

Combating childhood obesity among Spanish speaking families:
new **valid evaluation & education tools**
for practitioners & researchers

moderator



Deirdra
Chester
PhD, RD

speakers



Marilyn
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PhD, RD



Mical
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PhD



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Diaz Rios
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Lenaa
Oriol
PhD

SNEB 2019

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Karina
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PhD, RD

Niños Sanos Overview & Motivation

Adaptation of obesity risk assessment tools
for low-literacy Spanish-speaking parents

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Introductions



Mi Niño a la Hora de Comer
Validation



Niños Sanos Overview &
Cultural Adaptation



Medical Clinic Intervention
& Education Tools/Website



Niños Sanos Validation



Questions
Discussion

outline

2



nutrition + PA +
screen + sleep



parenting
+ meal time

5



By the end of the session you will be able to...

Discuss the needs of the audience and the
purpose of tools presented.

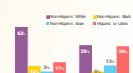
Describe how the evaluation tools were
validated for low-income, low-literate
Spanish speaking families.

Use the tools to tailor and evaluate nutrition
education interventions to improve the
family feeding environment.

learning objectives

3

race/ethnicity distribution



language spoken at home
(in the U.S.)

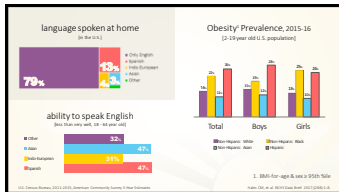


ability to speak English
(you state very well, 18-62 year old)



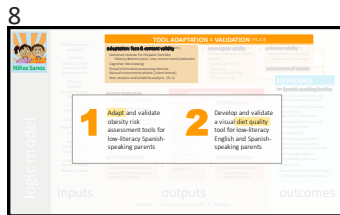
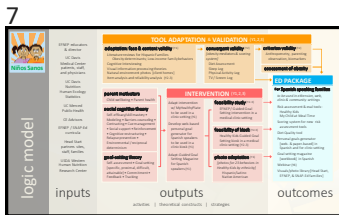
U.S. Census Bureau, 2011-2013, American Community Survey 5-Year Estimates

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Obesity Risk, Parenting, and Diet Quality Assessment Tools for Spanish-speaking Families with Preschool-Age Children:
EFNEP, Head Start, Medical Clinic sites

- 1 Adapt and validate obesity risk assessment tools for low-literacy Spanish-speaking parents
 - 2 Develop and validate a visual diet quality tool for low-literacy English and Spanish-speaking parents
 - 3 Determine feasibility and potential synergy of outcomes of EFNEP site located in a medical clinic
 - 4 Assess feasibility of using Healthy Kids tools and goal setting in English and Spanish speaking patients
- project aims



adaptation

domain

- clarity
- comprehension
- appropriateness
- relevance
- equivalence
- visuals

13

Evidence Analysis lit. reviews

Content Validity vegetable variety & HEI

Face Validity cognitive interviews

Diet Quality [vegetable variety]

33 items

Deaton, et al. JAMA Internal Medicine. 2019;139:10-15
Garnett, et al. J. Acad Nutr Diet. 2014;14:430-35

16

adaptation

domain

- clarity
- comprehension
- appropriateness
- relevance
- equivalence
- visuals

14

adaptation

domains

- clarity
- relevance
- suitability
- appropriateness

Deaton, et al. JAMA Intern Med. 2019;139:10-15

17

adaptation

domain

- clarity
- comprehension
- appropriateness
- relevance
- equivalence
- visuals

15

adaptation

domain

- clarity
- relevance
- suitability
- appropriateness

18

adaptation

I don't use cans, I cook from scratch

I rarely use peppers that way

domain

clarity
relevance
suitability
appropriateness

Is the vegetable well represented by the pictures?

What pictures would better represent this vegetable?

English

- Beans
- Peppers
- Tomatoes
- Potatoes

Spanish

- Ajíacos
- Chile
- Tomate
- Aguacate

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purpose of validation

Prove your tool has meaning
Prove it means what you say it does
Assess its accuracy
Establish the trustworthiness of tool

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adaptation

1 forward translation
2 back-translation verification
3 cognitive interviewing

Accurate data collection requires...

