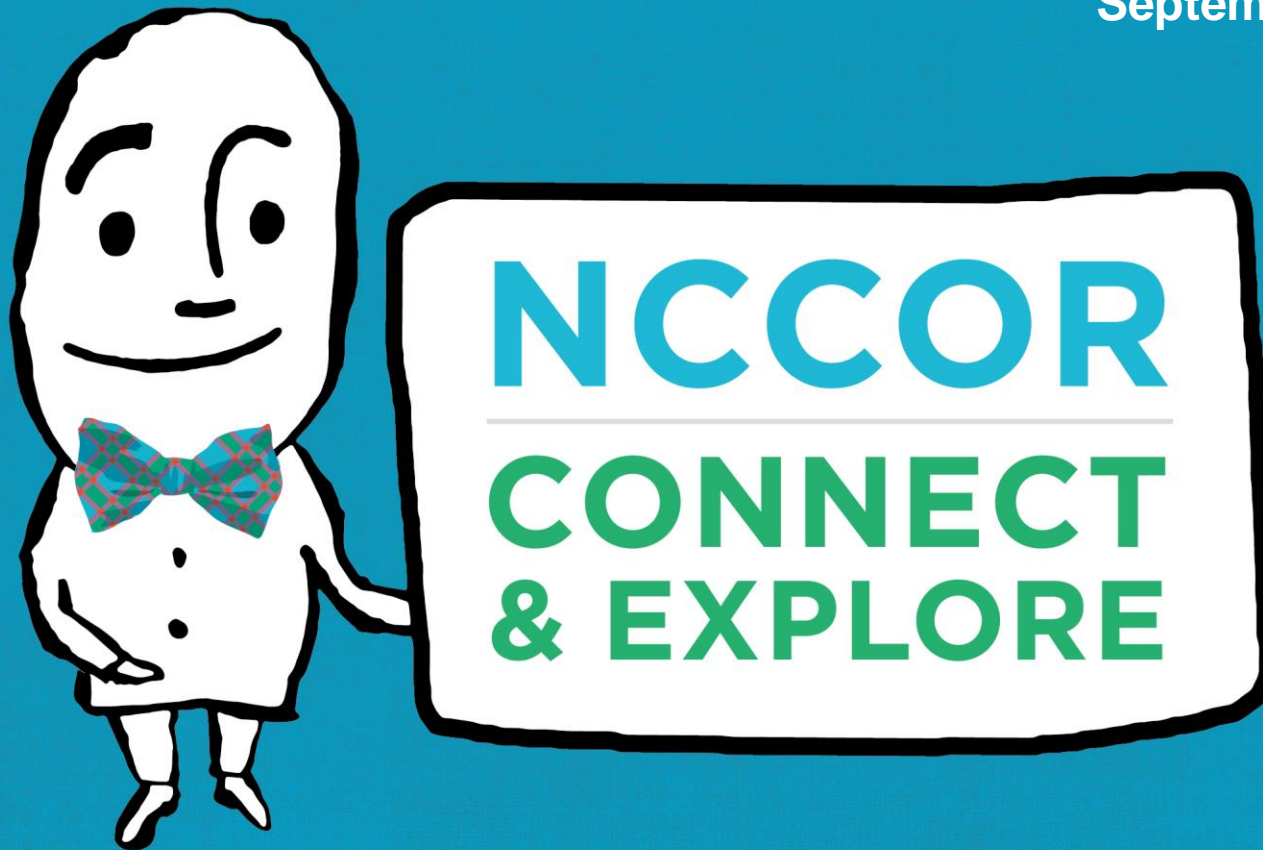


September 25, 2018

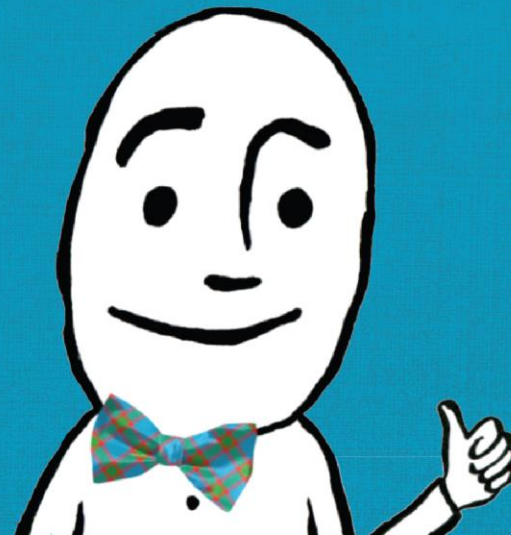


Connecting you with experts. Exploring the latest childhood obesity news and research.

