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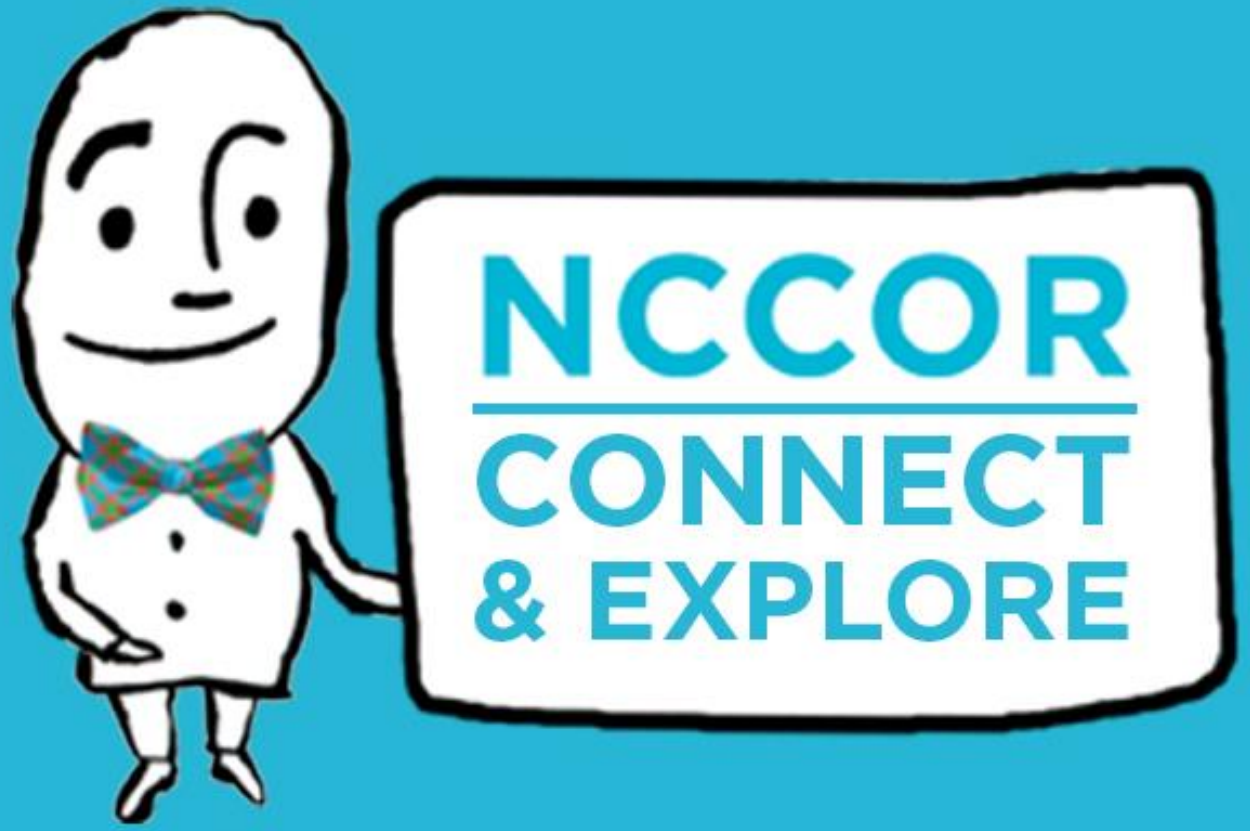
NATIONAL COLLABORATIVE ON CHILDHOOD OBESITY RESEARCH



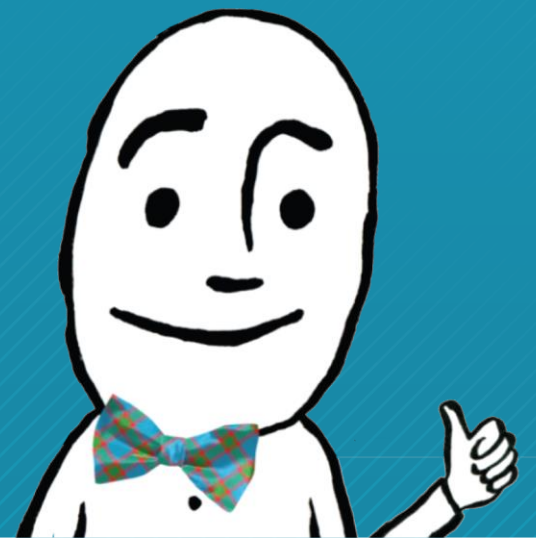
Childhood Obesity Evidence Base:

Using NCCOR's Newest Dataset to Examine Childhood Obesity Interventions

Wednesday, March 24, 3-4pm ET

TODAY'S PROGRAM

1. **Introduction to Childhood Obesity Evidence Base: Importance to the Field –** Deborah Young-Hyman, National Institutes of Health
2. **Development and Use of the Taxonomies and Database –** Mackenzie Magnus, Mission Measurement and Heather King, Mission Measurement
3. **Opening the Black Box: An Introduction to Taxonomic Meta-Analysis –** Lori Scott-Sheldon, National Institute of Mental Health
4. **Summary and Implications for the field of childhood obesity and meta-analysis** – Deborah Young-Hyman, National Institutes of Health
5. **Q&A**
6. **NCCOR Announcements**



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Today's Conversation

Deborah Young-Hyman, PhD
National Institutes of Health

Heather King, PhD
Mission Measurement

Mackenzie Magnus, MPH/MBA
Mission Measurement

Lori Scott-Sheldon, PhD
National Institute of Mental Health

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Type your question(s) by clicking the Q&A icon located below and representative will respond shortly.

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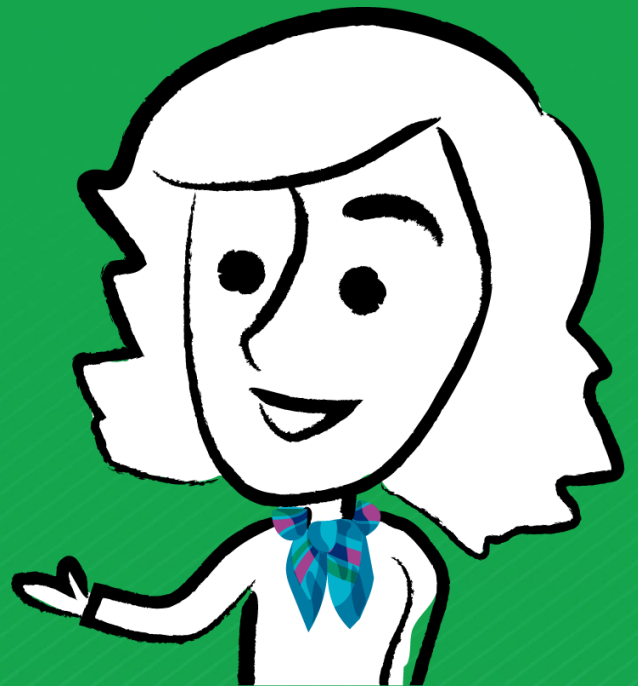
INTERACTIVE POLL



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SPOTLIGHT

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Making Better Use of the Evidence: Childhood Obesity Evidence Base

Deborah Young-Hyman, PhD
National Institutes of Health

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A Novel Approach to include all possible evidence:

- **Commonly accepted meta-analytic methods** for clinical trial results restrict content
  - Only includes studies that meet *specific trial design and evaluation criteria* to conduct statistical aggregation of effect size.
  - The systematic review approach to aggregating evidence may include studies of varying types; however, comparability of evidence, study components, and design types may or may not be examined.
- A **taxonomic approach** to social science evidence aggregation makes use of evidence from diverse obesity prevention studies and initiatives
- **COEB**, an NCCOR activity funded by the NIH, published an example of this method and actual findings, in a September 2020 supplement of *Childhood Obesity*.

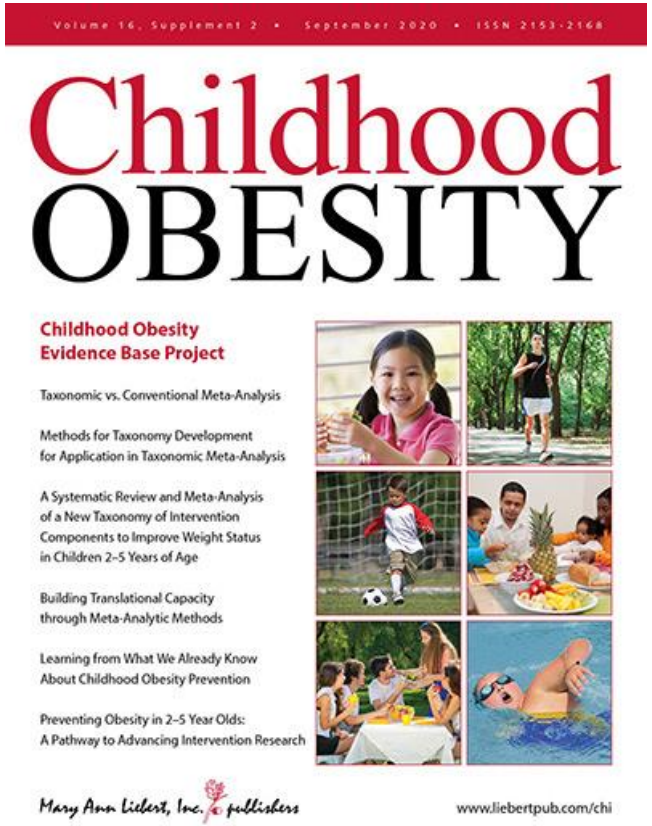
The Steps to the Method:

Design Hierarchy	• Created a design hierarchy/architecture for study/report inclusion.
Bibliography	• Created a topic-specific bibliography
Article Coding & Taxonomy	• Created a coding system based on elements present in reports using a representative sample of 200 studies to produce a foundational taxonomy
Manual of Procedures	• Formally documented coding procedures, including definition of taxonomy categories and elements used for article coding based on grounded theory.
Taxonomy Review	• Reviewed and finalized taxonomy with vetting by NCCOR WG and the External Expert Panel
Dataset	• Conducted a scoping review of US literature. Produced final comprehensive dataset of intervention studies coded using taxonomies
Papers	• Produced rationale, methods, results, and implications papers for publication

Childhood Obesity Evidence Base

Products

- A scoping review of the literature regarding prevention efforts of childhood obesity (bibliography of included reports) interventions in this age group
- Examples of successful approaches used to prevent childhood obesity in children aged 2–5 years
- Evidence of mechanisms, pathways including contextual elements, and implementation strategies to inform future efforts
- Instructions regarding how to implement this method



Development and Use of the Taxonomies and Database

Mackenzie Magnus, MPH/MBA
Mission Measurement

Heather King, PhD
Mission Measurement

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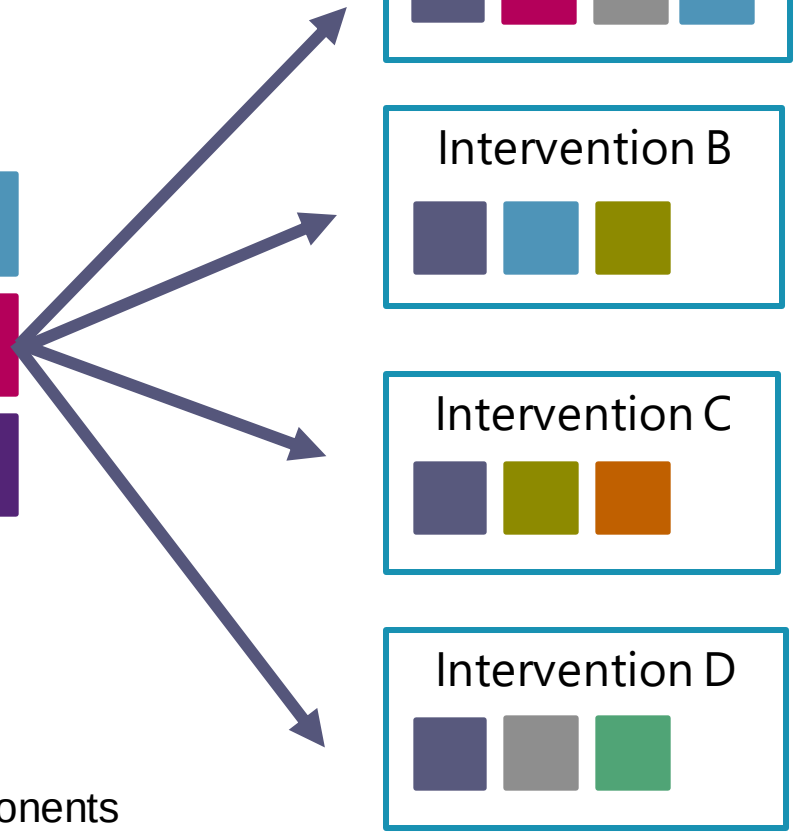
Why taxonomies?

