

Husky Nutrition Programs

Husky Reads: Formative Evaluation Report

SNAP-Ed Annual Report, FY 2018

Name: Husky Reads

Type of Evaluation: Formative Evaluation

Questions

3-5 year olds from SNAP-Ed eligible population

- Are preschool-age children able to identify specified fruits and vegetables?
- Do preschool-age children report liking specified fruits and vegetables?
- Can preschool-age children correctly identify MyPlate by name?
- Can preschool-age children correctly name food groups or identify foods that belong to specific food groups?

Approach (scope, design, measures, data collection):

The Husky Reads curriculum includes a series of 10 lessons designed to introduce preschool-age children to MyPlate while improving fruit and vegetable literacy. The lessons, each delivered on a weekly basis, include reading at least one children's book, an activity or game, and food tasting, each to complement learning objectives related to MyPlate. The evaluation team designed a formative evaluation to ascertain the extent to which preschool-age children can correctly identify MyPlate and food group concepts, name specified fruits and vegetables, and report liking specified fruits and vegetables. The planned use for this data is to inform program delivery, refine the approach used for the Husky Reads Food Group interview game, and collect baseline data for a Husky Reads outcome evaluation.

MyPlate Knowledge. The evaluation team began developing the Husky Reads Food Group interview game in 2017 to assess preschool child knowledge about MyPlate. The game design was informed by the *Building a Healthy Me!* survey developed by Larsen et al. (2017) for use in kindergarten classes and the Expanded Food Nutrition Education Program *Eat Well + Move* evaluation survey developed for use with children in kindergarten through 2nd grade classrooms. Piloting of the Husky Reads Food Group interview game occurred in December 2017 at two early care and education programs in Hartford, CT.

Fruit / Vegetable Identification and Liking Survey. The evaluation team obtained permission to adapt a fruit and vegetable preference tool originally created and validated by Carraway-Stage and colleagues (2014). The Carraway-Stage tool uses a five face pictorial scale for children to rate a food as super yucky, yucky, just ok, yummy or super yummy. Preparation for the survey includes a classroom visit for an orientation activity that introduces children in the class to the pictorial liking scale (Carraway-Stage et al, 2014). Approximately one week after the orientation activity, an interviewer administers the survey individually to each child who provides assent using a tablet preloaded with produce pictures. Children are shown a picture of a fruit/vegetable and

asked three questions: 1) What is this called? 2) Have you eaten it before? and 3) How much do you like / don't like it? The Husky Reads version of the Fruit and Vegetable Preference Tool incorporates 16 pictures of produce items.

- Seven fruits: banana, blueberry, strawberry, orange, pineapple, kiwi, watermelon.
- Nine vegetables: avocado, broccoli, carrot, celery, cucumber, green pepper, red pepper, snap pea, and tomato. (USDA MyPlate food gallery includes avocado, cucumber, peppers and tomatoes in the vegetable group).

Data collection for the formative evaluation began in May 2017. As of October 2018, study participation in the evaluation included six early care and education (ECE) centers with a total of 320 children from 24 classes participating in interviews. Children enrolled in the 24 classes participating in the evaluation were eligible for participation. Information packets were sent home to the 359 children eligible and parents were given the option to opt their child out of the evaluation. Of these children 89% completed the baseline survey.

Prior evaluation: USDA Higher Education Challenge Grant (2005-2010) supported early development of the Husky Reads curriculum and its delivery method. (Poehlitz, Pierce MB, and Ferris 2006; Pierce et al, 2012)

Use of SNAP-Ed Priority Indicators: not applicable.

Results.

MyPlate and Food Groups.

Identifying MyPlate. A total of 113 children (ages 3-5 years old) at two early child care and education programs were shown a picture of MyPlate and asked, "Can you tell me the name for this?" Table 1 displays the variety of answers provided by the children.

