exposure to food and beverage advertising on television is associated with increased obesity of children aged 2-11 years and of youth aged 12–18 years.

Of 73 countries surveyed in a recent WHO report, some 85% had introduced some form of regulation on television advertisement to children, and almost half of the countries (44%) had introduced specific restrictions on the timing and content of television advertisements directed at children.

Background

Overweight and obesity have become a major public health problem in the EU. Internationally accepted as a measure of the condition is the body mass index (BMI) which equals weight (kg) divided by squared height (m). In adults overweight (also referred to as pre-obesity) is defined by a BMI $>25 \text{ kg/m}^2$ (for example a weight $>75 \text{ kg}$ at a height of 1,73 m) and obesity (body fatness, the severe form of overweight) as a BMI $>30 \text{ kg/m}^2$ (e.g. weight $>90 \text{ kg}$ at a height of 1,73 m). Overweight and obesity affect more than half of the adult population in most if not all EU member states, and prevalence rates as high as about 75% of the population are reached in some countries such as the Czech Republic, Germany and Greece. Overweight and obesity have become a major cause of avoidable disease and reduced life expectancy due to increased occurrence of disorders such as cardiovascular disease, 'type 2' diabetes, hypertension, and some forms of cancer. In addition to the human suffering, obesity causes high economic costs.

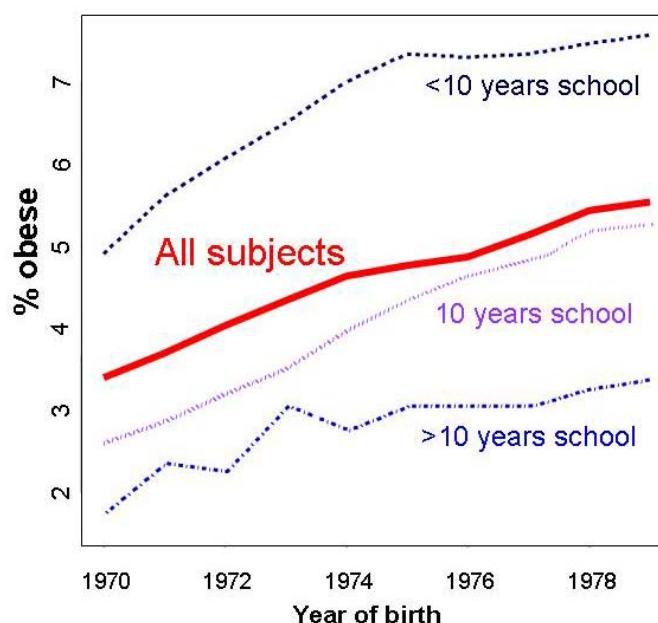


Figure 1: Between 1989 and 1998 there was a 1.7-fold increase in the overall obesity prevalence (body mass index $>30 \text{ kg/m}^2$) among 1.9 million men aged 19 years measured at military induction screening in Germany. Obesity prevalence is much higher in men with shorter than longer school education, but the relative increase is similar across all educational levels (drawn from data of Toschke et al 2005).

The prevalence of obesity has markedly increased in the recent past in EU populations. For example, between 1989 and 1998 obesity in 19 year old males in Germany increased 1.7-fold in only 9 years time (Figure 1). In this nationwide dataset including 1.9 million young men measured upon military induction screening, there is also clear evidence of the major importance of socioeconomic status. Obesity prevalence is markedly higher in young men with less than 10 years of school education than in those with longer education. However, the relative increase is similar across all socioeconomic groups.

Obviously, the foundations of the obesity increase in these young adults are laid in childhood and adolescence. Data collected by the International Obesity Task Force (www.ietf.org) indicate that the prevalence of overweight in children aged 7-11 years is in the range of 10-20% in most European countries and reaches some 27% of the population in the UK and more than 30% in several Southern European countries (Figure 2).