Childhood Obesity Prevention Interventions

IMPACT GENOME PROJECT®

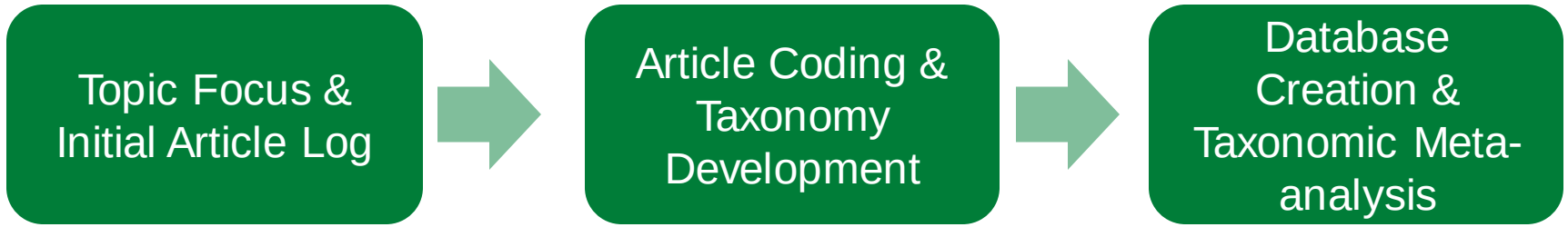


Interventions are decomposed into standardized components

- Outcomes
- Intervention Components
- Intended Recipient Characteristics
- Intervention Context

These components can be used as a common language to organize information

COEB Process



- Children, 2–5
- United States
- Measured BMI
- Published since 1998
- 246 potential articles

- 40 articles (random stratified sample)
- Open coding based on grounded theory
- External Expert Panel Review

- Full bibliography search
- Taxonomies applied to 51 studies
- Analysis

Working Group & External Expert Panel

- Sonia Arteaga, PhD – National Institutes of Health
- Leann L. Birch, PhD – University of Georgia
- John Cawley, PhD – Cornell University
- Jamie F. Chriqui, PhD, MHS – University of Illinois at Chicago
- Angie L. Cradock, ScD, Med – Harvard T.H. Chan School of Public Health
- Christina D. Economos, PhD – Tufts University
- Debra Haire-Joshu, PhD, RN – The Brown School Washington University
- Christine Hunter, PhD – National Institutes of Health
- Laura Kettel Khan, PhD – Centers for Disease Control and Prevention
- Shiriki Kumanyika, PhD, MPH – Drexel University
- Bruce Lee, MD, MBA – CUNY Graduate School of Public Health & Policy
- Lorrene D. Ritchie, PhD, RD – University of California Agriculture and Natural Resources
- Thomas N. Robinson, MD, MPH – Stanford University
- Marlene B. Schwartz, PhD – University of Connecticut
- Deborah Young-Hyman – National Institutes of Health

Outcomes

Table 1. Childhood Obesity Evidence Base Project Outcomes Identified across the 40 Reports Used for Taxonomy Development

Individual outcomes	Definitions	Examples
Weight status	Attained healthy or recommended weight/BMI	Change in height/weight/BMI (kg/m^2, percentage, z-scores).
Physical activity	Demonstrated positive changes in physical activity and/or maintained healthy physical activity	Change in physical activity frequency, intensity, or duration.
Diet	Demonstrated positive changes in food intake and/or maintained healthy diet	Change in vegetable/fruit consumption
		Change in sugar-sweetened beverage consumption
		Consuming recommended amounts of carbohydrates, protein, and fat
Sleep	Demonstrated positive changes in sleep behavior and/or maintained healthy sleep behavior	Change in sleep hygiene/sleep quantity and/or quality
		Change in bedtime routine

The outcomes' taxonomy categorizes common child-level individual outcomes. Given the nature of this project, taxonomic meta-analysis of the final 51 studies was restricted to those with multiple measures of BMI.

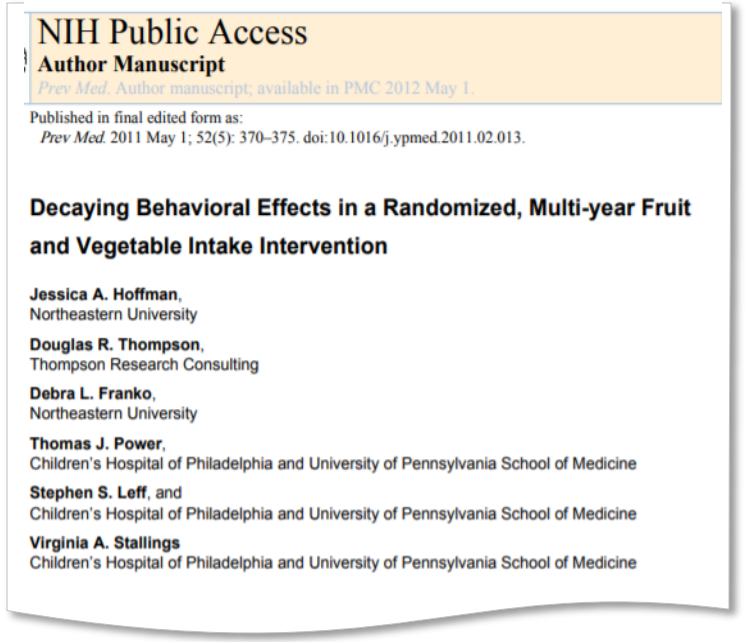
https://www.nccor.org/projects/childhood-obesity-evidence-base-test-of-a-novel-taxonomic-meta-analytic-method/project-documentation/

Example of Article Coding: Outcomes

It was hypothesized that children who received the intervention would demonstrate increased F&V knowledge, preferences and **lunchtime consumption** and **lower BMI** relative to a comparison group who did not receive the intervention. Additionally, children received new information in an engaging format so knowledge was hypothesized to increase…. …The intervention was designed so that children were encouraged to eat more F&V. It was hypothesized that preferences for these foods would increase with repeated exposures…

DIET

WEIGHT STATUS



NIH Public Access
Author Manuscript
Prev Med. Author manuscript; available in PMC 2012 May 1.

Published in final edited form as:
Prev Med. 2011 May 1; 52(5): 370–375. doi:10.1016/j.ypmed.2011.02.013.

Decaying Behavioral Effects in a Randomized, Multi-year Fruit and Vegetable Intake Intervention

Jessica A. Hoffman,
Northeastern University

Douglas R. Thompson,
Thompson Research Consulting

Debra L. Franko,
Northeastern University

Thomas J. Power,
Children's Hospital of Philadelphia and University of Pennsylvania School of Medicine

Stephen S. Leff, and
Children's Hospital of Philadelphia and University of Pennsylvania School of Medicine

Virginia A. Stallings
Children's Hospital of Philadelphia and University of Pennsylvania School of Medicine

Taxonomic meta-analysis of the final 51 studies was restricted to those with measures of Body Mass Index.

Intervention Components

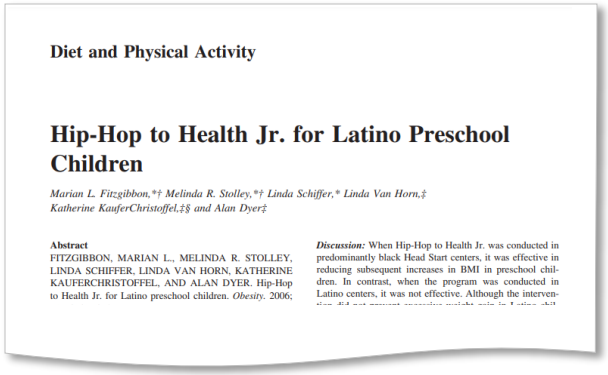
**Subset of ICs*

9 Categories and 93 Intervention Components

Category	Components
Activities to Support Behavior Change	Incorporate Implementation of Self-Reflection Strategies
	Incorporate Financial Incentives
	Engage Caregivers in Goal-setting
	Implement Media Campaigns
	Engage Caregivers in Praise/Encouragement for Positive Health-related Behavior
Activities for Supporting Caregivers	Engage Experts to Provide Technical Assistance to Caregivers
	Provide Materials to Support Healthy Eating Patterns to Caregivers
	Provide Education about the Importance of Routines to Caregivers
Activities Related to Physical Activity / Environment	Focus on Physical Activity Education
	Focus on Importance of Reduced Screen Time
	Provide Materials/Space to Support Physical Activity to Facilitators
	Include Free Play
	Include Structured Physical Activities

For full Intervention Components taxonomy, see "Taxonomy Overview" on the COEB Project Documentation site

Example of Article Coding: Intervention Components



Diet and Physical Activity

Hip-Hop to Health Jr. for Latino Preschool Children

Marian L. Fitzgibbon,† Melinda R. Stolley,*† Linda Schiffer,* Linda Van Horn,‡ Katherine KauferChristoffel,‡§ and Alan Dyer‡*

Abstract

FITZGIBBON, MARIAN L., MELINDA R. STOLLEY, LINDA SCHIFFER, LINDA VAN HORN, KATHERINE KAUFERCHRISTOFFEL, AND ALAN DYER. Hip-Hop to Health Jr. for Latino preschool children. *Obesity*. 2006;

Discussion: When Hip-Hop to Health Jr. was conducted in predominantly black Head Start centers, it was effective in reducing subsequent increases in BMI in preschool children. In contrast, when the program was conducted in Latino centers, it was not effective. Although the interven-

Utilize Research-Based Approaches or Curriculum

Engage Childcare Providers in Intervention

Engage Pediatricians /Healthcare Providers in Intervention

Used Culturally Tailored Intervention

Based on prior interventions conducted by our group and other researchers (35,36) and with input **and review from early childhood educators, nutritionists, exercise physiologists**, community health promoters, and Head Start administrators, we **developed a culturally proficient intervention tailored to this population** (34)...It was **delivered in both Spanish and English**…The parent intervention included **receiving weekly newsletters** that mirrored the children's curriculum and **accompanying homework assignments that were designed to be an interactive activity between parents and children.** Parents received 12 homework assignments during the 14-week intervention. If parents completed and returned the homework, **they received a small monetary incentive.**

Utilize Written Activities

Utilize Dual Language Instruction / Materials

Incorporate Financial Incentives

Provide Written Resources to Caregivers

Intended Recipients and Intervention Context

Intended Recipients (Children) Characteristics	Definition
Level of Education	Reported level of education for children
Age Group	Reported age group of children participants
Living Arrangements	Family structure (i.e., living with both parents, living with one parent, living with grandparents)
Gender	Gender of child
Language Spoken at Home	Information about language spoken and/or language proficiency (i.e., English language learner (ELL) status)
Physical / Learning Differences	Learning, behavioral, mental, or physical differences
Race/Ethnicity	Race or ethnicity of child
Socio-Economic Status	Socioeconomic status of child
Technology Access	Extent to which child has access to technology in the home
Health Status	BMI, at risk for obesity, physical activity level, etc.

