

Nutrient Composition of Two Combinations of CACFP Tier 2 Meals and Snacks

Although CACFP family child care homes offer many different combinations of meals and snacks, two combinations are the most common by far. About 43 percent of providers offer breakfast, lunch, and either the morning or afternoon snack, most often the afternoon snack. Another 38 percent offer breakfast, lunch, and both the morning and afternoon snacks.⁴⁴ (These are referred to as the “one-snack combination” and the “two-snack combination,” respectively.) All other combinations are offered by fewer than 5 percent of providers.

This section describes the total food energy and nutrient contribution of these two combinations of meals and snacks. Note that one cannot simply assume that the total nutrient values for a combination of meals and snacks will be equal to the sum of the average nutrient values shown previously for the individual meals and snacks. For example, a provider who is offering breakfast, lunch, and afternoon snack may offer a larger breakfast than a provider who offers both morning and afternoon snacks as well as the two main meals.

For this analysis, each provider was coded according to the combination of meals and snacks offered each day to children in each of the three CACFP age categories.⁴⁵ For each age group, only providers who offered the same combination for at least 3 days of the menu survey were included in the analysis.⁴⁶ Total daily nutrients were then averaged across all the days on which the provider offered that combination of meals and snacks. The resulting figures represent the average total nutrients that would be offered to a child in the provider’s care for the full operating day for that age group.

As discussed earlier, no guidelines exist as to how much of each nutrient measure should be provided in a full CACFP operating day, nor how much should be in either combination of meals and snacks. Therefore, as in the previous section, data for the cumulative energy and nutrient content of the meal combinations are presented as a percent of the RDA or relative to the daily limits expressed in *Dietary Guidelines* and NRC recommendations, but individual providers are not compared with any specific nutrient benchmarks.

The analysis indicates that both meal combinations offer at least two-thirds of the RDA for all dietary components measured here and over 100 percent for most components. The nutrient composition of the meal combinations is within or near most of the daily thresholds specified in the *Dietary Guidelines* and NRC recommendations, but exceeds the recommended percent of food energy from saturated fat.

⁴⁴ Providers can be reimbursed for two meals and one snack or two snacks and one meal per child per day. Given that over three-quarters of children under age 6 in CACFP homes are in care for 8 hours or more per day (Crepinsek *et al.*, E-FAN-02-005), it is likely that a substantial proportion of children are consuming all meals and snacks offered under this combination and the provider is not being reimbursed for one of them.

⁴⁵ A provider may offer different combinations to different age groups during the same day. This most often occurs when older children are not present for morning snack.

⁴⁶ Only 1 percent of providers did not offer the same combination for at least 3 days to at least one age group.

Tier 2 providers offering the two-snack combination in 1999 supplied significantly more food energy than providers with similar tier-related characteristics offering the same combination in 1995. Point estimates for both combinations consistently showed more sodium in 1999 than 1995, but the increase was not statistically significant.

Nutrient Content of Meal and Snack Combinations Relative to RDAs

Both of the most common meal and snack combinations provide—for all three age groups—a very substantial portion of the RDA for food energy and all of the nutrients examined (Exhibit 23). More than 100 percent of the RDA for protein, vitamin A, and vitamin C is supplied by both combinations. The two-snack combination offers more than 100 percent of the RDA for calcium as well. At least two-thirds of the RDA is provided for all other nutrients.⁴⁷ The two-snack combination offers more of each nutrient than the one-snack option, which would be the expected result of having one additional eating occasion.

It is interesting to note that the total nutrient content of each meal and snack combination is nearly equal to the sum of the previously reported averages for individual meals. For children aged 3-5, for example, the combination with breakfast, lunch, and two snacks (morning and afternoon) provides 80 percent of the RDA for food energy, while adding together the averages for the individual averages for breakfast, lunch, and morning and afternoon snack would yield a total of 78 percent. Thus it appears that the nutrients supplied in any one meal or snack are not strongly influenced by the combination of other meals that the provider offers during the day, at least for these two major groups of providers.

Comparing Tier 2 providers in 1999 with similar providers in 1995 yields slightly different results for the two meal combinations. For providers offering the one-snack combination there is virtually no difference between 1999 and 1995. For the two-snack combination, however, Tier 2 providers in 1999 supplied significantly more food energy for children aged 1-2 and for all age groups combined. Apparently the food energy increases seen earlier for the individual meals tend to be concentrated among providers who offer breakfast, lunch, and both morning and afternoon snacks.

⁴⁷ As noted for the breakfast and lunch analyses, the large age group differences in the mean percentage of RDA for iron, for example, are related to disproportionate differences in the RDA values relative to estimated portion sizes.

