

Alimentos funcionales

Dietary habits and nutritional status of school aged children in Spain

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Abstract

The different dietary habits and nutritional status of Spanish schoolchildren have been analyzed. Nutrition affects health throughout the life cycle, and it is best to begin to prevent harm early on. Habits are formed early in life, and habits are a major determinant of food choice in later life. Two trends in particular are worthy of mention in this regard: the progressive globalisation of the food supply and the increase of food intake such as snacks, soft drinks and fast food, which typically apportion a significant part of daily diet. In Spain, young people are abandoning the "Mediterranean Diet" in favour of industrial products, full of calories and saturated fatty acids but low in nutritional components, which is contributing to obesity and rising cholesterol levels. Also, breakfast consumption has been identified as an important factor in the nutritional status of children and in Spain we are observing that an increasing percentage of children are omitting breakfast.

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Key words: *Dietary habits. Spanish school children.*

Introduction

It is relatively easy to reach children through institutions such as schools. As a society, we have the responsibility to do our best to protect young people. All of these reasons are good, and true. However, they are in stark contrast to the increasing prevalence of poor diets

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HABITOS ALIMENTARIOS Y ESTADO NUTRICIONAL DE LOS NIÑOS EN EDAD ESCOLAR EN ESPAÑA

Resumen

Se han analizado los diferentes hábitos alimentarios y el estado nutricional de los niños españoles en edad escolar. La nutrición influye sobre la salud a lo largo de todo el ciclo vital, siendo aconsejable la prevención precoz. Los hábitos se establecen en fases tempranas de la vida, y representan un importante factor determinante para la elección de alimentos en fases posteriores. Con respecto a lo anterior, son especialmente significativas dos tendencias: la progresiva globalización del suministro de alimentos y el aumento de la ingesta de alimentos tales como aperitivos o "snacks", bebidas refrescantes y "comida rápida", que habitualmente suponen una parte importante de la dieta diaria. En España, los jóvenes están abandonando la dieta mediterránea en favor de productos industriales con un alto contenido en calorías y ácidos grasos saturados, pero con un bajo contenido en componentes nutricionales, lo que contribuye a la obesidad y al aumento de los niveles de colesterol. Además, se ha identificado la ingesta de desayuno como un factor relevante para un correcto estado nutricional de los niños, observándose en España que un número cada vez mayor de niños no toman desayuno.

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Palabras clave: *Hábitos alimentarios. Niños escolares españoles.*

and obesity among young people. Changes in children's diets cannot and should not be considered in isolation from other social changes. The main streets of many of our cities and towns across Europe are coming increasingly to contain the same retail and fast food outlets. Television programmes and advertising cross borders. The aspirations of many young people are formed by an international youth culture. Local tradition and culture play an ever decreasing part in the foods and meals peo-

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ple eat. In most European countries average income is rising, and all these previously mentioned characteristics also are affecting Spanish school children.

The revolution in children's lifestyles and dietary habits which has occurred over the last twenty-five years can be largely attributed to changes in the family environment and in the social environment in general. Such changes include the increasing tendency for women to work outside the home; the marked decline in birth rates and in size of families; the remarkable advances in agriculture, fishing, and food technology (with the result that a wide range of foods are now continuously available); the rapid urbanization of the population, the universalization of access to health services and education; the growing and homogenizing influence of television; the ever —earlier age at which children start school (where they typically receive a significant part of their daily diet); and the increasing disposable wealth of minors (allowing them to purchase and consume foods without parental control).

It should be stressed that a very significant number of pre school and school —aged children are subject to inadequate parental supervision as regards the number of meals, snacks and amount of food consumed. This is largely because many children are left alone at home for long periods each day, with no company other than television, the game console, and the refrigerator packed with foods of every description.

In addition, many children do not have breakfast or lunch at home but rather in the school dining hall or a nearby café. In such circumstances, children tend to choose "portable" snacks (sweets, cakes, soft drinks, etc.) to be eaten away from home, whether alone or with friends.

Family educational level and socioeconomic status have a marked effect on children's lifestyles and dietary habits. The mother's educational level is the one of the best predictors of the type and quality of child's diet, although the father's educational level may also have an effect. A number of studies have found that children of better educated families tend to consume more milk, dairy products, and fruit juice, and less sugar and processed fast food.

Also, various studies have shown that children of wealthier families tend to consume more protein, meat, fish, milk, and green vegetables, whereas children of poorer families tend to have a higher caloric intake and to consume more processed fast food, fats, and sugar.

Similarly, children's lifestyles and dietary habits may be affected by "habitat". In industrialized societies, the differences in diet between urban and rural populations are gradually becoming less significant. Despite this, town and city dwellers tend to have an easier access to a wider range of food. In addition, there are differences related to differences in socioeconomic level and to the maintenance of traditional dietary habits in rural areas (particularly as regards local agricultural or fisheries products). In the recent studies carried out in Spain, urban children consume

more meat, meat products, and legumes, whereas rural children consumed more milk, green vegetables and fruits.

