

Using Paradata to Investigate Food Reporting Patterns in AMPM

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What We Eat In America

- **Dietary component of the National Health and Nutrition Survey (NHANES)**
- **Continuing survey**
- **Each year ~ 5,000 people, 2 days**
- **Day 1 in-person, Day 2 telephone**

Automated Multiple Pass Method (AMPM)

- 24-hour dietary intake interview
- Blaise 4.8
- Interviewer administered
- Research-based, multiple-pass approach
- 5 standardized steps

AMPM Step

Design

Unstructured

Respondents use their own strategy

Structured

Six questions for specific types of foods and one for any other

Structured

Times and names of eating occasions

Structured

Reviews foods for each eating occasion and intervals between each occasion

Unstructured

Respondents use their own strategy

Quick List

Collects foods as recalled



Forgotten Foods

Probes for categories of forgotten foods



Time & Occasion

Collects eating times and meal names



Detail Cycle

Collects food details and amounts



Final Probe

Anything else recalled

Memory Cues

Yesterday, midnight to midnight, day of week, activities, snacks and beverages

Beverages, alcoholic beverages, sweets, savory snacks, fruits, vegetables or cheese, breads, anything else

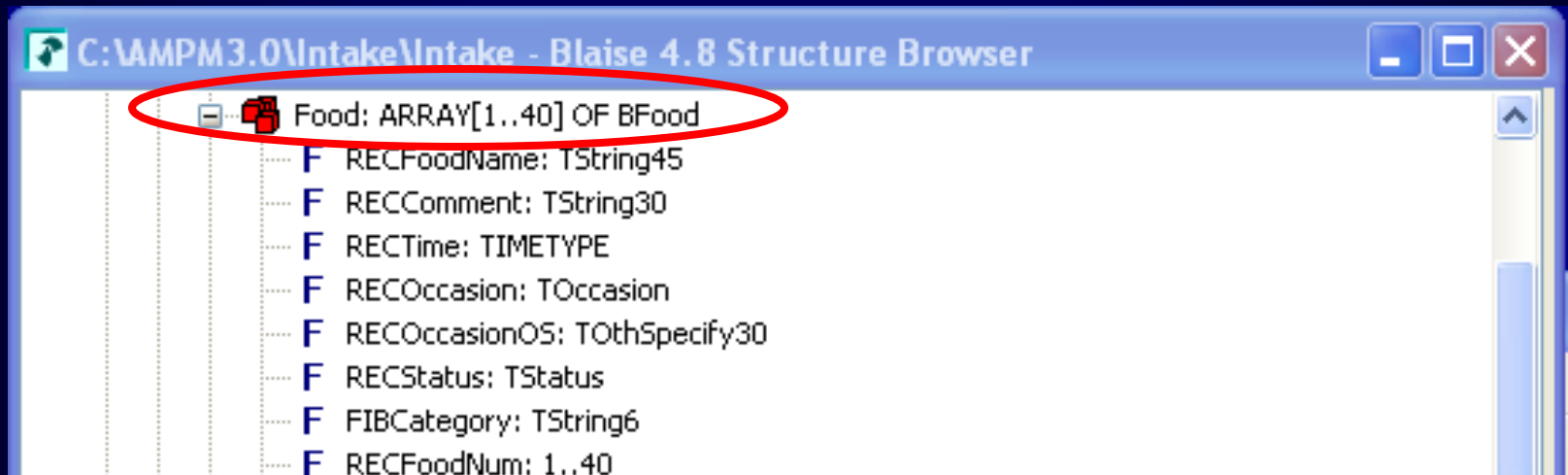
Breakfast, lunch, dinner, snack, drink....

For breakfast you had a bagel and coffee, did you have anything else?

Did you have anything between your 1 pm lunch and 3 pm snack?

In the car, at meetings, while shopping, cooking or cleaning up?

AMPM Respondent Food List (RFL)



AMPM RFL Source

Step where food was reported

The screenshot shows the 'Structure Browser' window for 'C:\VAMP3.0\Intake\Intake - Blaise 4.8'. The left pane lists various fields, with 'RECFLSource: TRFLSource' circled in red. The right pane shows the 'Field details' for this field.