We will begin at 3:05 to allow participants time to join the webinar.

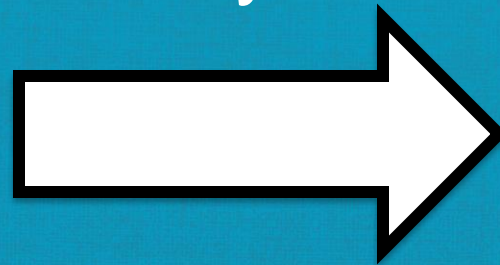
1. Spotlight: The Healthy Communities Study: How Community Programs and Policies are Related to Children's Health
 - The Healthy Communities Study Overview
 - What We Are Learning in the Healthy Communities Study
 - Community Programs and Policies:
 - Associations with Children's Physical Activity
 - Associations with Children's Dietary Outcomes
2. One on One
3. NCCOR Announcements

TODAY'S PROGRAM



Need technical assistance? Have a question for our speakers?

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located on the right and a representative
will respond shortly.



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Today's Speakers



Ann Jimerson

National Collaborative
on Childhood Obesity
Research



Russell Pate

University of South
Carolina



S. Sonia Arteaga

National Institutes of Health



Lorrene Ritchie

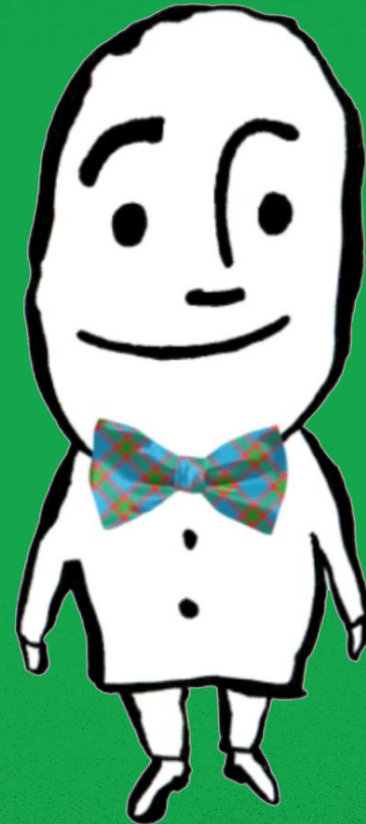
University of California Division
of Agriculture and Natural
Resources



Stephen Fawcett

University of Kansas

INTERACTIVE POLL





The Healthy Communities Study (HCS) Overview

S. Sonia Arteaga, PhD
Program Director
Division of Cardiovascular Sciences
National Heart, Lung, and Blood Institute
National Institutes of Health
arteagas@nhlbi.nih.gov

Study Overview

- Battelle – Lead
- University of Kansas – Community Measures
- University of California, Agriculture & Natural Resources – Nutrition
- University of South Carolina – Physical Activity
- NHLBI, NIDDK, NICHD, NCI, OBSSR – Funders
- CDC and RWJF – Scientific Partners
- Observational Study Monitoring Board

Special thank you to the study participants and communities!
Funded by NHLBI, NIDDK, NICHD, NCI, OBSSR
Contract No. HHSN268201000041C.

Study Rationale

- Childhood obesity is a public health problem.
- There are many local programs and policies across the country addressing childhood obesity, but they have not been systematically assessed in a common way.
- There is natural variation in many aspects of these programs and policies, including intensity level, duration, funding, target population, and how they are implemented.

