

# Outcomes of the *Familias Saludables*: A quasi-experimental study to reduce obesity among Latino children 5-12 years old

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LONG BEACH STATE UNIVERSITY  
**CENTER FOR LATINO  
COMMUNITY HEALTH**  
EVALUATION & LEADERSHIP TRAINING



# Background

## 1. Obesity disproportionately affects Latino children.

Obesity Prevalence	Hispanic/Latino	NH White
Children and adolescents 12-19 years old. <sup>1</sup>	21.9%	14.7%
Children 6-11 years old. <sup>2</sup>	25.3%	14%

- Childhood obesity is likely to lead to adulthood obesity and other adverse health outcomes such as type 2 diabetes, hypertension, heart disease, stroke, and cancer.<sup>3,4</sup>
- Comorbidities of overweight and obesity during childhood include:
  - hypertension, dyslipidemia, insulin resistance, foot pain, sleep apnea, and psychosocial consequences.<sup>3-5</sup>



# Background

- The literature suggests that successful obesity interventions include **culturally tailored information** about healthful diets and **parent role modeling** for both children and primary caregivers.<sup>5-8</sup>
- Other research with Hispanic adults indicates that **parents need to encourage their children** to eat healthier, but do not have convenient, culturally-relevant learning opportunities to learn what they need to do to reduce their family's risk for obesity and other chronic conditions.<sup>9, 10</sup>
- A **family-based approach** allows parents and their children to practice healthy lifestyle behaviors together.



# The Long Beach Collaborative to prevent Hispanic/Latino childhood obesity



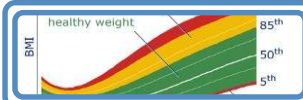
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# Project Objectives

Reduce the proportion of Latino children ages 5-12 years who are considered to have obesity among intervention participants, between baseline and 9-month follow-up.



Decrease in BMI



Decrease the consumption of simple carbohydrates and sugar sweetened beverages (SSB)



Increase the consumption of fruits and vegetables



Decrease the duration of daily time spent in sedentary behaviors



Increase the proportion of children achieving 60 minutes of physical activity (PA) each day



Increase the number of days spent engaging in PA as a family



# Study Population

## Inclusion Criteria:

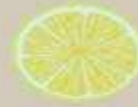
- Hispanic/Latino
- Between the ages of 5-12 years
- BMI at or above the 85<sup>th</sup> percentile
- Resident of Long Beach or LA County
- Have a parent/guardian available to participate in the intervention activities and data collection

## Exclusion Criteria:

- Not meeting the above requirements, and
- Not being able to participate in physical playtime activities
- Not able to stand still for anthropometric measurements



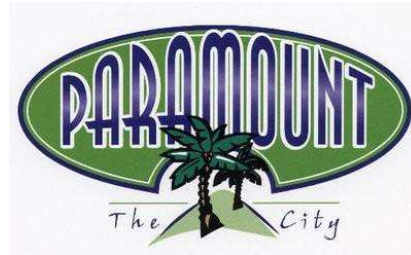
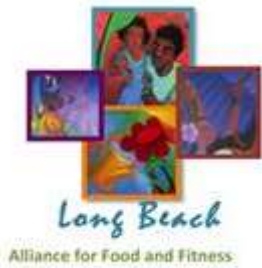
# Methodology



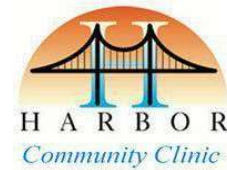
# Setting and Collaborators



LONG BEACH STATE UNIVERSITY  
**CENTER FOR LATINO  
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Community  
Advisory Board





