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Mr. Chairman and members of the committee, thank you for the invitation to testify here today. My name is Mary Kay Fox and I am a Nutritionist and Senior Researcher at Mathematica Policy Research. I have worked on research related to federal Child Nutrition programs for more than two decades.

My comments today are focused on summarizing research evidence on the nutritional quality of meals provided in the National School Lunch Program and the School Breakfast program as well as how these meals affect the diets and health of our Nation's children. Because of time constraints, many of my detailed comments focus on the lunch program.

Meeting Nutrient Needs

A long-standing goal of the school meal programs is to safeguard the health and well-being of the nation's children by ensuring that children receive the essential nutrients needed for healthy growth and development. This is an important goal because we know that the majority of children who participate in these programs come from low-income households, which may have poorer diets and increased health risks.

There is convincing evidence, accumulated over many years and involving several national studies, that, by and large, the school meal programs are meeting these goals. Research has shown that children who eat school lunches have higher intakes of a range of essential vitamins and minerals than children who consume lunches from other sources, and that this effect is due to consuming a more nutrient-dense mix of foods, rather than just consuming more food. A comparable pattern has been noted for children who eat school breakfasts.

Until recently, it was difficult to say with any certainty whether these differences at lunch and breakfast translated into meaningful differences in the overall quality of children's diets. This was due to limitations in the reference standards available for use as benchmarks in assessing dietary intakes. The third School Nutrition Dietary Assessment Study (SNDA-III), the most recent national study of school meal programs, bridges this gap. SNDA-III used up-to-date reference standards as well as assessment methods recommended by the Institute of Medicine to compare the prevalence of inadequate nutrient intakes among school meal participants and nonparticipants who were otherwise similar along a range of socio-demographic characteristics. The study found that middle school- and high school-aged children who ate a school lunch were less likely than similar children who did not eat a school lunch to have inadequate intakes of several vitamins and minerals, including vitamins A, C, and B_6, folate, magnesium, and phosphorus. In addition, children who ate a school lunch consumed more calcium and potassium that children who did not each a school lunch. Differences in the prevalence of inadequate nutrition intakes were most pronounced among high-school aged children, especially girls. A comparable pattern was noted for the school breakfast program; however, there was less variation across age groups and fewer of the differences between participants and nonparticipants were statistically significant.

The SNDA-III data demonstrate that the school meal programs play an important role in increasing the likelihood that children consume needed amounts of essential nutrients. The

programs may be especially important for older children who have more autonomy in making choices about what they eat and about whether to eat breakfast or lunch at all. Breakfast skipping is widespread among children of all ages, ranging from 10% among elementary school children to 23% among middle school children. Among low-income children, research has shown that the availability of the breakfast program increases the likelihood that children will consume a substantial breakfast (a breakfast that includes more than one food group and/or provides more than 10 percent of daily calorie needs).

Promoting Diets Consistent with the Dietary Guidelines for Americans

Providing essential vitamins and minerals is only one part of safeguarding children's health. With what we know today about the relationship between diet and chronic disease, efforts to meet children's nutrient needs must also place a high priority on preventing excessive intakes of fats, sodium, and added sugars; increasing fiber intakes; and promoting consumption of whole grains, fruits and vegetables, and other nutrient-dense foods. This is where the school meal programs fall short.

Nutrition standards for school meals did not explicitly address the above issues until 1994 when the Healthy Meals for Healthy Americans Act required that school meals be consistent with the Dietary Guidelines for Americans, which form the basis for federal nutrition policy. This action was largely motivated by findings from the first SNDA study, which indicated that school lunches were high in total fat, saturated fat, and sodium. The regulations developed by USDA to implement this legislation required that school meals be consistent with Dietary Guidelines standards for total fat and saturated and encouraged (but did not require) schools to decrease the sodium content and increase the fiber content of school meals.

The SNDA-II study, which collected data about two years after schools were required to implement the new standards, found that significant improvement had been made since SNDA-I, but there was still more to do. Lunches were significantly lower in total fat, saturated fat, and sodium, but average values continued to exceed the Dietary Guidelines recommendations and relatively few schools provided meals that were consistent with the standards. SNDA-III, which collected data six years later, in school year 2004-2005, found that the percentage of schools that met the lunch standard for saturated fat increased significantly since SNDA-II, from 15 to 34 percent of elementary schools and from 13 to 24 percent of secondary schools. Nonetheless, the majority of schools continued to exceed the standard for saturated fat. There was no improvement in sodium content; as in SNDA-II, only 1 percent of schools met the standard.

In looking at children's diets, SNDA-III found no significant differences in the total fat, saturated fat, or sodium intakes of school meal participants and nonparticipants. When judged against an up-to-date standard for fat intake (which differs from the standard included in current school meal regulations), the majority of both participants and nonparticipants had acceptable fat intakes. For saturated fat and sodium, however, the prevalence of excessive intakes was high for both groups—roughly 80% of children had saturated fat intakes that exceeded the Dietary Guidelines recommendation and 90 to 95 percent of children had excessive intakes of sodium. So the bottom line is that, even though school lunches, as offered, were high in saturated fat and sodium, relative to program standards, the usual dietary intakes of lunch participants were no worse, overall, than nonparticipants because *both groups of children had excessive intakes*.[1]

[1] High school-age children were an exception—in this age group, children who ate a school lunch were significantly more likely to consume excess sodium than children who did not each a school lunch.