Intervention Context Category	Definition
Community Type	Rural, suburban, urban
Geographic Location	Region, state, city, country
Intervention Setting	Where intervention takes place; within a school, childcare center, clinic, etc.
Instructor/Facilitator Education and Experience	Includes number of years providing instruction and degrees/certifications.
Instructor/Facilitator Gender	Gender of instructor(s)
Instructor/Facilitator Language	Native language or language proficiency of instructor(s)
Instructor/Facilitator Race/Ethnicity	Race/Ethnicity of instructor(s)
School Grade Level	The range of grade levels accommodated at the school (i.e., "K-5;" "high school;" "university")
School/District/Community Language Status	Description of language proficiency at the school or district level (i.e., student body is mostly ELL)
School/District/Community Race/Ethnicity Composition	Description of racial/ethnic makeup of school or district
School/District/Community Socio-Economic Status	Description of school or district SEL, including "low income;" "wealthy;" "50% free or reduced-price lunch;" etc.
Caregiver/Parent Employment Status	Description of whether parents are employed and to what extent
Caregiver/Parent Health Status	Characteristics of health status including BMI, obesity status, pregnancy/breastfeeding, overall health, etc.
Caregiver/Parent Relationship Status	Whether caregivers/parents are single, divorced, separated, married, etc.
Caregiver/Parent Language Status	Languages spoken by caregivers/parents
Caregiver/Parent Age	Age ranges or absolute numbers of years
Technology Present in Home	Types of technologies available include computers and phones

Final Dataset

NCCOR Childhood Obesity Evidence Base: Pilot Test of a Novel Taxonomic Meta-Analytic Method

TABLE OF CONTENTS

This workbook contains 51 studies and 147 supplemental materials that examine the effectiveness of interventions (or policies) intended to prevent childhood obesity (or provide supplemental information about these interventions). This has been prepared for use in the COEB Pilot (see NCCOR project website for additional details). These articles adhere to eligibility criteria as defined in the COEB Manual of Procedures and represent interventions across the social ecological model (SEM). The interventions in these articles are coded by 4 taxonomies (Outcomes, Intervention Components, Intended Recipients, and Context) and the research design and reported effects were recorded and standardized. This data is structured for use in Taxonomic Meta-analysis, to determine which Intervention Components correlate
to prevent childhood obesity in the target population of children residing in the United St

This workbook is organized into the following tabs:

Document Log: The list of 198 resources (studies and supplemental documents) included in this dataset.

Dataset: Each record is a reported effect from one of the articles. Reported effects have been standardized and
elements attached.

Dataset Glossary: Definitions for all the data fields included in the dataset.

PRODUCED BY:
MISSION MEASUREMENT
info@missionmeasurement.com

With support from:
Lori A. J. Scott-Sheldon, PhD
The Systematic Review and Meta-Analysis
Research Methods Team
The Miriam Hospital and Brown University

DATASET

see dataset glossary for variable definitions

UID	study_lev	interv_lev	StudyID	Links	Citation	Trial	ClinicalTrialN	pub	data	sour	source_sp	languag	language_oth
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Project Overview | Table of Contents | Document Log | **Dataset** | Dataset Glossary

Opening the Black Box: An Introduction to Taxonomic Meta-Analysis

Lori A. J. Scott-Sheldon, PhD*

Center for Behavioral and Preventive Medicine
The Miriam Hospital

Department of Psychiatry and Human Behavior
Alpert Medical School
Brown University

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National Institute of Health, Bethesda, MD

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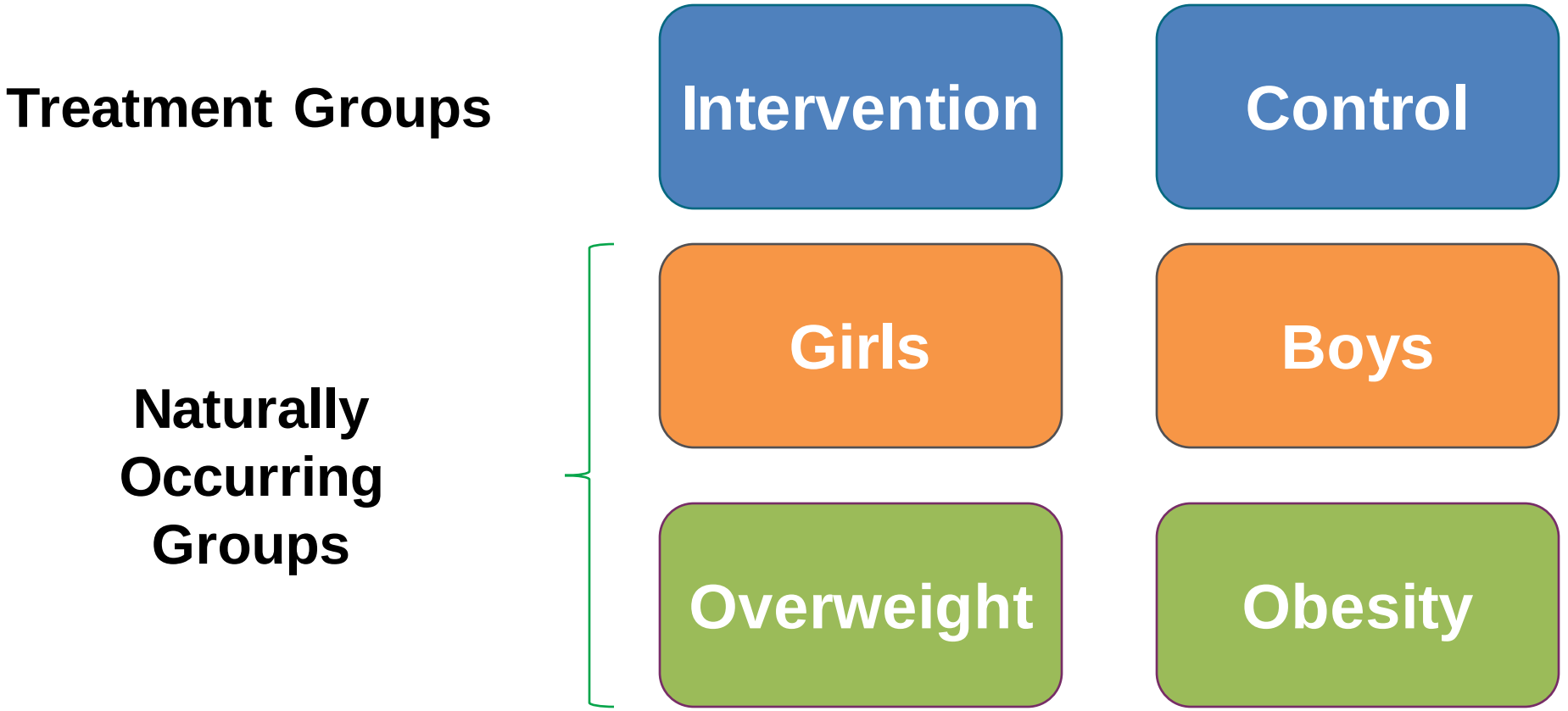
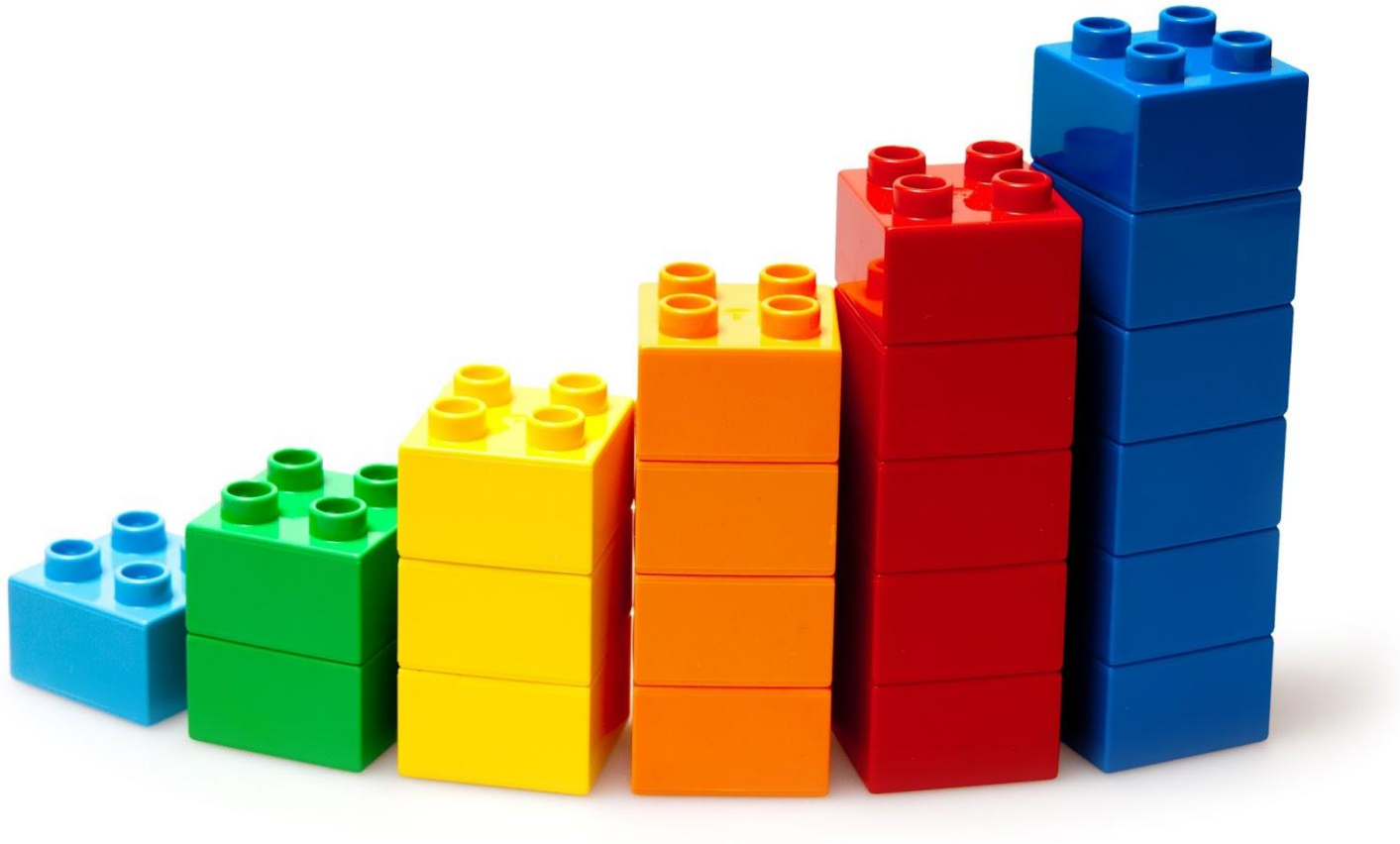
Overview

- Traditional vs. Taxonomic Meta-Analysis
- Meta-Analytic Best Practices
- Childhood Obesity Evidence Base Project