Study Aims

To assess/identify:

- Associations between characteristics of community programs/policies (CPPs) and BMI, diet, and physical activity for children
- Community, family, and child factors that modify or mediate such associations
- Associations between characteristics of CPPs and BMI, diet, and physical activity in communities with a high proportion of African American, Latino, and/or low-income residents

Study Design

Design: Observational study 2010-2016

Community = public high school catchment area

Data collected at multiple levels:

- Children – up to 81 children and their families
- Schools – up to 2 elementary and 2 middle schools
- Communities – 10-14 key informants interviewed per community

Study Design

Cross-sectional and Retrospective

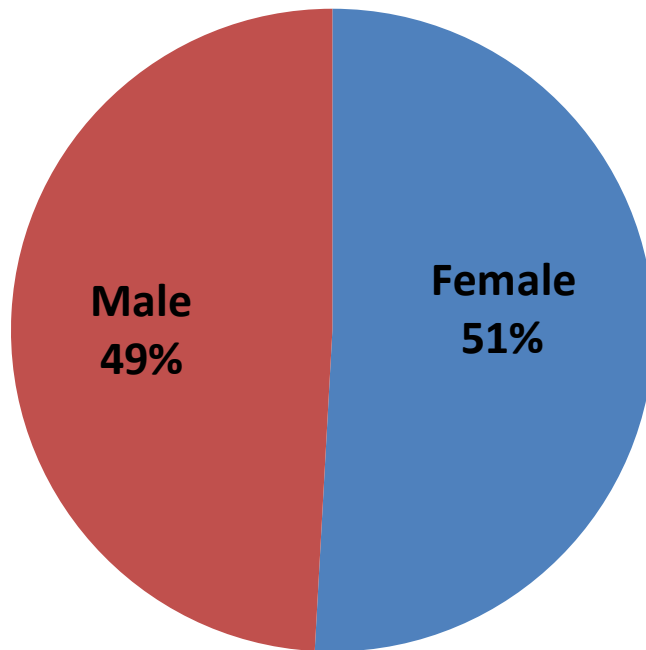
- **Cross-sectional** – BMI, diet, physical activity, program/policy
- **Retrospective** – previous 10 years for data on
 - Children (medical record abstraction) AND
 - Communities (program/policy review)

Study Overview

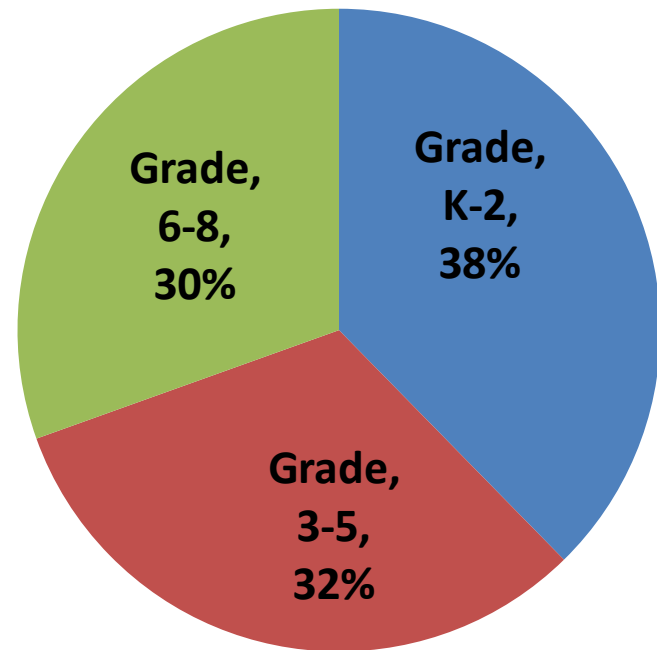
- 130 communities
- 149 school districts
- 436 schools
- 1,421 key informants
- 5,138 children/households
- 3,396 children with medical records (66%)

Child Gender and Grade (N=5,138)

