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Editorial

We are all involved in obesity policies

A key element in the Amsterdam Treaty was the statement that *"... high levels of human health protection shall be ensured in the definition and implementation of all Community policies and activities..."*

All policies and activities? Yes – because it is not enough to tell school children to eat better snacks or to tell parents they should read food labels carefully. Focussing on the individual will not solve the problem. We have to ask why that individual is at risk of obesity. We have to look at causes. We have to ask: Why?

Take physical activity. If children do not play outdoors, we must ask why. Is there too much traffic? Is there too much crime? If so, transport policies need to be changed. Crime and policing policies need review.

Take bad diets. If people eat 'junk' food we must ask why. Is junk food cheaper, tastier and more appealing? If so, we need pricing and distribution policies. We need policies on food formulation, the use of cosmetic additives and portion sizes. We need menu labelling policies and school meal services policies, workplace catering policies, fast-food labelling policies.

These in turn imply policies about commercial investments, agricultural support, trade barriers and commodity price-fixing. Political leadership is needed to challenge the status quo. But political leaders will not challenge the status quo unless they have popular support. Popular support comes from us all, as voters, as workers and experts, as members of trade unions and professional bodies.

The Amsterdam Treaty was written when the mad cow disease crisis led to popular support for reform. It led to stronger public health polices and institutions to support them. The obesity crisis will affect many more of us. By showing our support for change we can get the policies we need. All of us together.

Tim Lobstein
International Obesity TaskForce, London

Editorial Board

> ANNOUNCEMENT

EGEA FOURTH EDITION

INTERNATIONAL CONFERENCE
THE ROLE OF FRUIT AND VEGETABLES IN THE FIGHT AGAINST OBESITY
DATE: 17-19 APRIL 2007
LOCATION: EUROPEAN COMMISSION, BRUSSELS, BELGIUM
CONFERENCE ORGANISED BY APRIFEL WITH THE SUPPORT OF DG SANCO AND THE EU PLATFORM FOR DIET, PHYSICAL ACTIVITY AND HEALTH
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Cross-national comparison of environmental and policy correlates of obesity in Europe

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The burden of obesity

Although obesity is less prevalent in most European countries than in the United States, the International Obesity Task Force indicates that the prevalence of obesity has increased during the last decade on the "Old Continent"[1]. In Europe, the consequences of excess body weight are estimated to account for 7-8% of the overall burden of disease[2] and about 1-5% of total health care expenditures[3].

An ecological approach

Because of the increasing prevalence and costly consequences, obesity can no longer be considered as a purely medical issue, but rather as a threat to public health, requiring national and global strategies for prevention and management[3]. Several experts claim that the relatively poor success of existing obesity prevention interventions is due to their traditional, individual-level behavior change approach and a paradigm shift toward an ecological level understanding of obesity is necessary to reverse the escalating trends[4]. This involves interventions targeting individuals, families, communities, and policy settings.

The role of environment and policy variables

Although there is growing agreement among researchers that the modern environment is a major contributor to present obesity trends[4], little is known on how various environmental factors contribute to obesity. Existing studies indicate associations between increased likelihood of obesity and poor access to and low consumption of fruit and vegetables, negative community perceptions, lack of nearby recreational facilities, absence of sidewalks, spending more time in a car, walking less, not having access to a motor vehicle all the time, being a resident of a less walkable or a more sprawling neighborhood, and residing in an area with lower levels of land-use mix[5-11]. However, these studies are limited in scope to the microenvironment of individuals and provide no information on European patterns and correlates.

Despite the widely recognized role of governmental-level factors for many health behaviors[12], the link between policy and obesity trends is not well understood. Policy-level changes can guide individual choices and may be good complementary methods to individual-level interventions, as they can influence the lives of more people, may affect groups who are difficult to reach with traditional approaches, can have longer lasting effects on behavior change by shaping social norms, and may be cost-effective[4].

Findings from an ecological study in Europe: availability of fruits and vegetables inversely associated with obesity[13]

In an exploratory ecological study we examined data on obesity prevalence and indicators of the physical, economic, and policy environment for 24 European countries from 1997-2002. Reporting upon all findings is beyond the scope of this article. Nevertheless it is interesting to note that the availability of fruits and vegetables appeared to play an important role: we found a lower prevalence of obesity in countries with higher per capita availability of fruits and vegetables. Indeed, one of the only statistically significant findings for male obesity was an inverse association with available fruits and vegetables. However, our results indicated that higher availability of fat is correlated with lower obesity prevalence which is different from our hypothesized direction.

