

Childhood obesity—an international problem. what every parent should be aware of

Abstract

Childhood obesity is a major public health problem that requires immediate action by the scientific community and the governments. It is not clear what causes obesity but several dietary patterns seems to have association. We examine the association of breakfast consumption, meal frequency, school's canteen's food, fruit – vegetable and fast –food consumption.

Keywords: Childhood obesity; Breakfast; Meal frequency; School canteen's food; Fruit–vegetable; Fast–food consumption

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Opinion

The increase in the prevalence of overweight and obesity in children and adolescents worldwide, is “dramatic” in recent decades.¹ The IOTF characterizes it as an “out of control” situation. The figures are alarming: more than 155million school-age children are overweight, of which 30-45million are obese.

Childhood obesity complications

As stated in the WHO global report on obesity, the most important long-term complication is the fact that obesity is maintained in adulthood, along with all the accompanying health risks.² Amongst the effects affecting all organic systems are dyslipidemia, insulin resistance, type II diabetes and fatty liver. Other complications may be a reduced quality of life, low self esteem and poor academic performance.³

Childhood obesity etiology

“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have found the safest way to health.” Hippocrates 460-377 BC

Although the circumstances under which obesity occurs are not fully understood, it is confirmed that obesity appears when energy intake exceeds energy expenditure. However, environmental factors, preferences, lifestyle and cultural environment seem to play an important role in the increasing prevalence of obesity worldwide⁴ (www.ideficsstudy.eu). Regarding the environmental factors, those that have been considered to interfere the most with children's healthy nutrition are

1. the limited time spent in cooking,
2. the lack of money (where instead of the nutritional value, the price of the food becomes criterion to the parents)
3. the amount of time parents spend with their children (and therefore their control on food choices),
4. grandparents' interventions regarding nutrition⁵
5. the availability of energy-dense but nutrient-poor foods⁴

The food categories related to childhood obesity are oils, sweets, meat, cheese and frozen desserts.⁶

Dietary patterns associated to childhood obesity

Several factors have contributed to the change of children's nutrition. To name a few; the increasing food availability, the urbanization and the overall improvement of the socio-economic conditions. Below, we will examine dietary factors that are linked to childhood obesity, such as breakfast consumption, meal frequency, eating at school, types of snack, fruit, vegetables and fast food consumption.

Breakfast: Although the exact mechanism remains unclear, eating breakfast may be associated to a lower fat intake and a better distribution of calories intraday.⁷ Moreover, breakfast consumption is a sign of a healthy and organized eating behavior.⁸

Meal frequency: Meal frequency appears to prevent childhood obesity. This occurs despite the higher energy intake of children who eat frequent meals, suggesting that energy expenditure is increased in children who eat frequent meals.⁹ Potential protective biological mechanisms are: Increased physical activity, increased total thermogenesis.¹⁰ Finally, it is suggested that frequent meals help appetite regulation through the peptides of the gastrointestinal tract.¹¹ In conclusion, it seems that there is an association between the number of meals and childhood obesity, so skipping meals is not an appropriate approach for reducing the risk of obesity in children.¹²

Food at school: Consumption of food provided by the school's canteen, is associated with high intake of total and saturated fat, sugar and sodium, and low intake of vitamins and minerals.¹³ Since the majority of them are junk food and chocolate products, children tend to prefer them instead of other healthier options. In addition, even the children's parents provide them with unhealthy food, possibly due to the lack of time to prepare something healthier or in order to satisfy their own emotional needs by providing tempting food.¹⁴

Despite the existence of regulations and rules regarding the operation of school canteens, their observance is uncertain. Canteens promote the sale and supply of packaged snacks, chocolates, sweets and fast food as these are more profitable than other healthier meals. This, combined with children's limited nutrition knowledge, dictates the need to create a more rigorous legal framework, in order to protect children from exposure to unhealthy food in a place like school, where they spend almost half of their daily lives.

Fast-food: Current living conditions have pushed more families into replacing home cooking with fast food, which is tasty, cheap but poor in nutrients and rich in saturated fat, salt, sugar. When people eat in restaurants, they tend to consume larger portions and energy dense foods.¹⁵ As a result, people who eat fast food twice a week or more show a greater increase in BMI than those who eat fast food once a week or not at all. This is a clear indication of the poor quality of these meals. More specifically, it seems that eating fried food away from home causes weight increase during adolescence.¹⁶

As already stated, a major problem of fast food, in addition to poor nutritional value is the portion served in restaurants, which has significantly increased during the last decades.¹⁷ As portions are getting larger, so is the prevalence of obesity. It also seems that children's energy intake increases when larger portions are offered, especially french fries, meat and crisps. Although infants and very young children perceive satiety signals and ultimately reduce the intake, older kids cannot do so.

Consumption of fruit and vegetables

Fruit and vegetables are a very important part of children's nutrition, as they are rich in vitamins, minerals, antioxidants and fiber. In a recent report, WHO recommended the intake of at least 400 g. of fruit and vegetables per day (excluding potatoes and other starchy) for the prevention of chronic diseases such as cardiovascular disease, cancer, diabetes and obesity and for preventing micronutrient deficiencies. Similarly, European agencies, such as the British Pediatric Society recommends daily consumption of five portions of fruit and vegetables¹⁸ (www.dh.gov.uk).

Despite the major benefits of eating fruit and vegetables, children do not follow the recommendations. Specifically, in Great Britain only 12% of children consume five servings of fruit and vegetables, while in Canada, at ages 9-13, 62% of girls and 68% of boys do not follow the recommendations. Childhood obesity is a major public health problem that requires immediate attention by the scientific community and the governments. It shouldn't be underestimated or disregarded in any way. It is an issue that can and should be prevented by creating a "health" friendly environment with an easy access to healthy food and places to exercise. At the same time, scientific community shouldn't neglect the importance of educating parents and children regarding healthy nutritional habits as well as encouraging an overall healthy nutritional behavior combined with exercise.

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Conflict of interest

The author declares no conflict of interest.

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