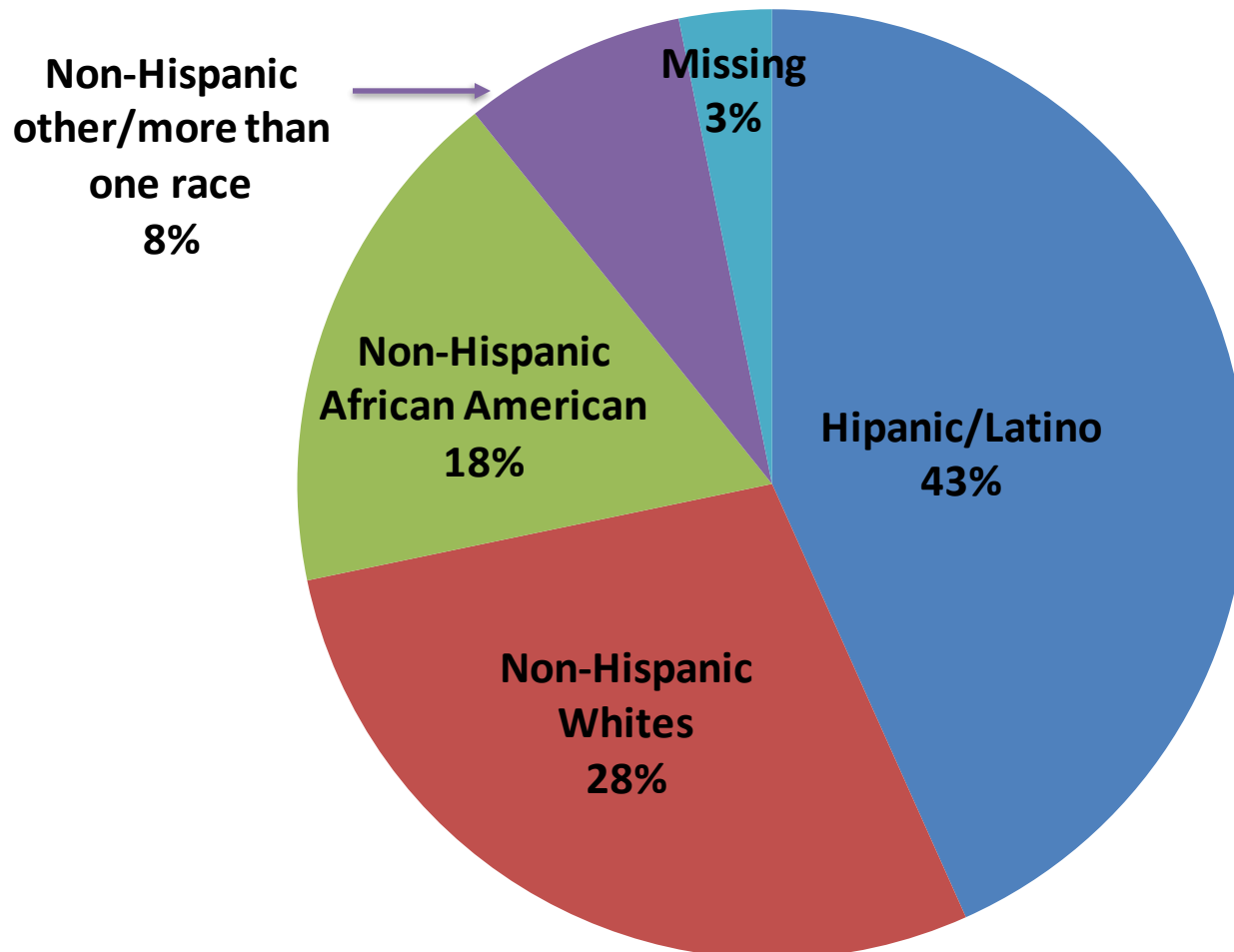
Gender



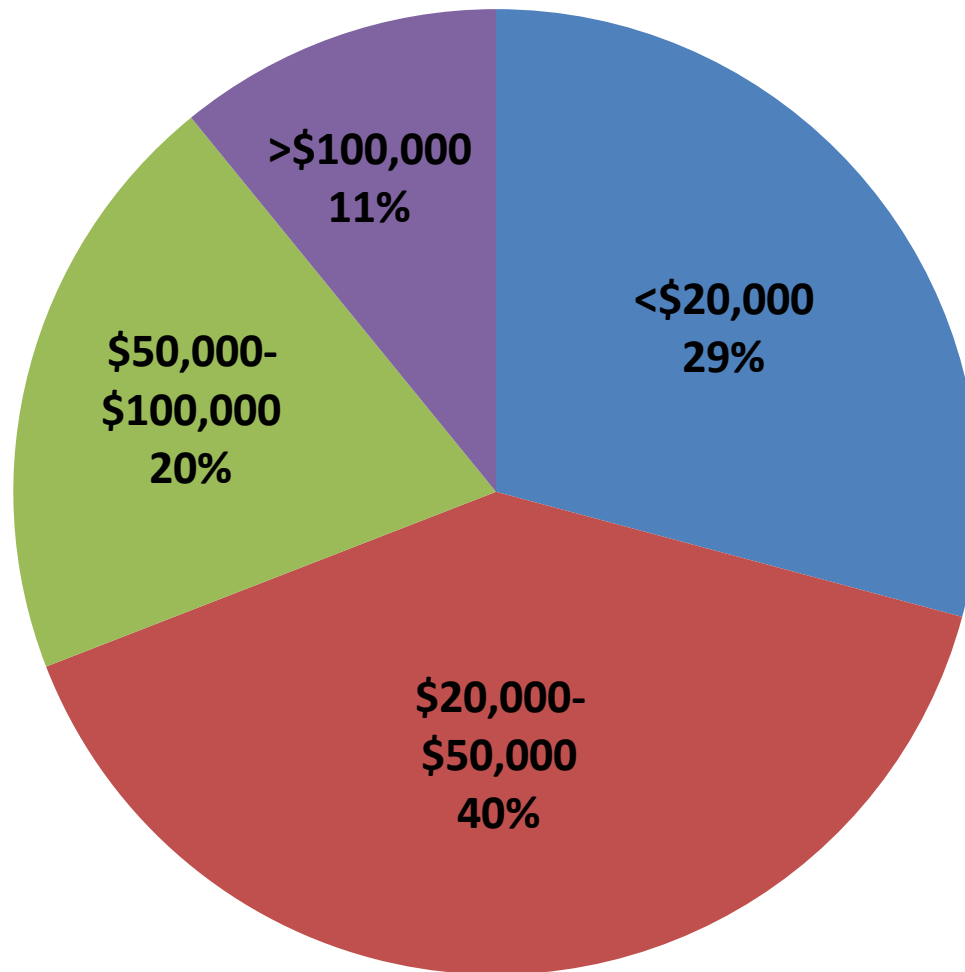
Grade



Child Race/Ethnicity (N=5,138)

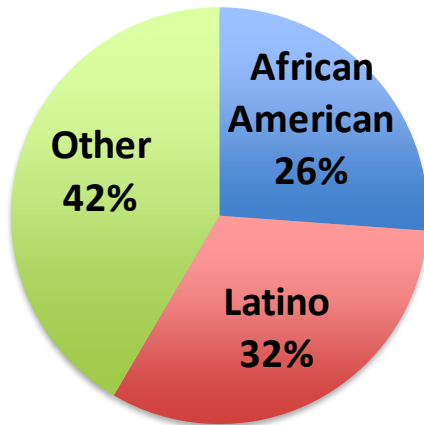


Household Income (N=5,138)

