

Building Healthy Eating Habits through Taste Testing in Early Childcare Centers

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Introduction

The preschool years are a time when children begin to develop their own taste preferences and model adult habits and behaviors. A simple method for sharing new foods and flavors with young children is the taste test. Taste testing in childcare centers, preschools, or Head Start centers helps young children develop healthy eating patterns and become more open to trying new foods. With planning, children can benefit from family-style taste-testing activities that introduce them to vegetables and fruits in a fun and engaging way. Not only do children try unfamiliar foods, but repeated food exposures encourage positive interactions that have long-lasting effects.

Children, ages 3–8 years old, have different caloric and nutritional needs based on their age, growth patterns, development, and physical activity. But obesity puts all children at high risk for developing preventable health problems like cardiovascular disease and type 2 diabetes. How does the Gem State fare in these child health statistics? In Idaho, 11.3% of children in the Women, Infants, and Children (WIC) program and 12.1% of youth aged 10–17 are obese¹. The rate is higher among Hispanic and non-Hispanic Black children.

Early positive actions that focus on healthy behaviors can encourage children and their families to make healthy choices. Emphasizing a nutrient-rich, well-balanced diet, high in vegetables and fruits, can contribute to healthy habits that extend into adulthood. Healthy food exposure in childcare facilities is linked with children's greater willingness to try eating vegetables and fruits at school and at home. With 61% of children ages 3–5 years old enrolled in full-day preschool and childcare in the United States², sampling new foods in childcare centers is important for building lifelong healthy eating behaviors.

Did you know? “Eating a rainbow” means eating vegetables and fruits that are green, red, orange, white, brown, blue, and purple. The color pigments in fresh vegetables and fruits are linked to healthy benefits.

How Childcare Providers Can Use This Publication

Because Building Healthy Eating Habits introduces best strategies to familiarize young children with vegetables and fruits, early childcare providers can use this publication as a “how-to” for organizing taste-testing activities

in their centers. The included, printable taste-test worksheet and tools provide a simple step-by-step approach for taste testing with young children.

Providers may also find it helpful that the guidelines for family-style taste testing in this bulletin align with

- IdahoSTARS QRIS Steps to Quality: Strategies for Nutrition and Active Play (2020)
 - At least one staff sits at tables with the children for MOST of the mealtime.

- Idaho Early Learning Guidelines
 - Domain 2 Physical Well-Being, Health and Motor Development, Nutrition and Feeding Goal 24: Children eat a variety of nutritious foods.
 - Domain 4 General Knowledge, Science Goal 42: Children observe, describe, and collect information by exploring the world around them.
 - Domain 5 Communication, Language, and Literacy, Subdomain Literacy, Goal 59: Children demonstrate comprehension of printed materials and oral stories.

- Idaho Building Blocks for Out-of-School Time Quality, Building Block Standards
 - Youth Safety and Wellness, Section C: Program promotes positive health, nutrition, and safety.

- Healthy Kids Healthy Futures Goal
 - Improve Food Choices: A fruit or vegetable should be served to toddlers and preschoolers at every meal and all meals to preschoolers should be served family style.

Did you know? Whole vegetables and fruits have more nutrients and fiber than juices. It is acceptable to eliminate juice entirely if desired. Too much juice consumption is associated with obesity or being overweight, tooth decay, and diarrhea.

Dietary Guidelines for Preschool Children

To practice healthy eating patterns, it is important to know and understand the value of nutrient-rich foods. Nutrient-rich foods and beverages provide vitamins and minerals and have little added sugars, saturated fat, and sodium. It is recommended that children between 2 and 4 years old eat 1–1½ -cup equivalents of vegetables and 1 cup of fruits daily³. What are the common trends among US children in this age group? Starchy potatoes and corn are the vegetables most often eaten by young children. Dark greens, red and orange vegetables, and legumes are often underconsumed. Children in this age group, however, are most likely to eat fruit at the recommended level⁴.

