

## Study of Nutrition and Activity in Childcare Settings (Summary)

### Background

Centers and family daycare homes participating in USDA's Child and Adult Care Food Program (CACFP) play an important role in supporting the health and wellness of the children they serve. The Study of Nutrition and Activity in Childcare Settings (SNACS) is the first nationally representative, comprehensive assessment of the CACFP. Data were collected in program year (PY) 2016–17 from CACFP providers and participating children on (1) the wellness policies and practices of childcare providers, (2) the nutritional quality of the meals served in CACFP, (3) CACFP meal costs and revenues, (4) the nutrient intake of infants and children in CACFP childcare settings and outside of childcare, and 5) the observed plate waste in CACFP settings. The CACFP providers in the study were both early care providers and before and after school care providers. Early care programs included childcare centers, Head Start programs, and family daycare homes, and typically served infants through children ages 5 years and younger. Before and after school programs included At-Risk and Outside School Hours programs and typically served children ages 6 years and older. Findings serve as an important baseline for the subsequent updates to the meal pattern and nutrition standards, which were implemented in October 2017.

### Key Findings

- The majority of lunches (88 percent), breakfasts (97 percent), and afternoon snacks (97 percent) served to 3–5-year-olds included all required meal components.
- The median total cost (labor plus food costs) per meal served in early care programs was \$4.19 for breakfast, \$4.85 for lunch, and \$2.94 per snack.
- Dietary intakes of 3–5-year-olds in early care settings were more nutritious on a single childcare day than a single day spent outside of care.

### Methods

Data were collected during 1 week of program operations using on-site data collection, surveys, and telephone interviews. Program wellness policies and practices were examined through self-administered surveys and onsite environmental observations in 227 early care programs, excluding family daycare homes, and 88 before and after school programs. The onsite observations assessed minutes spent in physical and sedentary activity. "Physical activity opportunity duration" was operationalized as the sum of (1) minutes children spent in designated indoor or outdoor play spaces (whether they were active or not) and (2) minutes when >50 percent of children were active (e.g., running or dancing) outside designated play spaces.

SNACS examined the nutritional quality of CACFP meals and their compliance with the CACFP meal pattern in place at the time of data collection. Self-administered menu surveys (n=701 early care programs; n= 290 before and after school care programs) collected information about all of the foods and beverages served to children in CACFP meals during a 1-week period. Meal observations

in a subsample of programs (n=227 early care and n=88 before and after school programs) captured the amounts of food and beverages served to sampled children (n=1,772 in early care; n=571 in before and after school programs), which were then used to impute portion sizes for the menu survey. These meal observations also captured the amount of food left over on the children's plates to be used in the plate waste calculation.

The cost to produce CACFP meals was calculated through cost interviews with program staff and their sponsors in early care programs (n=246, excluding family daycare homes) and before and after care programs (n=154). The two primary types of costs assessed in this study were food and labor costs.

Children's dietary intakes on a childcare day and a non-childcare day were collected through meal observations while in childcare, and a parent-completed food diary when outside of childcare. Data were collected from 1,669 children in early care programs (excluding family daycare homes) and 577 children in before and after care programs.

## Early Care Program Findings

### Wellness Policies and Practices

**Nearly all early care programs (99 percent) provided at least one physical activity opportunity, with a mean of 12 minutes per hour devoted to physical activity opportunities.** Of these programs, most (87 percent) provided at least one outdoor physical activity opportunity. Staff not joining in children's active play was observed in 61 percent of programs and was associated with 27 fewer minutes allotted to physical activity opportunities, after adjusting for program characteristics.

**Most early care programs (60 percent) had menu planners with over 10 years of experience; however, this varied by program type.** Approximately two-thirds of family daycare homes (64 percent) had menu planners with 10 or more years of experience, while 44 percent of menu planners for childcare centers and Head Start programs had this level of experience. Overall, 10 percent of menu planners were dietitians or nutritionists.

### Quality of Meals Served in Early Care Programs

**The majority of lunches (88 percent), breakfasts (97 percent) and afternoon snacks (97 percent) served to 3–5-year-olds included all required meal components.** Close to 100 percent of breakfasts and lunches contained each of the required components (See Figure 1). Although not required under the CACFP meal pattern in place at the time, 81 percent of lunches included both a fruit and a vegetable to meet the requirement to serve a fruit or a vegetable.