Field details:

- Descriptives:**
 - Field name: PassOrder.RFL.Food.RECFLSource
 - Field kind: Datafield
 - Field type: ENUMERATED
- Specifications:**
 - Attributes: (None)
 - Field size: 2
 - Tag defined: INTFLAG
 - Lowest value: 1
 - Highest value: 15
- Text:**
 - [ENG]**
(QuickList, FFLPass, FFL1, FFL2, FFL3, FFL4, FFL5, FFL6, FFL7, Tn0, Detail, RDEvent, Intervals, FReview, Trailers) Set in Food.Inc, RFLCopy.prc, used in Food.Inc
- Description text:**
 - (None)
- Enumeration:**
 - (1) QuickList
 - (2) FFLPass
 - (3) FFL1
 - (4) FFL2
 - (5) FFL3
 - (6) FFL4
 - (7) FFL5
 - (8) FFL6
 - (9) FFL7
 - (10) Tn0
 - (11) Detail
 - (12) RDEvent
 - (13) Intervals
 - (14) FReview
 - (15) Trailers

AMPM Food Type Primary or Addition

The screenshot shows a 'Structure Browser' window with a tree view on the left and a 'Field details' pane on the right. The tree view lists various fields under 'Food: ARRAY[1..40] OF BFood'. The field 'RECFDLType: TFoodType' is highlighted with a red oval. The 'Field details' pane shows the following information:

Descriptives	
Field name:	PassOrder.RFL.Food.RECFDLType
Field kind:	Datafield
Field type:	ENUMERATED

Specifications	
Attributes:	(None)
Field size:	1
Tag defined:	INTFLAG
Lowest value:	1
Highest value:	2

Text

[ENG]
[Primry (Primary), Addition] Set in Food.inc, RFLCopy.prc, used in PassOrder.inc, Events.inc, ActiveFIB.inc (numerous times), Food.inc, REvents.inc.

Description text

(None)