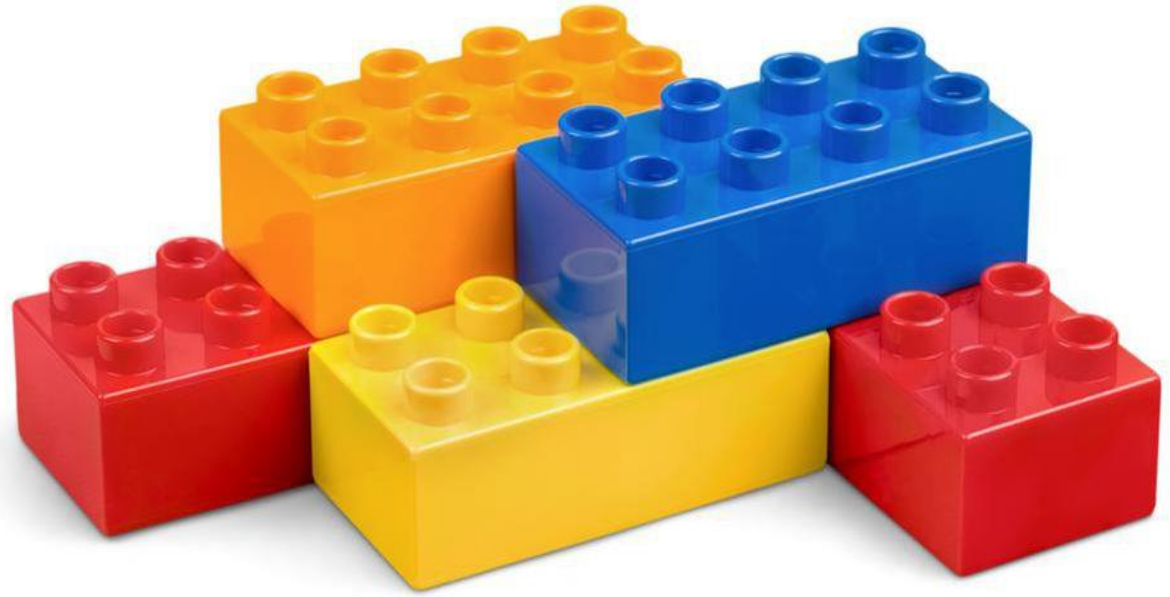
Traditional vs. Taxonomic Meta-Analysis



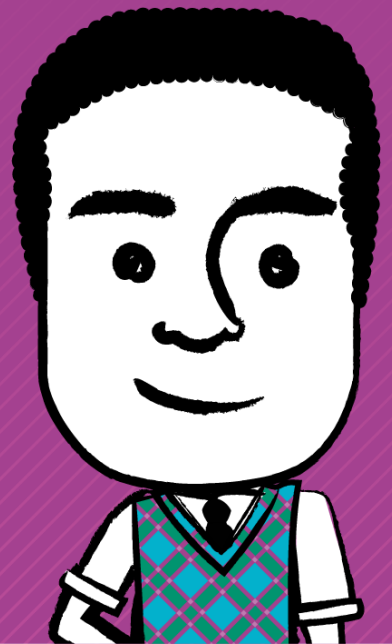
Traditional Meta-Analysis



Taxonomic Meta-Analysis



Meta-Analytic Best Practices



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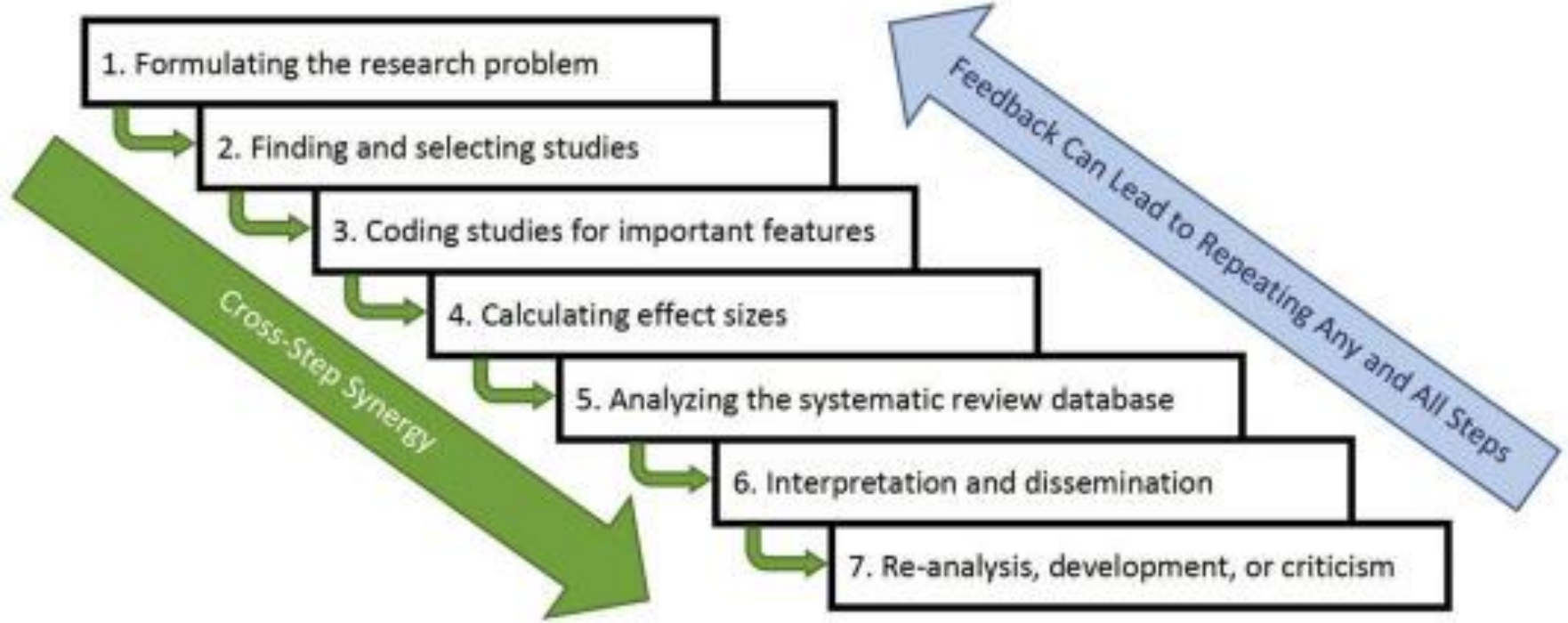
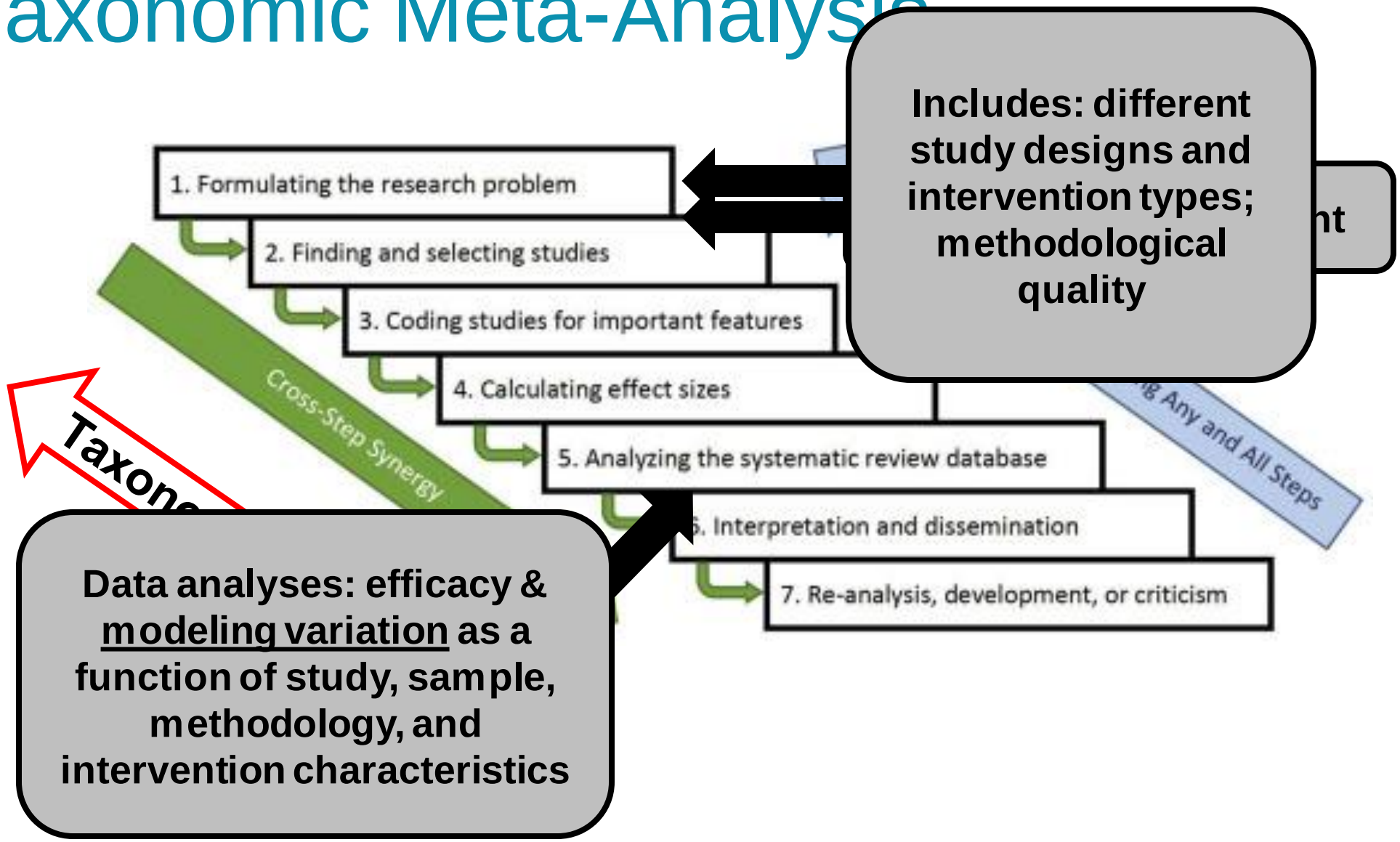
Taxonomic Meta-Analysis



Johnson & Hennessy (2019; *Soc Sci Med*)