Table 1. Preschool Age Child Responses to Telling the Name for MyPlate		
Open-Ended Responses	%	n
Correct		
MyPlate	18.6	21
5 food groups / food group / food groups / explained the groups but no name	4.4	5
Reflects some knowledge of MyPlate		
a plate / plate / the group / a group / group / plate where you can know where all the food goes / picture of the food you eat	11.5	13
protein / vegetable(s) / vegetable fruits / fruits / dairy / the grain group. The colors of the food blue is dairy	8.9	10
Not Correct		
Food(s) / food and fruit / different foods / favorite foods / eat food	8.0	9
Circle	7.1	8
Names of various fruits	4.4	5
Colors / name of colors	11.5	13
Miscellaneous answers	10.6	12
I don't know or No Response	15.0	17
Total	100	113

Twenty three percent answered correctly by saying MyPlate (19%) or food groups (4%). Another 20% of children answered in a manner that suggested some knowledge of

MyPlate. Specifically, 12% of children included the words plate or group and 9% named one or more food groups in their answer. More than half of the responses lacked reference to food groups or MyPlate.

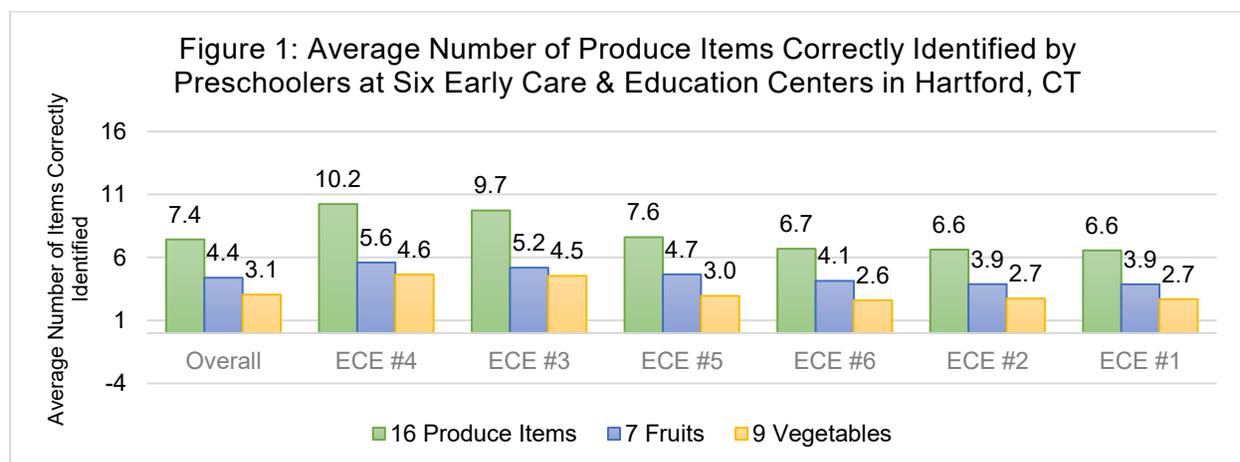
Identifying Foods from a Specific Food Group. Children’s ability to identify foods from a specific food group was measured by showing a set of five or six food pictures and then asking the child to point to all of the pictures of food from the specified food group. A score was calculated based on the number of items correct.

Fruit: Thirty-six children participating in the evaluation were shown six food pictures: glass of milk, banana, carrots, oranges, broccoli and a strawberry. Forty-one percent of the children scored 83% for answering correctly for five of the six food pictures. Twenty-two percent of the children received a perfect score (100%) for correctly identifying the three fruits (banana, orange, and strawberry) without misidentifying any of the other foods (milk, carrots or broccoli) as fruit.

Vegetables: Forty children participating in the evaluation were shown five food pictures: green pepper, strawberry, carrots, broccoli and cereal. Thirty-five percent of the children received a perfect score (100%) for correctly identifying the three vegetables (green pepper, carrots, and broccoli) without misidentifying any of the other foods (cereal and strawberry) as vegetables. Fifty-eight percent of the children scored 80% for answering correctly for four of the five food pictures. This item has been revised to include four pictures: green apple, strawberry, carrots, and broccoli. Green pepper was replaced with a green apple because peppers meet the definition for a fruit while also being grouped as a vegetable by USDA MyPlate.

Identification of Fruits and Vegetables.

Ability to identify fruits and vegetables was measured by showing children a picture of a fruit or vegetable and asking, “What is this called?” A total of 315 children from six early care and education (ECE) centers in Hartford, CT participated in the survey. Figure 1 shows overall and ECE specific results for the average number of produce items, fruits, and vegetables correctly identified.