A variety of vegetables and/or fruits should be offered at every meal. While fresh vegetables and fruits may not always be locally available, canned, frozen, or dried vegetables and fruits are acceptable choices. Dried vegetables and fruits are not recommended for children under four years old due to a possible choking hazard. Canned and dried vegetables should have no or low sodium. Canned fruit should be in 100% juice or water. Dried fruit should have no sugar added. For children ages 2–4 years old, limit 100% fruit and/or vegetable juices to only one serving per day (½ cup or 4 ounces).

Taste Tests

Offering vegetables and fruits as part of snacks, meals, and taste testing combined with basic nutrition education can improve children's diets. When childcare providers also reduce high-fat foods in daily meals and snacks, they can make a difference in children's overall health⁵. Research shows that young children learn about food and establish early eating behaviors through repeated taste exposures, by mimicking caring adults, and by making positive associations with food at home. Taste tests provide a structured way for children to learn about different textures, shapes, colors, and tastes and have been shown to increase their willingness to try new foods.

Repeated Exposure

Frequent and repeated exposure to new foods is key to helping to improve children's willingness to try unfamiliar foods. Even if they don't eat them right away, becoming familiar with new vegetables, fruits, and

other foods helps children build a positive attitude towards them⁶.

Taste testing can be done during a meal or as a stand-alone activity. But not every food exposure has to be a taste test. For example, food exposures can also occur between meals, meaning that new food engages other sensory properties of children throughout the day. Examples include reading storybooks about food (looking at pictures), drawing or coloring fruits and vegetables, or talking about food (listening to the names of vegetables). Studies show children need between 8 to 15 exposures at regular intervals to encourage trying a new food, but even just one exposure can be beneficial.

Taste Preferences

As children grow, their desire for independence often appears as selective or “picky” eating, food neophobia (a fear or dislike of anything new or unfamiliar), or food “jags” (eating only one or a few foods for periods of time). Offering the same type of food to children multiple times, in a variety of forms, or prepared in different ways can increase positive feelings about the food—prompting children to eventually taste or eat that food item⁷. Multiple taste-testing opportunities as part of an overall health plan can increase vegetable and fruit consumption in children 2–5 years old⁸.

Young children’s eating patterns resembles those of their parents and family. Other influential groups include peers, teachers, and caring adults. Cultural relevance and sensitivity should always be considered when planning and implementing nutrition activities⁹. Ideas include understanding what foods are familiar to the children, communicating in their home language, and using visuals and literacy-appropriate materials, especially when sending information home with families.

Abilities of Young Children (3–5 years old)

Developmental milestones in children 3–5 years old are exciting to see and shape how the child plays, learns, thinks, speaks, acts, moves, and interacts with others. While each child develops at their own pace, there are generally accepted targets for skills and abilities during these early years. Providers may choose to use the suggested developmental milestones below as a guide when preparing the taste-testing environment, with adaptations for individual children if necessary. For more information, the Centers for Disease Control and Prevention offers a full list of milestones for young children.

Thinking, Understanding, Processing, and Problem Solving

Three years: Children may play in a make-believe realm; manipulate simple puzzles and games and moving parts; begin handling pencils, crayons, other creative tools; and follow stories, read aloud, and build word recognition.

Four years: Children may begin color, number, and story sequence recognition; start to understand time; play board games; and understand the concept of “same” and “different.”

Five years: Children may count to ten or more items; draw people with six or more body parts; begin printing letters and numbers; know and understand about objects used daily, like phones, food, keys, money, etc.; and develop creative processes, like drawing geometric shapes and using multiple colors.

Language

Three years: Children may follow simple instructions; develop a large vocabulary by naming items; understand placement like in, out, and under; name friends and family members; and define self in terms of I, me, you, and them.

Four years: Children may begin using basic grammar correctly; be capable of memorizing simple poems or songs; and create their own stories.

