

# Helping Children Eat More Fruit and Vegetables

## At a Glance

This fact sheet reviews practical approaches to improving child nutrition by increasing fruit and vegetable consumption, along with ideas and suggestions for caregivers and educators who are interested in encouraging children to eat more produce.



The Dietary Guidelines for Americans recommend that children consume fruits and vegetables as part of a healthy diet, as they provide essential nutrients such as vitamins, calcium, and dietary fiber (DHHS 2020). Increased fruit and vegetable consumption is also associated with lower risk of chronic illnesses like hypertension, heart disease, stroke, and cancer (Boeing et al. 2012). Childhood food preferences may continue into adulthood, increasing the importance of establishing higher fruit and vegetable intake at a young age (Kelder et al. 1994, Nicklaus et al. 2004).

While families may understand that fruits and vegetables are important for health, it can be challenging to ensure children eat enough of these foods. Only 10% of children in the U.S. eat the recommended amount of vegetables, while just 60% meet the recommended intake for fruit (Kim et al. 2014). Evidence-based strategies for increasing children's fruit and vegetable consumption include repeated exposure, positive encouragement, role modeling, and participating in food-related activities like meal preparation or gardening.

## Access and Availability

Produce accessibility and availability are strongly associated with children's fruit and vegetable consumption (Blanchette and Brug, 2005). Caregivers should aim to provide consistent access to a variety of produce in a way that fits their lifestyles. For example:

- Slice or chop fresh fruits and vegetables in advance to make them easier to eat or cook.

- Keep pre-cut produce on a low shelf in the fridge and allow children to eat as much as they want for a healthy snack.
- Frozen, canned, or store-bought pre-cut fruits and vegetables are healthy options that help families save preparation time and avoid waste.
- If fresh produce tends to spoil before being eaten, choose longer-lasting items like cabbage, apples, radishes, carrots, or kabocha.

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## Exposure

Repeated exposure to new foods is shown to improve children's acceptance of them. Aim to offer a new food 10 to 12 times to help your child learn to like it. If your child is particularly sensitive, it could take more exposures for them to accept a new food, so be patient.

- Begin with small amounts of a new fruit or vegetable, rather than a full serving (e.g., one wedge of sweet potato, one chunk of mango) so the plate doesn't appear overwhelmed by unfamiliar foods.
- Try offering new foods at the same time as more familiar or well-liked flavors to help introduce them more easily. For example, add broccoli to macaroni and cheese or serve fruits and vegetables with a dip the child enjoys, such as peanut butter or ranch dressing.
- Preparing foods in different styles will offer new flavors and textures with each exposure (e.g. sweet potatoes baked, mashed, and roasted, or in desserts or potato salad).
- For infants and toddlers, introduce fruits and vegetables as soon as they begin to eat solid food, and continue to offer each new item periodically. Before age 2, children are more likely to try new foods as they develop their eating habits.

## Encouragement

While parents may think that making children "eat their vegetables" is the right thing to do, putting too much pressure on eating habits can have a negative effect (Yee et al. 2017). Forcing a child to eat a specific food may even create a lifelong dislike (Batsell et al. 2002).

On the other hand, providing positive reinforcement like verbal praise for healthy choices can be an effective strategy for increasing children's fruit and vegetable intake (Yee et al. 2017). Focus on health and body-positive messaging, rather than negativity about weight or shape (e.g. "vegetables help you grow and get strong" or "carrots help you see in the dark" instead of "ice cream makes you fat".) Avoid offering food as a reward or restricting food as punishment. Instead, try offering non-food rewards, such as a visit to the park or a chance to play a game they like.

## Modeling

Parents and other adults in a child's life play an important role in promoting fruit and vegetable consumption through modeling. Research shows that children are more likely to meet the recommended intake for produce if their parents model eating fruits and vegetables (Draxten et al. 2014). Parents, caregivers, and others can demonstrate eating and enjoying produce themselves. You can also model trying foods you may not like: explain that you always try new foods or things you don't like yet, and describe the taste,

texture, and smell to your child as you eat.

Establish meal routines to promote healthy, reliable relationships with hunger and food. Family meals are a great opportunity to practice modeling food behavior that you'd like children to adopt and provide them with quality time and attention. If schedules make it difficult to eat as a family, aim to have an adult eat with the children whenever possible, even if it's just once a week. Avoid conflicts during meals, such as arguments or debates, to ensure that mealtime remains a positive and safe environment for children to learn to enjoy their food.