Children identified an average of 7.4 of the sixteen produce items; 3.1 out of nine of the vegetables and 4.4 out of the seven fruit. Some differences in children’s ability to correctly name the produce items were observed when comparing the ECEs. At two of the ECEs, the average number of correctly named produce items was significantly higher than at the other four ECEs.

Figure 2 summarizes the proportion of children at the six ECEs who correctly named each of the seven fruit. Almost all of the children correctly identified the banana, 85% correctly named the strawberry and 84% correctly named the orange. Fewer than half of the children correctly named the pineapple (48%) and blueberries (43%) while only 11% of children correctly named the kiwi.

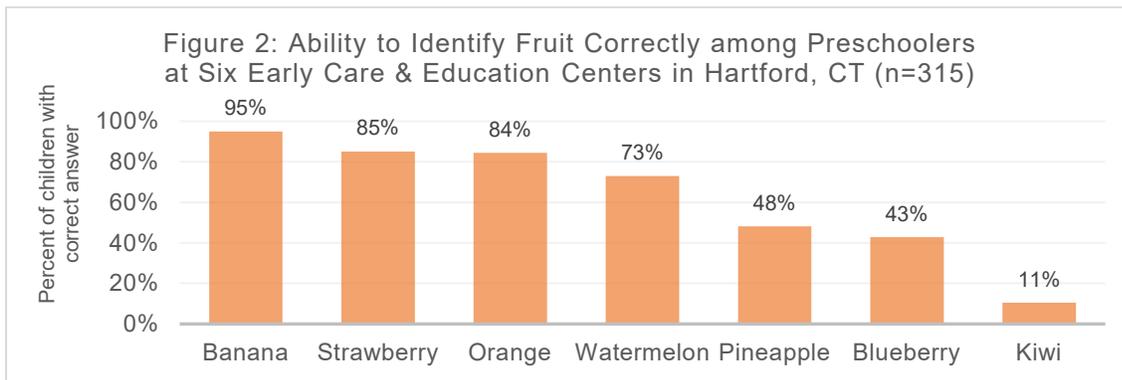
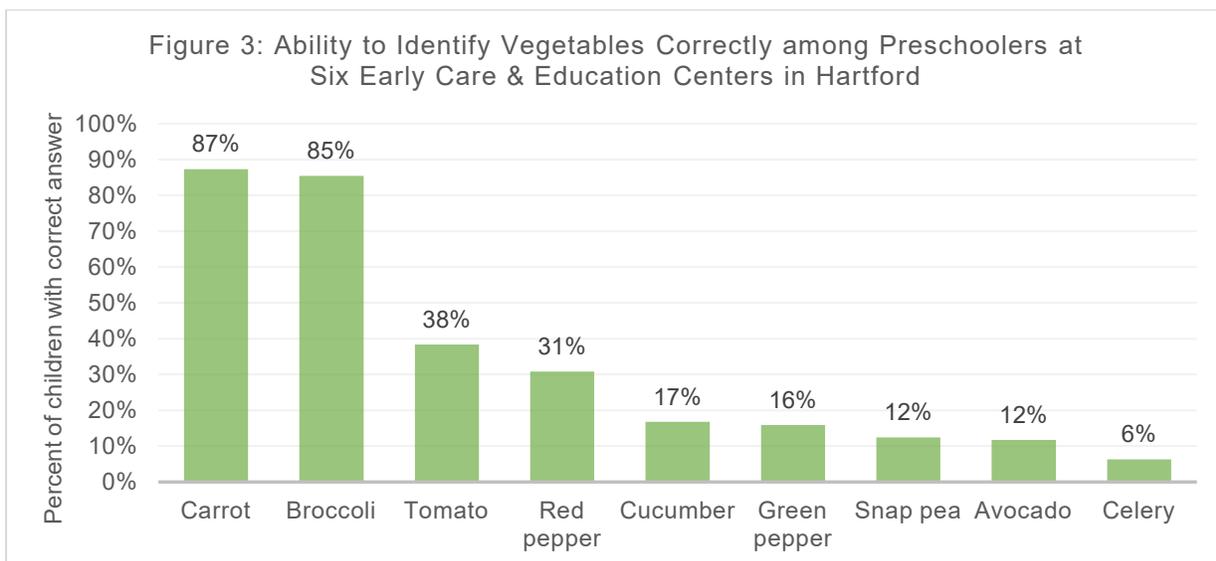


Figure 3 summarizes the proportion of children at the six ECEs who correctly identified each vegetable. Carrots and broccoli were the most commonly recognized with roughly 85% of children correctly naming them when shown the pictures. Correctly naming the other seven vegetables was far less common. Fewer than 40% of the children correctly named the tomato (38%) and red pepper (31%) while fewer than 20% correctly named the cucumber (17%), green pepper (16%), snap pea (12%), avocado (12%) and celery (6%).