Enumeration

(1) Primry
[ENG]
Primary
(2) Addition

PassOrder.RFL.Food.RECFDLType

Objective

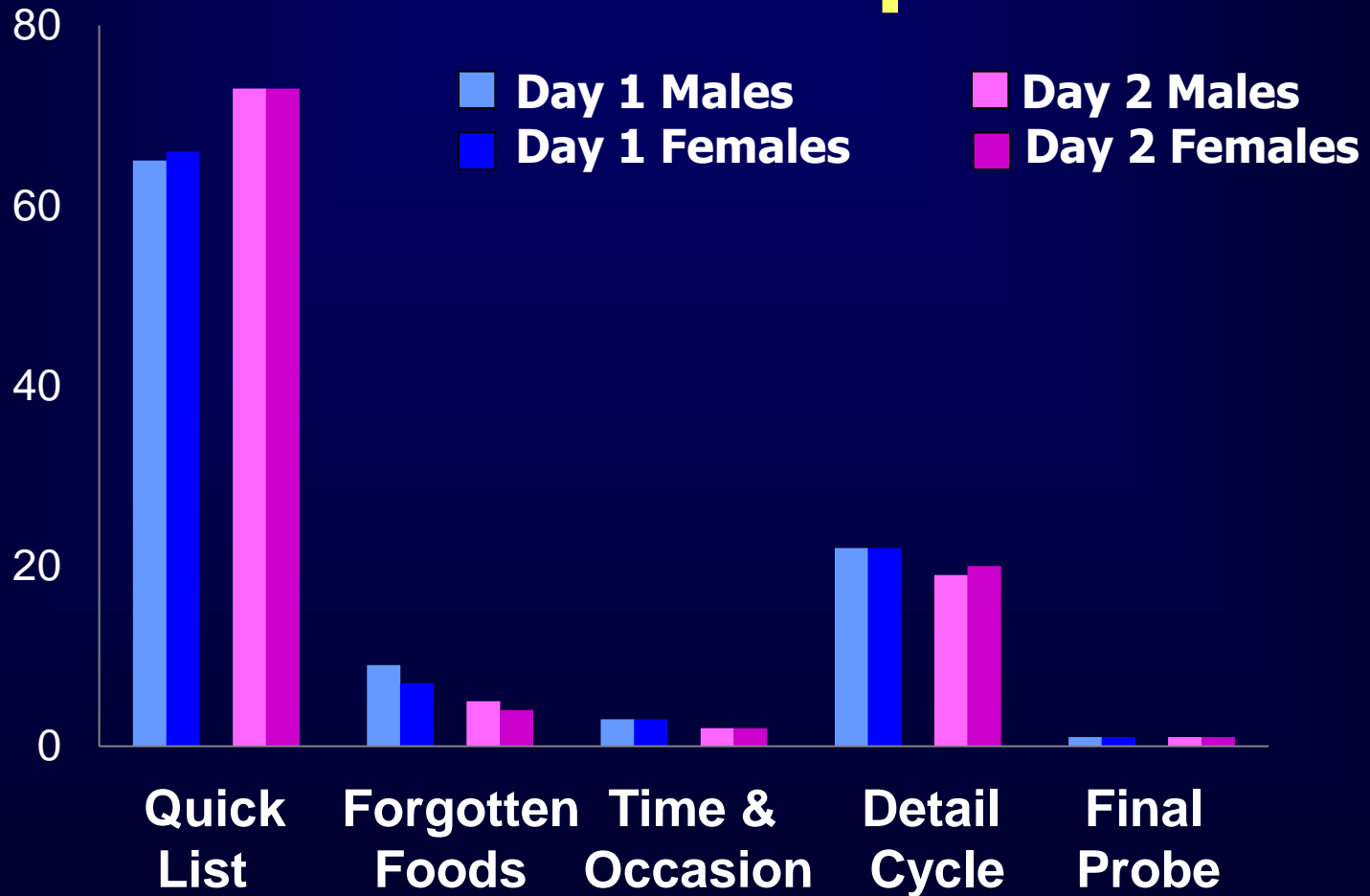
What can we learn about how respondents report foods using paradata which contains the order and AMPM step for each food reported?