Five years: Children may speak clearly; use the future tense to describe events or in storytelling; and share their full name and address.

Movement and Physical Development

Three years: Children are developing large motor skills and are able to combine sequences of movement like navigating stairs, running, jumping, throwing, climbing, dancing, and pedaling.

Four years: Children may build fine motor skills; use scissors; practice catching and throwing balls; and are good at using utensils to serve and feed themselves.

Five years: Children are increasingly capable of sequencing physical skills like hopping, skipping, somersaults, and swinging; and proficient at using utensils to serve and feed themselves and to help in the kitchen.

Socialization, Sharing, and Peer To Peer

Three years: Children may copy family members and friends; understand “mine” and “theirs”; can take turns; begin showing individual choices like dressing themselves; may express many emotions; express a preference for a routine; and can separate easily from caring adult or parent.

Four years: Children may look forward to and enjoy doing new things; prefer to play with peers; have greater depth of make-believe play (might see it as “real”).

Five years: Children are social and may want to have and be like their friends; are willing to agree to rules; like to sing, dance, and act; are capable of distinguishing between “real” and “make-believe”; and show more independence via skills and actions.

Step-By-Step Taste Testing Vegetables and Fruits

Preparing for Taste Testing

Objective: Prepare a safe and clean environment for young children to taste new vegetables and fruits.

- Determine if the taste test will be conducted during the meal or as a separate activity. Establish a routine for taste testing, making them part of the weekly schedule.
- Share what will be tasted with families ahead of time to ensure children do not have allergies. Plan to have an alternative option available or an alternative way for the child to participate as needed.
- Follow standard food-safety guidelines such as hand washing, rinsing vegetables and fruits, and cleaning the preparation area. Consider if the food might be a choking hazard for some children. Steamed vegetables and small bites lessen the choking hazard.
- Prepare a featured vegetable or fruit. Consider preparing it with seasoning/spices or serving with a complementary dip or spread.
- Let the children help prepare the vegetable or fruit in a way that is age appropriate.
- As with mealtimes, set the table together with needed plates, napkins, and placemats.
- Give clear directions to begin tasting. Demonstrating directions will help children to understand the procedure before the fun begins.
- Model positive language that children may use to express their opinion and to describe what they are tasting. For example, use descriptive words like “yum,” “tasty,” or “hmm, I'm not sure yet.”
- Emphasize respect for each other and taking turns to share opinions and describe the taste, texture, aroma, and color.
- Print one taste-test worksheet for each child. See the **Tools** section.

Ready to Begin Tasting Activity

Objective: Facilitate a positive tasting and learning experience for young children.

- Gather around the table family-style with washed hands and space for all.
- Take time for each child to see, touch, smell, taste, hear (tapping, crunch in mouth) the vegetable or fruit. Guide the discussion on what the children sense, allowing time for questions.
- Allow children to serve themselves, with the teachers setting the positive environment and offering encouragement.
- Have fun with it. Be positive and encouraging without trying to influence the child's choices to taste or not to taste! Use descriptive names for vegetables and fruits to help children develop more vocabulary (e.g., Green bean, Crunchy carrot, Spicy radish, etc.).
- Emphasize respect for each other and taking turns to share opinions and describe how the vegetable or fruit looks, feels, smells, sounds, and tastes. Ask questions as prompts.

- During the taste test, help children place a sticker or draw in the box that most reflects their reaction (i.e., I like this, I like this a little, I don't like this yet, and I haven't tried this yet) on the taste-test worksheet.

After the Taste Test—Recording Reactions

Objective: Evaluate the taste-testing process by reviewing the children's reactions, making necessary adjustments, and planning for future success. See the **Tools** section.

- Review the class results recorded on the Recording Reactions to Taste Test tool. How many children tasted the food? What elements did the children like or dislike?
- What additional activities can you do to strengthen the tasting experience? See **Wraparound Activities** for ideas.
- Consider consistency in the featured vegetable or fruit presentation. Can the family easily replicate it at home if directions are provided?