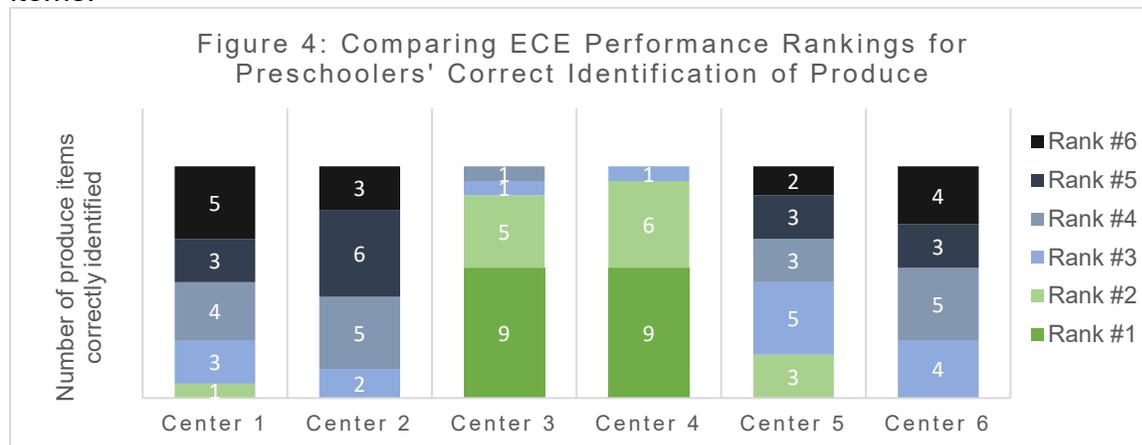


The percent of children who correctly identified the specified fruits and vegetables differed across ECEs. Table 2 summarizes the percent of children who correctly named each of the 16 produce items and also presents the results for the lowest and highest scoring ECEs. The scores range from an 11% point difference for banana to a 58% point difference for blueberry. From the perspective of intervention design, this indicates that the potential to improve the ability to identify specific fruits and vegetables may differ across sites and also by produce item. Figure 4 exemplifies this further.

Produce Item	Children (n=315)	Early Care & Education Centers (n=6)		
		Overall	Lowest Score	Highest Score
Banana	95	89	100	11
Carrot	87	76	100	24
Broccoli	85	75	100	26
Strawberry	85	75	96	22
Orange	84	76	100	24
Watermelon	73	56	88	32
Pineapple	48	40	72	32
Blueberry	43	27	85	58
Tomato	38	29	58	29
Red pepper	31	24	54	30
Cucumber	17	6	52	46
Green pepper	16	9	40	31
Snap pea	12	9	36	27
Avocado	12	6	35	29
Kiwi	11	6	24	18
Celery	6	1	28	27

*Note the potential to improve ability to identify varies by site at baseline.

