

A Tool for Facilitating Meal Planning

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Meal planning is a key component of nutrition counseling—by planning meals ahead of time, clients are better able to modify their diets to manage their body weight or diet-related diseases, such as diabetes and renal disease.¹⁻³ Planning meals also can help improve diets of those who are healthy and simply want to eat more nutritiously. For instance, planning meals in advance is associated with greater intakes of fruits and vegetables.⁴⁻⁶ Other benefits of planned meals include cost savings, more efficient grocery shopping, and fewer food shopping trips to purchase forgotten items. Meal planning also helps to make mealtimes more relaxed and minimize the negative effects associated with chaotic mealtimes, such as increased anxiety and depression in children.⁷ Moreover, meal planning can improve the ease with which families are able to eat meals together and thereby reap the myriad of nutritional (eg, higher intakes of fruit, vegetables, fiber, calcium, and several vitamins, and reduced intake of soft drinks and saturated fat⁸⁻¹²) and social benefits (eg, reduced risk of substance abuse and disordered eating, enhanced psychosocial well-being, better academic performance) associated with family mealtimes.¹³⁻¹⁵

A survey of mothers of young children who were the primary food gatekeeper in their families revealed that even though they recognized the importance of planning meals, many meals were not planned ahead of time.¹⁶ A lack of time and meal planning and preparation knowledge and skills hinder meal planning and preparation.^{17,18} Thus, the purpose of this

project was to create and evaluate a tool that helps families plan, prepare, and serve family meals.

MEAL PLANNER

The meal planner (Figure) was developed as part of a self-directed home kitchen makeover demonstration project targeted to mothers with children (ie, less than 12 years old) who had the primary food preparation responsibilities in their homes. The meal planner was developed to create a single tool that mothers can use as a menu, grocery list, and plan for organizing the food into meals. This study was approved by the Rutgers University Institutional Review Board. A blank sample menu planner is available at Nutrisci.rutgers.edu/MenuPlanner.

The meal planner is set up as a grid, with the first column designated for the menu and subsequent columns for listing food items needed to prepare the menu. To increase the efficiency of grocery shopping, the columns for listing food items are organized by section of the supermarket (ie, produce, dairy/eggs/refrigerated food, meat/seafood, canned/bottled and boxed food, frozen food, baked goods, and other). Rows were designated for each day's dinner meal, weekday and weekend breakfasts, and weekday and weekend lunches. Additional rows were set aside for snacks, other food items, and household supplies.

To complete the meal planner, mothers were instructed to begin by visualizing the meals they wanted to serve, keep good nutrition and family

food preferences in mind, and consider the resources (eg, time, money, food preparation skill, help from family members) they have to prepare each meal. Mothers were encouraged to emphasize grains, fruit, and vegetables in meals; use low-fat dairy products; choose lean, protein-rich food; and keep portion sizes of meat small. Then, they listed their planned menus and identified all food items needed to make each meal. Next, they placed an "X" beside any ingredient already in stock to remind them they did not need to purchase that item. To speed meal preparation, mothers used the meal planner to organize the storage of nonperishable food items by grouping ingredients for each dinner meal together in a separate box or basket labeled with the day of the week it was to be served. For example, if they were having a pasta night, mothers could put a box of spaghetti, can of crushed tomatoes, can or pouch of clams, jar of dried oregano, and loaf of Italian bread in a basket. When it was time to make the meal, mothers could just grab the basket and retrieve fresh ingredients, such as parmesan cheese, low-fat salad dressing, and prewashed salad mix, from the refrigerator.

Mothers were encouraged to add or remove sections in the grid to make it fit their household and the layout of their favorite supermarket. They also were encouraged to save each week's meal planner and recycle planners over time.

FEEDBACK FROM MOTHERS

Twenty mothers of moderate socioeconomic status participated in the 4-week, self-directed home kitchen makeover that included the use of the meal planning grid. Before participating in the makeover, most mothers (80%) reported they did not plan family meals. In addition, 60% did not grocery shop with family meal menus in mind, and 65% reported they