On a more positive note, school lunch participants had significantly higher usual intakes of dietary fiber than nonparticipants. But mean intakes of both groups were low, relative to the most up-to-date reference standard.

Obesity

In recent years, some have raised concerns that school meals have contributed to childhood obesity. A number of studies have investigated this relationship and the results have been conflicting. Several studies have reported that lunch participation is associated with an increase in weight or the prevalence of overweight. However, some of these studies did not control for important factors that may contribute to both obesity and participation in the school lunch program, leading to biased results. Two better-designed studies yielded conflicting results (one found no effect; the other found that participation in the school lunch program was associated with more increases in body weight and the probability of being overweight. Studies that have looked at the relationship between participation in the breakfast program and obesity have also reported mixed results. So the jury is still out on this issue. An analysis of the SNDA-III data, which examined this issue using an usually rich set of controls, will be released in February 2009.

It is important to recognize that school meals account for only a portion of the food children have access to at school. Foods that compete with school meals are widely available, primarily through vending machines, a la carte sales in school cafeterias, and fundraising activities. SNDA-III found that leading competitive foods included candy, baked desserts, and sweetened beverages. On average, children who consumed competitive foods consumed more than 150 calories from competitive foods that were high in calories and low in nutrients. While this may not sound like much, a recent analysis of National Health and Nutrition Examination Survey data from 1988 through 2002 suggests that the increase in body weight observed among US children over this time period could have been prevented by an average reduction in calorie intake of 110-165 calories per day.

Implications for Future of Child Nutrition Programs

Clearly, a priority for the future of the school meal programs is improving the extent to which meals conform with both nutrient- and food-based principles of the Dietary Guidelines. An ongoing Institute of Medicine Panel, commissioned by USDA's Food and Nutrition Service, is reviewing existing nutrient standards and meal patterns with this exact goal in mind. I am privileged to be a member of that committee and would like to call your attention to our Phase I report, which is scheduled to be released on Dec 15th. The Phase II report, which will include recommended revisions to existing standards, will be released in late October 2009.

These recommendations will provide a solid framework for improving the nutritional quality of school meals. However, to be effective, this framework needs to be supported in several important ways.

1) Schools need support in promoting healthy food choices. The old adage, "you can bring a horse to water, but you can't make it drink," comes to mind. We know that the diets of most Americans—adults and children alike—are not consistent with the Dietary Guidelines. This is reflected in the choices children make at school. At the time the SNDA-III data were collected, children in 92% of schools *could* have selected a lunch that was consistent with the Dietary Guidelines recommendation for saturated fat, but few children actually did. Similarly, although roughly 9 out of 10 daily lunch menus included fruit or 100% juice and one or more vegetables other than French fries, only 45% of children who consumed a school lunch included fruit or juice and only 30% included a vegetable that wasn't french fries. (As discouraging as these percentages are, it is important to note that children who ate a school lunch were significantly more likely to

consume fruit, 100% juice and vegetables other than french fries than children who consumed lunches from other sources.)

The point is that simply making healthier meals available does not guarantee that children will consume them. Nutrition reform efforts should be coupled with nutrition education and policies that promote healthy school environments and healthy eating. The requirement for comprehensive school wellness policies established under the last reauthorization was an important step in this direction. However, there is wide variability across schools in the design and implementation of these policies. There is a need for solid evidence about strategies that achieve desired results. It may be useful to consider demonstration projects like the healthy eating initiatives in the SNAP program that were included in the recent Farm Bill.

2) Some schools may face challenges in incorporating the new standards because they lack the refrigeration and storage space necessary to handle fresh produce and other fresh products or the equipment to support more than heat-and-serve cooking. This issue needs to be examined during the re-authorization process to gain a better understanding of the nature and extent of the problem and potential ways of addressing this gap.

3) Finally, in light of the economic downturn highlighted by the first two speakers and notable increases in food costs, it is important to consider the potential impact of new meal standards on costs. Some anecdotal data suggests that healthier school meals cost more. However, a study of 330 school districts in Minnesota suggests this may not be the case, with increased labor costs being off-set by decreased food costs associated with decreased use of processed foods. In developing its recommendations for revised standards for school meals, the IOM panel is addressing the issue of cost, but can only do so in a limited way, using somewhat dated information about food costs. The third School Food Purchasing Study, sponsored by USDA's Food and Nutrition Service (FNS), will be collecting updated information about the prices schools pay for food during the 2009-10 school year. Ideally, these data should be used to examine the cost implications of the revised meal standards in a more in-depth fashion prior to national implementation.

The Child and Adult Care Food Program and the Summer Foodservice Program

In closing, I wanted to mention the Child and Adult Care Food Program and the Summer Food Service Program. Both of these programs have important relationships to the school meal programs—the former provides meals and snacks to children in child care settings before they reach school-age and the latter provides meals to the neediest school meal program participants when school is not in session. Neither of these programs has been included in previous legislative or regulatory efforts to improve the nutritional quality of child nutrition programs. Moreover, we know much less about these programs, especially about how they contribute to children's diets and health. There has been much less research done on these programs and the research that has been done has focused largely on meals rather than on the children who consume them. While there is certainly still work to be done on the school meal programs, it seems like the time has come to broaden the focus of nutrition-oriented program improvement efforts to include these two "companion" programs.