

« *Food at home: a healthy way of eating* »

Editorial

Home food environment: a key to effective nutritional choices

A healthful diet is associated with reduced-risk for overweight/obesity and related chronic diseases. The nutritional quality of the food choices people make is influenced by a multitude of factors, and food environment in the home has been shown to be of significant consequence in this regard. Current models of the **home food environment** include sociocultural factors such as family meal patterns and cooking frequency and ability. Research has shown that **increased frequency of family meals is related to healthier diets**; however **confidence in meal preparation and cooking in general is declining**. Further, **time spent on food preparation has declined over the last decade**.

In this edition of the IFAVA Scientific Newsletter, home-cooking and family meal frequency was examined in relation to dietary quality of adults and children. Specifically:

- Santiago-Torres and colleagues investigated the association between family mealtime practices, home food availability, and parental dietary intake and diet quality in Hispanic children.
- Drewnowski and Monsivais examined food preparation-time in the home in relation to take-out dining frequency, food spending and diet quality in adults.
- Wolfson and Bleich investigated the relationship between cooking frequency, diet quality, and energy intake and whether these relationships differ depending on weight loss intention.

These studies provide evidence that the home food environment plays an important role in shaping the diets of adults and children. In particular, the frequency of home-cooking, the time spent cooking per day, and the frequency of family meals was favorably associated with energy intake in adults and diet quality in adults and children. These studies suggest that cooking skill development with a focus on time-efficient, low cost methods of healthful food preparation should be a key ingredient in nutrition education programming directed at improving diet quality and promoting healthy weight status in adults and youth.

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Home food environment and urban Hispanic children's diet quality

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The burden of obesity falls disproportionately on minority groups: the prevalence of obesity among non-Hispanic white adolescents in the United States was 16.1% by 2010, whereas that for Hispanics was greater than 23%.¹ The risk for obesity, diabetes, and all-cause mortality increase with poor diet quality.^{2,3} The home food environment and familial eating habits play a key role in children's diet given that they impart examples of eating habits and influence access to foods at home.⁴

As there is a paucity of data available regarding home food availability and familial eating habits in this minority group, this study focuses on Hispanic children. The study aimed to evaluate diet quality and investigate the influences of home food availability, parental diet, and familial eating habits on children's overall diet quality.

A total of 187 children, aged between 10 to 14 years, and their parents participated in this cross-sectional study. The Healthy Eating Index (HEI) was used to determine diet quality based on reported dietary intake obtained through a food frequency questionnaire administered to the children. Parents self-reported home food availability, familial eating habits, and their own habitual diet through a home environment survey.

Parents: more than 90% reported having fruits and/or vegetables at home and more than 80% consumed fruits and/or vegetables at least twice per week.

Most parents reported having fruits (97%), vegetables (91%), 100% fruit juice (86%), and milk (83%) available at home. Fifty-six percent of parents reported having soda in the home, and 54% reported having fruit drinks available in the home. Eighty-four percent reported having energy-dense snacks, such as potato chips, cookies, cake, and/or ice cream, available in their homes during the past week.

Most parents also reported consumption of fruits (88%),

vegetables (83%), 100% fruit juice (78%), and milk (91%) at least twice per week, whereas 42% reported consumption of soda, 38% reported consumption of fruit drinks, and 60% reported intakes of energy-dense snacks at least twice per week.

Family meals were reported as frequent behaviors (89% of families) at least twice per week, whereas approximately 50% of the families reported eating a meal while watching television (TV) at least twice per week.

Children: lack of adherence to recommendations to dietary guidelines, including vegetables and added sugars.

In this sample, 47% of children were healthy weight, 25% were overweight and 28% were obese. The children's HEI total score was 59.4 ± 8.8 and most of the HEI food components received only approximately half of the maximum score.

Children in this study obtained good scores for total fruit, whole fruit, dairy, and total protein foods; however they did not meet the recommendations for total vegetables, greens and beans, and whole grains, seafood and plant proteins, fatty acids, refined grains, sodium, solid fats, and added sugars.

Parental reported intake of fruits and vegetables were found to be positively associated with children's HEI total score. Soda and fruit drink availability at home were both associated with a significant, but modest, reduction in children's HEI scores. Parental diet associations with children's HEI total score included their reported intake of nutrient-rich and nutrient-poor, energy-dense foods and beverages.

Children with lower HEI scores had sugar-sweetened beverages available at home and participated in family meals while watching television more frequently, when compared with children with higher HEI scores.