- Accounting for linguistic and cultural characteristics of target respondents
- Verification equivalence with original version

summary

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ADMINISTRATION MODE

self-administered

- paper + pencil
- online, electronic
- group

interview

- one-on-one in person
- one-on-one phone
- guided group

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Niños Sanos Validation

Marilyn Townsend
PhD, RD

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evaluator's division of responsibility

researcher **what** ↔ respondent **how**

Source: McEwen et al. / Nutr Educ Behav. 2014;44(2):109-14

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content validity

dietary

- Vegetables availability
- Vegetables as snack
- Vegetables in main meal
- Vegetable variety
- Fruit intake
- Fruit availability
- Fruit accessibility
- Fruit as snack
- Soda frequency
- Sport drinks/punch/frag
- Energy dense foods
- Dairy/fat
- Energy dense snacks
- Meat fat
- Milk frequency

parenting

- Modeling at mealtime
- Television
- Other screen use
- Play sedentary time
- Bedtime

Ornela et al., 2008; Thompson et al., 2008; Thompson et al., 2008

study 1

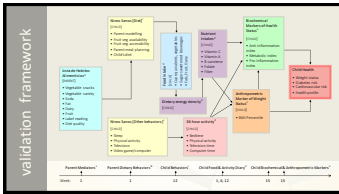
45 items

176 English speakers

study 2

45 items

204 Spanish speakers



25

tool purpose

1 evaluation
pre-post evaluation of community programs

2 risk prediction
identification of those most in need of intervention

3 program planning
address risk behaviors of target group

4 tailoring
selection of behavioral goals for an intervention

5 surveillance
assessment of population outcomes over time

6 survey
assessment of community needs and behaviors

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qualitative

Content validity
Face validity

quantitative

Criterion validity (bookmark, video-observer)
Convergent validity
Internal consistency
Discrimination analysis
Temporal stability
Readability
Sensitivity to change

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		DEVELOPMENT		
validity	content	experts	identify & select content domains—behavior relevant to target clientele	initial \$
	face	client	Taker to incorporate client's vocabulary and content	initial \$\$
	construct	client	For scales with no objective measures (eg attitudes, beliefs, self-efficacy)	stages 1-6 \$\$\$-\$\$\$\$
	convergent	client	Determine link to diet	post-initial \$\$\$\$
	criterion	client	Determine link to health	post-initial \$\$\$\$
reliability	stability	client	Does the item give same response over time for the same client?	mid-\$\$\$
	internal	client	Does the item in the scale all contribute to the construct?	mid-\$\$\$

Thompson et al., 2008

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Parent vs. Child BMI

$p < 0.0001$

parents			children		
category	BMI	%	category	BMI score for age	%
Normal	< 25	20.3	Low	0 – 5	4.0
Overweight	25 – 30	36.2	Normal	5 – 85	65.3
Obesity	30 – 40	37.2	Overweight	85 – 95	13.6
Morbid Obesity	> 40	6.3	Obesity	> 95	17.1

results

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item reduction

Began validation process with more test items than wanted in final version

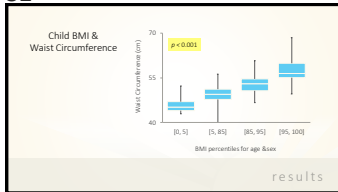
Then chose best items and jettisoned the non-performers

How to select for reduction

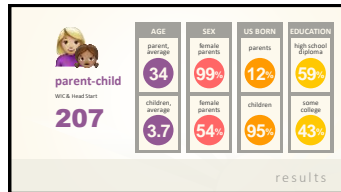
- duplication
- not related to BMI
- does not discriminate (100% eat breakfast)

considerations

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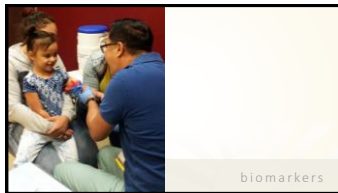
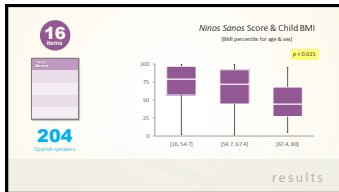
35