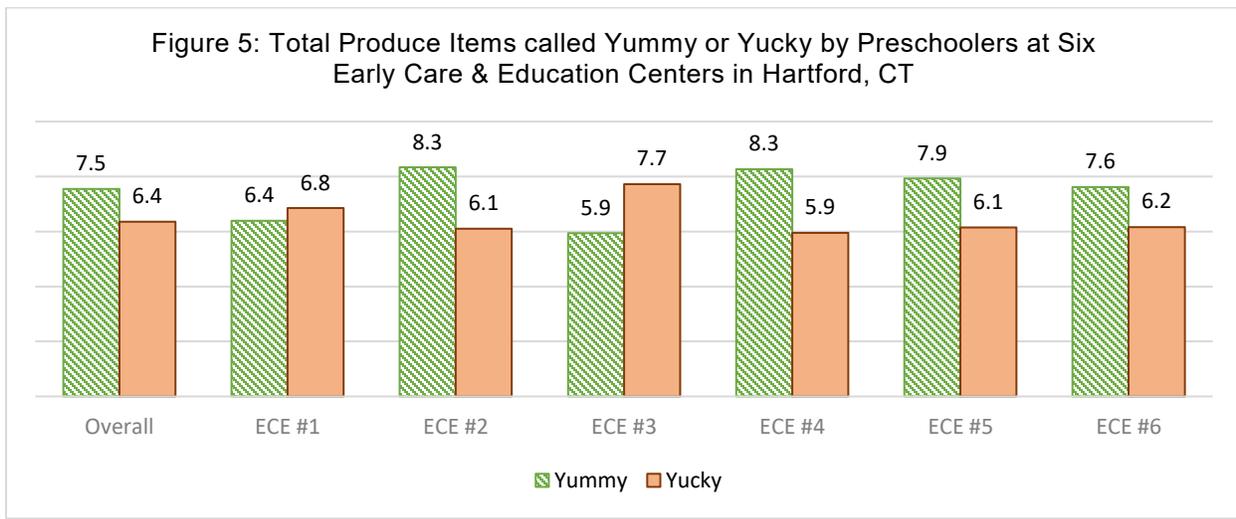
In Figure 4, results are shown for the six ECEs that participated in the evaluation. For each of the 16 produce items, the ECEs received a rank from 1 to 6 for the percent of children who answered correctly. A rank of 1 or 2 indicates the ECE was a top performer. Center 3 and Center 4 ranked in the top for almost all of the produce items tested, whereas Center 1, 2 and 6 ranked in the bottom two for at least seven produce items.



Fruit and Vegetable Preferences.

A total of 315 children from six ECE centers in Hartford, CT were asked how much they like 16 produce items. Figures 5-7 show overall and ECE-specific results for the average number of produce items, fruits, and vegetables reported as “Yummy” or “Yucky.” In Figures 5-7, “Yummy” refers to items where a child pointed to the “super yummy” or “yummy” faces on the picture scale; “Yucky” refers to items where a child pointed to the “yucky” or “super yucky” face. (Responses for “just okay” are not shown).

Note: These responses include the children who did not correctly name the produce item. Children who incorrectly named the produce item often appeared to be more likely to rate the food as yucky or super yucky.



Out of the 16 produce items, children liked an average of 7.5 items and disliked an average of 6.4 items (Figure 5). On average, children disliked more vegetables than fruit (Figures 6 & 7). For the fruit, children disliked 27% of the items (1.9 out of 7) whereas for the vegetables, children disliked almost half of the vegetables (4.4 out of 9). Differences across ECEs were not statistically significant but may have practical implications for programming.