The results suggest that home food availability, parental diet, and familial eating habits play an important role in the diet quality of Hispanic children. Interventions targeting family education should not only focus on having healthy foods available at home, but also include a focus on the reduction of nutrient-poor, energy-dense foods and beverages at home given that they might negatively affect children's diet quality and overall health.

Based on: Santiago-Torres M, Adams AK, Carrel AL, LaRowe TL, Schoeller DA. Home food availability, parental dietary intake, and familial eating habits influence the diet quality of urban Hispanic children. 2014. Oct;10(5):408-15.

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TIME: A key ingredient in healthier eating

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The home-cooked family meal used to be a cherished ritual. Research has found that regular family meals are associated with healthier eating habits, particularly for children¹. That changed with the trend toward a service economy, the emergence of two wage-earner families, and multiple demands on both adults' and on children's time. Not only has the time that families spend together diminished, but the amount of time that Americans spend on food preparation and cleanup has dropped to no more than 33 minutes per day².

Limited time available for meal preparation at home may be one reason for less-than-healthy diets. Time poverty was prevalent among working parents earning low wages in the United States. Increasingly, low- and middle-income working parents have been relying on restaurant takeout for the family meal. Even those parents who valued healthy family meals often served their children foods that were convenient and easy to prepare³. Fast food pizza, hot dogs, fried chicken, and hamburgers have become a part of the family dinner⁴. Based on analyses of the National Health and Nutrition Examination Survey (NHANES 2003-8), some dinners in the US were composed entirely of ready-to-eat finger foods that could be consumed without utensils. Examples include pizza, tacos, French fries, potato chips, fish sticks, sandwiches, tacos, hamburgers, and chicken drumsticks.

New Research on Time Use

This study examined food-related time use, food spending and eating habits of 1,319 adults in the Seattle Obesity Study (SOS)⁵. Participants in SOS completed telephone surveys on diets and health and were asked how much time per day, on average, they spent preparing meals, cooking and cleaning up afterwards. Participants were also asked how often they ate meals away from home and their food spending. Diet quality was based on self-reported consumption of vegetables, green salad or whole fruit versus fats or sweets.

People who spent the least amount of time cooking home meals tended to be working adults who emphasized convenience. Spending less than one hour per day on food preparation at home led to higher use of fast food restaurants and more money spent on food away from home. By contrast, younger married women

with families and higher incomes were more likely to spend greater than two hours per day preparing meals at home.

Significantly, the time spent on food preparation at home was associated with higher-quality diets, based on more frequent consumption of vegetables, salads, whole fruits and fruit juices. People who spent more time on meal preparation at home spent less money on eating away from home: per person expenditures on eating out dropped from \$22/week to \$15/week.

New Research on Family Meals

Spending more time on preparing food at home may be an important way to develop healthier dietary habits, but who is sitting down to a home-cooked meal? Using data from the NHANES Consumer Module 2007-2008, this study examined what demographic groups in the US were most likely to sit down together to eat a balanced family dinner prepared and consumed at home. For all meals (including dinner), younger children were more likely to consume meals with their family on a regular basis. At dinner times, older adults were more likely to consume home-cooked meals than younger adults.

Family income and household size were also associated with regularly consuming meals as a family. Low income families were more likely to frequently consume an at-home cooked dinner. Mexican-American and other Hispanic adults were also more likely to consume an at-home cooked dinner than were non-Hispanic whites. In fact, contrary to expectations, it was large families with lower incomes and less education who were most likely to cook and eat at home on a regular basis.

Achieving a healthy diet requires more than just knowledge about healthy foods. New research indicates that allocating more time to prepare meals at home may be the key to healthier and low-cost diets. If spending time cooking and enjoying meals together is part of a healthy lifestyle then it's important to enable these behaviors, for example, by teaching cooking skills to children and promoting family-friendly policies at workplaces. At the same time, the food industry and retailers ought to help families identify fresh foods that are affordable, nutritious and convenient to use.



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Cooking at home is associated with better diet quality

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Over the past several decades cooking frequency has declined and reliance on prepared foods and foods prepared away from home, both of which are typically more energy dense and of lower nutritional value, has increased^{1,2}. These simultaneous trends are associated with the rise in obesity, which affects more than one-third of adults in the United States^{3,4}.