# Study Design

- Quasi-experimental design

## Intervention

- *Familias Saludables* (Healthy Families) intervention

## Control

- Standard care

- Participants were blinded into the study



# Intervention Group

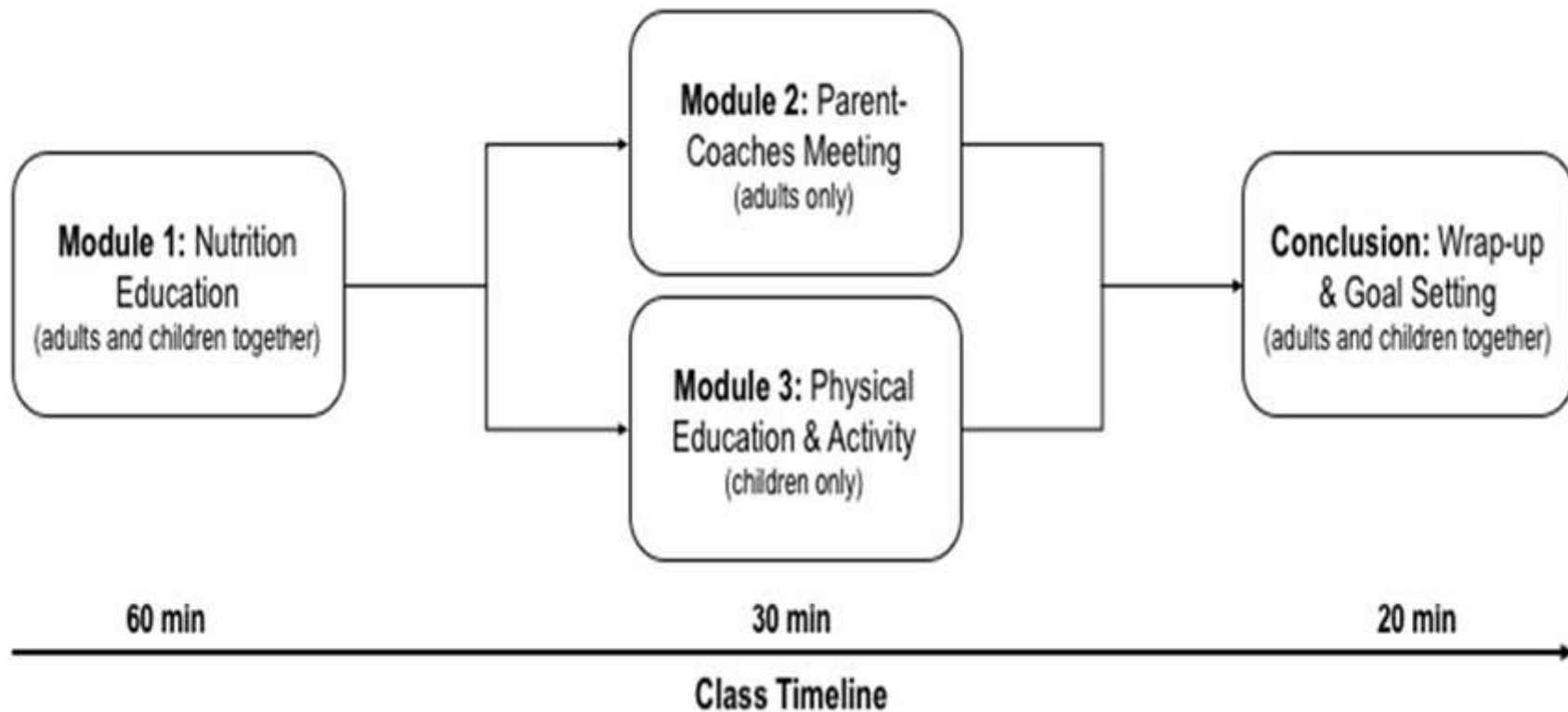
- Received six, 2-hour, family centered sessions based on three evidence-based interventions.
  - KidShape 2.0<sup>11</sup>
  - Sports, Play, and Active Recreation for Kids (SPARK) After School Physical Activity<sup>12</sup>
  - *Sanos Y Fuertes: Healthy & Strong*<sup>13</sup>



- Offered in a group setting with cohorts of 2-5 families



# 2-hour Session Structure



# Curriculum Topics & Activities

## Session 1



- Importance of Breakfast
- Eating as a Family
- Support System

## Session 2



- MyPlate
- Fruits & Veggies
- Mindful eating

## Session 3



- Carbohydrates
- Whole Grains & Fiber
- Hunger & Fullness
- Portion Control

## Session 4



- Protein
- Fats
- Eating and our Emotions

## Session 5



- Sugary Beverages
- Sedentary Behavior
- Physical Activity
- Importance of Sleep

## Session 6



- Healthy Snacks
- Reading Food Labels
- Eating Out Tips
- Life Skills



**Booster  
1**

Cooking  
Demo



**Booster  
2**

Family  
Bootcamp



**Booster  
3**

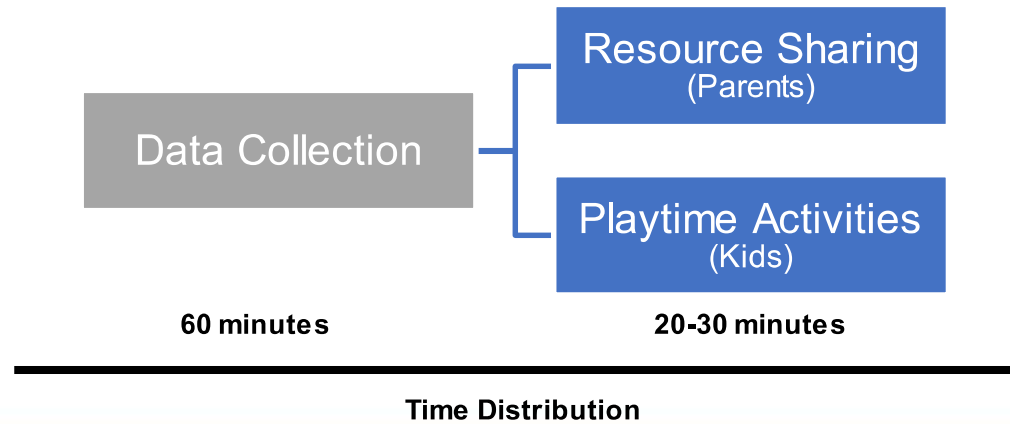
Jeopardy  
Review



LONG BEACH COLLABORATIVE

# Control Group

- Received standard care
  - referrals to free or low-cost community services for the same topics addressed in the intervention
    - nutrition education
    - referrals to food access
    - physical activity opportunities



# Control Topics

1  
Baseline



3  
month



9  
month



# Recruitment and Retention

## Recruitment

- Primarily from the patient pool at participating TCC Family Health centers
  - Potential participants were identified through review of TCC electronic health records (EHRs) by TCC personnel
- Additional recruitment strategies included:
  - advertisement of the project using bilingual print materials (i.e. flyers)
  - lobby recruitment while patients waited to be seen by doctor at TCC health centers
  - tabling at farmer's markets, public libraries, and community events
- Recruitment Goal: 200 participants (100 per condition)

## Retention

- A TCC community health worker was the participants liaison for referrals to services and transportation needs
- Incentives were provided in the form of grocery gift cards for completing assessments