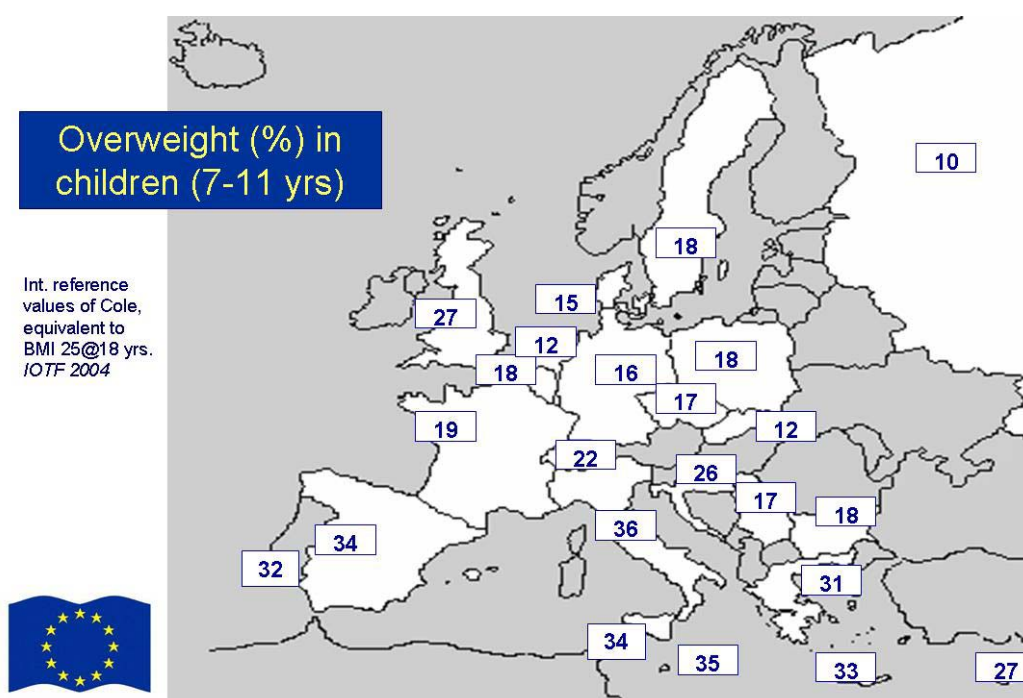


Figure 2: Percentage of overweight children aged 7-11 years across Europe (drawn from data collected by the International Obesity Task Force).

IOTF estimates that among the 77 million children in the EU, some 14 million are overweight, with an increase by 400 000/year, and 3 million are obese, with an annual increase by 85 000 (www.iotf.org). The occurrence of childhood overweight increases in an exponential fashion (Figure 3).

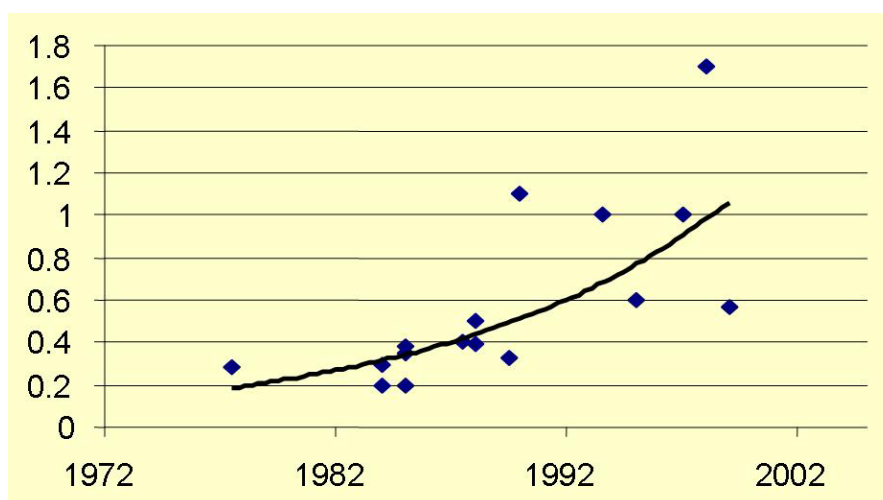


Figure 3: Childhood overweight occurrence/year increases exponentially in the EU, based on data from 15 repeated survey between 1965 and 2002 (IOTF 2004).

This alarming epidemic of obesity in the European population obviously reflects an imbalance between energy needs and energy supply in large parts of the population (Figure 4), resulting from a wide range of changes in lifestyle. While an individual’s risk of overweight and obesity is modulated by a complex combination of genetic, biological societal and psychosocial variables, the overall rise in prevalence has followed a marked reduction of physical activity associated with increasing mechanization and automation of both work and private life.

It is estimated that on a population level this decrease in physical work and physical activity in everyday life reduces energy requirements by some 500 to 750 kcal/day compared to the time period after World War II (EASO 2006).

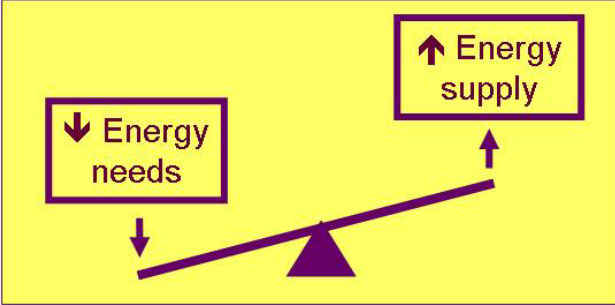


Figure 4: While an individual’s risk of overweight and obesity is modulated by a complex combination of genetic, biological and societal variables, it always results from a lasting imbalance between the body’s energy needs and the energy intake from foods and drinks.

However, the mean energy intake of the population did not decrease to this extent, which explains the rapid increase of overweight and obesity.

Comments on the questions raised:

1. **Considering the relevance of socio-economic factors, what added value can EU actions bring and what immediate action can be taken at Community level? How can/do EU programmes and funding (such as structural funds, research funding) influence/promote or possibly hamper actions in the Member States geared at tackling obesity and promoting a healthy lifestyle? Is there EU legislation that obstructs certain initiatives and actions to be taken in the Member States?**

1.1 Socio-economic factors

As implied in the question, socio-economic factors indeed are very strong predictors of obesity risk, as exemplified by the higher obesity rates in populations with poorer education levels (cf. Figure 1). This is also true for children. For example, children participating in the obligatory school entry examinations in Bavaria, Germany, at the age of 5-6 years show an approximately two-fold higher risk of overweight and obesity if they come from migrant families than children from non-migrant (German) families (Table 1).