Besides, television clearly transmits a conflicting message as regards dietary habits. Television thus encourages the consumption of certain foods and drinks, presented as "socially prestigious," as "healthy" (i.e. you can eat as much as you like), and/ or simply as "tasty." The permissiveness and tolerance of many parents further contributes to the tendency for children to eat "TV meals". It is estimated that Spanish children watch TV an average of 2 hours and 30 minutes per day, which implies that during this time, a child aged between four and twelve years sees an average of 54 advertisements.

A large proportion of televised food advertisements are for highly processed "junk foods" with limited nutritional value and high caloric content, and typically with large amounts of fat (particularly saturated fats and trans-isomers fatty acid), free sugars, cholesterol, and/or salt, and generally with little or no micronutrient content. The proportion of TV advertised junk foods in a child diet has been shown to be correlated with the amount of time the child spends watching television. The frequent, excessive, and indiscriminate consumption of products of this type is likely to lead to dietary inadequacies in terms of both micro and macronutrients as well as to excessive intake of chemical additives, with possible detrimental effects on health.

Dietary patterns in Spanish school children

In many cases family dietary patterns can be partially attributed to genetic factors and hereditary cultural factors. Dietary patterns become established in children from about age 1-2 onwards and to a great extent persist throughout life. The diets of younger children tend to be more similar to that of their parents than the diets of older children.

It is thus important to try to ensure that children's diets are as varied as possible from an early age. A diet comprising many different nutrients as well as a many different flavours, textures, and colours will not only ensure adequate nutrition and development but will also encourage acquisition of the capacity to make appropriate choices between food items. Such "diet training" is particularly critical for children at the pre-school stage because this is the period during which the child learns to exercise control over his or her impulses and environment. In addition, during this period the child begins to take notice of the organoleptic qualities of food, to prefer some foods over others, to be fussy at mealtime, to not be hungry, to get bored by too much of the same, and to be "scared" of certain foods. And adequate family diet is good for the child's health and provides a solid foundation for the future, when the child will gradually come to spend more time away from home, at school and elsewhere. In such environments, the child will be

increasingly exposed to the often unhealthy dietary habits of his or her peers.

Breakfast consumption has been identified as an important factor in the nutritional well-being of children. Several studies have indicated that omission of breakfast or consumption of an inadequate breakfast is a factor contributing to poor school performance and to dietary inadequacies that are rarely compensated for in other meals of the day. Differences have also been observed in the nutrient density of the breakfast meal, depending on whether it was consumed at school or at home.

Also, previous studies have shown that the diets of obese people are less nutritionally sound than those of normal-weight people, and that they omit breakfast more frequently, as well as eating a less nutritional breakfast.

Since both early eating habits and early obesity may persist into adulthood, the relationships between dietary habits and body weight during the school years may have a lifelong significance. Obese children, especially girls, omitted breakfast more frequently and ate smaller amounts of grain products at breakfast, in comparison to normal-weight children. The energy supplied by breakfast, measured as a percentage of energy expenditure, was lower in the obese than in the normal-weight children, and their breakfasts were lower in carbohydrates, thiamine, niacin, vitamin B₆, vitamin D, and iron. In Spain more than 20% of children go to school every morning without any breakfast or with an inadequate meal. Of course, children who skip breakfast at home often have money to buy a substitute; typically, however, such substitutes are of low nutritional quality.

Recent studies indicate that obese children have less satisfactory breakfast habits than normal-weight children do. To some extent, this may reflect the poorer overall quality of the diets of the overweight subjects. It is also possible however that an inadequate breakfast may contribute to the making of poorer food choices throughout the rest of the day, thereby promoting obesity. Since better breakfast habits have been associated with better overall diets, it is desirable to promote and facilitate the eating of adequate breakfast by schoolchildren, especially those who are overweight.

Obese people tend to show a stronger preference for fatty foods, and especially sweet fatty foods, than thin people; even in people of normal weight, they tend to have a positive correlation between the degree of preference for fatty foods and the fat content of the body.

School-aged children and adolescents in particular tend to eat many snacks as a result of their greater independence from the family, their tendency to be away from home for much of the day, and their typically significant disposable wealth; children in these age groups often replace breakfast, and sometimes lunch, with snacks. Children who snack frequently tend to eat relatively small amounts of the higher quality foods typically present in main meals.

Our review of recent literature on the dietary habits of school-aged Spanish children reveals similar tendencies (i.e., high intakes of total fats, and especially monounsaturated fats and cholesterol, free sugars and low intakes of carbohydrates).

The woman of the family unit must know the key to a healthy and balanced diet to transmit the message correctly, and for that reason cardiologists have spread this message in small towns around Spain, with the hope of keeping traditional healthy nutritional habits in the countryside although they have already changed in the urban population.