# Study Design and Timing

Implementation of the study took place from July 2018 – Dec 2020

	Baseline (Y1-Y2)	Intervention (Y1-Y2)	Immediate Post- Intervention (Y1-Y2)	3-mo FU (Y2-Y3)	6-mo FU (Y2-Y3)	9-mo FU (Y2-Y3)
<b>Treatment N=100</b>	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>	O <sub>5</sub>
				x <sub>1</sub>	x <sub>2</sub>	x <sub>3</sub>
<b>Control N=100</b>	O <sub>1</sub>			O <sub>2</sub>		O <sub>3</sub>
<b>FU = Follow-up; O = observation; X = Intervention implementation; x = booster session</b>						



# Evaluation

- Three measurement time points
  - Pre, 3, and 9-month
- Survey measures
  - Self-report survey data using bilingual paper instruments
    - Parent demographic
    - Child survey (BLOCK FFQ)
    - Parent Survey
- Anthropometric measures
  - Height, weight, BMI using a portable bioimpedance scale
- Statistical analysis
  - Wilcoxon signed rank test for repeated-measures
  - Regression modeling for trends over time



# Evaluation Design

Instruments Measures	
<b>Decrease BMI</b> <ul style="list-style-type: none"> <li>Fat percentage</li> <li>BMI percentile</li> </ul>	<ul style="list-style-type: none"> <li>Measured by Tanita SC-331S Body Composition analyzer</li> <li>CDC growth charts and calculator</li> </ul>
<b>OMH cross site measures</b>	
<b>Decrease the consumption of simple carbs and SSB</b>	Program-specific food frequency questionnaire, adapted from the BLOCK FFQ
<b>Increase the consumption of fruits and vegetables</b>	Self report dietary recall program specific food frequency questionnaire adapted from the BLOCK Food Frequency Questionnaire (FFQ)
<b>Decrease the duration of daily time spent in sedentary behaviors</b>	Adapted Sedentary Behavior Questionnaire, and Adolescent Sedentary Activity Questionnaire.
<b>Increase the proportion of children achieving 60 minutes of PA each day</b>	Adapted Physical Activity Questionnaire (PAQ)
<b>Increase the number of minutes spent in PA as a family</b>	



# Results



# Participants

	Number of Families Enrolled in <i>Familias Saludables</i>	
	Intervention	Control
Families	81	71
Child Study Participants	<b>91</b>	<b>85</b>
Guests	143	87
Total Reached	315	243