	Nationality	N	Overweight % (95% CI)	Obesity % (95% CI)
Boys	German	24.520	9,3 (9,0-9,7)	2,8 (2,6-3,0)
	Non-German	2.399	15,9 (14,4-17,4)	5,3 (4,5-6,3)
Girls	German	23.491	12,1 (11,7-12,5)	3,0 (2,8-3,3)
	Non-German	2.229	20,6 (19,0-22,4)	6,7 (5,7-7,8)

Table 1: Overweight and obesity in migrant children aged 5-6 years is about twice as frequent as in non-migrant children (adapted from Bayerisches Staatsministerium für Gesundheit 2002).

However, the relative increase of obesity affects all socioeconomic groups of the population to a similar extent (cf. Figure 1). Thus, strategies for effective obesity prevention need to address both high risk groups and the population at large.

1.2. Can EU actions provide an added value?

There is no single strategy that could solve the obesity challenge on its own. Rather, a multi-level approach appears necessary, which should involve a variety of stakeholders, including public and private actors on local, regional, national and EU levels.

As one part of such a complementary multi-level strategy, EU actions may be of considerable value in contributing to the promotion of effective prevention. One example is the EU Platform on Diet, Activity and Health which has certainly achieved raising considerable awareness about obesity in the public, among member states as well as a large number of stakeholders from different sectors. The EU Platform has achieved that a number of commercial actors and NGOs made voluntary commitments for concrete action to improve their practice, which almost certainly would not have occurred within the same timeframe without the EU support.

The EU platform has considerable further opportunities, for example in setting examples and standards for best practice that could have a marked impact on activities throughout the community, as was discussed at the recent EU/US conference on good practices for action on diet, physical activity and health held at Brussels on 11-12 May, 2006. For example, it was discussed at this conference that a large number of commercial actors do an admirable job in promoting educational programmes addressing school and pre-school children in several member states, but questions were raised as to the quality of some of these programmes as well as to the degree of separation between the promotion of healthy lifestyles and the promotion of brand or product images.

Here the EU Platform would have an excellent opportunity to set best practice examples and quality standards for such programmes, which might include the recommendation that such campaigns addressing children, particularly in school and pre-school settings, should not be driven by one commercial enterprise in isolation but should usually be coordinated with public institutions having expertise in child health, public health or education, that such campaigns should not unduly promote commercial products or brands, and that such campaigns should aim at implementing an external quality control.

Thereby, the EU Platform could significantly contribute to enhancing such valuable activities of the private sector and of useful public-private partnership. While such initiatives might also be possible at the Member State level, a large part of these programmes are sponsored by companies that act internationally and hence a harmonised approach on the EU level is very valuable.

Different voluntary or regulatory strategies to promote healthy lifestyles have been initiated in several Member States. Here the EU might play a very useful role in collecting and disseminating information on successful activities in Member States, and thus in the further promotion of such successful activities at national levels, which should contribute to enhancement of overall quality and outcome of obesity prevention strategies. In some instances one would also expect a benefit from moving towards a harmonized EU approach.

For example, some member states support voluntary actions to promote healthy lifestyles, such as Spain's NAOS concept negotiating with different stake-holders measurable improvements of action, or Germany's Platform on Nutrition and Physical Activity promoting educational and information activities for children. Other member states introduce certain limitations of marketing of some foods to children, such as France and Belgium limiting the use of vending machines and the sale of sugared carbonated drinks (soft drinks) in schools, and Ireland and Sweden limiting certain advertisements for foods directed at children.

In some countries initiatives are taken to promote food products with a reasonable amount of fat, sugar and salt by simple labelling symbols, such as keyhole concepts in some supermarket chains in Scandinavia, the Baltic states and the Netherlands, or the traffic light concept proposed by the Food Standards Agency in the UK.

There is great opportunity to learn from the variety of approaches used and their possible effects. However, at a time when such experience with different approaches has been gained and evaluated, it might be desirable to move towards a more harmonized approach given the significant movement of people, products and marketing activities across Member State borders.

EU action has been agreed with respect to the Health and Nutrition Claims Regulation, which is expected to contribute to a reasoned use of nutrition and health claims that would not lead to undue promotion of consumption of foods with high contents of fat, sugar and salt, of which a high consumption may contribute to the population obesity risk.

A further agreed EU action is the development of concepts for European food-based dietary guidelines by the European Food Safety Authority (EFSA). Such EU food-based dietary guidelines should help to effectively promote healthy dietary habits which contribute to obesity prevention. A further area with potentially strong impact might be a reconsideration of the EU agricultural policy. The focus of current EU funding in this area appears to be largely influenced by post-war considerations in securing food and nutrient supply for the EU population, and it provides considerable emphasis on supporting the production of affordable energy dense foods such as meat, butter, oils, and sugars.