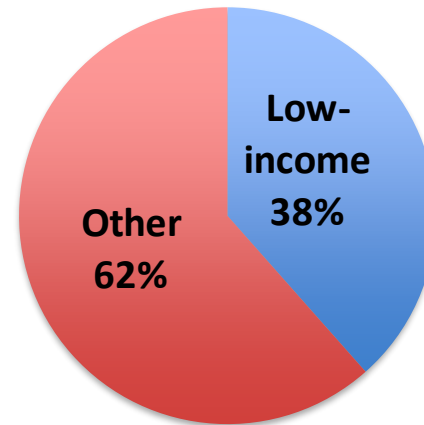


Communities: N=130

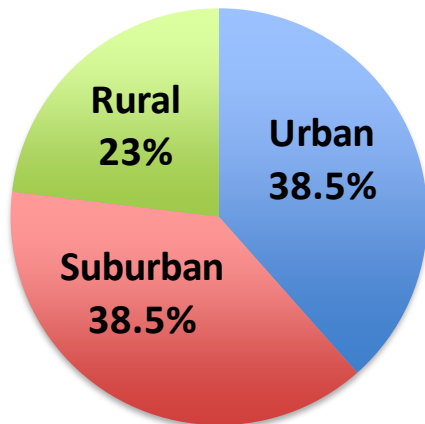
Race/Ethnicity



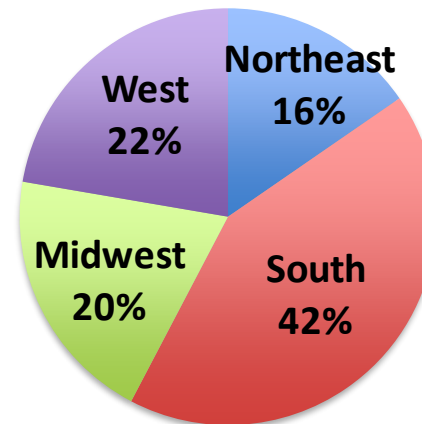
Income



Urbanicity



Region

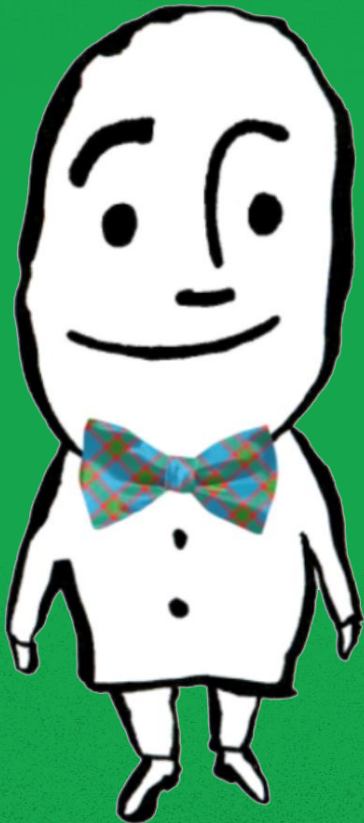


Coming Soon in *Pediatric Obesity*

- Healthy Communities Study Supplement will be available in *Pediatric Obesity*
- De-identified dataset available at <https://biolincc.nhlbi.nih.gov/home/>

QUESTIONS?

Please type your question(s) in the chat box located on the right.



Creating Healthy Environments for Children—What We Are Learning in the Healthy Communities Study

Stephen Fawcett, PhD, MA,
Senior Advisor

Center for Community Health and Development
University of Kansas

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Conventional Wisdom—Creating Healthy Environments Requires...

- **Intense dose** of programs/policies
- Comprehensive **targeting** of behaviors
- **Sustained** efforts
- Engaging **multiple sectors/settings**
- **Equity lens**

Focus & Protocol for Community Measurement

Focus—Number and type/intensity of community:

- Programs (e.g., nutrition program)
- Policies (e.g., new physical activity requirement in school)
- Environmental changes (e.g., bike path)

Protocol:

- Capture of CPPs
- Code instances of CPPs
- Characterize CPPs for key attributes
- Calculate intensity scores

Source: Fawcett, S.B., Collie-Akers, V., Schultz, J., Kelley, M. (2015). Measuring community programs and policies in the Healthy Communities Study. *American Journal of Preventive Medicine*. 49 (4), 636-641.