**558 people served**

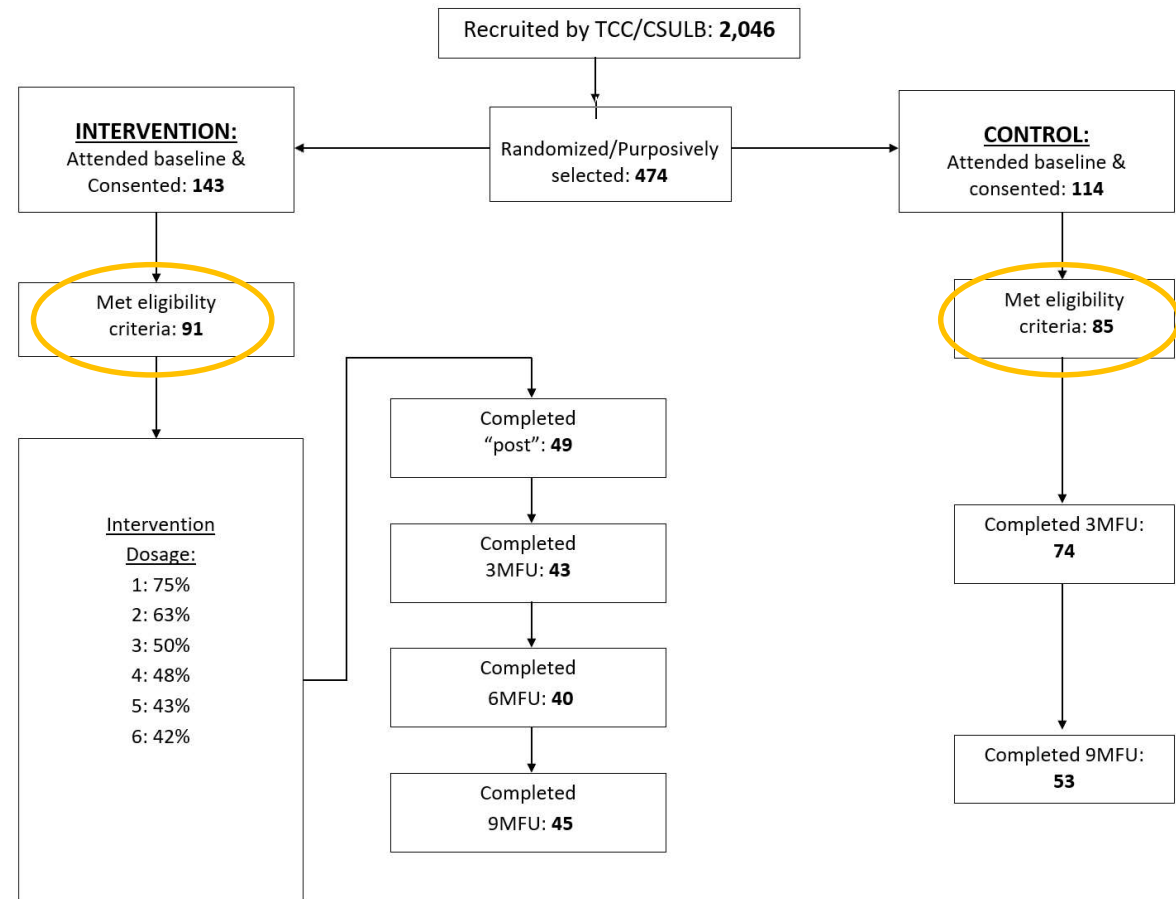


# Enrollment & Participation Flowchart

Recruitment activities ceased in March 2020 due to COVID-19

Retention rate was lower than we expected

- 62% for Control
- 50% for Intervention



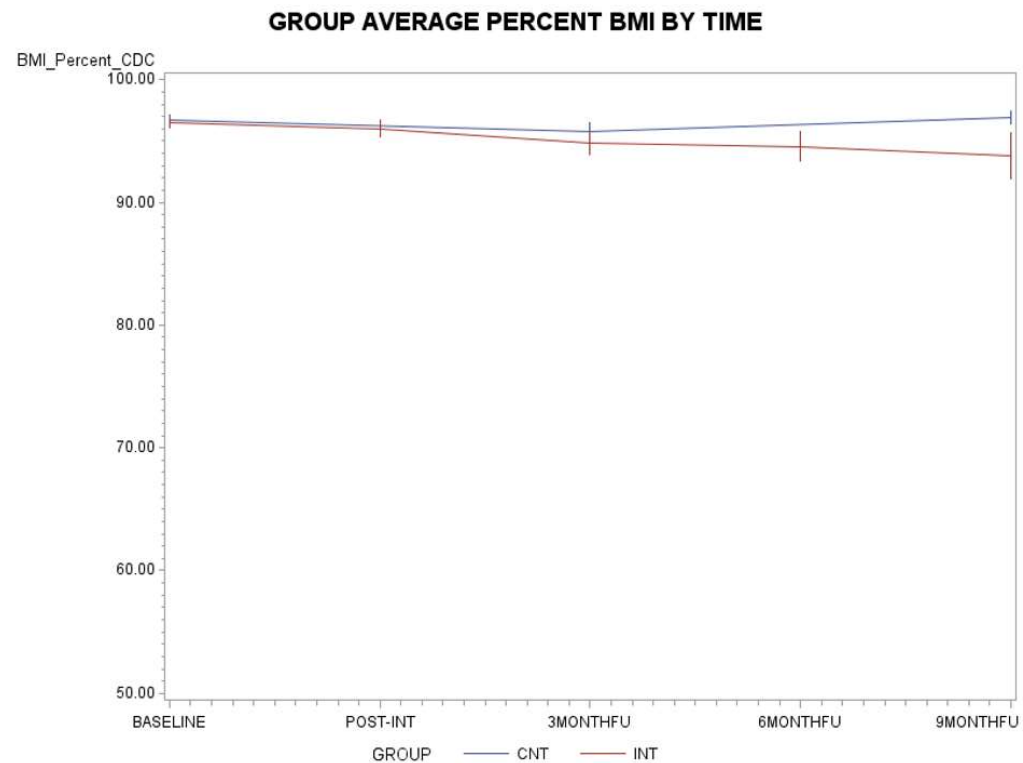
# Demographics

Analysis of baseline data showed study groups were comparable.

Characteristics	Intervention Arm		Control Arm	
	n	%	n	%
Children	N=143		N=114	
BMI %**				
Normal (0-74)	46	32.2	21	18.9
Overweight (75-84)	6	4.2	7	6.3
Obesity (85-99)	91	63.6	85	74.8
Age	8.8	2.1	9.1	2.1
Gender				
Female	43	47.3	36	42.4
Male	48	52.8	49	57.7
Race*				
White	35	40.2	24	33.8
Black or African American	1	1.1	4	5.6
American Indian or Alaskan Native	2	2.3	0	0.0
Asian	0	0.0	0	0.0
Native Hawaiian or Other PI	1	1.1	1	1.4
Chose not to Answer	48 →	55.2	42 →	59.2
Weight	93.5	42.6	102.5	45.2
	Range: 35.8 – 232.0		Range: 40.4 - 261.6	