Given the known benefit of a high consumption of vegetables and fruits for health, including obesity prevention, a shift towards a stronger support for the production and EU wide distribution of affordable fruits and vegetables could play a significant role in population wide obesity prevention.

While simplified and easily understandable labelling of food products can be expected to promote healthy food choices particularly among the more educated segments of the population, for low socio-economic groups that have the highest obesity risk (cf. Figure 1) the price of foods could be far more important in choosing what to buy than labelling information. This also holds true for children and adolescents, whose choice of foods purchased during the school break is markedly influenced by the price of those snack foods (Figure 5).

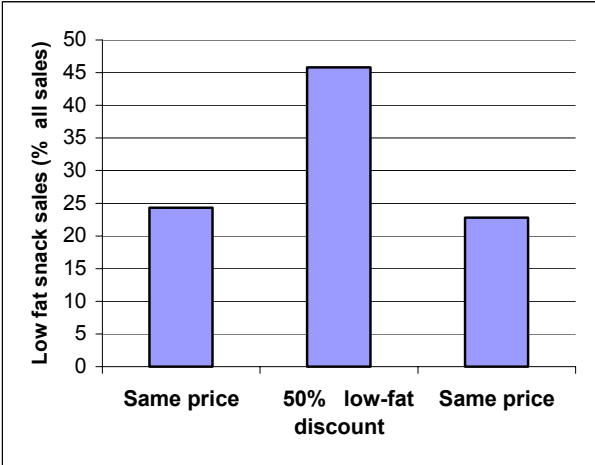


Figure 5: Sales of low-fat snacks at the school kiosk increased markedly when their price was reduced by 50 %, and again returned to baseline levels after cessation of the discount (Jeffrey, cited by WHO 2002).

1.3. Can EU programmes and funding influence actions in the Member States?

It is conceivable that EU programmes and funding, such as structural funds and research funding, might promote and stimulate activities of Member States geared at tackling obesity and promoting a healthy lifestyle, or they might possibly hamper the activities of Member act. Moreover, based on the perception that the problem is already addressed at the EU level some Member States might feel encouraged to put their resources rather into other areas. Thus the conception, design and execution of EU actions need to carefully consider such potential influences and be adapted to avoid untoward effects.

Structural funds have great potential to address also the obesity problem which is a recognized obstacle to economic progress and wealth creation. Obesity prevalence is highest in less privileged populations and areas with poor socioeconomic conditions, which are addressed by structural funds. Structural funding aiming at improved education and training and at improving infrastructure should also address the implications on lifestyle, physical activity, and dietary habits in the population, and it could encourage concurrent investment from member states into these very same objectives. For example, investments into improved roads could be linked to the establishment of bicycle paths, and investments into educational institutions to the establishment of areas for sports and physical activity.

The EU research funding particularly in the area of Food Quality and Safety has contributed tremendously to improving understanding of obesity development and approaches to prevention, and it must be considered a real success story. Many of the EU funded projects and their investigators are at the forefront of global cutting edge research and training activities¹. These research activities are of tremendous value in improving the ability to combat the obesity challenge. In view of the great impact of obesity on public health, well-being and the European economy these activities should be markedly strengthened. Funding in this area is a good example of EU funds promoting and stimulating activities at the Member States level, since all these programmes require a shared investment from the partner institutions and at the same time strengthen the capability of these institutions for further excellence in research and training.

In conclusion, EU programmes and funding, such as structural funds and research funding, should and can be structured as to promote activities of Member States geared at tackling obesity. The EU research funding in the area of Food Quality and Safety is very successful in improving understanding of obesity development and approaches to prevention, and it should be strengthened further.

¹ For example, the FP5 CARMEN project has shown that a high carbohydrate diet is of significant advantage over a high fat diet in reducing overweight. The FP6 programme DIOGENES (<http://www.diogenes-eu.org/>) investigates the hot area of interaction between human genes and diet in obesity development, a topic also addressed in the FP6 programmes NUGO (<http://www.nugo.org/>) and NUGENOB (www.nugenob.org/). How healthy lifestyles can be approached in adolescence is addressed in HELENA (FP6, www.helenastudy.com/). The exciting and promising topic of lasting effects of early nutrition during pregnancy and infancy on later obesity are investigated in the FP5 EU Childhood Obesity Project (www.childhood-obesity.org) and the FP6 Early Nutrition Programming Project (www.metabolic-programming.org).

2. What actions are taken in the Member States to promote physical activity given that people are consuming fewer calories but obesity is on the rise?

The decline in physical activity and energy expenditure provides a greater contribution to obesity increase than a change in mean dietary energy intake, as is supported by several observations. However, there is little evidence that populations today consume markedly less energy than one or two decades before. Rather, longitudinal studies with high methodological standards indicate no change in mean energy intake (Alexy et al 2002).

