

# BODACIOUS BROCCOLI



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#SNEB2020: What Food Future?

# Bodacious Broccoli: Assessing Preschool-Aged Children's Liking and Acceptance of Broccoli in Different Cooking Forms



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## BACKGROUND

- Early childhood is a crucial time for establishing healthy eating habits.
- Most children in the US eat far below the recommended amount of fruits and vegetables.
- Current nutrition education efforts may not be an effective intervention.



## METHODS

- Research subjects** included a convenient sample of four-year-old preschoolers from a variety of race and ethnic backgrounds (N=17, 35%M).
- Research Design** 3x2 design with cooking form (raw with dip, pizza, soup), presented in three culinary tasting lessons. Raw broccoli was used as a control.
- A binary rating (thumbs up or thumbs down) was used for the three assessment questions.
- The Institutional Review Board of Rutgers University approved this study.

## RESEARCH QUESTION

Does altering the cooking form for broccoli affect how much children like it, desire to consume it again, and demonstrate interest in making it again?

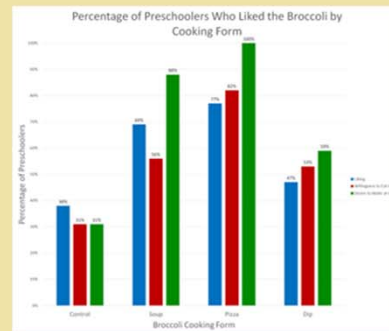


Figure 2: Percentage of preschoolers who indicated liking or disliking of broccoli for each cooking method.

Frequencies for Answers to 3 Assessment Questions for 3 Cooking Forms of Broccoli and Control

Frequencies	Control	Dip	Soup	Pizza
% liked	38	47	69	77
% would eat again	31	53	56	82
% would make again	31	58.8	88	100

Figure 3: Percentage of preschoolers who indicated whether or not they liked, were willing to eat and make again each cooking method.

## CONCLUSIONS AND IMPLICATIONS

- Cooking form was shown to influence preschool aged children's acceptance of broccoli, likelihood to eat broccoli again, and desire to make it at home.
- Broccoli on a pizza has the greatest acceptability factor of all cooking forms.

## ANALYSIS

- Dichotomous rating measures for the 3 assessment questions were examined.
- Frequencies examined answers to 3 assessment questions.
- T-tests were performed to test for significant difference between each of the 3 cooking forms and the control.



## RESULTS

- There was a significant difference ( $p < .050$ ) in the responses to Q3 (Would you be interested in making the item again) for all three cooking forms compared to the control of raw broccoli.
- Broccoli on pizza was the only cooking form with a significant difference from the control of raw broccoli for Q1 Did you like it ( $p = .014$ ) and Q2-Would you eat it again? ( $p = .008$ )

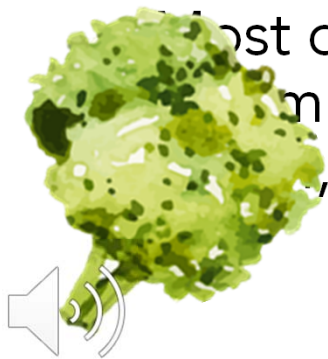
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# BACKGROUND

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- Dietary habits developed in childhood often extend to adulthood (Nekitsing, Hetherington, and Blundell-Birtill, 2018).
- Diets rich in fruits and vegetables (FV) can help prevent obesity and chronic disease

Most children in the US eat far below the recommended amounts of FV (Desalvo, [unclear], and Casavale, 2016)



# RESEARCH QUESTION

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Does altering the cooking form for broccoli affect how much children like it, desire to consume it again, and demonstrate interest in making it again?



# CONTENT DEVELOPMENT



## WHOLE WHEAT BROCCOLI PIZZA

### Ingredients:

- Whole wheat pizza dough, 16 oz.
- Pureed tomatoes, 4 oz.
- Basil, 4 leaves
- Garlic, 1 clove
- Olive oil (for brushing)
- Mozzarella, 8 oz.
- Broccoli, 1 crown
- Salt and pepper (to taste)
- Parchment paper

Serving size: 1 slice, makes 4 servings

## BROCCOLI WITH BASIL TZATZIKI DIP

### Ingredients:

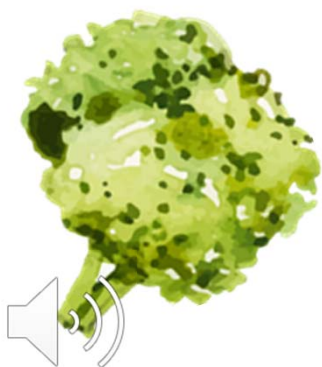
- Broccoli, 2 crowns
- Low-fat Greek yogurt, 2 cups
- Basil, 1 bunch
- Garlic powder, ½ tsp
- Cucumber, ½ chopped
- Olive oil, ¼ cup
- Lemon juice, to taste
- Salt and pepper, to taste

Serving size: 2 tablespoons, makes 16 servings

## SIMPLE BROCCOLI SOUP

### Ingredients:

- Broccoli, 1 crown
- Diced white onion, 6 oz.
- Powdered mashed potatoes, as preferred
- Unsweetened soy milk, 1 cup
- Vegetable stock, 1 cup
- Olive oil, to taste
- Ginger and thyme, 1/8 tsp each
- Salt and pepper, to taste





# METHODS



Did you like the broccoli today?

