



# Associations between lower diet quality and higher frequency of eating meals prepared away from home among adults, NHANES 2011-2018

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## Summary

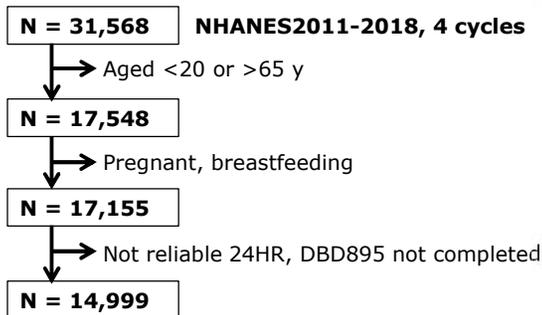
- Consumption of foods/meals prepared away from home (FAFH) in the US has increased since 1977 [1].
- Poor dietary quality associated with FAFH intake was reported in several studies using NHANES data 2008-12, 2003-2010, 2005-2016 [2-4].
- FAFH consumption frequency has been explained by several individual and environmental considerations [5-7].

## Objectives

**Update the association between diet quality and frequency of meals prepared away from home among US adults using NHANES 2011-18 data.**

## Methods

### NHANES data used in this study



### Variables used in this study

- DBD895 of the Diet Behavior and Nutrition questionnaire (DBQ): the number of meals not home prepared such restaurants, fast food places, food stands, grocery stores, or vending machines
- Healthy Eating Index (HEI)-2015 based on the 24-hour recall, day 1 data

### Statistical analysis

- Differences in demographic characteristics by the median frequency of meals prepared away from home were examined using chi-square tests or t-tests.
- Multivariable regression models were used to compare HEI-2015 scores by the median frequency of meals prepared away from home adjusting for covariates and using Bonferroni-Holms correction for multiple comparisons.
- Appropriate weight, cluster and strata statements to account for study design and sampling.

## Results

### The median frequencies of meals prepared away from home: 2 meals/week

The number of participants eating meals prepared away from home  $\leq 2$  meals/week = 7,625 (46%, weighted); those eating meals prepared away from home  $> 2$  meals/week = 7,362 (54%, weighted).

### Differences in demographic characteristics

	$\leq 2$ meals /wk	$> 2$ meals /wk	P
Age	-Least square mean (SE)- 44.8 (0.2)	40.7 (0.3)	<.0001
	----- n (%) -----		
Sex			
Male	3358 (43.4)	4058 (56)	<.0001
Female	4279 (56.6)	3304 (44)	
Race/ethnicity			
Mexican American	1247 (10.7)	936 (8.3)	<.0001
Other Hispanic	911 (7.6)	691 (6)	
Non-Hispanic White	2425 (59.8)	2713 (66)	
Non-Hispanic Black	1703 (11.6)	1852 (11.9)	
Non-Hispanic Asian	1062 (6.2)	863 (4.4)	
Other Race	289 (4)	307 (3.5)	
Education level			
< High school	1904 (17)	1019 (9.6)	<.0001
High school/GED	1807 (24.9)	1557 (20.7)	
Some college	2225 (30.8)	2582 (34.3)	
$\geq$ College graduate	1696 (27.3)	2204 (35.4)	
Marital status			
Married	4782 (65.5)	4134 (61)	0.0002
Not married	2849 (34.5)	3226 (39)	
Country of birth			
Born in the US	4692 (76.8)	5591 (85.9)	<.0001
Others	2939 (23.2)	1767 (14.1)	
Poverty income ratio (PIR)			
<1.3 PIR	3482 (34.6)	2320 (22.4)	<.0001
$\geq 1.3$ PIR	4155 (65.4)	5042 (77.6)	

### Differences in HEI-2015 scores by the median frequency of meals prepared away from home

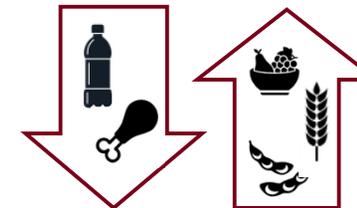
HEI-2015 scores (maximum score)	Least-square mean (SE)		
	$\leq 2$ meals /wk	$> 2$ meals /wk	P
<b>Total HEI score (100)</b>	<b>52.1 (0.3)</b>	<b>49.5 (0.28)</b>	<b>&lt;.0001</b>
<b>Adequacy</b>			
Total vegetables (5)	3.06 (0.03)	2.98 (0.03)	0.031
Greens & beans (5)	1.84 (0.04)	1.64 (0.04)	<.0001
Total fruits (5)	2.19 (0.04)	1.88 (0.05)	<.0001
Whole fruits (5)	2.18 (0.04)	1.87 (0.05)	<.0001
Whole grains (10)	2.52 (0.07)	2.00 (0.06)	<.0001
Dairy (10)	4.48 (0.07)	4.32 (0.06)	0.0332
Total protein foods (5)	4.24 (0.02)	4.28 (0.02)	0.2239
Seafood & plant protein (5)	2.47 (0.05)	2.43 (0.04)	0.3892
Fatty acids (10)	5.44 (0.07)	5.35 (0.06)	0.2755
<b>Moderation</b>			
Sodium (10)	4.53 (0.06)	4.36 (0.06)	0.0209
Refined grains (10)	5.74 (0.07)	5.56 (0.09)	0.0665
Saturated fats (10)	6.54 (0.06)	6.25 (0.07)	0.0004
Added sugars (10)	6.86 (0.06)	6.57 (0.07)	0.0009

Models were adjusted for age, PIR, sex, race/ethnicity, education attainment, marital status, country of birth. Underlined p values were significant using Bonferroni-Holms correction.

## Conclusions

### For those eating meals prepared away from home more than two meals per week...

- Intake of green and beans, total and whole fruits, and whole grains should be encouraged.
- Consumption of saturated fats and added sugars should be limited.



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