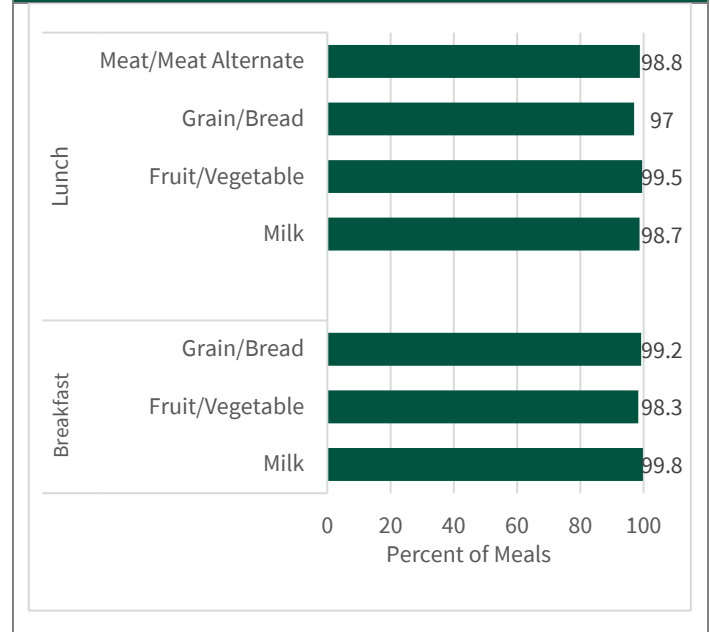
**CACFP lunches served to 3–5-year-olds in early care had a mean Healthy Eating Index (HEI) score of 73 out of 100 and breakfasts had a mean score of 67 out of 100.** The scores indicate that the meals served do not align with the Dietary Guidelines for Americans (DGAs). However, by comparison, the mean HEI score for dietary intake for Americans ages 2–5 years in 2017–2018 was 61, suggesting that CACFP meals were healthier than the average young child's diet.

### Cost and Revenue of Early Care Meals

**The median total cost (labor plus food costs) per meal served was \$4.19 for breakfast, \$4.85 for lunch, and \$2.94 per snack.** Labor costs were substantially greater than food costs. Specifically, the median labor cost for lunch was 69 percent of the total costs, while the median

labor costs for breakfast and snack were 79 percent of the total cost.

**Figure 1: Percent of Child and Adult Care Food Program (CACFP) Meals Served to 3–5-Year-Olds that Contained Each Required CACFP Component**



**USDA subsidies, including cash-in-lieu, covered between 18 to 51 percent of total costs per meal.** On average, the subsidies covered 112 to 157 percent of the food cost alone of breakfast, lunch or snacks, but just 29 percent of the *total* cost (i.e. combined food and labor costs) to produce a breakfast, 51 percent of the total cost to produce a lunch, and 18.2 percent of the total cost to produce a snack.

**About half of all labor costs for breakfast (53 percent), lunch (49 percent), and snack (48 percent) went toward serving and cleaning up after meals.** The remaining half went toward administrative tasks and meal production, both of which were evenly split for breakfasts and lunches. However, administrative tasks comprised a higher percent of labor costs for snacks than meal production (35 percent vs. 17 percent, respectively).

### Children's Dietary Intakes on a Childcare Day and a Non-Childcare Day

**Children's dietary intake was significantly more aligned with the 2015 DGAs on a childcare day compared to a non-childcare day.** Specifically, HEI-2015 scores were significantly higher on a day children

**Table 3:** Percent of Observed Foods Wasted on 3- to 5-Year-Old Children's Lunch Plates in Early Care Programs

ACFP Lunch Foods	Percent Wasted of Food Served
Vegetables	42.3%
Combination Entrees	29.0%
Grains/Breads	28.1%
Dessert/Other Menu Items	28.0%
Milk	23.7%
Fruit	24.0%
Meat/Meat Alternate	19.6%
<b>Total Children</b>	<b>1,370</b>
<b>Total Programs</b>	<b>195</b>

**Table 2:** Healthy Eating Index (HEI)-2015 Scores as a Percent of Maximum for 24-Hour Intakes of 2–12-Year-Olds in Early Childcare Programs

HEI Component	Childcare Day	Non-Childcare Day
<b>Adequacy Components</b> <i>Higher scores reflect higher concentrations</i>		
Total fruits	100%	99%
Whole fruits	100%	100%
Total vegetables	54%*	46%
Greens and beans	37%	39%
Whole grains	40%*	28%
Dairy	100%*	92%
Total protein foods	93%	99%
Seafood and plant proteins	60%	63%
Fatty acids	33%	36%
<b>Moderation Components</b> <i>Higher scores reflect lower concentrations</i>		
Refined grains	60%	58%
Sodium	47%	46%
Added sugars	85%*	73%
Saturated fats	64%*	54%

Note. The HEI findings were pooled across all age groups (2–12 years) in early care programs. Most children (97 percent) were ages 2–6 years.