33



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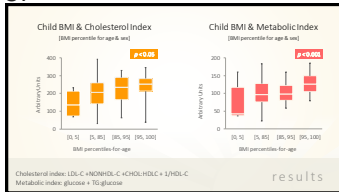


Blood Biomarkers

criteria validity

Pro-Inflammatory	Anti-Inflammatory	Metabolic	Lipid	Carotenes
Leptin	Adiponectin	Insulin	Cholesterol	Retinol
Interleukin-6	Interleukin-10	Glucose	Triglycerides	α -carotene
Interleukin-8	IGF Binding Protein-1	TG:GLU	HDL-C	β -carotene
TN Factor- α			LDL-C (calc)	
Retinol Binding Protein-4			CHOL:HDL-C	
C-Reactive Protein			TG:HDL-C	

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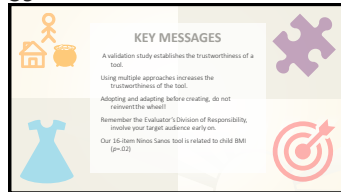
40

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39



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Leticia
Ontal
PhD

Measuring Parent Food-Related Behaviors
with Spanish-speaking Parents of Preschool
Aged Children: Validation of Mi Niño a la
Hora de Comer-Year 4

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Itemsfood-related parenting
behaviorsI get my child to eat by explaining
the food is good for him.Hago que mi niño(a) coma explicándole que
le conviene lo que le estoy dando.
 Nunca
Never
Rarely
 A Veces
A Times
 Siempre
Always
 Muy Siempre
Very Always
I struggle with my child to get
her to eat (pick her up and
put her in the chair).Batallo frecuentemente con mi niño(a) para que
coma (alzarlo(a) y ponerlo(a) en su silla).
 Nunca
Never
Rarely
 A Veces
A Times
 Siempre
Always
 Muy Siempre
Very Always

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1
test structure
Confirmatory Factor Analysis

caregivers

238



methods

validation - CFA

46

44

parent centered

I tell my child she will get a treat for eating.
I remind my child to keep eating her food.
I tell my child he will get in trouble for not eating (no toys, time out).
I struggle with my child to get her to eat (pick her up and put her in the chair).
I warn my child he will not get a treat if he does not eat.
I hand-feed my child to get her to eat.
I say to my child, "Hurry up and eat your food".
I tell my child that she needs to eat an item on her plate ("Eat your chicken").
I tell my child I do not like it that he is not eating.
I tell my child that I will reward her for eating with TV, playtime, or videogames.
My child skips meals.
I beg my child to eat his food.
I tell my child she will get a treat for eating.
I remind my child to keep eating her food.



child centered

I get my child to eat by explaining that the food is good for him.
My child sits and eats with an adult.
I plan meals.
I ask my child to try a little bit of a new food.
I prepare at least one food that I know my child will eat.
I praise my child for eating.
I help my child with eating (cut food, cool the food).
I get my child to eat by making food fun.
My child eats a snack at about the same time every day.
My child eats dinner at about the same time every day.
I say good things about the food my child is eating.
I ask my child to pick from foods already cooked.
I ask my child questions about the food she is eating.
I let my child serve himself.

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1
test structure
Confirmatory Factor Analysisparent
centered12
Items $\alpha = 0.81$ child
centered14
Items $\alpha = 0.80$

RMSEA (90% CI) = 0.078 [0.071-0.086];
SRMR = 0.084; CFI = 0.763; TLI = 0.742

results

validation - CFA


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validation – criterion

2 validate
Test association with mealtime behaviors

parent centered child centered
behavior scores

families
60



methods

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validation

2 validate
Test association with mealtime behaviors

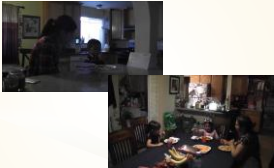
average meal time = 29 minutes
1 occurrence = .034 rpm

parent centered		child centered	
MEALTIME BEHAVIORS	mean RPM	MEALTIME BEHAVIORS	mean RPM
Physical Manipulation	.072	Statement about Eating	.127
Verbal Demand	.284	Eating Inquiry	.123
Bargaining	.040	Statement about Food	.092
Feeding Child	.073	Statement about Food Preference	.135

results

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validation



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validation

		Physical Manipulation	Verbal Demand	Bargaining	Feeding Child	Statement about Eating	Eating Inquiry	Statement about Food
Parent Centered	Physical Manipulation	1						
	Verbal Demand	.515**	1					
	Bargaining	.491**	.587**	1				
Child Centered	Feeding Child	.492**	.328**	.452**	1			
	Statement about Eating	.076	.487**	.219	.039	1		
	Eating Inquiry	.138	.261**	.474**	.110	.384**	1	
	Statement about Food	.190	.141	.130	.207	.128	.384**	1
	Statement about Food Preference	.068	.247	.221	.117	.236	.520**	.365**