Time and price constraints, lack of access to healthy foods, lack of knowledge and confidence in cooking skills are all factors that contribute to declines in cooking frequency⁵. Meals at home are increasingly made with convenience products and prepared or semi-prepared items^{6,7}. Cooking at home can provide a high level of control over dietary intake, though certainly not all cooking is healthy cooking, and little is known about the relationship between cooking frequency and diet quality. This study has examined that association.

Americans cook dinner at home an average of 5 nights a week

The study used data from the consumer behavior module of the National Health and Nutrition Examination Survey (NHANES). The NHANES is a nationally representative, cross-sectional population-based survey designed to collect information on the health and behaviors of the US population. The study used data from 2007-2010, and the sample included adults aged 20 and older who were not pregnant or diabetic at time of data collection (N=9,569).

Using 24-hour dietary recall data, diet quality as total calories, protein, fiber, carbohydrates, fat and sugar consumed was measured. An assessment was also made on the consumption of meals eaten not prepared at home, fast food, ready to eat meals and frozen meals. Cooking frequency was measured based on the number of times the respondent or someone in the household cooked dinner in the previous seven days. Cooking frequency was categorized as low (0 to 1 times, N=802), medium (2 to 5 times, N=3,704) and high (6 to 7 times, N=5,063). Measures of body weight, gender, race/ethnicity, education, marital status, country of birth, household size, household food security and income were included in the study. Multivariate linear models were used adjusting for the above covariates to estimate the association between cooking frequency and the dietary measures described above. The study also estimated models using an interaction term between cooking frequency and weight loss intention to examine if the relationship between cooking frequency and diet quality differs depending on whether a person is trying to lose weight. All significance tests were considered at $p < 0.05$.

More frequent cooking at home is associated with better diet quality

Among American adults 20 years or older in 2007-2010, 8% cooked dinner with low frequency, 44% cooked dinner with medium frequency and 48% cooked dinner with high frequency. Blacks were more likely to cook with low or medium frequency than whites. Males and full time workers were more likely to cook with low frequency than females or non-employed individuals respectively.

People in high cooking frequency households consumed significantly fewer calories than low frequency cookers (2164 kcal vs. 2301 kcal). High cookers also consumed less carbohydrates (262 grams vs. 284 grams), fat (81 grams vs. 86 grams) and sugar (119 grams vs. 135 grams) compared to low cookers. Higher cooking frequency was associated with better diet quality regardless of whether a person was trying to lose weight. Figure 1 shows calories consumed by cooking frequency and weight loss intention. This pattern was similar for the other measures of diet quality as well.

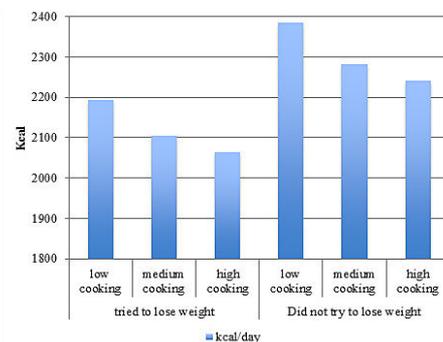


Figure 1: Mean calories consumed by cooking frequency and weight loss intention

Helping people cook at home more could have a positive impact on public health

Our findings that more frequent cooking at home is associated with better diet quality regardless of weight loss intention has important implications for obesity prevention and public health. It is important to consider how to best support and incentivize more frequent cooking at home. Cooking skills development through cooking classes, nutrition education and re-introduction of a modern home economic curriculum could all help build cooking self-efficacy, confidence, skills and knowledge. It is also important to address common barriers to cooking: time constraints and lack of access to affordable, high quality, fresh ingredients.

Cooking more frequently may not be achievable for everyone, especially among low-income groups. Therefore, other strategies that make healthy choices and navigating the food environment outside the home easier are urgently needed. Menu labeling, which is set to be implemented nationally in December 2015, has the potential to help people make healthier choices when not preparing their own food.

The Dietary Guidelines for Americans⁸ encourage Americans to consume smaller portions, less fat and sugar and more fruits and vegetables. New recommendations from the Dietary Guidelines Advisory Committee issued in February 2015 go even further by urging a plant-based diet low in sugar, refined grains and red and processed meats⁹. This study provides evidence that more frequent cooking at home is associated with reduced intake of overall calories, carbohydrates, fat and sugar. Building cooking confidence and skills and reducing barriers to cooking could help more Americans make the healthy choice to cook at home more frequently.

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