Aggregate policy indicators, addressing different aspects of the quality of governance, had robust associations with obesity, especially among women. These findings suggest lower levels of obesity in countries that can be described by more independent media or by higher "capacity of the government to effectively formulate and implement sound policies"[14]. The complexity of these policy indicators makes them difficult to interpret, however, we hypothesize that better stability and higher effectiveness of a government may provide a better opportunity for policymakers to focus on key public health problems such as obesity.

Summary

Further research should examine the role of obesogenic environments, including policy-related variables and other components of the macroenvironment (e.g., the accessibility and affordability of fruits and vegetables) with a special focus on gender differences.

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Fruit and vegetable consumption and body weight management

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Obesity is a worldwide public health problem

Obesity has reached epidemic proportions in Western countries, but its prevalence is also rising in developing countries[1]. Obesity, especially abdominal obesity, is a strong risk factor for several chronic diseases, such as type 2 diabetes, cardiovascular diseases, and certain cancers[1]. Therefore, it is of high public health relevance to combat this epidemic.

Principally, overweight and obesity result from a long-term imbalance between energy intake and energy expenditure. Although many research efforts have been made, the role of certain macronutrients and foods in the development of obesity is still not entirely understood. This article briefly summarizes studies on the relation of fruit and vegetable intake and weight management.

How fruits and vegetables could exert beneficial effects on weight control

Fruits and vegetables are characterized by a low energy density because they contain large amounts of water and little fat. Basic research studies on satiety demonstrated that an increased water content of a food leads to a decreased energy density, increased satiety and decreased energy intake at subsequent meals[2]. Furthermore, many studies have shown that increasing the intake of fiber, which is highly available in fruits and vegetables, also increases satiety and decreases energy intake[3, 4].

Results from intervention studies

Numerous intervention studies have investigated whether a high consumption of fruits and vegetables is effective in body weight control. Intervention studies of satiety showed that adding fruits and vegetables to the diet, thereby reducing energy density, was associated with enhanced satiety, reduced hunger, and a reduction in energy intake[2]. Intervention trials investigating body weight development as an outcome can generally be classified into two groups: 1) studies on weight maintenance as the main objective (often conducted in normal-weight subjects) and 2)weight reduction studies (usually conducted in overweight or obese subjects). Trials in which participants were advised to increase their fruit and vegetable intake but without a weight loss prescription demonstrated that most subjects did not gain body weight during follow-up but could maintain their weight[2]. More consistent weight maintenance and even weight loss was observed when advice to increase intake of fruits and vegetables was combined with advice to decrease fat intake[2]. Weight-reduction studies, in which the advice to increase consumption of fruits and vegetables was part of the weight reduction program were similarly successful in their results. In these studies, the increase of fruit and vegetable intake was associated with weight loss and maintenance of weight loss[2]. These data are supported by weight reduction trials not advising but providing obese subjects low-energy dense diets with a high content of fruits and vegetables and a low fat content. These studies also reported substantial body weight reductions among participants[2]. Taken together, intervention studies suggest that fruits and vegetables are beneficial in body weight control. However, most interventions were not designed to specifically investigate the effects of fruits and vegetables on weight control alone, but tested increased intakes in fruits and vegetables along with other dietary changes like a decreased fat content[2]. Well controlled intervention studies should be designed with a focus on the impact of increasing fruit and vegetable intake while keeping other parts of the diet constant.

Observations from epidemiological studies

Several prospective epidemiological studies investigated the relation of fruit and vegetable intake and weight gain. In the Nurse's Health Study[5] women with the largest increase in fruit and vegetable intake during the 12-year time interval of follow up had a 24 percent lower risk of becoming obese (defined as BMI >30 kg/m2) compared with those women with the largest decrease in intake. Similarly, in a large cohort of nearly 80,000 white adults, an inverse association of baseline vegetable consumption with a 10-year change in BMI and gain in waist circumference was reported[6]. However, not all prospective epidemiological studies detected beneficial effects of fruits and vegetables on body weight control. Indeed, two studies found an inverse association of increase in fruit consumption during follow-up with weight gain[7, 8], but no relation was observed for vegetable intake, respectively. Moreover, two further studies could not detect a relationship between fruit or vegetable intake and subsequent weight gain at all[9, 10]. However, these studies were limited due to their short follow-up period[10] and small study population[7-9].