*p < .05
**p < .001


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validation



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validation



Parent Centered Behaviors

High
Scores > 8

Low
Scores 1 – 7

Mean splits for each behavior

- Above mean = 2
- At /below mean = 1
- No occurrence = 0

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validation

Do they do what they say?

Mi Niño Parent Centered

High Observance = 2.00
Low Observance = 1.76

$F(1,57) = 4.04 p = .049$

validation

2 scales
Parent Centered
Child Centered

Parent centered scale validated through mealtime behaviors

Child centered behaviors more difficult to validate

Micol Shiba MD

Feasibility of a community nutrition program embedded into a medical clinic

Description of Niños Sanos education package

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logic model

inputs

- EFNEP educators & clinicians
- EC Clinics
- Medical Center partners, staff, and physicians
- EC Clinics Nutrition Human Ecology Nutritionists
- EC Clinical Public Health Dietitians
- EC Address
- EFNEP / SNAP ED materials
- Head Start partners, sites, staff, families
- USDA Wiccare Human Nutrition Research Center

TOOL ADAPTATION & VALIDATION (15-18)

adoption: face & content validity
 • Content validity: Identify items relevant, use common terminology
 • Cognitive interviewing
 • Social collaboration: present log, discuss
 • National assessment: pilot test (short form)
 • Item analysis and reliability analysis (19-2)

concurrent validity
 • Social assessment
 • Sleep log
 • Physical activity log
 • TV Screen Log

subsequent validity
 • Social assessment, parenting observation, interviews
 • Assessment of obesity

ED PACKAGE for Spanish speaking families
 • In the adult community with ethnic & community settings
 • Staff assessment & evaluation
 • Healthy Kids
 • My Child at Meal Time
 • Having options for new risk assessment tools

parent motivation
 • Child well-being in parent hands
 • Self assessment of motivation
 • Modeling & reinforcement
 • Collaborating in Case management
 • Management of
 • Environmental / sociocultural determinants

INTERVENTION (19, 2-8)

feasibility study
 • EFNEP / Guided Goal Setting intervention in a medical clinic setting (19-2)

feasibility of reach
 • National goal generation for Spanish speaking
 • Setting based in a medical clinic setting (19-2)

obesity adaptation
 • Community in transition in healthy kids by enhancing
 • Hispanic/Latino Behavior Assessment

outcomes

actions | theoretical constructs | strategies

58

56

logic model

inputs

3 Determine feasibility and potential synergy of outcomes of EFNEP site located in a medical clinic

4 Assess feasibility of using Healthy Kids tools and goal setting in English and Spanish speaking patients

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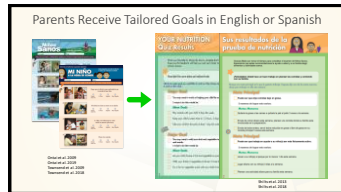
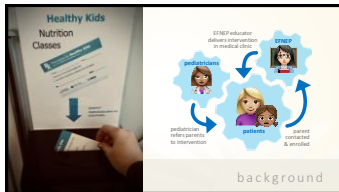
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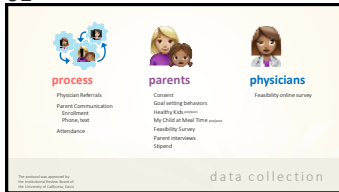
outcomes

actions | theoretical constructs | strategies

60

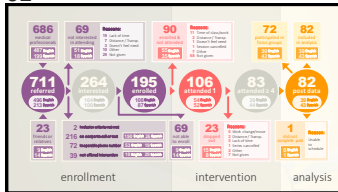


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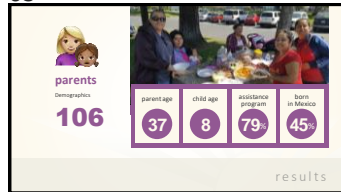
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62



