Testing repeated exposure to target fruits and vegetables through hands-on cooking as a way to increase children's preferences for these foods

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Background

- Few US children meet national fruit and vegetable intake recommendations, highlighting a need for interventions.
- Research has demonstrated that repeated taste exposures to previously disliked or unknown foods are a way to increase children's acceptance and liking of those foods.[1]
- The use of repeated taste exposures is a simple strategy to modify children's taste preferences, encouraging healthier diets.
- Hands-on cooking programs have demonstrated positive results in terms of improving nutrition in children from low-income families.[2]
- Summer camps have been shown to contribute to positive youth development and are a possible place to implement interventions that also improve children's health and nutrition.[3]

Objectives

The goal of this study was to incorporate disliked and unfamiliar fruits and vegetables into hands-on cooking recipes in a summer camp to increase children's preference for these foods through repeated taste exposures.

Aim 1: Test if there were increases in children's preferences for target foods from pre- to post-tests

Aim 2: Describe children's ratings of recipes

Participants

18 6-to-8-year-old children from a second grade summer camp class in Buffalo, NY enrolled, and 17 completed all study assessments.

Characteristic	% or mean (SD)
Child gender	76.5% girls, 23.5% boys
Child age (years)	M=7.1 (0.70)
Child race/ethnicity	94.1% African-American/Black, 5.9% Hispanic/Latino

Table 1. Participant characteristics (n=17)

Procedures

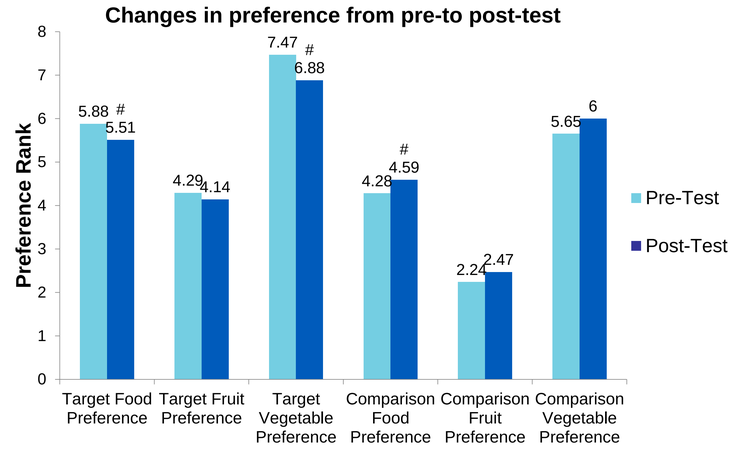
- Familiarity, liking, and preference for nine study foods were measured at pre- and post-tests using a Tasting Game.
- Target foods were chosen if they were low in liking (vegetables) or low in liking and familiarity (fruits).
  - Target fruits: cantaloupe and nectarines
  - Target vegetables: bell peppers and tomatoes
- Children were exposed to the target foods five times each over nine cooking sessions.
- Lesson plans for each visit included the Tasting Game or a recipe followed by group assessment, plus games and a physical activity.

Study Procedures	Sessions (S) 7/11/17-8/17/17											
	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12
Pre-test: study food familiarity, liking and preference	X	X										
Target fruit taste exposures			X	X		X			X	X		
Target vegetable taste exposures			X		X		X	X			X	
Mid point test: target food liking and preference						X						
Post-Test: study food familiarity, liking and preference											X	X

Table 2. Study design

Results

- We saw a trend such that preference for target foods increased from pre- to post-test, driven by increases in preference for target vegetables.
- For the comparison foods, we saw a trend such that preference decreased from pre- to post-test.



Graph 1. Preference changes pre- to post-test
#p<.10 and *p<.05
(lower values indicate higher preference)

- Of all the recipes prepared, 60.1% of children rated recipes as "yummy", 17.4% as "just OK", and 22.4% as "yucky".

Discussion

- Findings show a trend such that preference increased for the target foods, suggesting that repeated taste exposures can increase preference of disliked foods.
- High initial fruit preference may have been a barrier to increasing children's preference for target fruits.
- Five exposures may not have been sufficient enough to significantly increase preference.
- Additional research is needed to test whether results replicate among a larger sample.

References
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