

Behavioral Outcomes, Concepts, and Messages

Messages directed to mothers have the potential to affect what moms eat and their children's diets. Women are still the primary food shoppers and meal preparers in most households.⁴ Moms are also more likely than dads to eat breakfast and dinner with their children—even in two-parent households.⁵ As such, moms have the power to change what food is available in the home, how food is offered and prepared, and their children's attitudes and feelings about food.

The core nutrition messages reflect USDA's goals and guiding principles of nutrition education delivered through nutrition assistance programs. These messages can augment well-designed, theory-based initiatives that support the behavioral outcomes listed in Figure B.

Concepts for the core nutrition messages address five mediators (influences) of children's dietary behavior. For instance, messages for moms of elementary school-age children address the availability and accessibility of fruits and vegetables in the home (a mediating environmental variable).

Message concepts (and the mediating variables they are based upon) apply to constructs in theories frequently used to explain dietary behavior (e.g., self-efficacy, observational learning, social influence/support, and skill building), as well as intrapersonal, social, and physical

environmental factors outlined in ecological models. In other words, the core messages address factors that influence the likelihood that children will eat fruits and vegetables, drink fat-free or low-fat milk at meals, etc. Following our example above, kids are more likely to eat fruits and vegetables when they are available and accessible in the home. Message concepts are described in the following paragraphs.

Role Modeling

These messages encourage mothers to set a good example by eating fruits and vegetables themselves. Several studies have shown that children's consumption of fruits and vegetables is correlated with parents' intake and children's attitudes about fruit.⁶⁻⁹ Children are also more likely to eat new foods when they see a parent consuming them.¹⁰

Figure B: Behavioral Outcomes

- Mothers and their children consume recommended amounts of fruits and vegetables.
- Mothers eat and prepare foods together with their 2- to 5-year-old children more often.
- Mothers allow their 2- to 5-year-old children to decide whether and how much to eat.
- Six- to ten-year-old children consume recommended amounts of milk and milk products, choosing primarily low-fat and fat-free options.

Cooking and Eating Together

Families that eat dinner together tend to have more healthful dietary intake patterns that are higher in fruits, vegetables, and calcium and lower in saturated fat.¹¹⁻¹⁴ Eating meals together also provides opportunities for role modeling as previously explained. Some research indicates that watching television while eating together may reduce the positive effects of family meals.¹⁵⁻¹⁶ Family meals may have a greater positive effect on children's diets when the meal is prepared at home.¹⁵ Involving preschoolers in food preparation may also help make new foods more familiar and can help motivate children to try new foods.

Division of Feeding Responsibility

Messages under this concept are based upon the delineation of parent and child feeding roles where the parents decide what, when, and where foods are offered and the child decides whether and how much to eat.¹⁷

Research suggests that infants and very young children have the ability to self-regulate the amount of food they consume when given the opportunity.¹⁸⁻²⁷ While intake at specific meals may be erratic, caloric intake over the course of the day is relatively well regulated. However, child feeding practices (i.e., when moms are not responsive to child feeding cues) may disrupt children's abilities to eat when they are hungry and stop eating when they are full.^{18, 28-30} Differences in children's abilities to self-regulate energy intake appear in preschoolers, and these differences are even more pronounced in older children.³¹⁻³⁴

The amount and way that food is provided can also make a difference. Mothers may serve larger portions than their children can consume and then use pressure or coercion to get their children to eat "enough." Some research has shown that simply by serving large portions, moms may be causing children to eat more.³⁵⁻³⁷

Child feeding practices may also influence the development of food preferences in children.

Research suggests that the use of pressure or rewards may decrease children's preferences for foods. Children may then eat less of these foods when the reward or pressure is no longer present. The number of times mothers expose children to new foods also appears to influence food preferences.³⁸

Availability and Accessibility

Messages under this concept focus on increasing the availability and accessibility of fruits and vegetables at home and encouraging/motivating kids to eat them. The availability and accessibility of (i.e., ready to eat and easy to get to) fruits and vegetables has been shown to be a critical factor in the consumption of fruits and vegetables by elementary school-age children.³⁹⁻⁴⁴ One study showed that accessibility is particularly important when children "dislike" fruits and vegetables.⁴⁵

Food Preferences, Beliefs, and Asking Behaviors

Messages for 8- to 10-year-old children are designed to make fruits, vegetables, milk, and milk products more appealing to children. The messages for children complement messages for mothers, providing motivation for children to consume the fruits, vegetables, and milk products that mothers are making available and accessible in the home. By influencing children's beliefs about these foods, we can also increase the likelihood that children will ask mom to provide them. This reinforcement may further strengthen mom's commitment to making fruits, vegetables, and milk products available and accessible.^{46, 47} The impact of messages designed to influence children's food preferences and food purchase requests has been seen in commercial advertising.⁴⁸ A major challenge in creating messages is that children see health issues as a distant problem and tend to base their food choices on taste, availability, and accessibility.⁴⁹ Messages that appeal to children's desires to have energy for play and sports and to "maximize their potential" are preferred.⁴⁹ Including a sense of fun, fantasy, and challenge can also help capture kids' attention and stimulate their motivation to learn.⁵⁰⁻⁵³

Figure C: FNS Core Nutrition Messages

There are 16 core nutrition messages addressing 5 concepts: 7 for mothers of preschoolers, 4 for mothers of elementary school-age children, and 5 for 8- to 10-year-old children. These messages may be used alone or with others. Consumer-tested supporting content (e.g., bulleted tips, stories, or recipes) is provided for certain messages in the Appendices.

For Mothers of Preschoolers

Role Modeling Messages*

1. They learn from watching you. Eat fruits and veggies and your kids will too.
2. They take their lead from you. Eat fruits and veggies and your kids will too.

Cooking and Eating Together Messages*

1. Cook together. Eat together. Talk together. Make mealtime a family time.
2. Make meals and memories together. It's a lesson they'll use for life.

Division of Feeding Responsibility Messages

1. Let them learn by serving themselves.
Let your kids serve themselves at dinner. Teach them to take small amounts at first. Tell them they can get more if they're still hungry.
2. Sometimes new foods take time.
Kids don't always take to new foods right away. Offer new fruits and veggies many times. Give them a taste at first and be patient with them.
3. Patience works better than pressure.
Offer your children new foods. Then, let them choose how much to eat. Kids are more likely to enjoy a food when eating it is their own choice. It also helps them learn to be independent.

For Mothers of Elementary School-Age Children

Availability/Accessibility Messages

1. Want your kids to reach for a healthy snack? Make sure fruits and veggies are in reach.*
2. When they come home hungry, have fruits and veggies ready to eat.*
3. Let your kids be "produce pickers." Help them pick fruits and veggies at the store.
4. They're still growing. Help your kids grow strong. Serve fat-free or low-fat milk at meals.

For 8- to 10-Year-Old Children

Food Preference, Beliefs, and Asking Behavior Messages

Note: Milk and yogurt messages must be paired with image depicting low-fat or fat-free milk or yogurt.

1. Eat smart to play hard. Drink milk at meals.
2. Fuel up with milk at meals. And soar through your day like a rocket ship.
3. Snack like a super hero. Power up with fruit and yogurt.
4. Eat smart to play hard. Eat fruits and veggies at meals and snacks.
5. Fuel up with fruits and veggies. And soar through your day like a rocket ship.

* Consumer-tested supporting content (e.g., bulleted tips, stories, or recipes) is provided for these messages in the Appendices.