Unfortunately, and following the trend of other countries, children and young people in Spain are leading unhealthy lifestyles, noticeable in their poor nutrition habits. Thus, for Spanish ten-year-olds, the prevalence of obesity is only greater in Europe among children in Italy, Malta and Greece. The average concentration of cholesterol among the young Spanish population is 173 mg/dl for both sexes, according to the various epidemiological studies performed. This is a worrying figure, considering that in Spain C-LDL values over 135 mg/dl among young people are already considered high.

For that reason, the Ministry of Health and Consumer Affairs of Spain has drawn up the *Strategy for Nutrition, Physical Activity and Prevention of Obesity (NAOS Strategy)*, which aims to improve diet and to encourage the regular practice of some physical activity by all citizens, paying special attention to prevention during childhood. It has been demonstrated that there is a high probability that an obese child will become an obese adult in the future.

Finally, young people in Spain are abandoning the "Mediterranean Diet" in favour of industrial products and fatty foods, full of calories but low in nutritional value, which is contributing to their rising cholesterol levels. A special "warning" is dedicated to children and teenagers, teaching them that one key to a healthy adult life is good nutrition, starting in childhood.

Nutrition surveys in Spanish school children

A summary of the main findings of nutrition surveys in Spanish school children are given below with more detailed information.

There is a high percentage of children that do not have breakfast (13%) or breakfast is not adequate. Twenty four percent of school aged children have breakfast watching television, while 11% have breakfast with the family and 46% have breakfast alone.

The majority of Spanish school children reported having for breakfast whole milk (65%), semi-skimmed milk (13%), skimmed milk (9%), white bread (84%), cereals (50%) and cookies. Only twenty four percent of those children that usually have breakfast eat the three groups of recommended food (dairy products plus cereals plus fruit).

The main information source concerning food and nutrition are the family, television, the school, the doctor and friends, in this order. In Spain the average of hours watching television are 46% of children 1-2 hours per day, 19% of children 2-3 hours per day and 7% of children more than 3 hours per day. Television clearly transmits a conflicting message as regards dietary habits in Spanish school children.

The mean daily energy intakes were higher than recommended. There is an unbalance in the intake of macronutrients, with a higher than recommended caloric contribution due to fats (40%) and proteins (16%) and a lower than recommended intake of carbohydrates (44%). The high protein consumption shows the predominant intake of animal origin food. The average proportion of food energy derived from saturated fatty acids intake was 16.5%, from monounsaturated fatty acids 18.5% and from polyunsaturated fatty acids 5.0%. The average intake of cholesterol is also higher than recommended.

Average intakes of almost all vitamins from food sources (excluding dietary supplements) were above reference levels. However, average intakes for a number of minerals were below references and including Magnesium, Iron and Zinc. The average intake of Calcium is insufficient specially in children eleven years old and older.

The nutritional status of Spanish school children was generally good and there are no evidences of malnutrition.

The foods most commonly consumed by Spanish school children were "pasta" and rice, soft drinks, juices and fruits (bananas, apples and oranges), cakes, tomato, snacks and fast-food. They rejected vegetables (29%), legumes (14%) and fish (12%). The most commonly consumed types of meat were chicken, beef and pork. Only 2% of children have eggs or fish daily. The majority of them usually have "soft drinks" (average 253 ± 234 ml/day) although the proportion of coke type beverages are increasing with age respect to juices.

In the last years Spanish school children were taller and heavier (high BMI) than in previous surveys, suggesting that activity levels fell as they got older. According to a study recently carried out in 15 European countries, Spain is one of the countries where the least amount of physical activity is performed. It is also stressed that the number of hours that children and adolescents spend playing on the computer or with video games has increased dramatically. Most worrying is the phenomenon of obesity in Spanish infant and adolescent population (2-24 years), already at 13.9%, and overweight of 26.3%. The highest figures are detected in prepuberty and, more specially in the 6 to 12 years age group, with a prevalence of 16.1% (ENKID Study).

Finally, when the rest of countries are approaching to the model of "Mediterranean Diet", I think that Spanish school children in many cases are moving away from it.

Conclusions

—The data of studies suggest that an inadequate breakfast may contribute to the making of poorer food choices throughout the rest of the day, thereby promoting obesity. Also, omitting breakfast interferes with cognition and learning in school children.

—It is necessary to increase daily physical activity, because together with diet, it is the other factor causing obesity in a sedentary lifestyle.

—Recent studies of dietary habits in Spanish school children reveals tendencies such as high intakes of total fats, saturated fatty acids, cholesterol, free sugars and low intakes of complex carbohydrates.

—Spanish school children are abandoning the "Mediterranean Diet" in favour of industrial products and fatty foods, full of calories but low in nutritional properties, which is contributing to their obesity and the rising cholesterol levels found.

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