Data collected by the United States Department of Agriculture even suggest that the mean dietary energy supply increased between 1970 and 2000 by 530 kcal per capita and day or by 24.5% (Figure 6). Of importance, data on mean energy intake do not explain what might be happening in vulnerable subgroups, for example with a frequent consumption pattern of high energy snacks.

Notwithstanding, sedentary behaviour and lack of physical activity are major risk factors for overweight and obesity. For example, data from school entry examinations in 5-6 year old children in 6 regions of Bavaria (D), show that children with at least 2 hours/day of electronic media consumption (television, electronic games) have a more than twofold higher prevalence of both overweight, and obesity, respectively, than children with rare media consumption (Table 2). Thus, reduction of sedentary activity and promotion of physical activity are important approaches to obesity prevention.

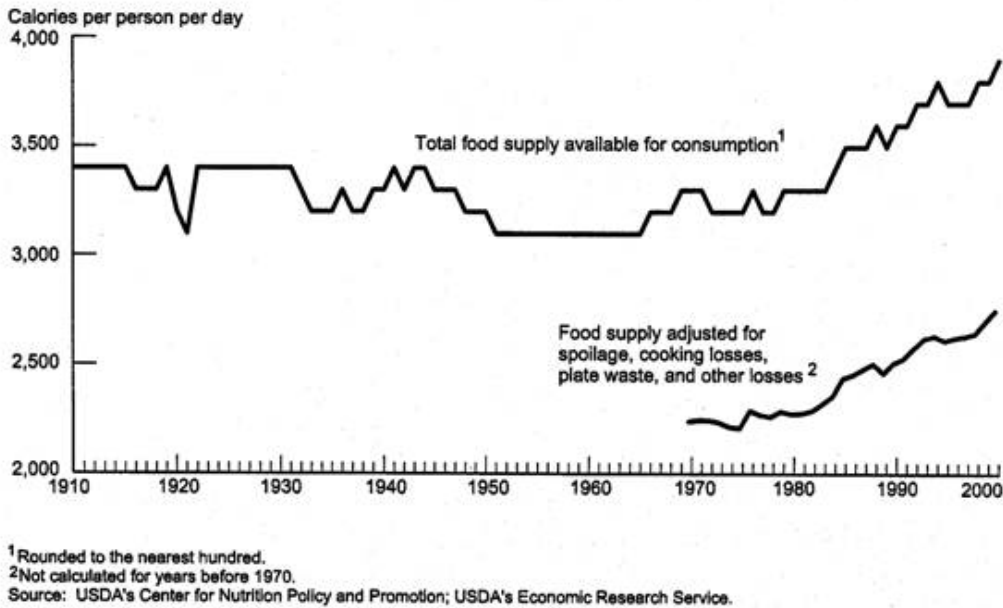


Figure 6: Data of the United States Department of Agriculture suggest that the mean energy supply available for human consumption in the USA increased between 1970 and 2000 by 530 kcal per capita and day or by 24.5% (from USDA Economic Research Service Food Review Winter 2002).

Media use	Prevalence in children	
	Overweight	Obesity
None/rare	4.3 % (3.3 - 5.3)	2.0 % (1.4 - 2.8)
<2 h/day	7.5 % (6.7 - 8.4)	2.7 % (2.2 - 3.3)
≥2 h/day	9.9 % (8.3 - 11.8)	4.8 % (3.6 - 6.1)

Table 2: In Bavarian children aged 5-6 years, the prevalence of overweight and obesity is more than doubled with more than 2 hours/day of electronic media consumption (television and electronic games) compared to rare consumption (modified from Kalies et al 2001).

In a number of EU Member States a large number of initiatives exist which aim at promotion of physical activity, particularly among children. However, there is no database that systematically collects such activities. Many of these activities are led by private initiatives, educational institutions, sports clubs and other NGOs.

For the treatment of obesity, general physicians in the UK have been authorized to prescribe 12 weeks access to a local authority sports centre. Austria plans to subsidize membership in fitness centres for health-insurance holders (Glenn 2006).

The United Nations Economic Commission for Europe (UNECE) in collaboration with the World Health Organisation (WHO) Europe and its Member State representatives from the transport, environment and health sectors, together with relevant international and non-governmental organizations, have set up the Transport Health and Environment Pan European Programme (THE PEP, www.thepep.org). Among the priority areas and related actions for THE PEP is also the integration of environmental and health aspects into transport policy, in particular in relation to decision making processes, monitoring and impact assessment.

In the UK an Activity Co-ordination Team (ACT) has been set up jointly by the Department for Culture, Media & Sport (DCMS) and the Department of Health (DH) (www.dh.gov.uk/PolicyAndGuidance/HealthAndSocialCareTopics/HealthAndSocialCareArticle/fs/en?CONTENT_ID=4077912&chk=6ZOOZC). The cross-Government team plans to develop a national Delivery Plan for physical activity and sport. Its core target, set by Game Plan, is to increase participation in sport and physical activity to 70% of the population by 2020, particularly among economically disadvantaged groups, school leavers, women and older people. The Delivery Plan aims at providing the foundation for a long-term national physical activity and sport strategy for England, and it plans to adapt to arising evidence of what works both in the UK and internationally. At the regional and local level ACT is supposed to be working to develop joined up approaches to increasing levels of physical activity.