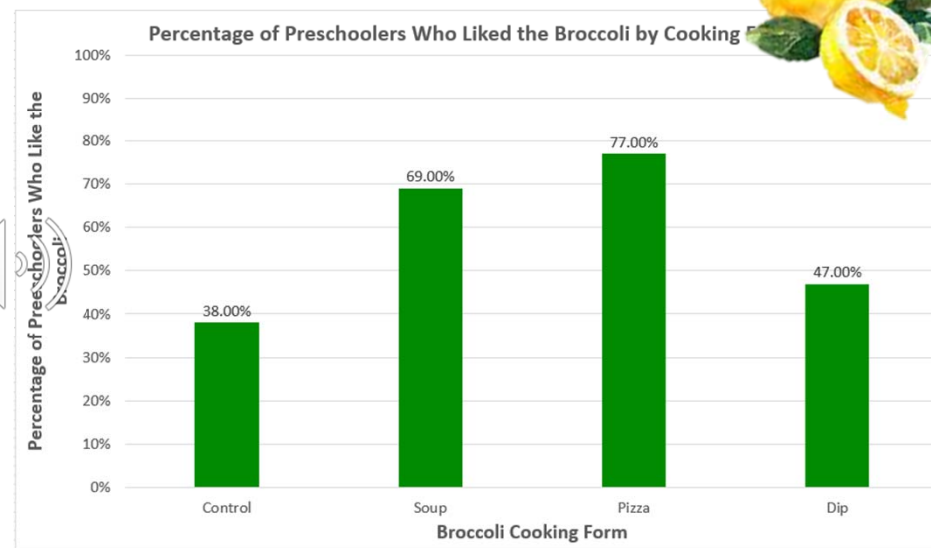
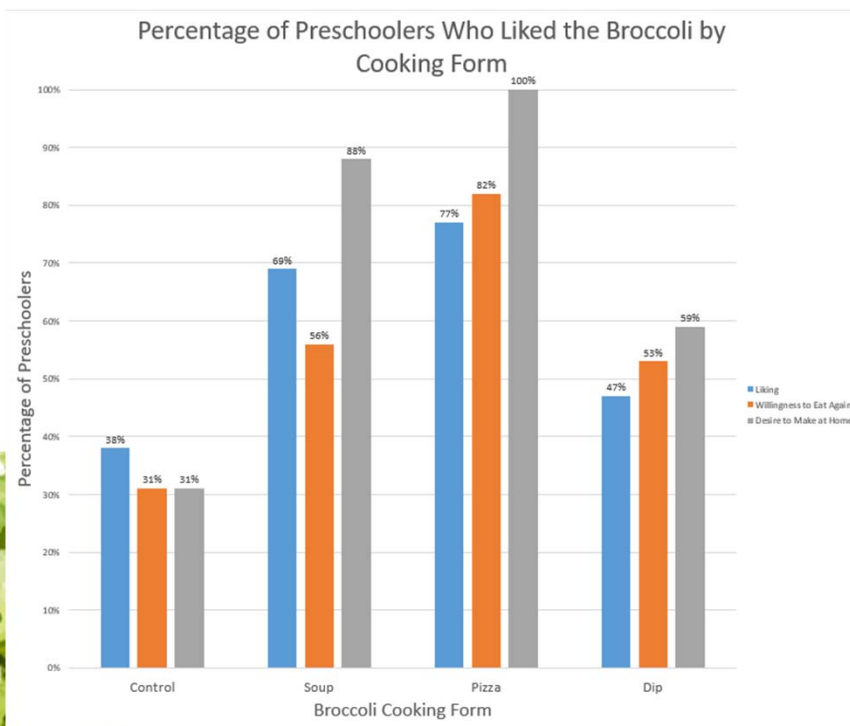
Would you eat the broccoli again?

Would you like to make it again?

The form contains six broccoli-shaped icons arranged in a 3x2 grid. Each icon has a thumbs-up or thumbs-down hand inside its head. The first row corresponds to the question 'Did you like the broccoli today?', the second row to 'Would you eat the broccoli again?', and the third row to 'Would you like to make it again?'.



# ANALYSIS & RESULTS



# CONCLUSION

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Offering broccoli on pizza is a method to increase acceptance of broccoli, likelihood to eat it again, and desire to make at home.



# CONTACT INFORMATION

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