Conclusion

Although the results are not completely consistent, data from basic research studies, as well as intervention and epidemiologic studies suggest that a high consumption of fruits and vegetables is beneficial in body weight management. However, further well controlled studies are needed to corroborate the data of these investigations. Public health efforts should emphasize the benefit of consuming high amounts of fruits and vegetables in combination with an overall healthy diet and a physically active and health-conscious lifestyle to combat the worldwide epidemic of obesity.

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Environmental factors and obesity related dietary behaviors in youth

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The prevalence of overweight and obesity is rapidly increasing in children and adolescents, making these groups important targets for prevention. Promoting healthful dietary patterns is likely to contribute to preventing the onset of overweight and obesity. To effectively prevent or modify obesity-inducing eating patterns, a detailed understanding of factors that determine these behaviors is essential.

Environmental influences in childhood eating patterns

Until recently, the research of determinants of dietary intake in youth has predominantly been focused on individual level determinants, such as attitudes and social influences. More recently a shift in attention to environmental determinants has occurred. A major driving force for the increasing obesity prevalence may be an environment that encourages eating and discourages physical activity[1, 2]. Child and adolescent dietary behavior is likely to be strongly influenced by environmental factors. Parents decide on what kind of foods they offer their children[3]. Adolescents become more autonomous, and lifestyle, social and environmental changes take place. School food environments may have a large impact on adolescent food choices[4-6].

The environment can be defined as 'anything outside the individual'. Several types of environmental factors can be distinguished, such as physical factors (built environment, availability of foods), socio-cultural factors (social influences), economic factors (household income) and political factors (rules and regulations). These factors can be categorized in several environmental settings, such as microenvironments where groups of people meet (home, school, and restaurant) and macroenvironments that include the broader infrastructure that may support or hinder health behaviors (town planning, transportation infrastructure). For example, availability of vegetables (physical factor) can be important in various microenvironmental settings: availability of vegetables at home or on restaurant menus[7]. Currently, there is limited insight into which environmental factors are associated with obesity-inducing dietary behaviors.

Review study

In 2005 we conducted a systematic review of the literature to examine which environmental factors are consistently associated with child and adolescent energy, fat, fruit, vegetable, snack, fast food and soft drink intake[8]. Studies published between January 1980 and December 2004 were located from four databases. The search procedure resulted in a final inclusion of 58 articles. Most of the studies were cross-sectional (n=55) and environmental determinants of fruit and vegetables were studied most often (n=34). Socio-cultural and economic environmental factors were examined most extensively, especially parental intake, availability and accessibility of fruit and vegetables, and parental education. The review provided evidence for the positive association between parental intake and children's fat and fruit and vegetable intake, for parent and sibling intakes with adolescent's energy and fat intake, and for parent educational level with adolescent's fruit and vegetable intake. These findings were replicated in multiple studies. The relationship between availability and accessibility of fruit and vegetables and children's fruit and vegetable intake was less clear. A positive association was found, however the samples that found a positive association only slightly outnumbered the samples that found no association.

A less consistent repeated but positive association was found for availability and accessibility on child fruit and vegetables intake.

Conclusions and implications

This review provided evidence for associations between environmental determinants and dietary intakes. However, due to important limitations of the available evidence, the results should be interpreted with caution. Most of the studies had a cross-sectional design, which makes drawing conclusions about causes and effects difficult. Another limitation is that only a few studies have been conducted on the same environmental factor – dietary behavior combination. This replication is needed to generate evidence on these associations.

In spite of the associations found in the review, there are still large gaps in the evidence regarding the influence of environmental factors on dietary behaviors. For instance very few studies on physical and political factors were retrieved. An important reason for these gaps may be that many papers on this topic might be underway, as the attention to the role of the physical environment is an emerging research field.

Interventions should take the behavior of parents into account. Parents should be strongly encouraged to give the right example, especially where fat and energy intakes are concerned. Fruit and vegetable promotion should focus especially on adolescents from parents with lower levels of education. In addition, factors such as the availability and accessibility of foods at home, school and within the neighborhood should be studied in relation to energy, fat, soft drink, snacks and fast food intake. Longitudinal studies and studies using objective assessments of the physical environment are required to gain better insight in environmental determinants of obesity-inducing behaviors.

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