The EU Platform on Diet, Activity and Health has discussed an apparent decline in time allowed for physical education in schools in many Member States, in part as a result of increasing cost pressures. This unfortunate development might be counteracted by an EU initiative to encourage a minimum of 2 or better 3 hours/week of physical education in schools of Member States. According to the discussion at the EU Platform, there also appears to be opportunity for enhancing extracurricular physical activity in view of widely underused sports facilities in many EU countries.

In conclusion, there is little indication of a marked reduction of mean dietary energy intake. Numerous activities to encourage physical activity exist in EU Member States, but little systematic information is available. EU initiatives to promote physical activity and to establish a minimum goal of 2 or better 3 hours/week of physical education in schools in Member States are considered desirable.

3. What best national or local practices and policies can be disseminated or replicated at the EU level – looking beyond the EU to action taken in other countries?

A systematic review of obesity prevention strategies for children, based on evidence based criteria, concluded that at present there are no prevention programmes with proven efficacy (Campbell et al 2005). However, there are many promising approaches and initiatives, of which only a few can be introduced here.

The Fleurbaix Laventie Ville Santé 1992 - 2007 (15 ans d'actions de prévention santé pour la population) is a population based prevention programme in the North of France that uses a promising multi-level approach and is funded mostly by private sponsors (www.flvs.fr/). The outcomes reported are quite encouraging, but it is based on a rather small group with relatively vague monitoring criteria which do not allow to draw very firm conclusions. The French EPODE programme aims at expanding the approach of the Fleurbaix Laventie intervention to a larger number of towns in France (www.villesante.com/epode/). This ambitious programme started less than two years ago and is still in a pilot phase, therefore, no conclusions can be drawn yet. The approach is based on to the specific conditions in France and would need to be adapted for application in other countries.

The TigerKids intervention programme in the Kindergarten setting has been developed in Germany and is evaluated in a cluster-randomized approach by comparing children in TigerKids-Kindergartens and in control settings (www.tigerkids.net). The first results after a programme duration of 9 months (Table 3) are encouraging and show a significantly higher percentage of TigerKids-Children with high fruit and vegetable consumption and with low consumption of high energy drinks. There was also a trend to high proportions of low TV use and to lesser overweight. Of importance, particularly positive effects of the programme were also found in children from low

	Control	TigerKids
↑ Fruit consumption	61.0 %	67.0 %
↑ Veggie consumption	39.1 %	45.1 %
↓ High energy drinks	57.3 %	66.4 %
↓ High energy sweets	45.6 %	48.0 %
↓ TV use	55.1 %	61.9 %
Overweight	14.4 %	12.4 %

Table 3: Results of the interim evaluation of the TigerKids intervention programme with randomisation of Kindergartens to non-intervention (control) or to the TigerKids programme. After 9 months, a significantly higher proportion of children in the TigerKids programme showed a high consumption of fruits and vegetables and a low consumption of high energy drinks, and there was also a trend to high proportions of low TV use and to lesser overweight.

socioeconomic subgroups, which are difficult to reach with most prevention programmes. Based on these very encouraging results, TigerKids will be rolled out to 5000 Kindergarten settings in Germany over the course of the next three years, with continued evaluation of its effects, with funding provided by a major health insurance (AOK).

Again, this programme is based on the specific conditions in Germany and would need to be adapted if one were to use it in other settings.

Examples of school based studies, generally with small numbers of included children, indicate that school based educational programmes may succeed in reducing television viewing and sedentary behaviour (Robinson et al 1999), lowering consumption of soft drinks (James and Kerr 2005) and overall prevalence of overweight (Toh et al 2002, James and Kerr 2005, Spiegel and Foulk 2006) (e.g. Figure 7).

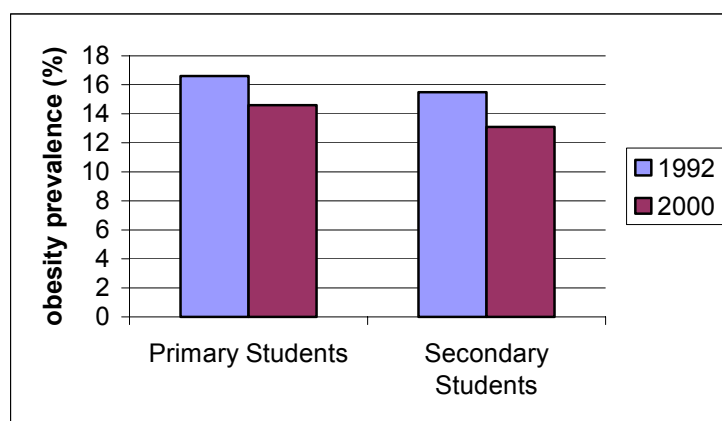


Figure 7: The „Trim and Fit“-programme in Singapore promoting healthy lifestyle, regular physical activity and balanced food choice in schools succeeded in reducing obesity prevalence, however, with quite a bit of pressure on children and their families which may not be considered acceptable in Europe.