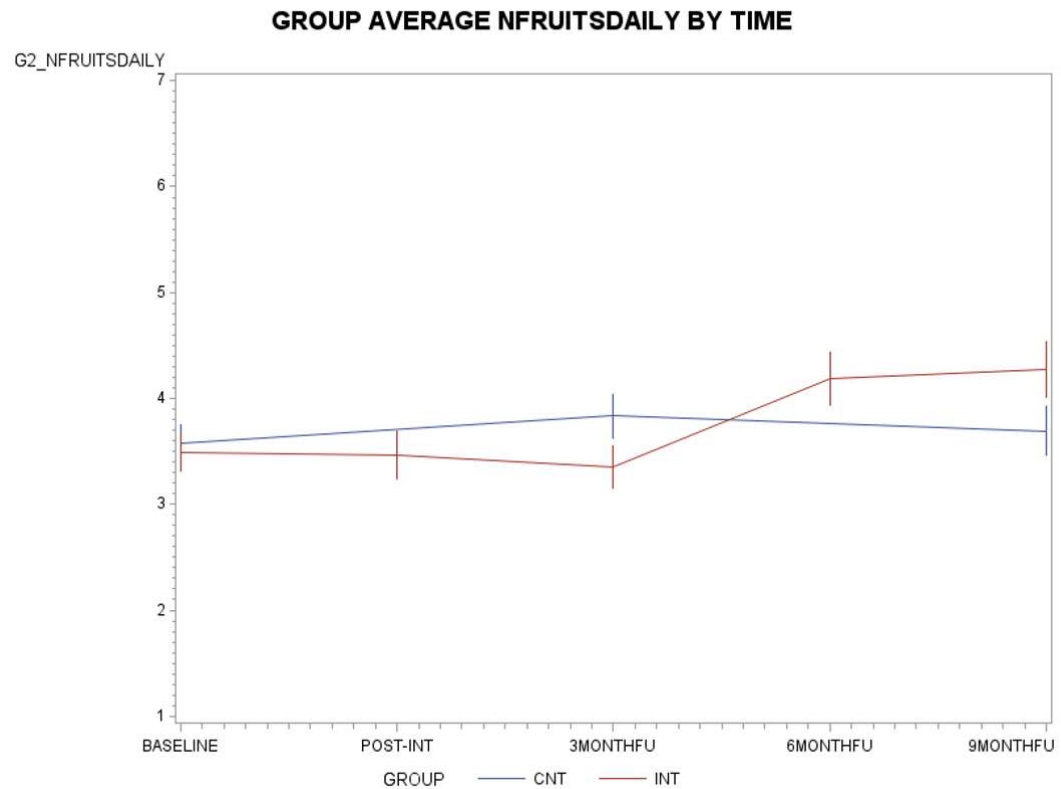
# Outcome: BMI Percentile

There were no significant decreases in BMI from baseline to 9-month between the two groups.



# Outcome: Fruit Consumption

Fruit consumption is marginally significant among intervention participants at 9-months ( $p=.053$ )

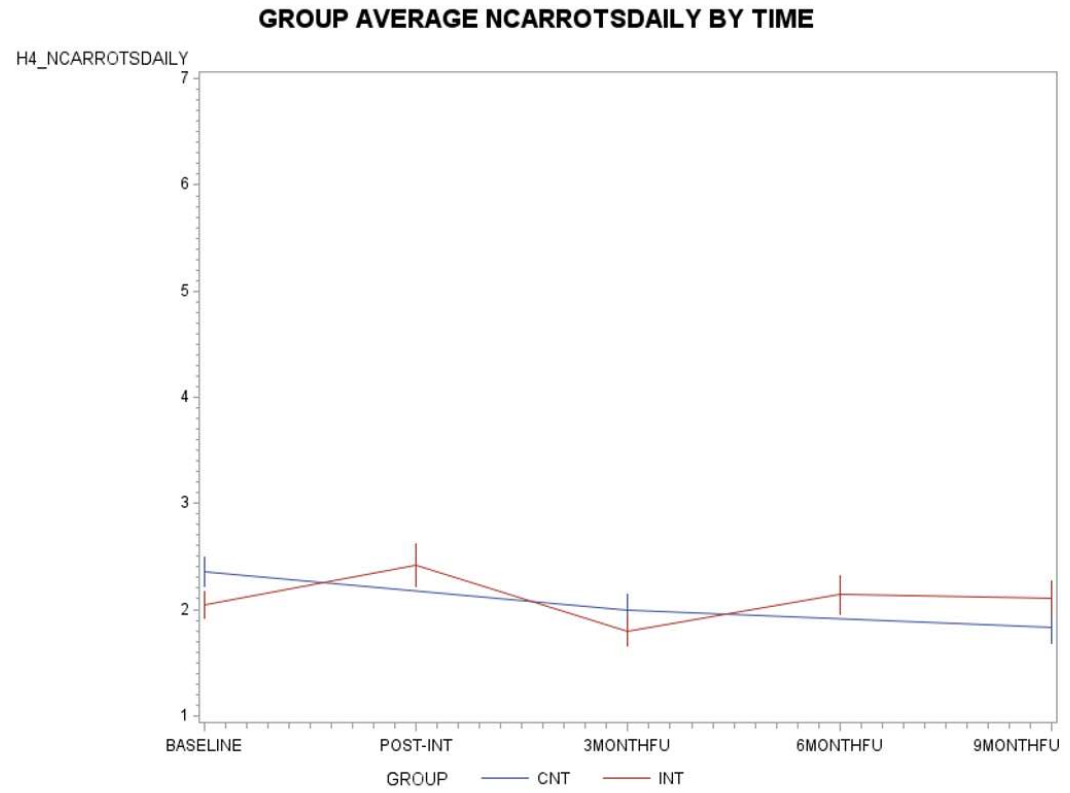




# Outcome: Vegetable Consumption

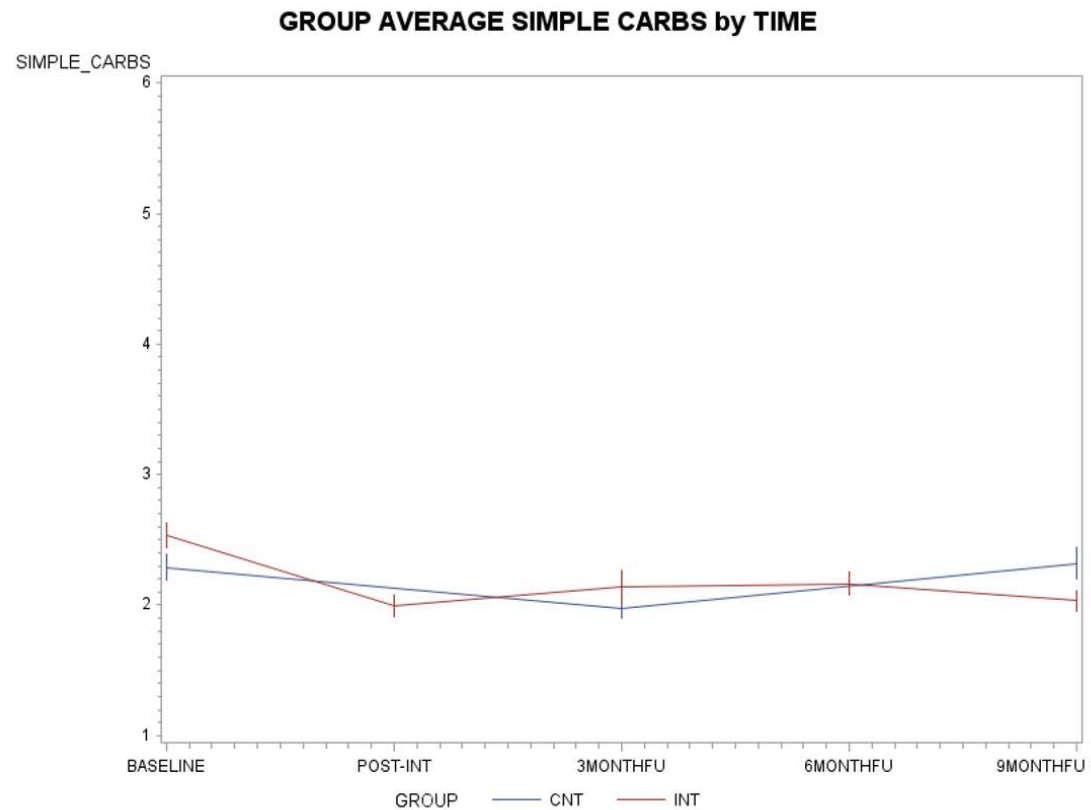
There were no significant differences between groups for vegetable consumption.

