

# The Contribution of Food Taken at-Home and Away-from-Home to Children's Diet and Nutrition

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## ABSTRACT

Recent studies have started to pay attention on several factors on the eating habits of children with the increasing concern of childhood nutritional status. Research has shown that eating habits for children are increasingly affected by advances in science and technology, changes in lifestyle, dietary transformation, and vice versa. Children are more likely to eat available and easily accessible foods, and they generally tend to eat huge quantity whilst larger portions are given. The objectives of this study were to illustrate the contribution of at-home and away-from-home food intake to the diet and nutrition of children as well as their scenario of intake by children and comparative nutritional quality. By following proper criteria, applicable secondary data, and records from extraordinary electronic databases have been included in this paper for accomplishing the review article. According to the aforementioned literature, the majority of children's daily energy demands are provided by the food taken at home and this form of food also contributes to most children's macro-nutrient and micro-nutrient requirements. Yet, away-from-home food intake is rising every day around the world. Away-from-home foods have been reported to be of lower nutritional quality and greater portion sizes compared with other home-made foods. The results of the study suggest that out-of-home foods tend to have high energy density; other findings of the study indicate that out-of-home foods can be a source of staple foods as well as snack-type foods and sugar-sweetened

beverages. As the children's eating behavior changes smoothly, an appropriate study should be carried on food taken at home and away from home to cover the correct diet and nutrition for the children.

**Keywords:** At-home eaten food; away-from-home food; child diet; child nutrition

## INTRODUCTION

Healthy eating habits in childhood prevent many lifelong health problems and improve cognitive ability and concentration<sup>[1, 2]</sup>. Because dietary patterns acquired during childhood tend to persist in adulthood, encouraging healthy eating habits from early life<sup>[3]</sup>. The food environment is a significant determinant of the dietary behavior of children<sup>[4-6]</sup>, and thus improvements in food environments can facilitate healthier eating behaviors<sup>[7, 8]</sup>. Eating items may be classified according to eating location as 'at home' if consumed at home; otherwise, the location is classified as 'away from home' and included work, school, transportation, restaurant, sports arena, a street vendor, and others<sup>[9]</sup>.

In particular, out-of-home eating in children is linked to the consumption of nutrient-poor, energy-dense foods, also known as 'noncore foods,' including sugar-sweetened beverages (SSBs), cakes, and potato chips<sup>[10, 11]</sup>. The nutritional quality of food consumed away from home is

significantly lower than that consumed at home<sup>[12]</sup>. Increased longevity and lower rates of chronic disease and cardiovascular risk factors have been associated with the traditional Mediterranean food pattern rich in plant foods and low in saturated fat<sup>[13-15]</sup>. This dietary pattern is maintained mainly while consuming meals at home<sup>[12]</sup>.

Eating food prepared out-of-home is becoming more common worldwide and contributes substantially to individual diets and household food expenditure<sup>[16-19]</sup>. For example, in 2012, about 10 percent of UK individuals' total daily energy intake was accounted for by food prepared and consumed out-of-home, with up to 4 percent accounted for by home-eaten take-away foods<sup>[20]</sup>. In the United States of America (USA), out-of-home intake accounts for 31% of total energy between 2–5y and 36% among 6–11y elderly people<sup>[21]</sup>. Recent studies has also determined that of the store, fast food, and faculty calories, all consist of approximately 32–35 percent "empty" energy from solid fats and delivered sugars (SOFAS)<sup>[10]</sup>.

Dietary inequalities are crucial to consider, as they contribute significantly to disparities in both obesity and overall health<sup>[22-24]</sup>. Out-of-home foods appear to be less safe than homemade foods, especially in terms of energy and fat content<sup>[17]</sup>. One possible area for change is the food climate away from home, as previous research has shown that food away from home appears to be of poorer nutritional quality, with more calories, total fat, and saturated fat, as well as less dietary fiber, vitamin C, calcium, and iron<sup>[17, 25]</sup>. Larger portion sizes of aliments removed from home also contribute to increased energy intake<sup>[26-29]</sup>.

The objective of the present study is to describe the food intake of children by eating location (at-home and away-from-home), and contributions of eating behaviors on children's diet and nutrition.

## **METHODS: LITERATURE SEARCH STRATEGY**

The searches were done for getting journal articles into pub med/Medline, Google scholar, data base of open access journal and science direct to locate and assess relevant studies. Several searches were conducted to identify articles of potential interest published in any country of the world on factors influencing eating behaviors in children's diet and nutrition. Relevant articles published until May 2020 has been identified using keyword groups below.

Articles of potential interest were selected for inclusion in this narrative analysis if they presented one of the following routes, recommended as a result of connections previously recorded between: (a) children's eating behaviors and parental feeding practices; (b) children's eating behaviors and family eating environments; (c) children's eating behaviors and socioeconomic status; (d) contributions to children's diets and nutrition from taken at-home foods; (e) contributions to children's diets and nutrition from away-from-home foods.

Studies needed to be included, focusing on eating behaviors by location, or reporting on interactions between eating behaviors by location and diet and nutrition for children. Following those inclusion and exclusion criteria, the authors excluded so many articles and evaluated the potentially relevant ones. There were no restrictions imposed on the year of release. The included research had to be primary studies or articles providing secondary analyzes of the data from these studies and published in a peer-reviewed journal or book.

### **Contribution of taken at-home food on children's diet and nutrition**

An analysis of 4636 children involving >80,000 occasions of eating reveals that most of the energy intake in a nationally representative sample came from foods eaten at home. As children aged they ate more frequently from home and school

(or work) and more energy came from less-sanitary food options in those settings. In particular, food stores, leisure spots, and "on the go" were the out-of-home food environments correlated with the highest proportion of noncore food resources. For children aged 4–18 years, roughly one-third of total daily energy intake came from these foods at these locations, with core foods contributing just less than one-fifth at the same locations<sup>[30]</sup>.