With regard to national policies, a variety of different approaches are followed. As mentioned before, Spain has introduced the NAOS collaboration in which measurable improvements of action are negotiated with different stakeholders. Germany has introduced the Platform on Nutrition and Physical Activity with stakeholders from different sectors of society that puts a focus on educational and information activities addressing children. France and Belgium decided to introduce certain limitations of the use of vending machines and the sale of sugared carbonated drinks (soft drinks) in schools. Ireland and Sweden decided to limit certain advertisements for foods directed at children. An easily understandable keyhole concept of labelling foods with a nutrient content considered desirable has been introduced as a private initiative in some supermarket chains in Scandinavia, the Baltic states and the Netherlands, while in the UK the Food Standards Agency has proposed a traffic light concept of labelling foods based primarily on fat, sugar and salt contents. All these approaches could potentially be extended to the EU level, but prior to such a possible extension one would wish to see a thorough evaluation of their possible effects.

In conclusion, a variety of promising programmes with educational and behaviour oriented concepts are being developed and used, but often only limited information is available on those programmes and on the extent of their evaluation. It would be useful to establish an EU wide database on standardized programmes which may be applicable potentially in modified form in other parts of the EU, and on the extent of their evaluation. National policies in Member States follow a variety of different approaches, including both voluntary and regulatory concepts and addressing educational measures, food labelling and marketing. Currently there appears to be relatively little emphasis on policy approaches addressing physical activity, which could be strengthened.

4. What is the link between commercial communication of certain foods to children and obesity, and what effects do the different approaches to advertising to children in the Member states have in tackling obesity amongst children?

No information about monitoring activities on the effects of different approaches to advertising to children in EU Member States has become available. Therefore, the issue of a possible link between commercial communication on certain foods to children and obesity is discussed on the basis of published information, which has recently been systematically reviewed by the Institute of Medicine in the United States (IOM, 2005), based on a request by the US Congress and sponsored by the US Centers for Disease Control and Prevention (CDC). In addition, the World Health Organization has recently published a report on the marketing of food to children (Hawkes 2004).

Dietary patterns begin to form in childhood as a result of a complex interaction of many influencing factors, and they tend to persist into adulthood, thus childhood dietary patterns have an impact on long-term health (Figure 8). Among many other factors influencing the development of dietary patterns and choices in children are the marketing activities of the food, beverage, and restaurant industries. The IOM report indicates that children and youth represent a primary focus of food and beverage marketing and estimates that more than 10 billion US Dollars per year is spent for all types of food and beverage marketing to children and youth in America. Although some recent public announcements by some in the industry suggest an interest in change, the preponderance of the products introduced and marketed to children and youth have been high in total calories, sugars, salt, and fat, and low in critical nutrients.

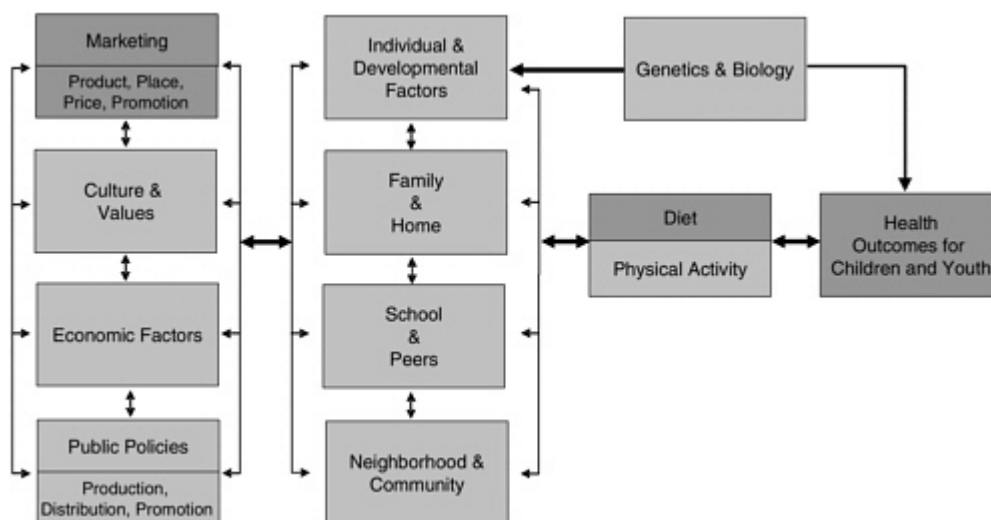


Figure 8: Influences on children’s dietary patterns and related health implications (Adapted from IOM 2005).

Children develop consumer socialization skills with increasing age. Over the time period from about 2–11 years, children develop consumption motives and values as they are exposed to commercial activities, and they develop knowledge about advertising. Before a certain age, children lack the defenses or skills to discriminate commercial from noncommercial content, or to attribute persuasive intent to advertising. Children generally develop these skills at about age 8 years, but children as old as 11 years may not activate their defenses unless explicitly cued to do so. Thus, there is considerable concern about young children’s limited ability to understand and interpret the nature and purpose of advertising.

