

**National Food and Nutrition Questionnaire (NATFAN)
Summary - New Hampshire Results
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Background

The purpose of this report is to summarize changes in dietary behavior among WIC participants based on the NATFAN food package rollout questionnaire.

Methods

“The National Food and Nutrition (NATFAN) questionnaire was developed to examine WIC participants’ food/beverage consumption patterns and attitudes prior to and after the rollout of the new WIC food package. Approximately 85,000 pre-surveys from 50 WIC programs and almost 90,000 post-surveys from 58 programs were returned. Statewide agency reports were generated based on these results. The pre- and post-surveys illustrate WIC participant responses before and after the changes to the food package.”¹ In New Hampshire, pre-surveys were administered during the fall of 2009 and post-surveys in the spring of 2011.

Results

I. WOMEN (pre-survey n=357, post-survey n=271)

A. Beverages

Although less milk is allowed on the new WIC food package, comparison of pre- and post-surveys showed no change in the amount of milk consumed by women. There was, however, a change in the type of milk consumed. The pre-survey indicated that 44% of women consumed 2% milk most often compared to 13% in the post-survey. Pre-survey data indicated that 21% of women consumed 1% milk compared to 49% in the post-survey. Consumption of whole milk decreased from 21% pre- to 18% post-survey and skim milk consumption increased from 9% pre- to 11% post-survey. There were no notable changes in juice and sugar sweetened beverage consumption among women when pre- and post-survey results were compared.

¹ <http://orin2.tamu.edu/login.aspx?ReturnUrl=%2findex.aspx>

B. Fruits and Vegetables

Survey results showed an increase in the frequency of fruit consumption among women. About 17% of women reported eating fruit two times per day in the pre-survey compared to 20% in the post-survey. The percentage of women who reported consuming fruit three or more times per day increased by about 74% (pre-survey=14%, post-survey=24%). Vegetable consumption among women also increased from pre- to post-survey. About 20% of women reported consuming vegetables two times per day in the pre-survey. This increased to about 23% in the post survey. Consumption of vegetables three or more times per day increased from 14% in the pre-survey to 24% in the post-survey.

C. Grains

Among women, there was decrease in consumption of white rice one to three times per week (45% pre- vs. 40 % post-survey) with no change in white rice consumed four to six times per week. Consumption of brown rice one to three times per week increased from about 21% pre- to 27% post-survey. Consumption of brown rice four to six times per week also increased (6% pre- to 12% post-survey). Oatmeal consumption one to three times per week increased from 29% in the pre-survey to 32% in the post-survey. The number of respondents who reported daily rice consumption (white and brown) and oatmeal consumption were too small to draw any conclusions.

According to the pre-survey, the percentage of women who reported eating white bread one time per day decreased from about 16% in the pre-survey to 8% in the post-survey. Consumption of whole-wheat/whole grain bread one time per day increased from 18% in the pre-survey to 24% in post-survey.

The pre-survey indicated that 15% of women ate whole-wheat tortillas one or more times per week. This increased to 27% in the post-survey. Consumption of corn tortillas one to three times per week increased from about 27% in the pre-survey to 29% in the post-survey. There were no notable changes in the frequency of white tortilla consumption across any of the frequency categories.

II. INFANTS (pre-survey n=367, post-survey n=294)

A. Age of Infant at Breastfeeding Cessation²

Among respondents who had stopped breastfeeding, post-survey results showed that approximately 44% had stopped at less than one month, 28% had stopped between one and two months, and 15% had stopped between five and six months. There were no major differences in age of infant at breastfeeding cessation when the pre- and post-surveys were compared.

B. Age of Infant at Introduction to Solids³

Among infants who were fed cereal, approximately 84% were introduced before 6 months of age (pre and post-survey results were similar). The pre-survey indicated about 63% of infants were introduced to fruit before 6 months. This increased to about 73% in the post-survey. According to the pre-survey, about 60% of infants were introduced to vegetables before 6 months of age. This increased to 70% on the post-survey. Parents/caregivers reported only 34% of infants ate meats (all ages) and 28% of infants ate desserts (all ages), with a majority of infants introduced to these at 6 months of age or older.