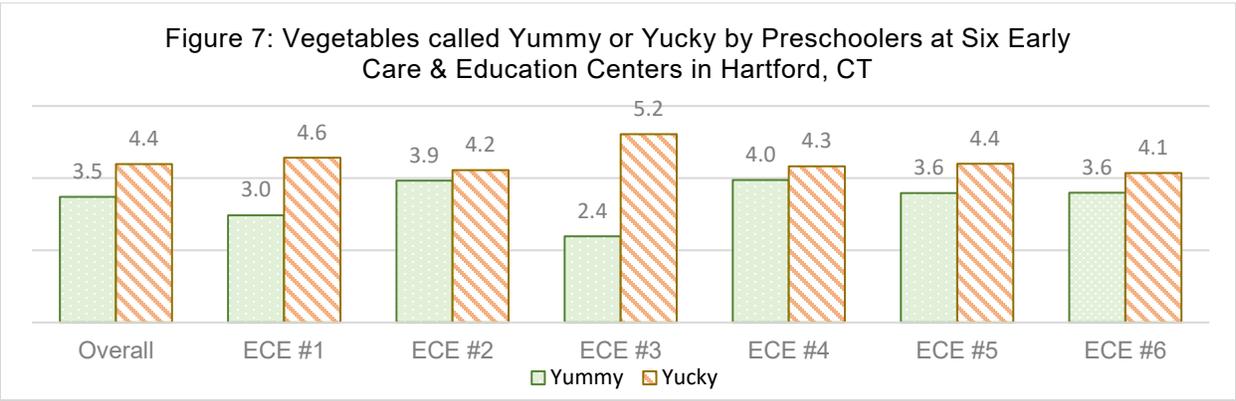
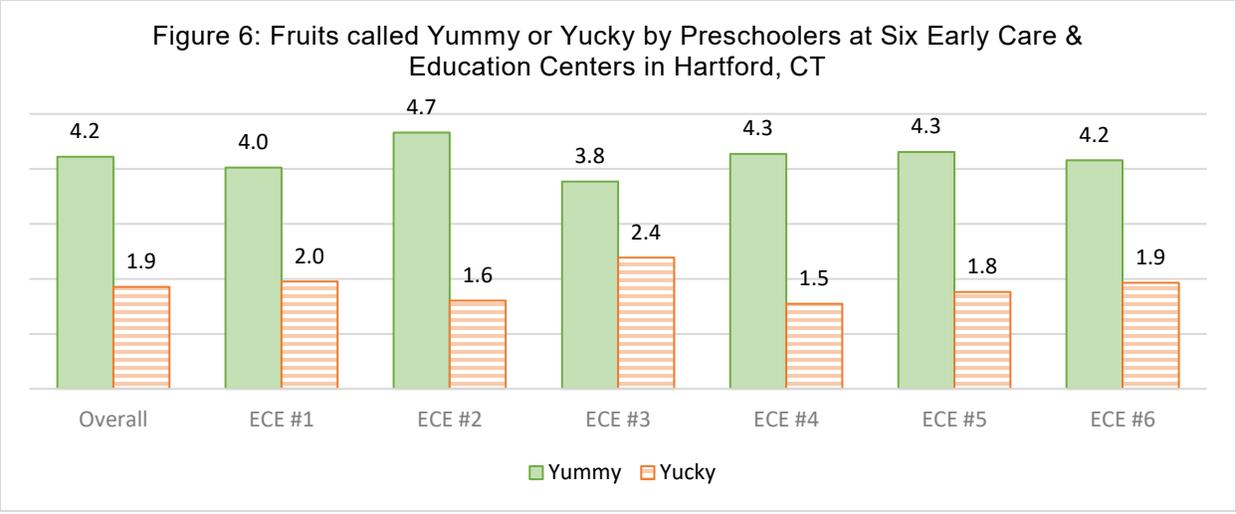


Figure 8 summarizes the proportion of children at the six ECEs who reported liking or disliking each of the seven fruit. Almost 70% of the children reported liking bananas and oranges, two-thirds liked strawberries, 63% liked blueberries and 62% liked watermelon. The fruits most commonly referred to as “yucky” or “super yucky” included kiwis (53%), pineapple (37%), blueberries (26%), and watermelon (23%).

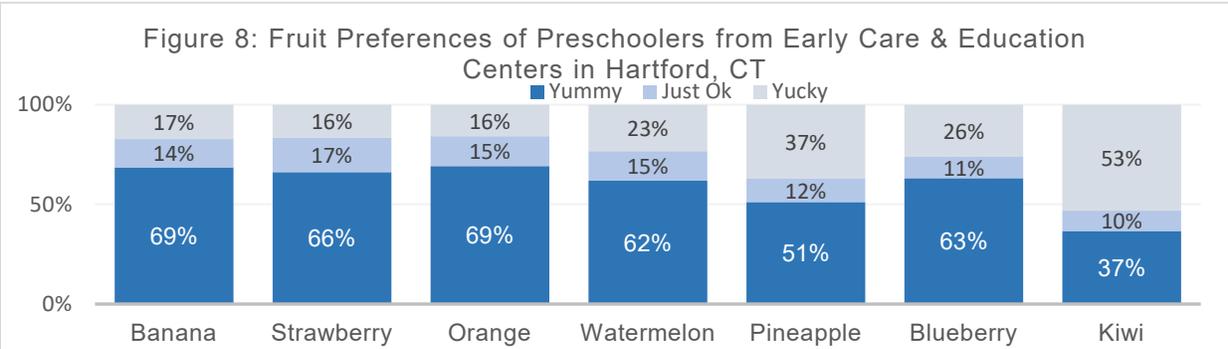


Figure 9 summarizes the proportion of children at the six ECEs who reported liking or disliking each of the nine vegetables. Slightly more than half of the children reported liking broccoli (54%) and carrots (54%). Roughly 50-60% of children reported the remaining seven vegetables as “yucky” or “super yucky.”