Daily consumption of **carrots** was significantly higher among intervention participants at 9-months ( $p=.031$ )



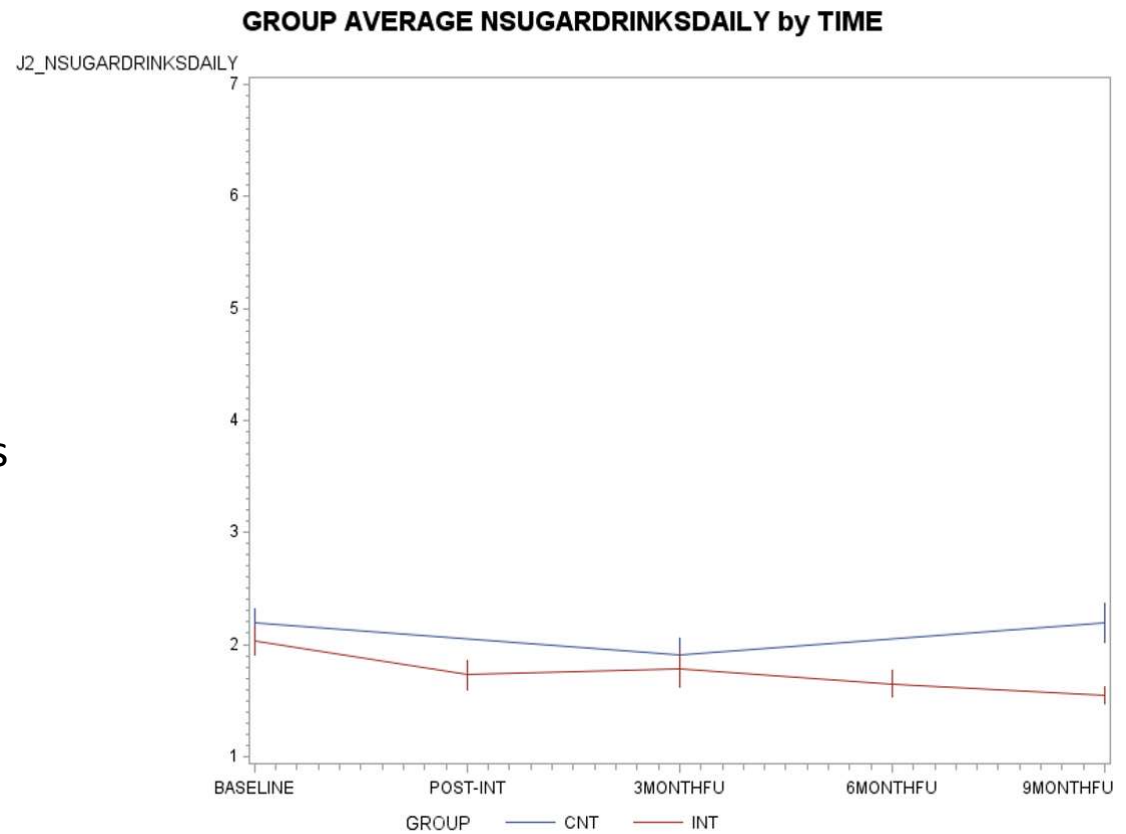
# Outcome: Simple Carbohydrates

Consumption of simple and refined carbs significantly decreased from baseline to 9-months among intervention participants. ( $p=.046$ )