Data Source

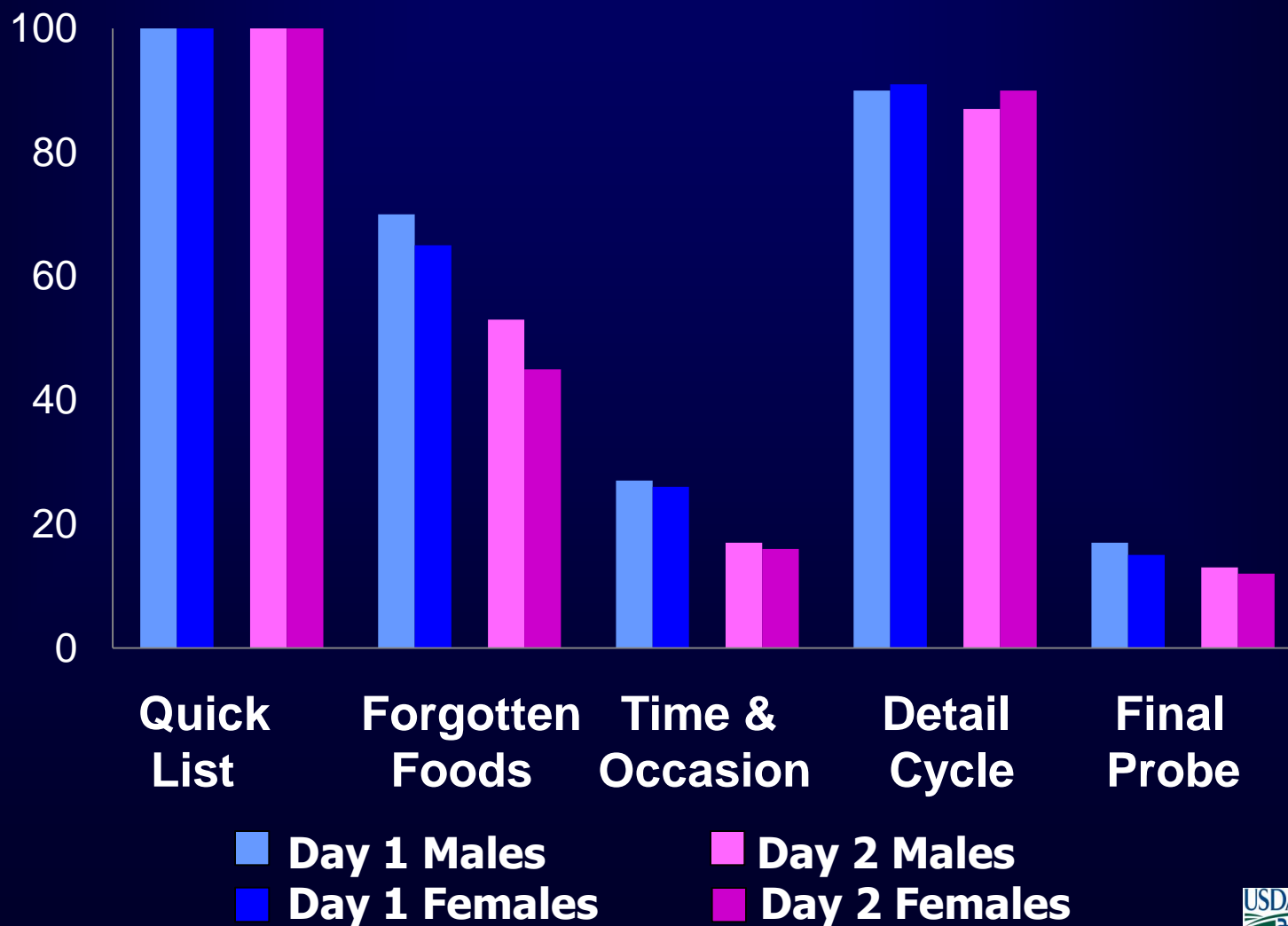
- **2007-2008 What We Eat In America, National Health and Nutrition Examination Survey**
- **Males and Females, age 12 and over (self-reporters)**

Day	Interview
1	6,575
2	5,663

Percent of Foods Reported by AMPM Step



Percent of Intakes with Foods Reported by AMPM Step



Food Reporting Order

**Respondents who begin the Quick List
with their first eating occasion**

Day 1: 66%

Day 2: 83%

**Respondents who report all foods in the
same order they were eaten**

Day 1: 8%

Day 2: 20%

Example of order assignment and calculation of order difference

<u>Reported Order Number</u>	<u>Reported on AMPM Quick List</u>	<u>Consumed Order Number</u>	<u>Order Difference</u>
1	7 am Breakfast: cereal	1	0
2	1 pm Lunch: pizza	3	-1
3	3 pm Snack: cookie	4	-1
<u>Forgotten Foods</u>			
4	7 am Breakfast: coffee	1	3
<u>Detail Cycle</u>			
1	7 am Breakfast: milk added to cereal	1	0
5	9 am Beverage: soft drink	2	3