C. Juice

Pre-survey data indicated that 43% of infants consumed juice one time or more per week. This decreased to 35% in the post-survey. Post-survey results showed that 17% of infants were introduced to juice before 4 months of age, 25% between 4 and 5 months, and 58% at 6 months of age or older (no major differences in age of infant at introduction to juice between pre- and post-survey).⁴

III. CHILDREN (pre-survey n=720, post-survey n=577)

A. Beverages

Responses to the question “What kind of milk does your child drink most often” were not stratified by age, making it difficult to draw conclusions (whole milk is recommended for children from 1 year of age to 1 year 11 months; children 1 year of age and older were included in the sample). The question “I am willing to give my child who is two years or older (type of milk)” may

² Recalculated to exclude women who were still breastfeeding

³ Recalculated to exclude infants who were not fed cereal, fruits, or vegetables

⁴ Recalculated to exclude infants that did not consume juice

provide a better estimate of the type of milk consumed by children. The pre-survey indicated that 23.6% of parents/caregivers agreed or strongly agreed that they were willing to offer their child (2 years of age or older) skim milk. This increased to 31% in the post-survey. Willingness to offer 1% milk increased from 42% in the pre- to 69% in the post-survey.

Parents/caregivers reported that about 20% of children consumed four or more cups of milk per day, with no change from pre- to post-survey. About 24% of children consumed juice three or more times per day, with no change observed from pre- to post-survey. Pre-survey results showed that 26% of children consumed sugar-sweetened beverages one to six times per week. This increased to 35% in the post-survey

B. Fruits and Vegetables

Among children, fruit consumption two times per day increased from 30% in the pre-survey to 33% in the post-survey. Additionally, fruit consumption three or more times per day increased from 21% in the pre-survey to 29% in the post-survey. Post-survey results indicated that children ate more of their “top five” favorite fruits (bananas, apples, grapes, strawberries, and oranges) when compared to pre-survey results.

Pre-survey results indicated about 30% of children consumed vegetables two times per day compared to 33% in the post-survey. There was a 73% increase in consumption of vegetables three or more times per day (15% pre-survey, 26% post-survey). Post-survey results indicated that children may have been exposed to a larger variety of fruits and vegetables. Of the 27 vegetables listed on the survey, consumption of 10 vegetables increased (10 stayed the same and 7 decreased).

C. Grains

Among children, brown rice consumption one to three times per week increased from about 31% in the pre-survey to 40% in the post-survey. Oatmeal consumption one time per week or more decreased from 67% in the pre-survey to 55% in the post survey. There were no notable changes in white rice consumption. Consumption of whole-wheat tortillas one to three times per week increased from 17% in the pre-survey to 25% in the post survey. There were no notable changes in consumption of corn tortillas among children.

Conclusion

Overall, survey results for women and children indicate a shift towards healthier eating patterns including increased consumption of fruits, vegetables, whole grains, and low-fat/fat-free milk. It appears that more WIC participants are meeting the U.S. Dietary Guidelines with the introduction of the new food package. Among infants, there were no changes in age of infant at breastfeeding cessation. Although cereal, fruits and vegetables are offered to WIC infants according to guidelines established by the World Health Organization and others⁵, survey results indicated that a majority of infants were introduced to those before six months of age.

IV. TABLES*

A. Women

	New Hampshire		National	
	Pre	Post	Pre	Post
Milk Consumption by Type				
Whole Milk	21%	18%	36%	20%
2% Milk	44%	13%	44%	55%
1% Milk	21%	49%	9%	13%
Skim Milk	9%	11%	6%	6%
Fruit Consumption				
3 times or less per week	26%	19%	26%	21%
4-6 times per week	22%	19%	18%	18%
1 time per day	22%	17%	18%	17%
2 times per day	17%	20%	20%	22%
3 times or more per day	14%	24%	18%	22%
Vegetable Consumption				
3 times or less per week	21%	16%	28%	26%
4-6 times per week	20%	15%	19%	18%
1 time per day	25%	21%	20%	20%
2 times per day	20%	23%	18%	20%
3 or more times per day	14%	24%	14%	16%
Whole Grains				
Brown rice 1-3 times per week	21%	27%	22%	24%
Brown rice 4-6 times per week	6%	12%	5%	5%
WW/WG Bread 1 to 3 times per week	28%	29%	28%	29%
WW/WG Bread 4-6 times per week	20%	22%	18%	20%
WW/WG Bread 1 time per day	18%	24%	16%	18%
WW tortilla 1 to 3 times per week	15%	27%	18%	21%
Corn tortilla 1 to 3 times per week	27%	29%	30%	28%

*The data presented here are highlights from the survey. Therefore, the response categories may not add up to 100% as only the most frequent responses for some questions were included. Also, responses to questions may not add up to 100% due to rounding.