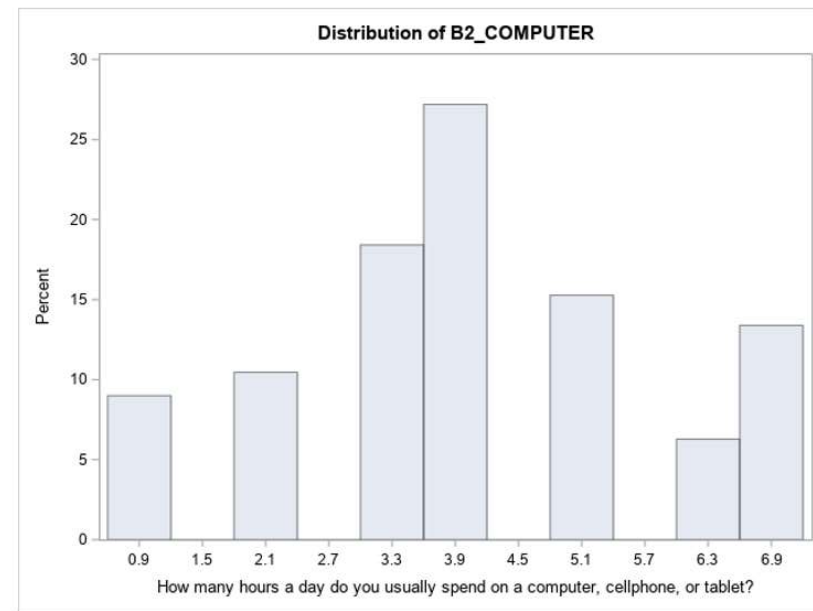
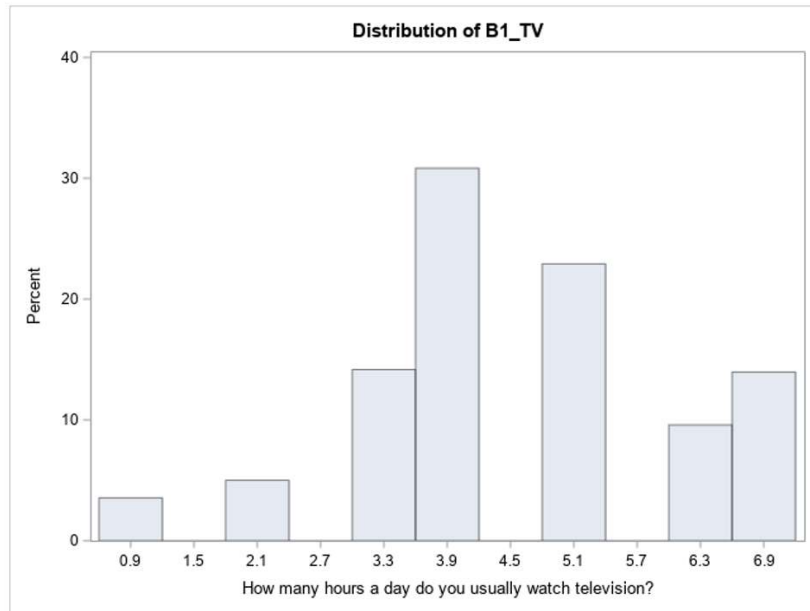
# Outcome: Sugary Sweetened Beverages

There was a reduction in  
sugary sweetened  
beverage consumption  
that was sustained at 9-  
month follow up for  
intervention participants  
( $p=.002$ )



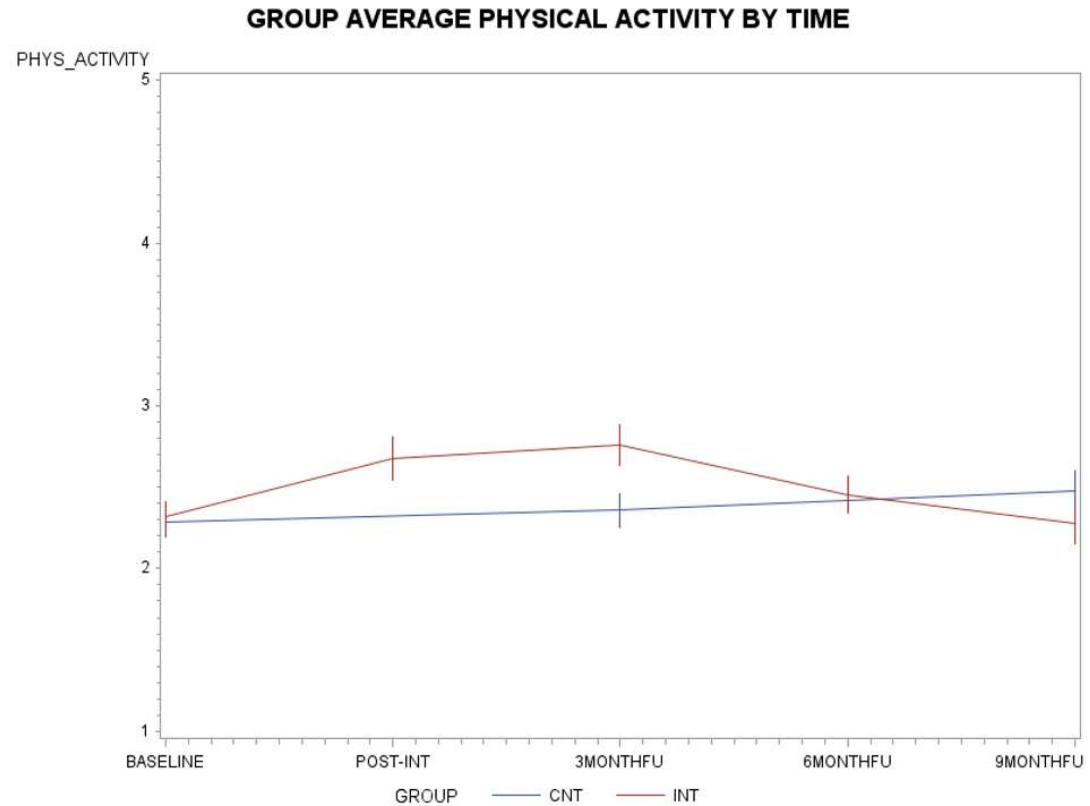
# Outcome: Sedentary Behavior

There were no significant decreases in sedentary behavior, measured by use of screen time such as watching tv and playing video/computer games.