Taxonomic Meta-Analysis



Childhood Obesity Evidence Base Project

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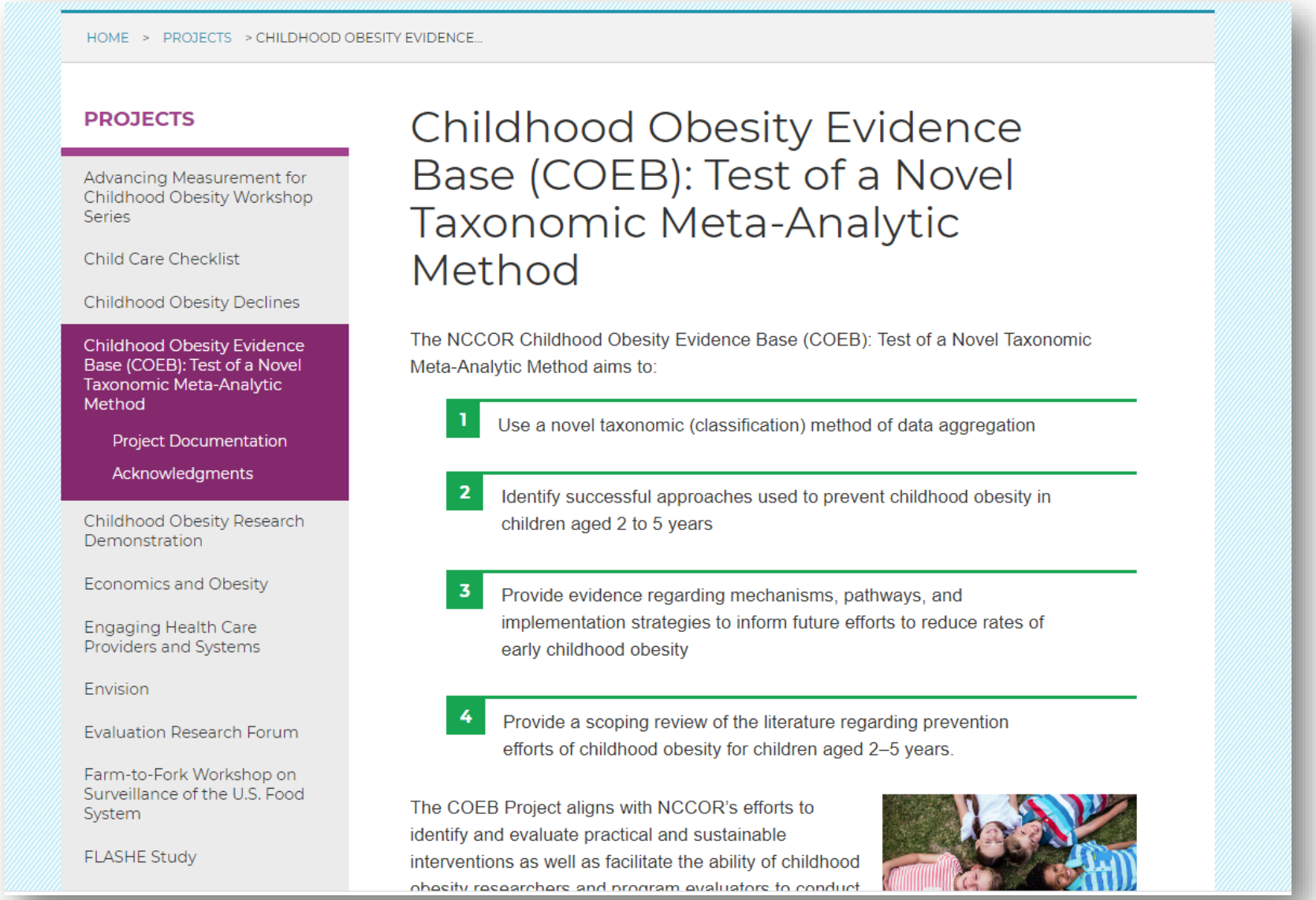
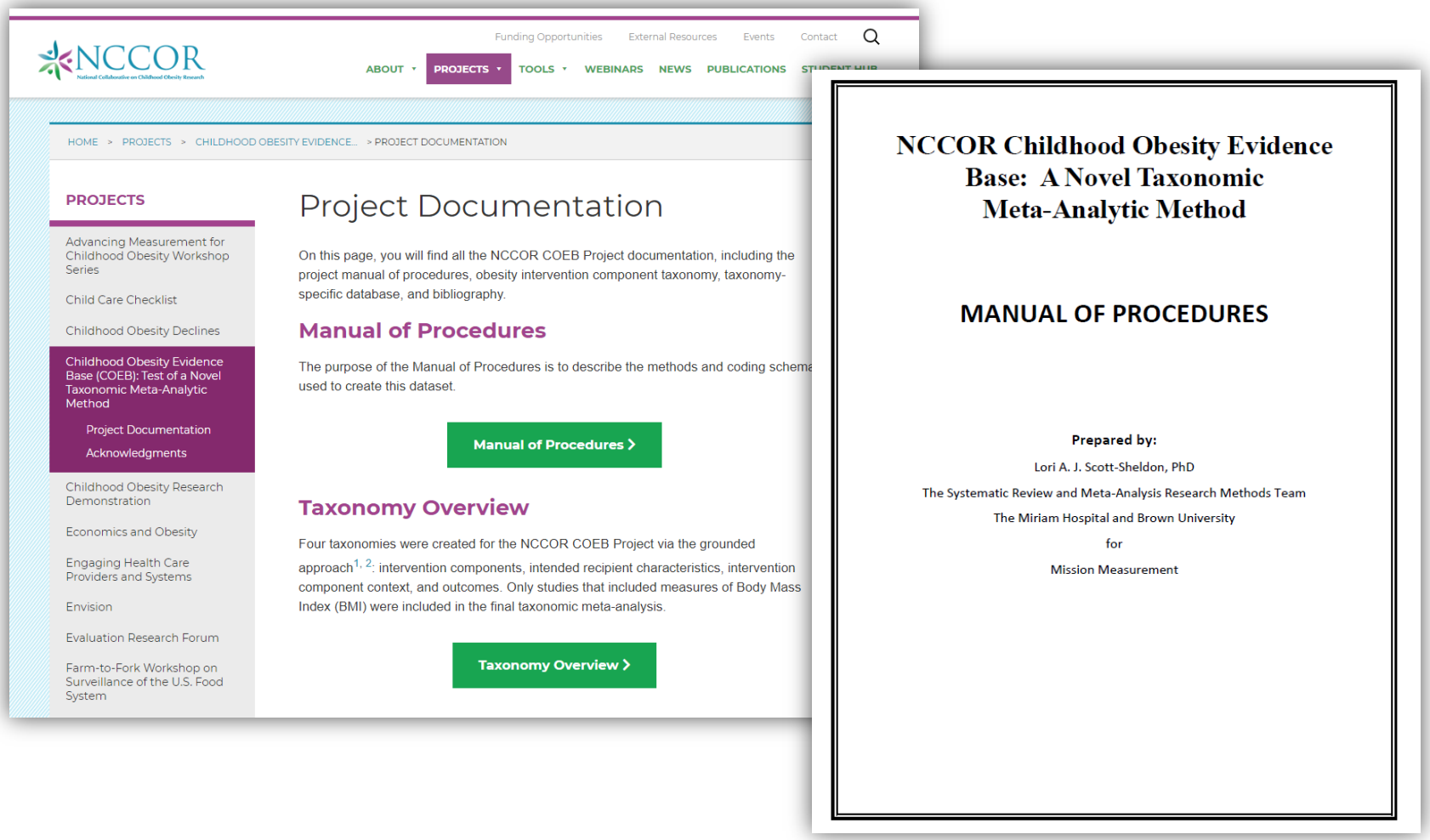


https://www.nccor.org/projects/childhood-obesity-evidence-base-test-of-a-novel-taxonomic-meta-analytic-method/

Manual of Procedures



https://www.nccor.org/projects/childhood-obesity-evidence-base-test-of-a-novel-taxonomic-meta-analytic-method/project-documentation/

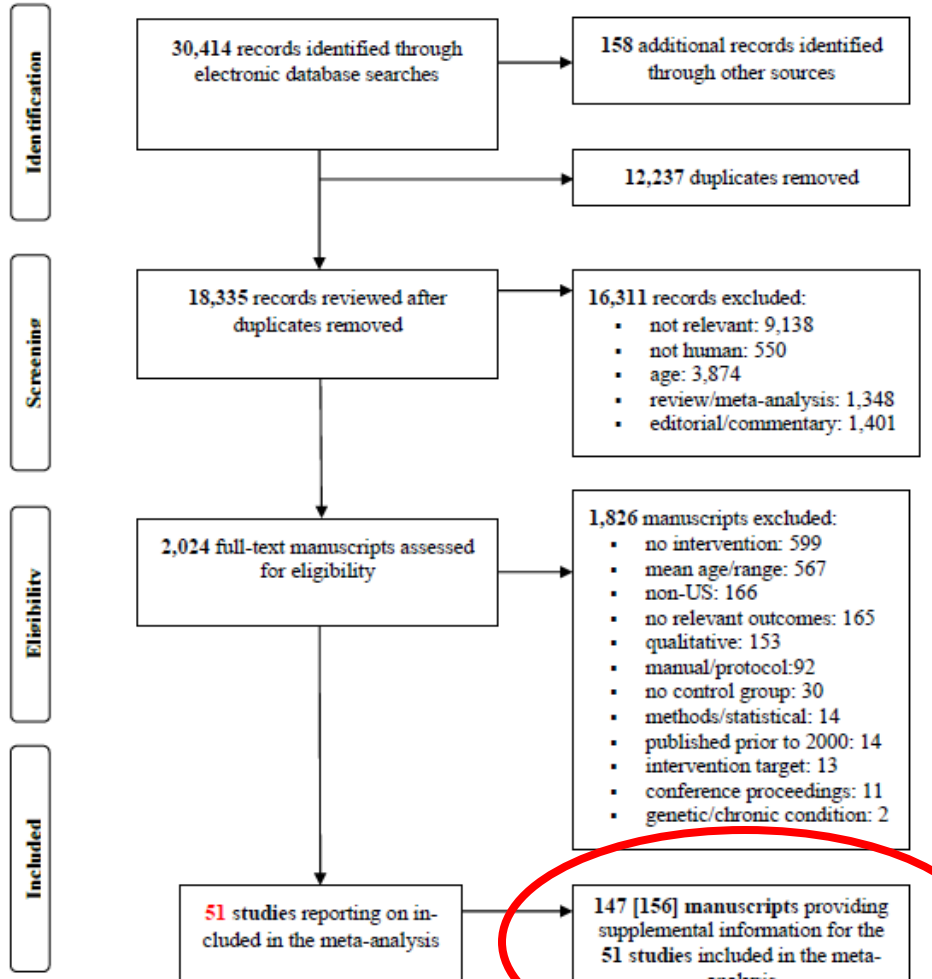
Which intervention components are more effective to prevent obesity or improve weight status among children ages 2 to 5 years?

Inclusion Criteria

- **P** Children ages 2–5 years living in the United States
- **I** Interventions targeting childhood obesity prevention
- **C** Same-aged control/comparison group
- **O** Assessed body mass index (BMI)
- **S** Published/unpublished between 1/1/2005 and 8/31/2019

Screening and Selection Process

Figure 3.1. Screening and Selection Procedures



Intervention Components

Data Collection Process

- Two trained coders independently extracted:
  - Study information
  - Recipient characteristics
  - Design and measurement
  - Intervention details
  - Risk of bias

- For each intervention, components were coded as present (1) or absent (0).

Summary Measures

Standardized mean differences, controlling for baseline

$$SMD = \left(\frac{M_{\text{pre}} - M_{\text{post}}}{SD_{\text{pre}}}\right) - \left(\frac{M_{pre} - M_{\text{post}}}{SD_{pre}}\right)$$

Database

NCCOR Childhood Obesity Evidence Base: A Novel Taxonomic Meta-Analytic Method

DATABASE

The National Collaboration on Childhood Obesity Research (NCCOR), and Mission Measurement piloted a novel approach to evidence aggregation: a taxonomic approach that categorizes intervention approach and components, intended recipients and context, and evaluation design. The Social Ecological Model (SEM) is used as an organizing framework. This approach allows the comparison of the evidence from studies of varying levels of rigor and specificity, the examination of the success of intervention components in intended recipients and circumstances and provide a comparison to evidence generated by well accepted meta-analytic methods. The Childhood Obesity Evidence Base (COEB) tests the capacity of ta… meta-analytic approaches and differences in evidence aggregation outcomes from other methods of meta… frameworks. Data was generated from published studies of obesity prevention initiatives and was not limit… clinical trials. Approaching data aggregation in this manner has the potential to inform future initiatives, c… contextual elements of the project, as well as intended recipients and approach, thereby facilitating initiat… and potentiating successful outcomes.

This dataset was derived from 51 unique studies and 147 supplemental documents that provided addition… data for the studies included. The purpose of this database is to enable independent analysis.

Example Use Cases:

1. Comparing evidence from studies of varying levels of rigor and specificity
2. Examine the effectiveness of specific intervention components in the intended recipients and circumstan…
3. Provide a comparison to evidence generated by well accepted meta-analytic methods.