Wraparound Activities

Wraparound activities strengthen sensory learning during taste tests. Tasting along with other sensory experiences may increase children's interest in trying unfamiliar vegetables and fruits.

Literature. Reading aloud engages the auditory and visual senses. It can also lead to new vocabulary, story sequencing, and may increase willingness to try unfamiliar vegetables or fruits. Suggested books that enhance the taste-testing experience are *A Fruit is A Suitcase for Seeds* by Jean Richards; *Tops and Bottoms* adapted by Janet Stevens; *Up, Down, and Around* by Katherine Ayers; *Two Old Potatoes and Me* by John Coy; *One Bean* by Anne Rockwell; *Oats, Peas, Beans and Barley Grow* by Tony Garbani; *The Vegetables We Eat* by Gail Gibbons; *Rah, Rah, Radishes* by April Pulley Sayre; and *Eating the Alphabet* by Lois Ehlert.

Visuals. Posters and other visual classroom reminders reinforce learning about vegetables and fruits when not using the actual produce. Of course, having a sample of the vegetable or fruit to show and pass around is the best strategy to help children become familiar, feel the texture and form, and smell the produce to stimulate interest in tasting.

Arts. The visual arts offer children another avenue to learn and practice new skills. Creating with crayons, markers, and paints helps children to think and to create. They can incorporate what they are learning about vegetables and fruits into an art piece and share the artwork with their family.

Physical activities. Using games, dance, songs, role play, or puppetry are easy and fun methods to engage young children in learning about vegetables and fruits. Children can use their bodies to grow like sprouting seeds and dance and wiggle to the beat of music while singing a garden-themed song. Playing games builds small and large muscle skills. Creative play, role playing, and using puppets helps them to develop a sense of self while learning about vegetables and fruits. Furthermore, children can share these activities with their parents and families.

Science. Incorporating science activities builds skills in observing, predicting, investigating, recording, critical thinking, and sharing. These activities may include examining the inside and outside of fruits, vegetables, and seeds or observing and charting plant growth.

Gardening. Connecting taste testing to gardening practice is doable in most childcare settings. Growing seeds in bags, small terrariums, containers, and pots provide a tactile experience for children and improves observational, investigatory, and recording skills. Field trips to farms and garden centers, along with guest speakers, enhances the taste-test activity.

Did you know? Purchasing locally grown produce in season for taste testing introduces children to an array of vegetables and fruits. It also supports local producers and can even encourage families to serve locally raised or garden-grown vegetables and fruits as part of a healthy diet.

Extending Learning to the Family

Parents and family play a key role in developing healthy eating habits in young children. Families set the example for healthy eating by providing and preparing the foods and setting the eating schedule. It is important

that childcare providers support busy families in this process. Taste-testing and related activities can be carried out at home if families have the time and resources to do so.

Childcare providers can support families by sharing strategies that create a positive eating environment. These strategies should be offered regularly and often through a family newsletter, social media, email, or even in conversation. Like young children, continuous exposure to healthy habits is necessary for adults to make possible positive healthy behavioral change in their family. Strategies may include the following:

- Print extra taste-test worksheets for families.
- Provide a recipe for the featured vegetable or fruit.
- Demonstrate how children may help in the kitchen.
- Offer conversation starters around vegetables and fruits to reinforce learning.
- Provide appropriate serving sizes or the recommended daily intake for young children.
- Suggest several vegetables and fruits to serve at home throughout the month.
- Provide a list of local farm vendors, farmers markets, or grocery stores that features local produce.
- Display posters, visual aids, and information around the classroom for parents to see at drop-off and pickup times.
- Promote and celebrate food- and health-related campaigns, like October as National Farm to School Month; March as National Nutrition Month; and May as National Physical Fitness and Sports Month.