Many eating times were at home in all age groups and this setting also contributed the most to energy intake. While eating out frequency increased with age, eating at home remained strongly linked to a healthier dietary intake. Children are more likely to have a higher core intake of food energy than noncore intakes of food energy at home, suggesting better dietary patterns are more likely to occur when eating at home<sup>[11]</sup>.

In support of this, the availability of such foods has been correlated with increased fruit and vegetable intake at home in children<sup>[31]</sup>. Food consumed at home has contributed most of the daily macro and micronutrients for children, including energy from SoFAS (Solid Fats and Added Sugars) in line with energy contributions<sup>[32]</sup>.

### **Contribution of away-from-home food on children's diet and nutrition**

Most food intake was consumed at home among Mexican children aged 2–13y. Younger and older children consumed only 11% and 19% of their food away from home, respectively, which is substantially lower than the US, where children between 2 and 12 years of age consume between 29% and 35% of their calories away from home<sup>[33, 34]</sup>. Brazilian data indicates that 43 percent of individuals aged 10 years and older ate at least one food away every day from home (18 percent of total daily intake)<sup>[32]</sup>.

Mixed dishes of wheat and rice and mixed dishes of corn, including sandwiches, tacos, enchiladas and pasta dishes are among the greatest contributors to home-

grown food. SSB and pastries, candies and other desserts are top contributors as well. Children between the ages of 6 and 13 consumed a disproportionate amount of energy from these food groups away from home; for example, they consumed 36% of salty snacks and 30% of pastries, sweets and desserts away from home (compared to 18 % of total energy consumed away from home). On the other hand, children aged 6-13 years also consumed disproportionately more yoghurt (40%), fruit (25%), 100% fruit juice (48%) and vegetables (20%) away from home. While Brazilian research indicates that out-of-home foods appear to have high energy density (e.g. baked and fried snacks, pizza, soft drinks, sandwiches and sweets)<sup>[32]</sup>, other findings indicate that out-of-home foods can be a source of both staple foods as well as snack-type foods and sugar-sweetened beverages (SSB) to Mexican children<sup>[9]</sup>.

Several factors have been suggested to clarify the route between food consumption away from home and excessive intake of calories, including high energy density, high fat content, low fiber content, large portion sizes, poor palatability and high variability<sup>[26, 28, 35-40]</sup>.

Although the findings of the studies examining the relationship between out-of-home eating and weight gain are uncertain<sup>[41-46]</sup>, it can be claimed that out-of-home food consumers have a higher consumption of energy than non-consumers.

Alcoholic beverages and baked and deep-fried foods have been eaten well away from home in greater amounts than at home. There was also a strong consumption of pizzas, soft drinks, sandwiches, and candy, and desserts away from home. These findings are consistent with other studies<sup>[42, 47-50]</sup> and pose serious questions about the position of food consumed away from home in terms of diet quality in urban Brazilian areas.

Consumption of baked and deep-fried snacks and pizza can add large quantities of saturated fat, trans fat and Na to the diet, which are known to raise the risk

of weight gain, insulin resistance and CVD<sup>[43, 51, 52]</sup>. Many studies have shown that eating away from home is correlated with higher total fat and Na intakes than consuming at-home foods<sup>[12, 18, 42, 49, 51]</sup>.

Furthermore, high consumption of soft drinks away from home is another important aspect that can hurt health, as it is suggested that intake of energy in liquid form gives less satiety, reducing the mechanisms of energy intake compensation compared to solid foods, thus contributing to high energy intake and weight gain<sup>[53, 54]</sup>.

A negative feature of food consumed away from home in Brazilian urban areas is the high amount of candy and desserts, which results in both a high percentage of energy consumed away from home and substantial additions to the energy intake away from home. Diets with high amounts of sugars and sweet foods usually have high energy content and a low vitamin and mineral content<sup>[49]</sup>.

### **Foods away from home are nutritionally lower than foods eaten at home**

Away-from-home foods are usually nutritionally lower than those eaten at home, with higher levels of salt, fat, and calories and lower quantities of meat, vegetables, and iron, calcium, and fiber nutrients<sup>[12, 55, 56]</sup>. According to a survey of more than 200 restaurants in four communities in Atlanta, the majority of restaurants did not serve non-fried vegetables, while sit-down restaurants were twice as likely (53% versus 26%) to offer non-fried vegetables as fast food locations<sup>[57]</sup>. Less than 12 percent of restaurants of any type had any fruits on the menu. Multiple studies have established the correlation between the frequency of eating away from home and the risk of overweight<sup>[47, 58-60]</sup>.

### **CONCLUSION**

Multiple factors influence eating patterns and interact reciprocally, so they cannot be perceived independently. The family system surrounding the domestic life of a child will play an active role in

establishing and promoting behaviors that will continue throughout his or her life. Numerous factors contribute directly or indirectly to diet and nutrition for children. Yet eating habits by place (i.e. food taken at home and food taken away from home) leads strongly to a state of health for children. In the literature studied, we find that most of the daily energy needs derive from the food taken at home. Yet the habit of consuming away-from-home food is growing day by day, due to different reasons. It has also been found from the examined literature that foods from afar are rich in energy and fat content. On the other hand, foods taken at home are rich in different macro- and micro-nutrient content. As the habit of eating away-from-home food increases with the change in the human standard of living, sufficient research should be carried out on food taken at-home and away-from-home to cover the child's proper diet and nutrition.

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