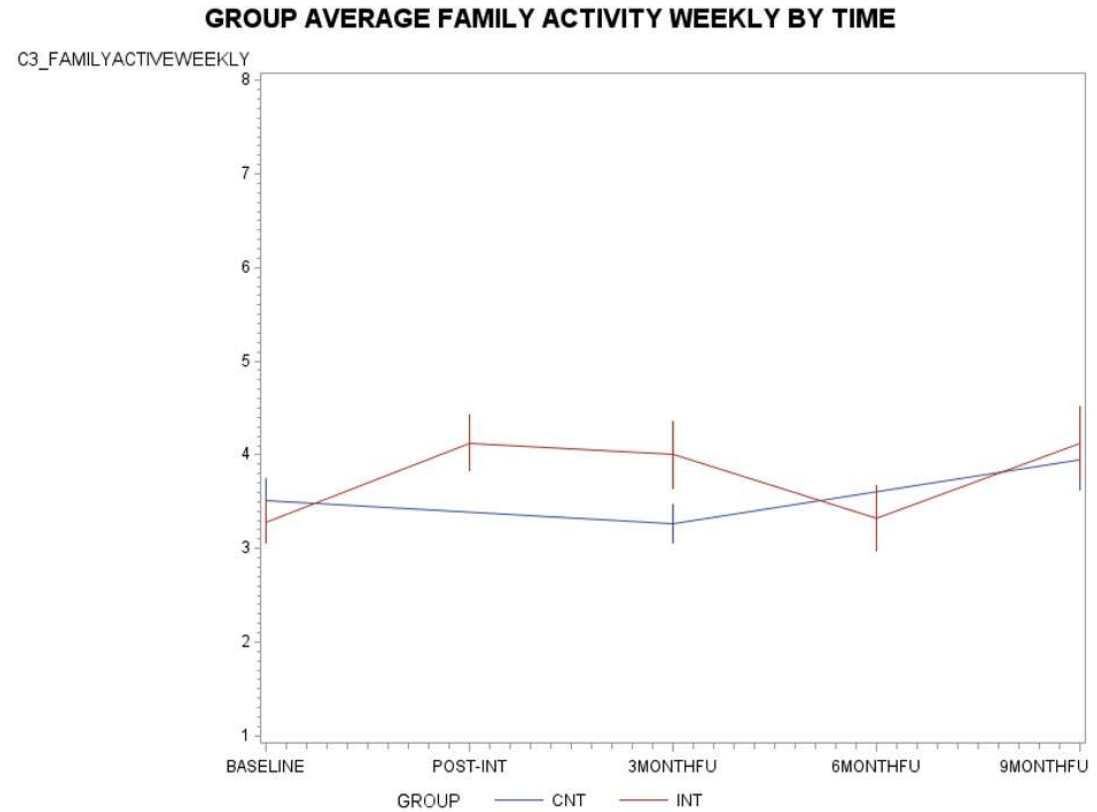
# Outcome: Physical Activity

There were significant increases in daily physical activity at 3 months for intervention kids ( $p=.011$ )



## Outcome: Family Physical Activity

There were no significant differences in physical activity as a family between the groups.



# Results Between Groups

Intervention	Baseline	3MFU	9MFU	Control	Baseline	3MFU	9MFU
BMI %	96.48	94.80	93.80	BMI %	96.72	95.72	96.91
Simple carbs consumption/week	2.54	2.14	2.03	Simple carbs consumption/week	2.29	1.97	2.32
SSB consumption/day	2.03	1.78	1.54	SSB consumption/day	2.19	1.91	2.19
Fruit servings/day	3.49	3.36	4.27	Fruit servings/day	3.58	3.84	3.69
Vegetable servings/day	2.32	2.57	2.77	Vegetable servings/day	2.62	2.38	2.55
Sedentary behavior: hours of TV/day	4.71	4.15	4.38	Sedentary behavior: hours of TV daily	4.69	4.42	4.48
Sedentary behavior: hours of video/computer games/day	4.09	3.85	4.08	Sedentary behavior: hours of video/computer games/day	4.19	4.17	4.02
Daily physical activity time	2.32	2.76	2.28	Daily physical activity time	2.28	2.36	2.48
Days physically active as a family	3.28	4.00	4.13	Days physically active as a family	3.52	3.27	3.94

# Conclusions

- Children at the 85<sup>th</sup> percentile for obesity and above, may need more intensive clinical treatment.
- Reduction in sugary beverage consumption and increasing physical activity levels seem to be obesity factors that Latino families are ready to change.
- Continuous opportunities for engagement as a family in healthy lifestyle programs can motivate children to continue to be active and eat more fruits.
- Family-based culturally tailored healthy lifestyle programs, focusing on diet and physical activity, show promise in increasing physical activity levels and improving dietary behaviors may help prevent overweight and obesity among Latino children in urban communities.





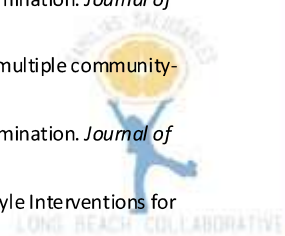
# Acknowledgements

- **Funding:** Office of Minority Health
- **Co-Principal Investigators:** Mara Bird, Ph.D., and Elisa Nicholas, M.D., and Melawhy Garcia, MPH, Ph.D.
- **Evaluator:** Olga Korosteleva, Ph.D.
- **TCC Staff:** Liliana Martinez, MPH and Yoselin Garcia
- **Research Staff (Fellows):** Angelica Durazo, Lucia Muro, Maricela Bravo, Jacqueline Garay, Lucero Silva, Patricia Dionicio, Esmeralda Castro, Kimberly Sanchez, Patricia Trinidad, Jesus Gaona, Clarivel Vega, and many other student interns from Health Science, Kinesiology, Healthcare Administration, Nutrition, and Mathematics.
- **Participants:** Families from Long Beach and surrounding cities in LA county



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*¡Gracias!*  
**Thank you!**