Did you know? Farm to School is a national strategy that helps school-age children in public and private educational settings establish healthy eating habits while supporting local farmers and ranchers. Farm to Early Care and Education (Farm to ECE) focuses on the youngest learners and their families. Like Farm to School, Farm to ECE teaches children about where their food comes from by integrating three basic approaches:

1. Incorporating more locally grown food into meal and snack programs.
2. Engaging children in hands-on learning through gardening activities.
3. Including agricultural literacy into lesson plans and activities.

All three approaches may not be feasible for every school or childcare setting but exploring even one of these can benefit children. Childcare providers may

- Read story books about farms, farmers, plants, or animals.
- Try indoor and outdoor plant experiments and sensory experiences.
- Conduct taste tests using locally grown, in-season produce when available.

Did you know? Vegetables and fruits taste best when purchased in season and at the source. “Local” can have many definitions, from vegetables right from the school garden to farm products grown in your county, the state of Idaho, or even the surrounding region.

What Idaho vegetables and fruits are typically available throughout the year? The following list offers suggestions of popular seasonal produce to introduce through taste testing month by month:

- January and February: red, blue, white, and gold potatoes; dry beans
- March: leafy greens including lettuce, spinach, and microgreens
- April: asparagus, kale, and cabbage

- May: carrots and radishes
- June–August: berries, cherries, peaches, plums, apricots, and cucumbers
- September: melons, tomatoes, and bell peppers
- October: beets and pumpkin
- November: apples and winter squash
- December: dried fruits and lentils

For a more complete list of seasonal Idaho foods, retailers, and recipes, refer to Idaho Preferred (<https://www.idahopREFERRED.com/>). You can also find your nearest farmers market by visiting the Idaho Farmers Market Association website (<https://www.idahofma.org/>).

Tools

Taste-Test Worksheet—This worksheet was tested over a two-year period in fifteen childcare centers that participated in the Idaho Farm to Early Care Education program.

Step-by-Step Taste Testing Vegetables and Fruits

Recording Reactions to Taste Tests

Notes

¹State of Childhood Obesity. 2019. Obesity rates among WIC participants ages 2–4. <https://stateofchildhoodobesity.org/wic/>. (return to text)

²Institute of Education Sciences, National Center for Education Statistics. (2019). Enrollment rates of young children. <https://nces.ed.gov/programs/coe/indicator/cfa>. (return to text)

³US Department of Agriculture and US Department of Health and Human Services. Dietary Guidelines for Americans, 2020–2025. 9th Edition. (2020). (Pages 73–74). [DietaryGuidelines.gov](https://www.dietaryguidelines.gov). (return to text)

⁴Ibid. (return to text)

⁵County Health Rankings and Roadmap. 2020. Nutrition and physical activity interventions in preschool and childcare. <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/nutrition-and-physical-activity-interventions-in-preschool-child-care>. (return to text)

⁶Nekitsing, C., Hetherington, M., Blundell-Birtill, P. (2018). Developing Healthy Food Preferences in preschool children through taste exposure, sensory learning, and nutrition education. *Psychological Issues* (P.61), doi: 10.1016/j.appet.2015.08.022. (return to text)

⁷US Department of Agriculture and US Department of Health and Human Services. Dietary Guidelines for Americans, 2020–2025. 9th Edition. (2020). (Page 89). <https://www.dietaryguidelines.gov/>. (return to text)

⁸County Health Rankings and Roadmap. (2020). Nutrition and physical activity interventions in preschool & childcare. <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/nutrition-and-physical-activity-interventions-in-preschool-child-care>. (return to text)

⁹Ibid. (return to text)

Additional Resources

Action for Healthy Kids celebrates National Physical Fitness and Sports Month each May with tips for schools and families. <https://www.actionforhealthykids.org/activity/celebrate-national-physical-fitness-sports-month/>.