Mean Differences in Food Ordering Between Reported and Consumed

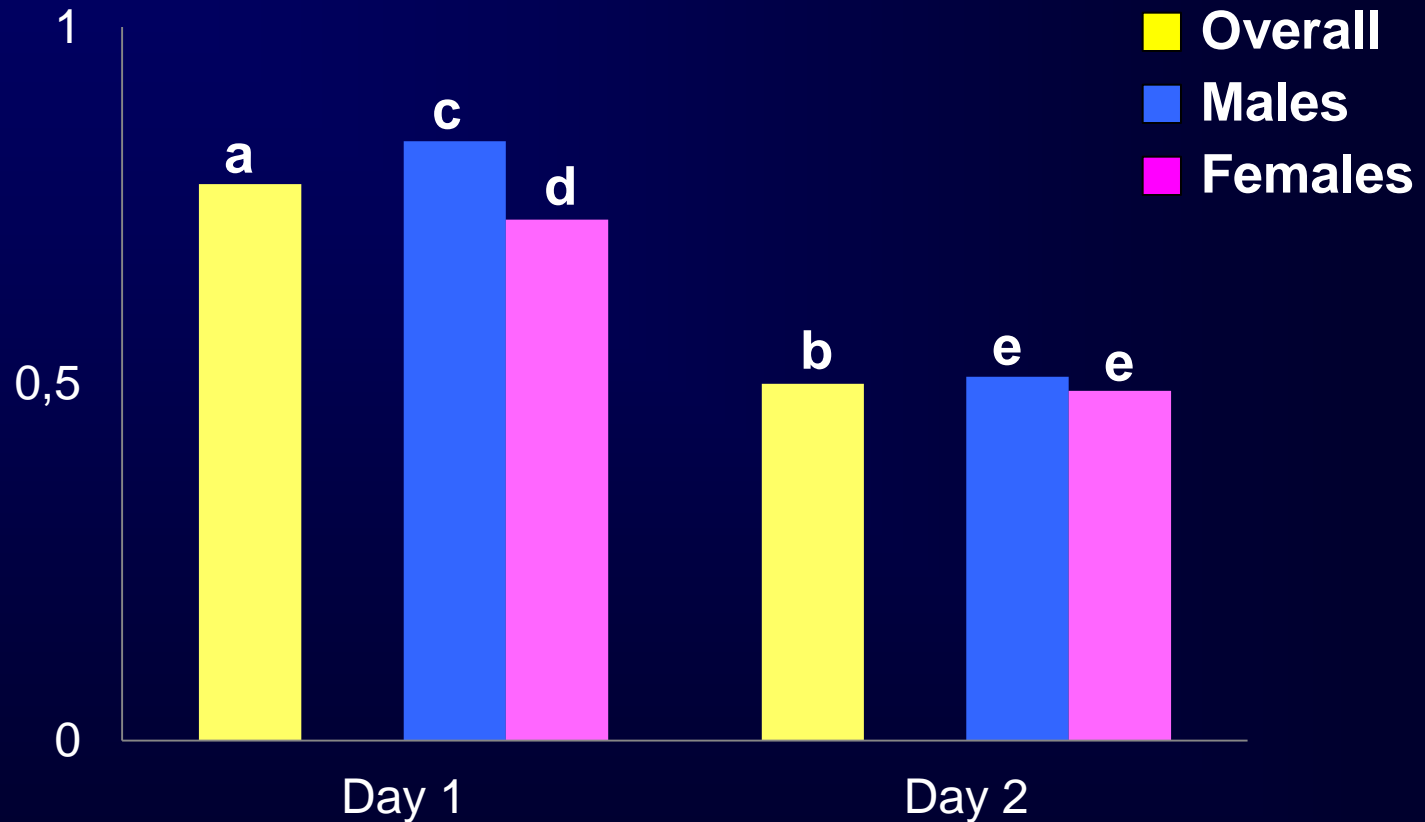
Interview	Gender and Age (years)	N	Order Difference Mean (SE)
Day 1		6,575	.78 (.03)**
	Males	3,268	.84 (.05)**
	12-29	1,044	.94 (.08)**
	30-39	472	.88 (.12)**
	40-49	417	.87 (.13)**
	50-59	439	.75 (.12)**
	60 and over	896	.76 (.08)**
	Females	3,307	.73 (.04)**
	12-29	1,000	.81 (.08)**
	30-39	485	.63 (.11)**
	40-49	465	.72 (.12)**
	50-59	432	.58 (.12)*
60 and over	925	.77 (.08)**	
Day 2		5,663	.5 (.03)**
	Males	2,750	.51 (.04)**
	12-29	847	.52 (.06)**
	30-39	379	.58 (.11)**
	40-49	346	.57 (.11)**
	50-59	385	.51 (.10)*
	60 and over	793	.46 (.07)**
	Females	2,913	.49 (.04)**
	12-29	869	.5 (.06)**
	30-39	404	.48 (.09)**
	40-49	415	.5 (.09)**
	50-59	388	.48 (.10)**
60 and over	837	.48 (.07)	