Exhibit 23**Mean Percentage of RDA Offered by Two Meal and Snack Combinations**

	Age 1-2		Age 3-5		Age 6-12		All Ages	
	Tier	Difference	Tier	Difference	Tier	Difference	Tier	Difference
	2 1999	1999- 95 ^a	2 1999	1999- 95 ^a	2 1999	1999- 95 ^a	2 1999	1999- 95 ^a
Breakfast, Lunch, and One Snack^b								
Total energy	67.7%	0.7%	63.9%	2.0%	63.4%	1.5%	65.5%	1.9%
Protein	214.7	-4.2	185.4	-1.2	161.1	-9.4	194.3	-0.6
Vitamin A	157.1	-3.0	155.1	-0.9	127.0	-11.7	151.5	-2.0
Vitamin C	132.2	-5.4	143.1	-1.3	198.1	47.7	144.2	-0.8
Calcium	90.5	-3.1	99.1	-1.1	106.7	-6.4	96.4	-2.2
Iron	66.3	2.2	78.0	0.0	97.0	-1.9	75.8	0.2
Un-weighted sample	209	396	224	426	66	138	257	488
Breakfast, Lunch, and Two Snacks^b								
Total energy	84.8%	9.9%**	79.6%	10.1%*	77.1%	9.9%	81.8%	10.3%**
Protein	247.8	16.8	216.5	18.6	182.0	9.2	230.3	21.3
Vitamin A	174.2	6.0	170.8	-5.8	140.4	-20.0	169.8	-3.4
Vitamin C	181.7	5.8	196.3	6.6	190.6	-24.3	191.5	1.2
Calcium	109.8	10.3	119.3	12.4	124.3	11.2	116.1	10.5
Iron	81.8	9.6	97.9	8.1	109.0	4.7	90.8	5.2
Un-weighted sample	147	245	142	254	45	71	168	300

^a Regression estimate. See Appendix D.

^b Morning and afternoon snacks only.

Significance levels:

* = .10

** = .05

*** = .01

Nutrient Content of Meal and Snack Combinations Relative to *Dietary Guidelines* and NRC Recommendations

Both of the most common meal and snack combinations offer a nutrient profile that approximates the *Dietary Guidelines* goal for the percent of food energy from total fat and the NRC recommendation for percent of energy from carbohydrate (Exhibit 24). In both of these cases, the average for children aged 3-5 and aged 6-12 is within the recommended range or fairly close to the recommended level for that nutrient.

The picture is less favorable for saturated fat. The percent of energy from saturated fat, at about 13 percent in both meal combinations, exceeds the daily recommendation of less than 10 percent. This result is particularly driven by the nutrient composition of lunch, the largest meal in the combinations, which averaged over 15 percent of food energy from saturated fat.

Exhibit 24
Mean Nutrient Levels Relative to *Dietary Guidelines* and NRC Recommendations Offered by Two Meal and Snack Combinations^a

	Daily Recommendation	Age 3-5		Age 6-12	
		Difference		Difference	
		Tier 2 1999	1999-95 ^b	Tier 2 1999	1999-95 ^b
Breakfast, Lunch, and One Snack^c					
Percent of Food Energy from:					
Fat (%)	≤ 30%	30.8	0.6	32.0	1.4
Saturated fat (%)	<10%	13.0	0.4	13.0	0.6
Carbohydrate (%)	> 55%	55.7	-0.1	55.1	-0.6
Cholesterol (mg)	≤ 300 mg	119.4	2.9	174.2	37.6
Sodium (mg)	≤ 2,400 mg	1,644.1	124.9	2,108.6	212.3
Unweighted sample		224	428	66	143

Breakfast, Lunch, and Two Snacks^c					
Percent of Food Energy from:					
Fat (%)	≤ 30%	30.7	0.8	30.9	-0.9
Saturated fat (%)	<10%	12.8	0.4	12.7	0.0
Carbohydrate (%)	> 55%	56.9	-0.1	57.2	1.2
Cholesterol (mg)	≤ 300 mg	157.9	29.9	171.7	25.9
Sodium (mg)	≤ 2,400 mg	1,962.0	346.2	2,299.2	427.7
Unweighted sample		142	255	45	73

^a Note that the *Dietary Guidelines* and NRC recommendations are only applicable to children beginning at 2 years of age and older. This analysis is limited to meals offered to children 3-5 and 6-12, the only CACFP age groups for which the recommendations fully apply.

^b Regression estimate. See Appendix D.

^c Morning and afternoon snacks only.

Significance levels:

* = .10

** = .05

*** = .01

Cholesterol and sodium, which are measured in absolute amounts, are naturally greater for the two-snack than the one-snack combination. The only exception is the amount of cholesterol in the meal combinations offered to children aged 6-12, which varies little.

Compared with the daily recommendation of 300 mg. of cholesterol, the combinations provide between 40 and 60 percent for children in the 3-5 and 6-12 age groups. For sodium, with a recommended daily limit of 2,400 mg., the percentages are higher. For children aged 6-12, the one-snack and two-snack combinations provide 88 percent and 96 percent of the suggested daily amount of sodium, respectively.

There were no statistically significant 1999-95 differences in nutrient measures relative to the *Dietary Guidelines* and NRC recommendations for either the one-snack or the two-snack combination. For both meal combinations, however, Tier 2 providers in 1999 offered foods containing 10-20 percent more sodium relative to foods offered by similar providers in 1995. This would be expected from the results for individual meals and snacks as increases in sodium were seen consistently and for all age groups. As noted previously, the increased sodium reflects a general increase in portion sizes as well as some menu shifts that have emphasized higher sodium foods, especially at lunch.