Be Outside, Idaho, a coalition of diverse organizations, collaborates and shares resources to help address “nature deficit disorder” and to connect Idaho’s youth to the outdoors. <https://www.beoutsideidaho.gov/>.

Best Practices for Healthy Eating (Nemours Foundation), is a practical tool for implementing child-feeding best practices in early care and education settings. <https://healthykidshealthyfuture.org/wp-content/uploads>

/2020/10/25455_Nemours_HealthyEatingGuide_Final.pdf.

Eat Right (Academy of Nutrition and Dietetics) promotes and provides teaching resources for National Nutrition Month each March. <https://www.eatright.org/>.

Centers for Disease Control and Prevention's Developmental Milestones Matter! offers a tracker app and tools for understanding and tracking developmental milestones. <https://www.cdc.gov/ncbddd/autism/features/developmental-milestones-matter.html>.

County Health Rankings and Roadmaps supports communities to be healthy, equitable, and thriving by offering data, reports, and resources. <https://www.countyhealthrankings.org/>.

In "Developing Healthy Food Preferences in Preschool Children through Taste Exposure, Sensory Learning, and Nutrition Education" (*Current Obesity Report* 7(2018): 60–67), Nekitsing et al. discuss different strategies for preschooler's vegetable consumption. <https://link.springer.com/article/10.1007/s13679-018-0297-8>.

Dietary Guidelines for Americans 2020–2025 (USDG2020-2025) provides recommendations for healthy eating patterns by life stages from infants to seniors. https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.

Farm to Early Care and Education (University of Idaho) offers a set of strategies that addresses community health outcomes by engaging early care and education sites in the three core elements of Farm to School —local food procurement, education, and gardening. <https://www.uidaho.edu/extension/small-farms/farm-to-school/early>.

Feeding Young Children in Group Settings (University of Idaho Margaret Ritchie School of Family and Consumer Sciences) offers healthy-living resources, including mealtime and active play strategies. <https://www.uidaho.edu/cals/feeding-young-children>.

Harvest for Healthy Kids provides resources to help children develop healthy eating habits. <https://www.harvestforhealthykids.org/>.

Healthy Children.org's Nutrition and Fitness (American Academy of Pediatrics) offers parent-friendly resources on nutrition and fitness for preschool-aged children. <https://www.healthychildren.org/English/ages-stages/preschool/nutrition-fitness/Pages/default.aspx>.

Healthy Kids, Healthy Futures (Nemours Children's Health Systems) offers childcare providers tools to help their children get a healthy start. <https://healthykidshealthyfuture.org/>.

Idaho Building Blocks for Out-of-School Time Quality, Building Block Standards defines building blocks for quality out-of-school time programming. <https://idahoooutofschool.org/buildingblocks/>.

Idaho Early Learning eGuidelines (Idaho Department of Health and Welfare) provides information on children's development and learning. <https://healthandwelfare.idaho.gov/services-programs/about-idaho-early-learning-eguidelines>.

Idaho Preferred (Idaho State Department of Agriculture) identifies and promotes Idaho agricultural products by connecting farmers and ranchers with consumers, restaurants, retailers, and schools. <https://www.idahopreferred.com/>.

IdahoSTARS defines the standards for quality childcare and training for childcare providers and coaches. <https://idahostars.org/>.

MyPlate Preschoolers offers tips for healthy eating, picky eaters, serving safe food, and additional resources. These resources include practical, easy-to-use information for both childcare providers and families. <https://www.myplate.gov/life-stages/preschoolers>.

MyPlate Plan (English/Spanish) lets the user customize food group (fruits, vegetables, grains, protein, and dairy) consumption based on individual characteristics. <https://www.myplate.gov/myplate-plan>.

State of Childhood Obesity (Robert Wood Johnson Foundation) provides data, facts, and research on obesity rates and successful community-based solutions. <https://stateofchildhoodobesity.org/>.

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