** Significantly different from 0 at $p < .001$

* Significantly different from 0 at $p < .01$

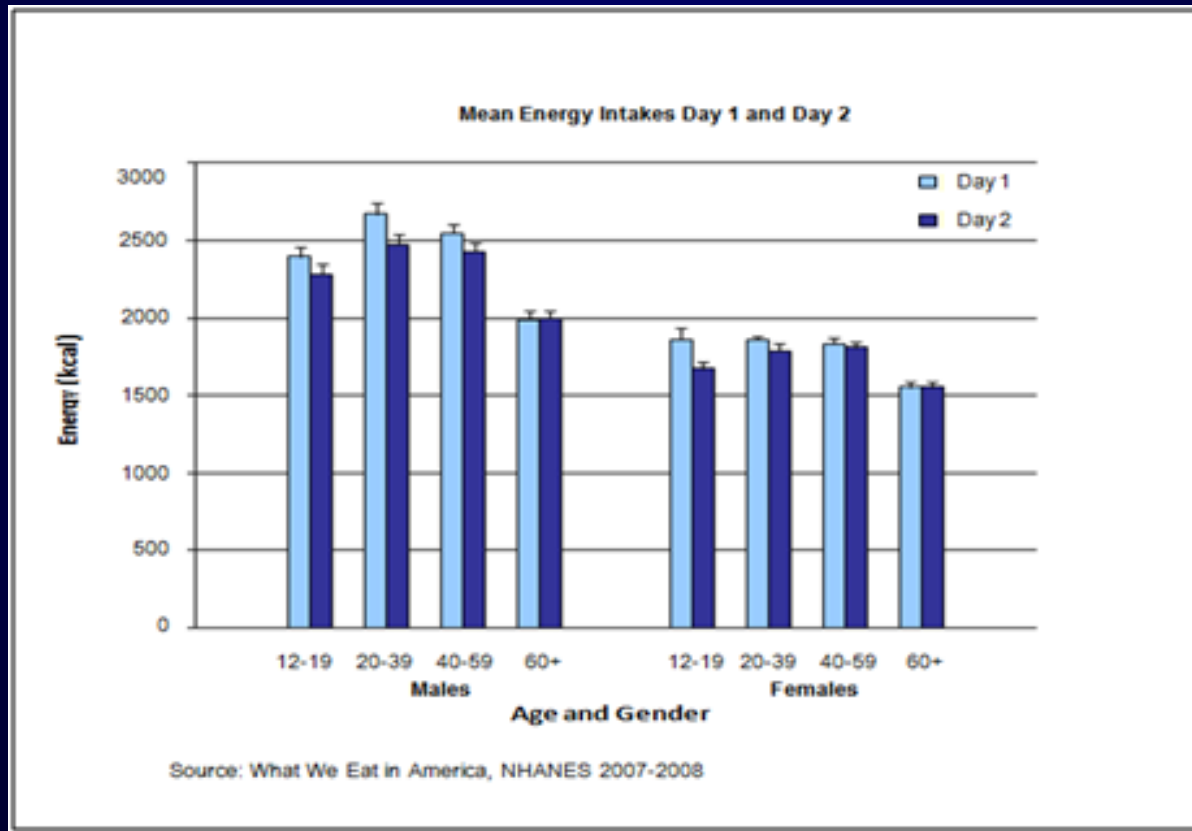
■ Not significantly different

Mean Differences in Food Ordering Between Reported and Consumed



2007-2008 WWEIA, NHANES , Males and Females, ages 20 and over, unweighted
abcde Means with different letter superscripts are significantly different at $p < .01$

Comparison of Mean Energy Intake Day 1 and Day 2



Conclusions

- Analysis of food reporting patterns from AMPM interviews shows the importance of the multiple-pass methodology to produce complete and accurate dietary intakes.
- Regardless of day, gender, and age, foods are reported on every AMPM step and few respondents report foods in the order they were consumed.
- Additional analyses will look at types of foods and beverages and eating occasions added at each AMPM step and the effect of the time of day the interview is conducted.

Acknowledgements

Jas and Theo

FSRG Web site:

www.ars.usda.gov/ba/bhnrc/fsrg

Thanks!