65

63



66



67

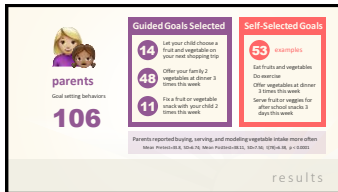
Feasibility was supported
Physicians referred parents & found value in the community nutrition intervention
Spanish & English speaking parents attended classes, engaged in GGS activities, improved vegetable behaviors

Limitations
Turnover with physician interns
Participant enrollment more time intensive vs. program with captive audience

Next steps include
Local community nutrition program taking lead
On bed referral system into EMR
Future research should include a larger sample size with randomization

conclusion & next steps

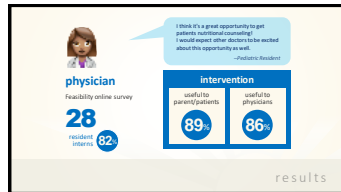
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**Niños Sanos
Education Package**

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ob risk assessment

Nutrition, PA, Screen & Sleep

Parenting & Mealtime

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photo customization

healthykids.ucdavis.edu

Expanded databank to include Native American and more Hispanic families

Using children as models [with parents' permission]
Natural setting

I sit and eat a meal with my child.

every day
 most days
 some days
 almost every day
 rarely

photo customization

Photo Customization – Samples

African American Asian / Pacific Islander Hispanic / Native American

retrospective tools

Prospective Retrospective

toarsendlab.ucdavis.edu

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diet quality tool

Mis Vegetales My Veggies

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goal setting

healthykids.ucdavis.edu

Website

Generate tailored goals
English or Spanish

Parents Educators Directors

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goal setting

healthykids.ucdavis.edu

Website

Generate tailored goals
English or Spanish

Parenting Nutrition, PA, sleep & screens

Parent Workbook

Chaffin et al., 2013; Shih et al., 2014

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medical clinic

ipad Kiosk

Parents receive tailored family nutrition & activity tips

Encouraged to share results with the physician & ask about the EFNFP nutrition classes

healthykids.ucdavis.edu/home/kiosk

medical clinic

ipad Kiosk Guidebook

Referral sheets

<http://townsendlab.ucdavis.edu>

English & Spanish

thank you

For questions, contact:

Mical Shilts

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Healthy Kids

healthykids.ucdavis.edu
townsendlab.ucdavis.edu
healthykids.ucdavis.edu/Home/kiosk

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Chen L, Shilts M, Shilts ML, Townsend ML. My Child Medline: A Family-Enhanced Self-Assessment of Reading System for Low-Income Parents of Preschoolers. *Appetite*. 2016; 100:70-81.

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Townsend ML, Shilts ML, Martin J, Moe D. Western Depressor II: Improving reliability of an evaluation tool for low-income clients using visual information processing elements. *J Nutr Educ Behav*. 2008;40(1):41-50.

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Shilts ML, Smith, G, Chen L, Townsend ML. Evaluation for Feasibility Use of the Retrospective Parent Method to Measure Dietary and Physical Activity Behavior and Self-Reported Subjective, Parental Health Development - Bridging Research and Practice. *2008;12(04):030-032.*

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references

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funding

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research team

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Mical Shilts, PhD

Lytle, PhD

Chen, PhD

Katie Chan, PhD, MS

Leah Lamm, PhD

Kate Parnell, MS, MPH

medical school

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Genese Stone, MS

UCDavis Western Human Nutrition Research Center

Leah Lamm, PhD

Nancy Chan, PhD

Leah Westmore, PhD

Ellen Bernard, PhD

Leah Westmore, PhD

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Shirley Davis, MA, Registered Dietitian

Carlynn Sutter, Dietitians

Larissa Lamm, MSW

Christine Davidson, MSW

Partner Agencies

UC Davis Medical Center

Placer-Sutter of Sacramento, CA


Yuba County Health Dept

Yuba & Sutter County County WIC

NorthStar-Health

Western Medical Center

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Questions?

SNEB 2019

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thank you!

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