\*Difference between childcare day and non-childcare day significant at the .05 level or lower.

attended childcare compared to a day they did not attend childcare (65 vs. 61 out of 100, respectively). On both childcare and non-childcare days, children's intakes had maximum or near maximum scores for total fruit, whole

fruit, dairy and total protein foods, indicating children's consumption of these components were in close alignment with the DGA recommendations (See Table 2).

**HEI scores for total vegetables and whole grains were fairly low in general, but were significantly higher on childcare days than non-childcare days (See Table 2).** Three- to five-year-olds also consumed significantly more dairy on a childcare day compared to a day outside of childcare. Children also consumed significantly fewer added sugars and saturated fats when they were in childcare compared to a day when they were not.

**On average, 3- to 5-year-olds did not consume 29 percent of calories served at breakfast, 26 percent of calories at lunch, and 22 percent of calories at afternoon snack.** At lunch, vegetables were most likely to be wasted (42 percent wasted from plates that included this food), though they were still more likely to be consumed than wasted (See Table 3).

## Before and After School Program Findings

### Wellness Policies and Practices

**The majority of before and after school programs (88 percent) provided at least one physical activity opportunity session, with a mean of 21 minutes per hour.** Of these programs, most (64 percent) provided at least one outdoor physical activity opportunity.

### Quality of Meals Served in Before and After School CACFP

**The most common meal types served in before and after school care settings were suppers (served in 67 percent of the programs) and afternoon snacks (47 percent).** The majority of suppers (91 percent) served to 6–12-year-olds provided all of the required components. Eighty-two percent of suppers included both a fruit and a vegetable to meet the requirement to serve a fruit or vegetable. Close to all afternoon snacks (97 percent) included all required components.

**The suppers served in before and after school programs had a mean total HEI-2015 score of 76 out of 100.** Four of the nine adequacy components were near perfect or perfect scores, indicating maximum alignment with the DGAs: total fruits, whole fruits, dairy, and protein foods (See Table 4).

**Cost and Revenue of Before and After School CACFP Meals**

**The median total cost per meal was \$4.00 per supper and \$2.66 per snack.** Labor costs were on average greater than food costs, with median labor costs accounting for 59 percent of the total cost of supper and 78 percent of the cost of snacks.

**Contrary to the findings from early care programs, about half of all labor costs for supper and snacks went to administrative labor (51 percent and 46 percent, respectively).** Serving and cleaning made up 27 percent of labor costs at supper and 37 percent of labor costs for snacks, while meal production labor made up 23 percent of labor costs for supper and 18 percent of labor costs for snacks.

**The percent of costs covered by the USDA subsidies, including cash-in-lieu of USDA Foods, varied by meal type in before and after school care settings.** While USDA subsidies covered, on average, 185 percent of the food costs alone of suppers and 126 percent of the food costs for snacks, they covered just 84 percent of *total* costs (i.e., accounting for food and labor costs combined) for suppers, and only 27 percent of total costs for snacks.

**Infant Findings**

Early childcare programs (n=50) completed an infant food intake form (n=115) about the foods and beverages infants consumed on a single day while in childcare.

**Milk Feeding among Infants**

**Over two-thirds of infants under 12 months of age (69 percent) consumed only infant formula while in childcare on a single target day.** Twenty-three percent consumed only breastmilk and seven percent consumed a combination of both. Two percent of infants consumed cow’s milk.

**Complementary Feeding among Infants**

**Early care programs served a variety of foods to infants to complement the milk feeding.** More than half of infants ages 6 to 11 months consumed grains (70 percent), vegetables (70 percent), and fruits (62 percent) at least once during a single childcare day. Fewer consumed mixed dishes (36 percent), sweet and salty

foods (25 percent), and single meat and protein foods (20 percent).

Adequacy Components	
Higher scores reflect higher concentrations	
Total Fruits	100%
Whole Fruits	100%
Total Vegetables	82%
Greens and Beans	84%
Whole Grains	64%
Dairy	100%
Total Protein Foods	99%
Seafood and Plant Proteins	88%
Fatty Acids	38%
Moderation Components	
Higher scores reflect lower concentrations	
Refined Grains	87%
Sodium	30%
Added Sugars	96%
Saturated Fats	70%
Total Score	76.2