To analyse the effects of advertising exposure on children, the committee responsible for the IOM report reviewed approximately 200 of the strongest and most pertinent articles. Of these, 123 were subjected to a systematic evidence review using a protocol established by the committee.

The results of this analysis indicates that, among many factors, food and beverage marketing influences the preferences and purchase requests of children, influences consumption at least in the short term, is a likely contributor to less healthful diets, and may contribute to negative diet-related health outcomes and risks among children and youth. The literature indicates relationships among marketing, dietary precursors, diets, diet-related health, and, in particular, obesity. The committee's systematic evidence review found that:

- There is strong evidence that television advertising influences the *food and beverage preferences* of children ages 2–11 years. There is insufficient evidence about its influence on the preferences of teens ages 12–18 years.
- There is strong evidence that television advertising influences the *food and beverage purchase requests* of children ages 2–11 years. There is insufficient evidence about its influence on the purchase requests of teens ages 12–18 years.
- Given the findings from the systematic evidence review of the influence of marketing on the precursors of diet, and given the evidence from content analyses that the preponderance of television food and beverage advertising relevant to children and youth promotes *high-calorie and low-nutrient products*, it can be concluded that television advertising influences children to prefer and request high-calorie and low-nutrient foods and beverages.

Food and beverage advertising on television has some influence on the *dietary intake* of children and youth:

- There is strong evidence that television advertising influences the short-term consumption of children ages 2–11 years. There is insufficient evidence about its influence on the short-term consumption of teens ages 12–18 years.

With respect to *diet-related health*, food and beverage advertising on television is associated with the adiposity (body fatness) of children and youth:

- Statistically, there is strong evidence that exposure to television advertising is associated with obesity in children ages 2–11 years and teens ages 12–18 years.
- Most children ages 8 years and under do not effectively comprehend the persuasive intent of marketing messages, and most children ages 4 years and under cannot consistently discriminate between television advertising and programming.

In conclusion, the available evidence is quite clear that advertising has an impact on what children eat. The advertised diet tends to be an unhealthy diet, high in salt, sugar and fat, and exposure to advertising is associated with increased obesity. Television advertising is a more popular means of promoting food and beverage products. Of 73 countries surveyed in the WHO report, 85% had introduced some form of regulation on television advertisement to children (Hawkes 2004).

Almost half of the countries surveyed (44%) had introduced specific restrictions on the timing and content of television advertisements directed at children, while two countries and one province had completely banned television advertisement to children.



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References:

Alexy U, Sichert-Hellert W, Kersting M. Fifteen-year time trends in energy and macronutrient intake in German children and adolescents: results of the DONALD study. *Br J Nutr.* 2002 Jun;87(6):595-604.

Bayerisches Staatsministerium für Gesundheit, Ernährung & Verbraucherschutz. *Gesundheit im Kindesalter.* München 2002

Campbell K, Waters E, O'Meara S, Kelly S, Summerbell C. Interventions for preventing obesity in children. *Cochrane Database Syst Rev.* 2002;(2):CD001871. Review. Update in: *Cochrane Database Syst Rev.* 2005;(3):CD001871.

Commission of the European Communities. Green Paper "Promoting healthy diets and physical activity: a European dimension for the prevention of overweight, obesity and chronic diseases". Brussels, 08.12.2005, COM (2005) 637 final

European Association for the Study of Obesity. Response to the European Communities Green Paper (2006)

Glenn J. Austria plans gym discount to help citizens get fit. *The Lancet* 2006;367:1563

Hawkes C. Marketing food to children: the global regulatory environment. Geneva, World Health Organisation 2004

Institute of Medicine. Food Marketing to Children and Youth: Threat or Opportunity? Washington DC, National Academy Press, 2005

James J, Kerr D. Prevention of childhood obesity by reducing soft drinks. *Int J Obes (Lond).* 2005 Sep;29 Suppl 2:S54-7.

Kalies H, Koletzko B, von Kries R. Übergewicht bei Vorschulkindern. Der Einfluß von Fernseh- und Computerspiel-Gewohnheiten. *Kinderärztliche Praxis* 2001;4:227-234

Robinson TN. Reducing children's television viewing to prevent obesity: a randomized controlled trial. *JAMA.* 1999 Oct 27;282(16):1561-7.

Spiegel SA, Foulk D. Reducing overweight through a multidisciplinary school-based intervention. *Obesity (Silver Spring).* 2006 Jan;14(1):88-96.

Toh CM, Cutter J, Chew SK. School based intervention has reduced obesity in Singapore. *BMJ.* 2002 Feb 16;324(7334):427.

Toschke AM, Ludde R, Eisele R, von Kries R. The obesity epidemic in young men is not confined to low social classes--a time series of 18-year-old German men at medical examination for military service with different educational attainment. *Int J Obes (Lond).* 2005 Jul;29(7):875-7.

WHO. Diet, nutrition and the prevention of chronic diseases: report of a joint WHO/FAO expert Consultation. WHO Technical Report Series 916. Geneva, WHO, 2002.