Additional database creation and usage information can be found online at the NCCOR COEB project webs…
https://www.nccor.org/projects/childhood-obesity-evidence-base-test-of-a-novel-taxonomic-meta-analyti…

This dataset has the potential for additional studies to be included and coded using the same coding schem… the COEB dataset to grow and expand over time. Given the rigor, specificity, and training required for prop… studies by this schema, it is recommended that any user interested in adding studies to the COEB dataset f… Mission Measurement at info@missionmeasurement.com

PRODUCED BY:
MISSION MEASUREMENT
info@missionmeasurement.com

With support from:
Lori A. J. Scott-Sheldon, PhD
The Systematic Review and Meta-Analysis Research Methods Team
The Miriam Hospital and Brown University

NCCOR Childhood Obesity Evidence Base: Pilot Test of a Novel Taxonomic Meta-Analytic Method

DATASET

see dataset glossary for variable definitions

	UID	study_lev	interv_lev	StudyID	Links	Citation	Trial	ClinicalTrial	pub	data	sour	source_sp	langua	language_oth	translati	fundi	agency	multisi
4	58	1	1	MMX090.0	1	Alkon et al. (2014)	The Nutrition and Physical A	NCT01921842	2014	2009	1		1			1	U.S. Dept of Health	1
5	58	0	0	MMX090.0	1	Alkon et al. (2014)	The Nutrition and Physical A	NCT01921842	2014	2009	1		1			1	U.S. Dept of Health	1
6	58	0	0	MMX090.0	1	Alkon et al. (2014)	The Nutrition and Physical A	NCT01921842	2014	2009	1		1			1	U.S. Dept of Health	1
7	58	0	0	MMX090.0	1	Alkon et al. (2014)	The Nutrition and Physical A	NCT01921842	2014	2009	1		1			1	U.S. Dept of Health	1
8	58	0	0	MMX090.0	1	Alkon et al. (2014)	The Nutrition and Physical A	NCT01921842	2014	2009	1		1			1	U.S. Dept of Health	1
9	50	1	1	MMX080.0	1	Annesi et al. (2013)	Start for Life	NR	2013	2011	1		1			1	Kaiser Permanente	1
10	2	1	1	MMX004.0	1	Barkin et al. (2012)	Salud Con La Familia/Health	NCT00808431	2012	2008	1		1			1	State of Tennessee	0
11	9	1	1	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
12	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
13	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
14	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
15	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
16	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
17	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
18	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
19	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
20	9	0	0	MMX020.0	1	Barkin et al. (2018)	The Growing Right onto We	NCT01316653	2018	2012	1		1			1	NIH, National Hear	0
21	63	1	1	MMX096.0	1	Bellows et al. (2013)	Food Friends Get Movin' wi	NR	2013	2006	1		1			1	U.S. Department o	1
22	63	0	0	MMX096.0	1	Bellows et al. (2013)	Food Friends Get Movin' wi	NR	2013	2006	1		1			1	U.S. Department o	1
23	63	0	0	MMX096.0	1	Bellows et al. (2013)	Food Friends Get Movin' wi	NR	2013	2006	1		1			1	U.S. Department o	1
24	74	1	1	MMX115.0	0	Bonis et al. (2014)	The Nutrition and Physical A	NR	2014	2012	1		1			1	Office of Public He	1
25	74	0	0	MMX115.0	0	Bonis et al. (2014)	The Nutrition and Physical A	NR	2014	2012	1		1			1	Office of Public He	1
26	12	1	1	MMX024.0	1	Butte et al. (2017)	Texas Childhood Obesity Re	NCT02724943	2017	2012	1		1			1	CDC; Michael & Su	1
27	12	0	0	MMX024.0	1	Butte et al. (2017)	Texas Childhood Obesity Re	NCT02724943	2017	2012	1		1			1	CDC; Michael & Su	1
28	12	0	0	MMX024.0	1	Butte et al. (2017)	Texas Childhood Obesity Re	NCT02724943	2017	2012	1		1			1	CDC; Michael & Su	1
29	12	0	0	MMX024.0	1	Butte et al. (2017)	Texas Childhood Obesity Re	NCT02724943	2017	2012	1		1			1	CDC; Michael & Su	1
30	12	0	0	MMX024.0	1	Butte et al. (2017)	Texas Childhood Obesity Re	NCT02724943	2017	2012	1		1			1	CDC; Michael & Su	1
31	12	0	0	MMX024.0	1	Butte et al. (2017)	Texas Childhood Obesity Re	NCT02724943	2017	2012	1		1			1	CDC; Michael & Su	1
32	19	0	0	MMX038.0	1	Cloutier et al. (2015)	Steps to Growing Up Health	NCT01973153	2015	2009	1		1			1	Catherine & Patric	0
33	19	0	0	MMX038.0	1	Cloutier et al. (2015)	Steps to Growing Up Health	NCT01973153	2015	2009	1		1			1	Catherine & Patric	0
34	19	0	0	MMX038.0	1	Cloutier et al. (2015)	Steps to Growing Up Health	NCT01973153	2015	2009	1		1			1	Catherine & Patric	0
35	19	1	1	MMX038.0	1	Cloutier et al. (2015)	Steps to Growing Up Health	NCT01973153	2015	2009	1		1			1	Catherine & Patric	0
36	51	1	1	MMX081.0	1	Davis et al. (2016)	The Child Health Initiative f	NCT00428805	2016	2008	1		1			1	NIDDK	1
37	51	0	0	MMX081.0	1	Davis et al. (2016)	The Child Health Initiative f	NCT00428805	2016	2008	1		1			1	NIDDK	1

Project Overview | Table of Contents | Document Log | **Dataset** | Dataset Glossary

Ready

https://www.nccor.org/projects/childhood-obesity-evidence-base-test-of-a-novel-taxonomic-meta-analytic-method/project-documentation/

Taxonomy of Intervention Categories

Intervention Categories	# of Components
Activities to Support Behavior Change	8
Instructional Strategies	15
Activities for Supporting Caregivers	23
Facilitator Training Activities	8
Involvement of Facilitators	4
Policy-Based Strategies	6
Activities Related to Physical Activity/Environment	10
Activities Related to Food/Food Environment	10
Characteristics of the Intervention	9
Total	93

Intervention Components

- 90 out of 93 components were identified
- Insufficient evidence for three components:

Activities for Supporting Caregivers

  - provide materials to support self-control in children

Policy-Based Strategies

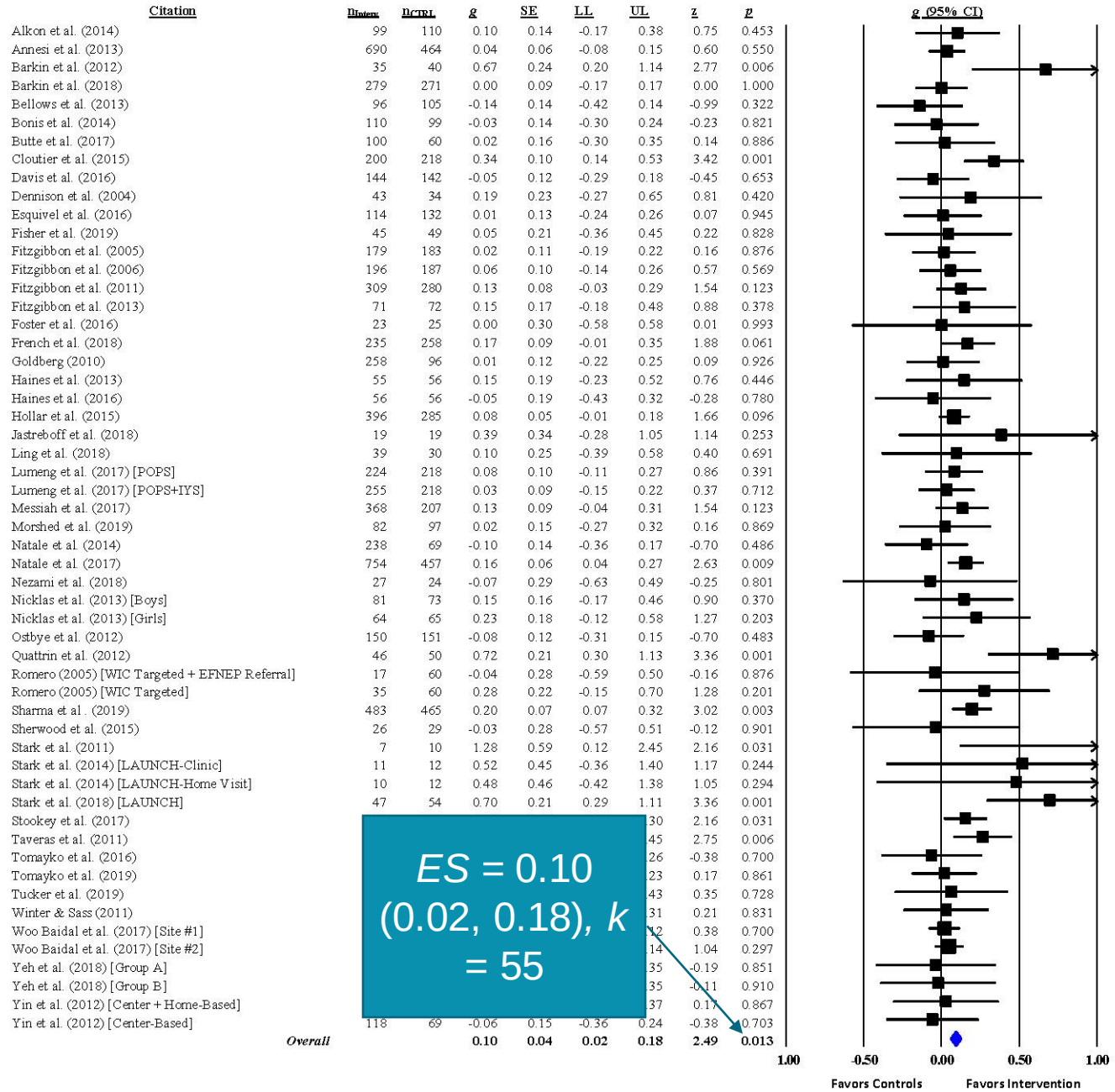
  - implemented earned income tax credit
  - implemented policies regarding food/beverage costs

Intervention Components

- # components: *M* = 20 (*SD* = 6), range = 7-34
  - used research-based approach/curriculum (84%)
  - provided written resources to caregivers (60%)
  - provided initial or one-time training opportunities to facilitators (59%)
  - provided education about nutrition and healthy eating patterns to caregivers (53%)
  - provided curricular materials to facilitators (50%)

Standardized Mean Difference in BMI

```
. meanes d_btwn_new_R [w=tw_btwn_new] if dv_OverallBMI_c_A1==1
(analytic weights assumed)
(3 missing values generated)
(3 missing values generated)
(3 missing values generated)
Version 2008.03.22 of meanes.ado
                                        Homogeneity Analysis
No. of obs (k) =     55     ------------------------------------------------
   Minimum obs =  -.141          I2 = 19.50          Q =      67.08
   Maximum obs =  1.284       -95%CI =  0.00         df =        54
   Weighted SD =  0.121       +95%CI = 42.89         p =   0.10890
-------------------------------------------------------------------------------
     Model      |    Mean    -95%CI    +95%CI        SE          Z         P
----------------+--------------------------------------------------------------
Fixed effect    | 0.08749   0.05864   0.11635   0.01472   5.94286   0.00000
Random effects 1| 0.08935   0.05411   0.12460   0.01798   4.96853   0.00000
Random effects 2| 0.10180   0.02394   0.17967   0.03973   2.56261   0.01039
----------------+--------------------------------------------------------------
1 Random effects variance component (method of moments)   = 0.00296
2 Random effects variance component (full information ML) = 0.06052
```



$I^2 = 20\%$ (95% CI = 0–43); $\tau^2 = 0.0303$; Q (54) = 67.08, $p = 0.109$.