⁵ www.who.int/mediacentre/factsheets/fs342/en/index.html, www.ncbi.nlm.nih.gov/pubmed/16892776

B. Infants

	New Hampshire		National	
	Pre	Post	Pre	Post
Age at Breastfeeding Cessation				
Stopped less than 1 month	47%	44%	43%	43%
1 to 2 months old	25%	28%	26%	26%
3 to 4 months old	15%	15%	17%	18%
5 to 6 months old	6%	5%	7%	7%
7 to 8 months old	2%	3%	3%	3%
9 to 10 months old	0%	2%	2%	2%
11 months old	4%	2%	2%	1%
Age of Introduction - Solids				
Cereal before 6 months	84%	85%	79%	76%
Fruit before 6 months	63%	73%	59%	58%
Vegetables before 6 months	60%	70%	58%	56%
Eats meat (any age)	35%	34%	34%	33%
Eats desserts (any age)	27%	28%	31%	28%
100% Juice - age of introduction and frequency				
Juice before 4 months	14%	17%	16%	15%
Juice 4-5 months	27%	25%	33%	31%
Juice 6 months or older	60%	58%	52%	54%
Never or less than once per week	57%	65%	57%	60%
1 to 3 times per week	17%	14%	18%	18%
4 to 6 times per week	8%	8%	7%	6%
1 or more times per day	18%	14%	19%	17%

C. Children

Children	New Hampshire		National	
	Pre	Post	Pre	Post
Willingness to offer skim or 1% milk (2 years or older, agree/strongly agree)**				
Skim Milk	24%	31%	25%	28%
1% Milk	42%	69%	40%	46%
100% Juice				
Never or less than 1 time/week	5%	8%	4%	5%
1 to 6 times per week	24%	21%	33%	34%
1 to 2 times per day	48%	48%	42%	42%
3 or more times per day	24%	24%	32%	18%
Sugar-Sweetened Beverages				
Never or less than 1 time/week	67%	55%	45%	44%
1 to 6 times per week	26%	35%	40%	41%
1 to 2 times per day	6%	8%	12%	12%
3 or more times per day	1%	3%	3%	3%
Fruit Consumption				
3 times or less per week	14%	8%	17%	14%
4-6 times per week	14%	13%	18%	17%
1 time per day	20%	17%	18%	17%
2 times per day	30%	33%	27%	28%
3 times or more per day	21%	29%	21%	25%
Vegetable Consumption				
3 times or less per week	19%	14%	25%	23%
4-6 times per week	14%	12%	17%	16%
1 time per day	23%	19%	20%	20%
2 times per day	30%	30%	24%	24%
3 or more times per day	15%	26%	15%	17%
Grains				
Brown rice 1 to 3 times per week	31%	40%	24%	28%
Brown rice 4 to 6 times per week	6%	8%	5%	6%
Oatmeal 1 to 3 times per week	41%	38%	39%	39%
Oatmeal 4 to 6 times per week	13%	9%	13%	12%
WW/WG Bread 1 to 3 times per week	24%	25%	32%	31%
WW/WG Bread 4 to 6 times per week	18%	26%	15%	19%
WW tortilla 1 to 3 times per week	17%	24%	17%	22%
Corn tortilla 1 to 3 times per week	27%	26%	30%	30%

*Parents/caregivers were asked to rank how strongly they agreed or disagreed that they were willing to offer 2%, 1% or skim milk to their child at two years age or older. They picked one response out of five possibilities (strongly disagree, disagree, neutral, agree, and strongly agree) for each type of milk. Responses within milk categories add up to 100%, but do not add up to 100% between types of milk. Only 1% and skim are presented here as these types of milk are recommended in the 2010 Dietary Guidelines for Americans.