## Involvement

As much as possible, invite children to get involved in the food process. This includes meal planning, shopping, cooking, and even gardening. Research suggests that children involved in meal preparation eat more fruits and vegetables (Chu et al. 2013), and allowing children to participate and have control over their food gives them a sense of pride and ownership. Bring your child to the grocery store and have them choose which fruits and vegetables they would prefer to eat, or let them pick out a new fruit for the family to try. Include them in planning the meals for the week and as they get older, find safe ways to involve them in the cooking process.

Gardening is another great way for children to feel more invested in their food, introduce them to new fruits and vegetables, and encourage them to eat healthy plants they grew themselves. Participation in youth gardening programs can increase a child's fruit and vegetable consumption, in addition to providing physical activity and nutrition education (Savoie-Roskos et al. 2017). Visiting farmers' markets, food businesses, or farms can give children a glimpse of the work "behind-the-scenes" in food production, increasing their interest and attachment to the food on their plates.

## Options

"Parents provide, children decide" is a slogan that may help guide families in building healthier food habits. Offering children different options of fruits and vegetables can encourage them to eat more produce (Poelman et al. 2019, Dominguez et al. 2013). Allow children to choose what they will eat from what is offered, or ask the child which vegetable they want with a meal before cooking or ordering food.

If preparing multiple choices is too much work, it can help to have pre-cut or pre-cooked fruits or vegetables in the fridge that can be included as an option. While parents may be tempted to serve picky eaters a separate meal, this can negatively reinforce their preferences. Serve children the same meal as the rest of the family, just include at least one food the child already eats.

## How much fruit and vegetables do children need daily?

### **GIRLS**

| <u>Age</u>  | <u>Fruit</u> | <u>Vegetables</u> |
|-------------|--------------|-------------------|
| 12 - 23 mo  | ½ - 1 cup    | ⅔ - 1 cup         |
| 2 - 3 yrs   | 1 - 1 ½ cups | 1 - 1 ½ cups      |
| 4 - 8 yrs   | 1 ½ cups     | 1 ½ - 2 cups      |
| 9 - 13 yrs  | 1 ½ - 2 cups | 2 - 2 ½ cups      |
| 14 - 18 yrs | 2 cups       | 2 ½ cups          |

### **BOYS**

| <u>Age</u>  | <u>Fruit</u> | <u>Vegetables</u> |
|-------------|--------------|-------------------|
| 12 - 23 mo  | ½ - 1 cup    | ⅔ - 1 cup         |
| 2 - 3 yrs   | 1 - 1 ½ cups | 1 - 1 ½ cups      |
| 4 - 8 yrs   | 1 ½ cups     | 1 ½ - 2 cups      |
| 9 - 13 yrs  | 1 ½ - 2 cups | 2 ½ - 3 cups      |
| 14 - 18 yrs | 3 cups       | 3 - 3 ½ cups      |

These amounts are for children who get less than 30 min/day of moderate physical activity, beyond normal daily activities. More active children may be able to consume more while staying within calorie needs.

Source: U.S. Department of Health and Human Services, U.S. Department of Agriculture. (2020). 2020-2025 Dietary Guidelines for Americans, 9th ed.



## Presentation

Try serving fruits and vegetables when children are hungrier, such as offering a plate of sliced vegetables for snacking before dinner. At meals, serve small portions to children or let them serve themselves and remind them they can have seconds. Have children eat meals and snacks in a designated eating place, such as a dining table, and avoid distractions like TV or phones.

For processed foods like chips or popcorn, remove the packaging and serve on a plate or bowl to control the portion size and avoid fixating on flashy wrapping. To increase food's appeal, you can cut it into bite-size pieces and use food shapes, colors, and patterns to make it more "fun." Some parents with picky eaters provide toy-like utensils, such as colorful children's chopsticks or spoons with animals on them.

Caregivers play an important role in shaping the dietary choices of youth through positive practices such as exposure, modeling, and involvement. While a range of approaches may be successful in improving produce intake, consistently providing children with access to a variety of fruits and vegetables is at the core of effective strategies. Programs and policies that enable accessibility and availability of fruits and vegetables are critical supports in improving nutrition for our children.

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