Components as a Moderator of BMI

- *Categories*:
  - Activities to Support Behavior Change (β=0.03, p=.024)

- *Components*:
  - Engaged caregivers in praise/encouragement for positive behaviors, β=0.09, p=.049
  - Provided education about the importance of screen time reduction to caregivers, β=0.13, p=.002
  - Engaged pediatricians/healthcare providers in delivering content, β=0.11, p=.012

Multiple Regression Model

Multiple meta-regression model: F (3, 51) = 4.33, p = .009, I^2 residual = 5%

```
. metareg d_btwn_new_R G5_Presence G41_Presence G52_Presence if dv_OverallBMI_c_A1==1, wsse(se_new_v2) reml

Meta-regression                                   Number of obs   =      55
REML estimate of between-study variance           tau2            =  .00011
% residual variation due to heterogeneity         I-squared_res   =   4.63%
Proportion of between-study variance explained    Adj R-squared   =  89.00%
Joint test for all covariates                     Model F(3,51)   =    4.33
With Knapp-Hartung modification                   Prob > F        =  0.0086
```

d_btwn_new_R	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
G5_Presence	.0211288	.049986	0.42	0.674	-.0792222	.1214799
G41_Presence	.1001145	.0456644	2.19	0.033	.0084395	.1917896
G52_Presence	.059366	.0497145	1.19	0.238	-.0404401	.1591721
_cons	.0582181	.0173356	3.36	0.001	.0234155	.0930208

Permutation Test

```
. metareg d_btwn_new_R G5_Presence G41_Presence G52_Presence if dv_OverallBMI_c_A1==1, wsse(se_new_v2) permute (5000)

Monte Carlo permutation test for meta-regression

Moment-based estimate of between-study variance
Without Knapp & Hartung modification to standard errors

P-values unadjusted and adjusted for multiple testing

                Number of obs =      55
                Permutations  =    5000
------------------------------------------------
                          P
  d_btwn_n~R | Unadjusted   Adjusted
-------------+----------------------------------
  G5_Prese~e |      0.618      0.936
  G41_Pres~e |      0.017      0.048
  G52_Pres~e |      0.221      0.498
------------------------------------------------
largest Monte Carlo SE(P) = 0.0071

WARNING:
Monte Carlo methods use random numbers, so results may differ between runs.
Ensure you specify enough permutations to obtain the desired precision.
```

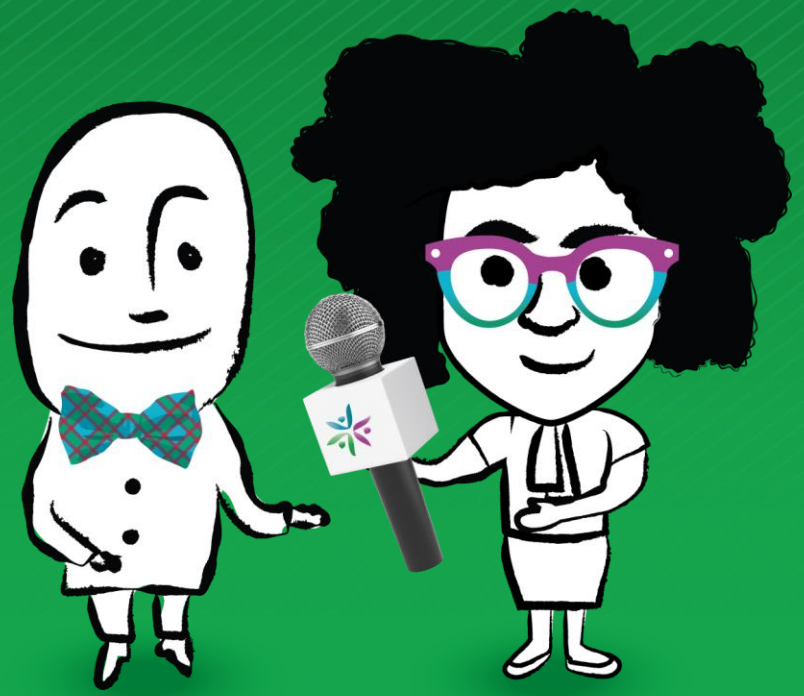
There is evidence of moderation even after adjusting for multiple testing.

Conclusions & Acknowledgements

- This work was funded by the Office of Behavioral and Social Science Research of the National Institutes of Health. The views presented here are solely the responsibility of the authors and do not necessarily reflect the official views of the NIH.
- This research represents a collaborative effort between the National Collaborative on Childhood Obesity Research (NCCOR) and Mission Measurement, guided by members of NCCOR and an NCCOR External Expert Panel. The four organizations represented in NCCOR are the CDC, NIH, RWJF, and USDA. NCCOR is supported by the NCCOR Coordinating Center staff at FHI360.
- The Miriam Hospital/Brown University Systematic Review and Meta-Analysis Research Methods Team: Melissa M. Feulner, Brittany L. Balletto, Julie DeCosta.

Looking Ahead

- Clinicians, policy makers and implementers, as well as researchers can utilize the data base and methods to answer their own customized questions regarding successful intervention approaches to prevent childhood obesity.
- This database can be updated as more evidence is generated.
- This method can be utilized to aggregate evidence in diverse social science topics and provides adjunctive information to traditional meta-analytic methods.



Q&A

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Thank you!

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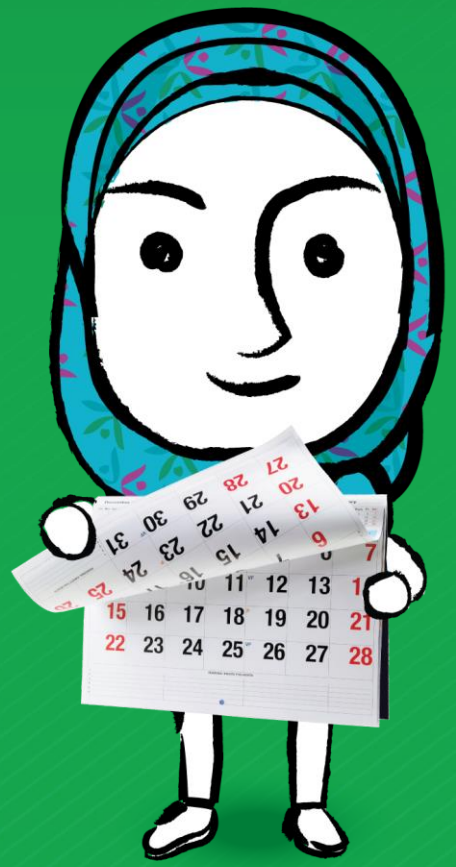
UPCOMING EVENT



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American Trails Webinar

- Effective Programs to Improve Access to and Use of Trails for Youth from Under-Resourced Communities
  - Thursday, April 22, 1–2:30 p.m. ET

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ANNOUNCEMENTS

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NCCOR MEASURES REGISTRY UPDATE

INDIVIDUAL DIET

FOOD ENVIRONMENT

INDIVIDUAL PHYSICAL ACTIVITY

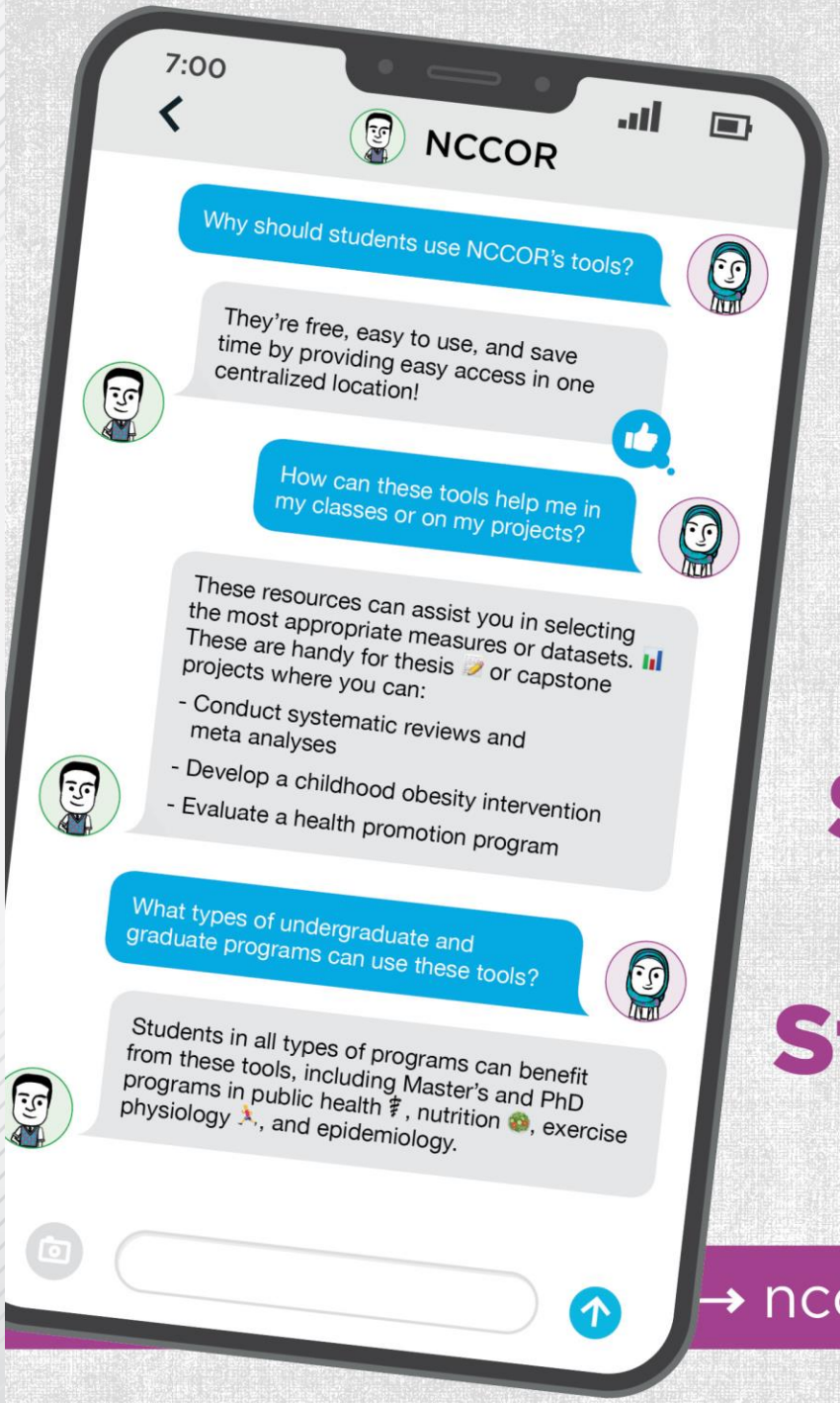
PHYSICAL ACTIVITY ENVIRONMENT

NCCOR
Catalogue of Surveillance Systems

UPDATE

List of Surveys | Sampling | Key Variables | Data Access & Cost

- **School Nutrition and Meal Cost Study**
- **American Housing Survey**
- **Pregnancy Risk Assessment Monitoring System**
- **WIC Participants and Characteristics Report**
- **SNAP Policy Database**
- **WIC Infant and Toddler Feeding Practices Study**
- **National Health and Nutrition Examination Survey**
  Linked HUD Administrative Data
- **National Health Interview Survey**
  Linked HUD Administrative Data