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Day	Menu	Produce	Dairy/Eggs/ Refrigerated Food	Meat-Seafood	Canned/Bottled & Boxed	Frozen	Baked Goods	Other
Monday Dinner	Spaghetti & Meat sauce (double the sauce!) Salad	1 bag Romaine 1 bag Carrots 1 box Grape Tomatoes	2 oz. Parmesan Cheese	8 oz. Lean Ground Beef	2 large cans Crushed Tomatoes 1 box spaghetti		1 loaf Italian Bread	Oregano Lowfat salad dressing
Tuesday Dinner	Chicken Quesadillas Frozen juice pops	2 Tomatoes 1 head Lettuce ½ pound Broccoli	4 oz. Cheddar Cheese	2 Chicken Breasts	1 can Black beans 1 jar Salsa	100% Juice Pops	12 Flour Tortillas	
Wednesday Dinner	Veggie Frittata Rice Ice Cream & Berries	1 Onion 1 Red Pepper	8 Eggs		1 box Instant Brown Rice	Light Ice Cream 1 bag Mixed vegetables 1 bag strawberries		
Thursday Dinner	Lasagna (using frozen Meat sauce leftovers) Salad Peaches & 'Cream'	1 bag salad greens Carrots (leftover from Monday)	4 oz. Lowfat cottage cheese 4 oz. Parmesan cheese		1 can Peaches 1 can Evaporated Skim Milk 1 box Lasagna noodles		4 Garlic rolls	Lowfat salad dressing
Friday Dinner	Tuna Salad Sandwiches Slaw Watermelon	1 bag Celery 1 head Cabbage ½ Watermelon			2 cans Tuna Sweet Pickle Relish Nonfat Mayonnaise Walnuts		Whole Wheat Bread	Vinegar
Saturday Dinner	Dinner at Grandma's! Take Dessert				Brown Sugar Mandarin Oranges		Angelfood Cake	
Sunday Dinner	Veggie Pizza Pear Salad	10 Mushrooms 1 Green Pepper 1 Garlic head	4 oz. Lowfat Mozzarella cheese		1 can Tomato paste 1 can Roasted red peppers 1 can Pear Halves		1 large Pizza crust	
Weekday Breakfasts	Cereal English Muffins	Bananas	2 gallons Lowfat Milk		2 cans Apple Juice 1 box Cheerios 1 box Raisin Bran 1 box Granola	1 bag Blueberries	1 box English Muffins	
Weekend Breakfasts	Waffles	½ gallon Orange Juice			1 can Blueberries	1 box Whole wheat waffles		Maple Syrup
Weekday Lunches	Kids: eat at school Parents: eat at work							
Weekend Lunches	Bagel-wiches and Soup	1 bag Grapes			2 large cans Bean Soup 1 jar Peanut Butter	8 Whole Wheat Bagels		
Snacks		Raisins Tangerines Carrot sticks Celery sticks	24 oz. Nonfat Yogurt		Graham crackers Tomato Juice Applesauce			
Other Food Items			2 gallons Nonfat Milk Butter		Sparkling Water Lemonade Mix Olive oil			Dog food
Household supplies	Paper towels Plastic wrap Window cleaner							

Figure. Meal Planner Example

frequently forgot to buy needed items. Upon completing the make-over, mothers were asked to rate the grid using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Mothers indicated that they felt the meal planning grid was useful for planning their family's weekly menu (mean = 4.0 ± 1.1 standard deviation [SD]) and helped them organize their grocery shopping list (mean = 3.9 ± 1.1 SD). They also indicated that they felt better able to plan meals ahead of time (mean = 4.4 ± 0.8 SD) and their shopping list now was based on the weekly menu (mean = 4.5 ± 0.8). In addition, mothers felt that meal preparation had become less stressful (mean = 3.9 ± 1.1) and felt their meals were more healthful (mean = 3.6 ± 1.1).

Individual telephone interviews conducted by a trained researcher explored mothers' feelings about the meal planner. Mothers reported: "I love the menu grid. It is very useful, now I grocery shop with a purpose";

"The meal planner did help me plan better for meals"; "I always made a shopping list, but never planned meals before meal time, so the meal plan grid was excellent, an inspiration"; "Menu grid is terrific, will help me plan ahead"; "I really like the meal planner, it relieves stress"; "(My) kids love having a weekly menu"; and "The menu grid got me on the right path."

ASSESSMENT AND FUTURE DIRECTION

The meal planner appears to be a useful tool for assisting mothers of young children in planning meals and reducing stress associated with meal preparation. The feedback from these mothers suggests that a simple tool such as the meal planner can help people to visualize menus and think ahead about how they will implement recommendations for improving their diets (eg, planning where they will add more fruits and

vegetables to their diets). Nutrition professionals can use tools such as the meal planner to operationalize the educational messages they present by helping participants create meal plans for their families that are congruent with nutrition recommendations as well as family food preferences and available resources.

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