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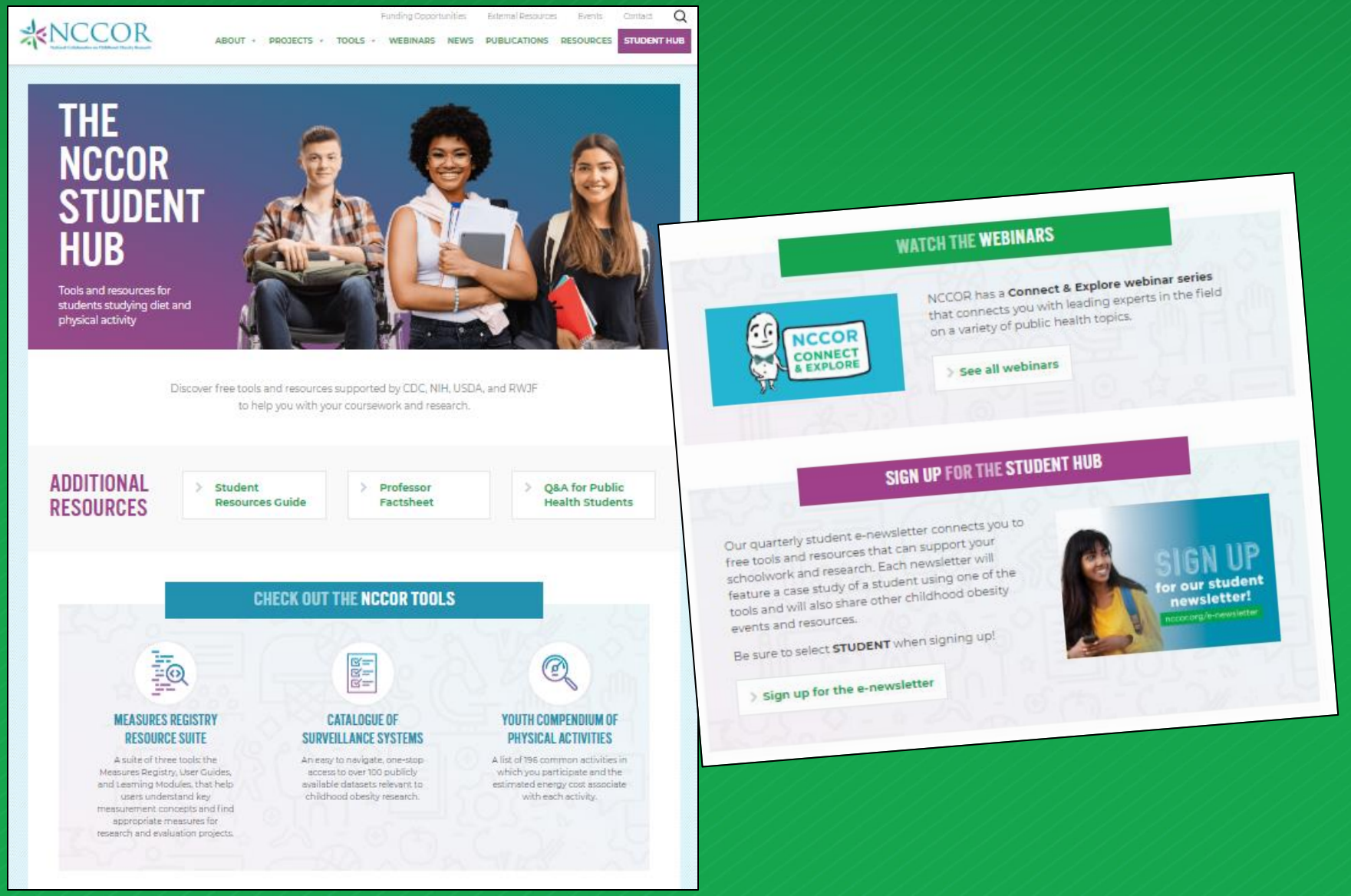

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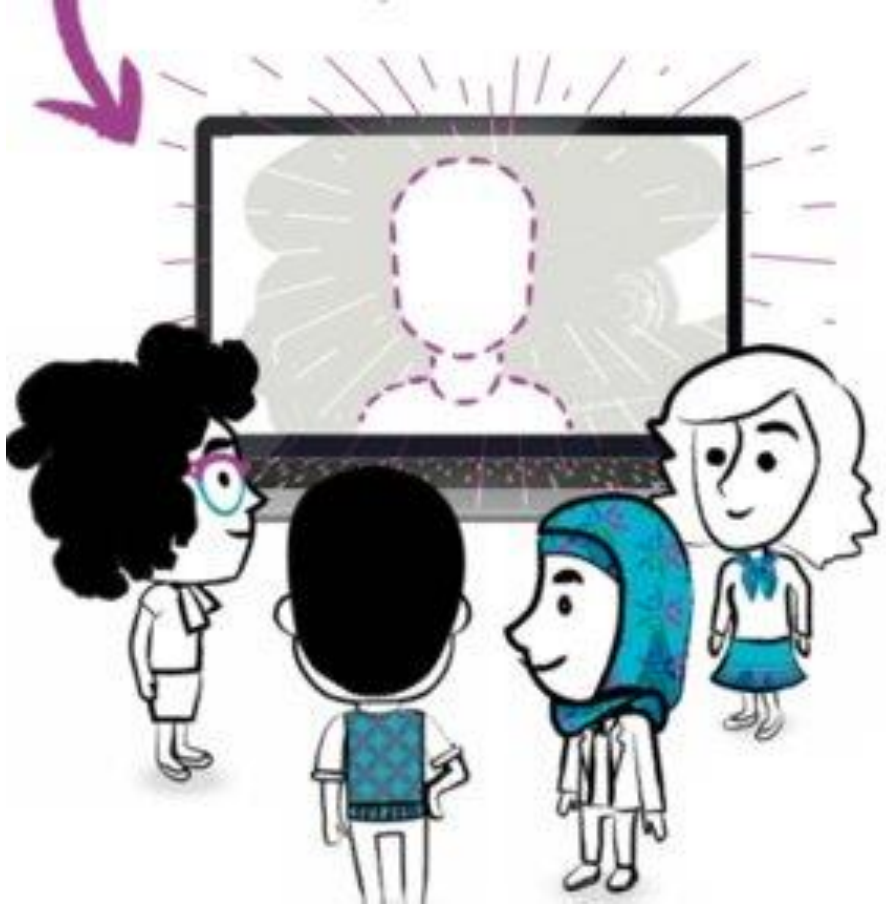

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Let us know at nccor@fhi360.org and we may feature you in our next webinar!

WHAT'S HAPPENING IN
NCCOR NEWS

New Update to NCCOR's Measures Registry

Childhood Obesity Evidence Base: Using NCCOR's Newest Dataset to Examine Childhood Obesity Interventions

New from NCCOR: A Brief on Programs Promoting Trail Use to Youth from Under-Resourced Communities

NCCOR Year in Review: 2020

Improving research on children at high risk for obesity: When to apply, adapt, or develop a measure

Connect & Explore

Upcoming Webinars

Mark your calendar for these upcoming Connect & Explore webinars!

FURTHER QUESTIONS?

Other questions about NCCOR or upcoming activities?

Email the NCCOR Coordinating Center nccor@fhi360.org

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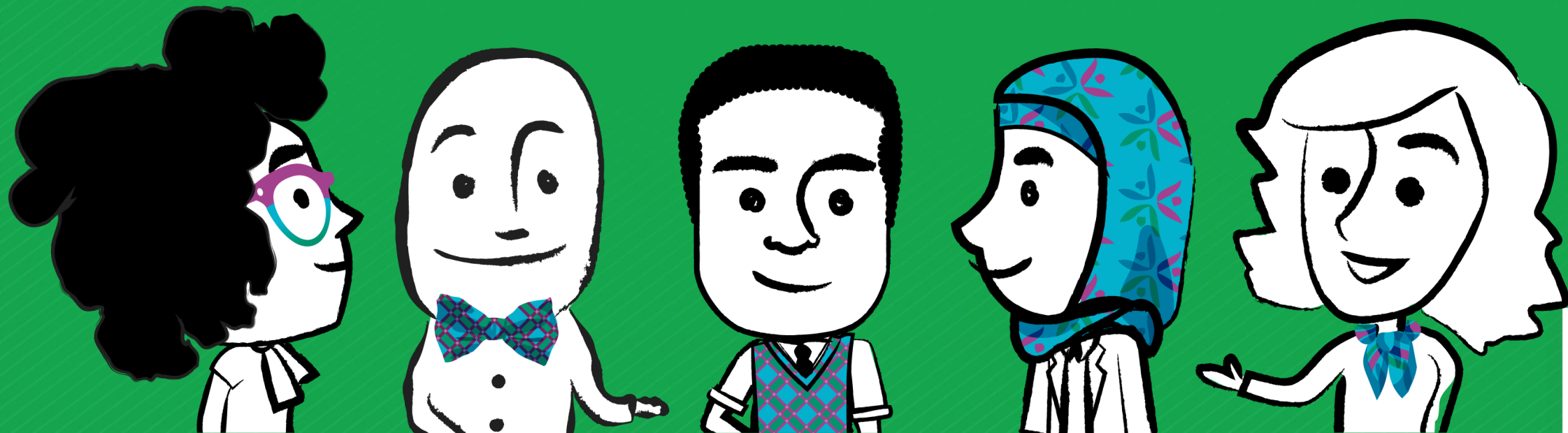
THANK YOU!



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```
. metareg d_btwn_new_R A01_Totalx if dv_OverallBMI_c_A1==1, wsse(se_new_v2)

Meta-regression                                   Number of obs  =      55
REML estimate of between-study variance           tau2           = .000812
% residual variation due to heterogeneity         I-squared_res  =  13.14%
Proportion of between-study variance explained    Adj R-squared  =  18.98%
With Knapp-Hartung modification
```

d_btwn_new_R	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
A01_Totalx	.0288041	.0124303	2.32	0.024	.0038721	.0537361
_cons	.0484437	.023836	2.03	0.047	.0006348	.0962526

```
. metareg d_btwn_new_R G5_Presence  if dv_OverallBMI_c_A1==1, wsse(se_new_v2) reml

Meta-regression                                   Number of obs  =      55
REML estimate of between-study variance           tau2           = .000994
% residual variation due to heterogeneity         I-squared_res  =  15.14%
Proportion of between-study variance explained    Adj R-squared  =   0.90%
With Knapp-Hartung modification
```

d_btwn_new_R	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
G5_Presence	.0939587	.0466028	2.02	0.049	.0004853	.187432
_cons	.0740545	.0182614	4.06	0.000	.0374268	.1106822

```
. metareg d_btwn_new_R G41_Presence if dv_OverallBMI_c_A1==1, wsse (se_new_v2) reml

Meta-regression                                 Number of obs   =        55
REML estimate of between-study variance         tau2            =  .000251
% residual variation due to heterogeneity       I-squared_res   =    5.08%
Proportion of between-study variance explained  Adj R-squared   =   74.96%
With Knapp-Hartung modification
```

d_btwn_new_R	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
G41_Presence	.1321946	.0403279	3.28	0.002	.0513071	.2130821
_cons	.0646588	.0168793	3.83	0.000	.0308032	.0985145

```
. metareg d_btwn_new_R G52_Presence  if dv_OverallBMI_c_A1==1, wsse(se_new_v2) reml

Meta-regression                                 Number of obs  =      55
REML estimate of between-study variance         tau2           =       0
% residual variation due to heterogeneity       I-squared_res  =  10.87%
Proportion of between-study variance explained  Adj R-squared  = 100.00%
With Knapp-Hartung modification
```

d_btwn_new_R	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
G52_Presence	.1132846	.0434857	2.61	0.012	.0260634	.2005059
_cons	.0703215	.0169307	4.15	0.000	.0363627	.1042802