Characterizing CPPs by Key Attributes

Attributes related to intensity:

- Duration (e.g., Higher–Ongoing; Lower–one time)
- Reach (e.g., Higher–21% or more of children in area; Lower–1-5%)
- Behavioral intervention strategy used (e.g., Higher–Modifying access or policy change; Lower–Providing information)

Other attributes, including:

- Primary goal
- Behavioral objective addressed
- Sector in which implemented

Calculating Intensity Scores for CPPs

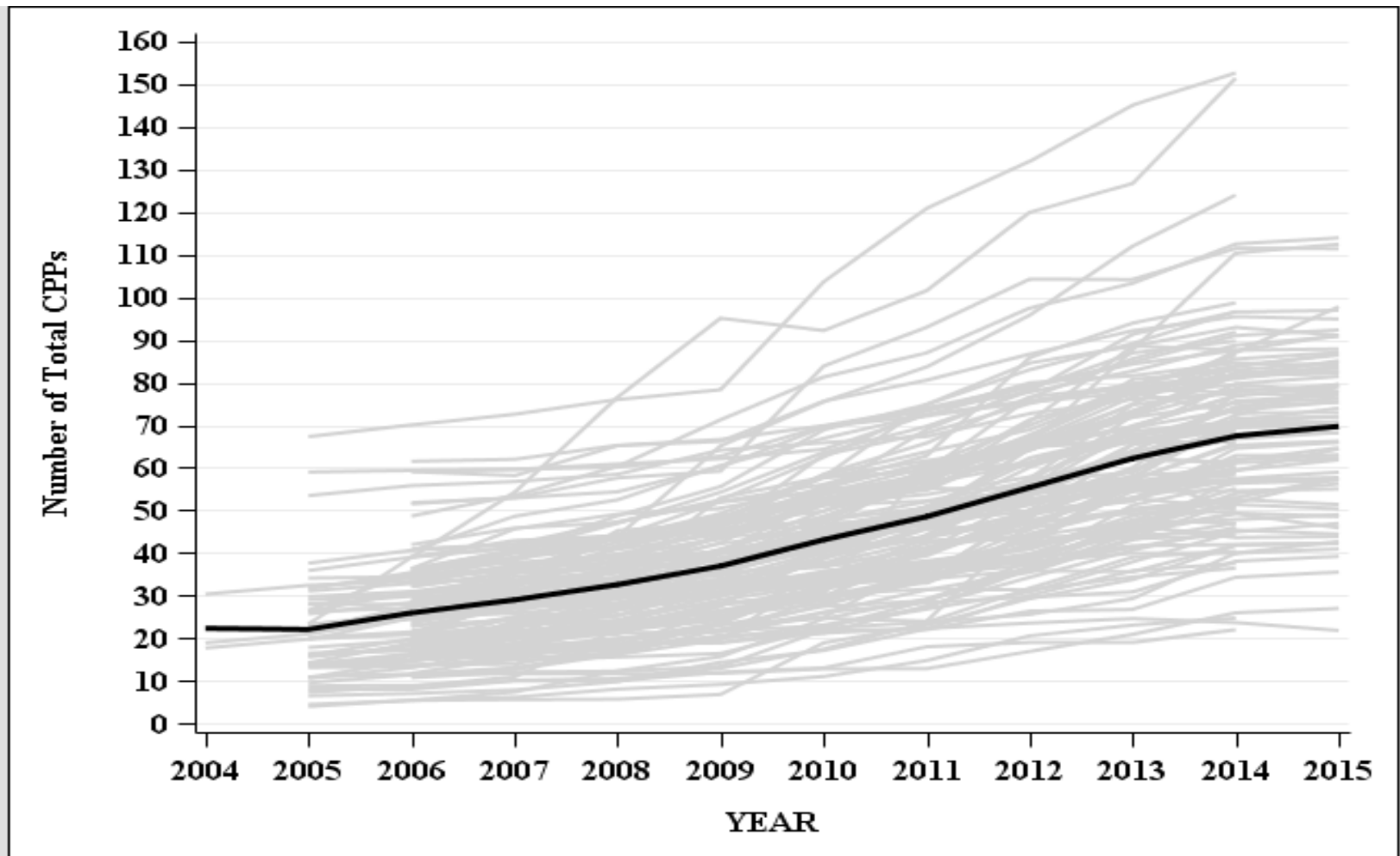
Each CPP characterized (High, Med, Low) for each attribute

Formula: Individual CPP Intensity Score = $(\text{Duration} + \text{Reach} + \text{Strategy})/3$

Calculating Intensity Scores for CPPs

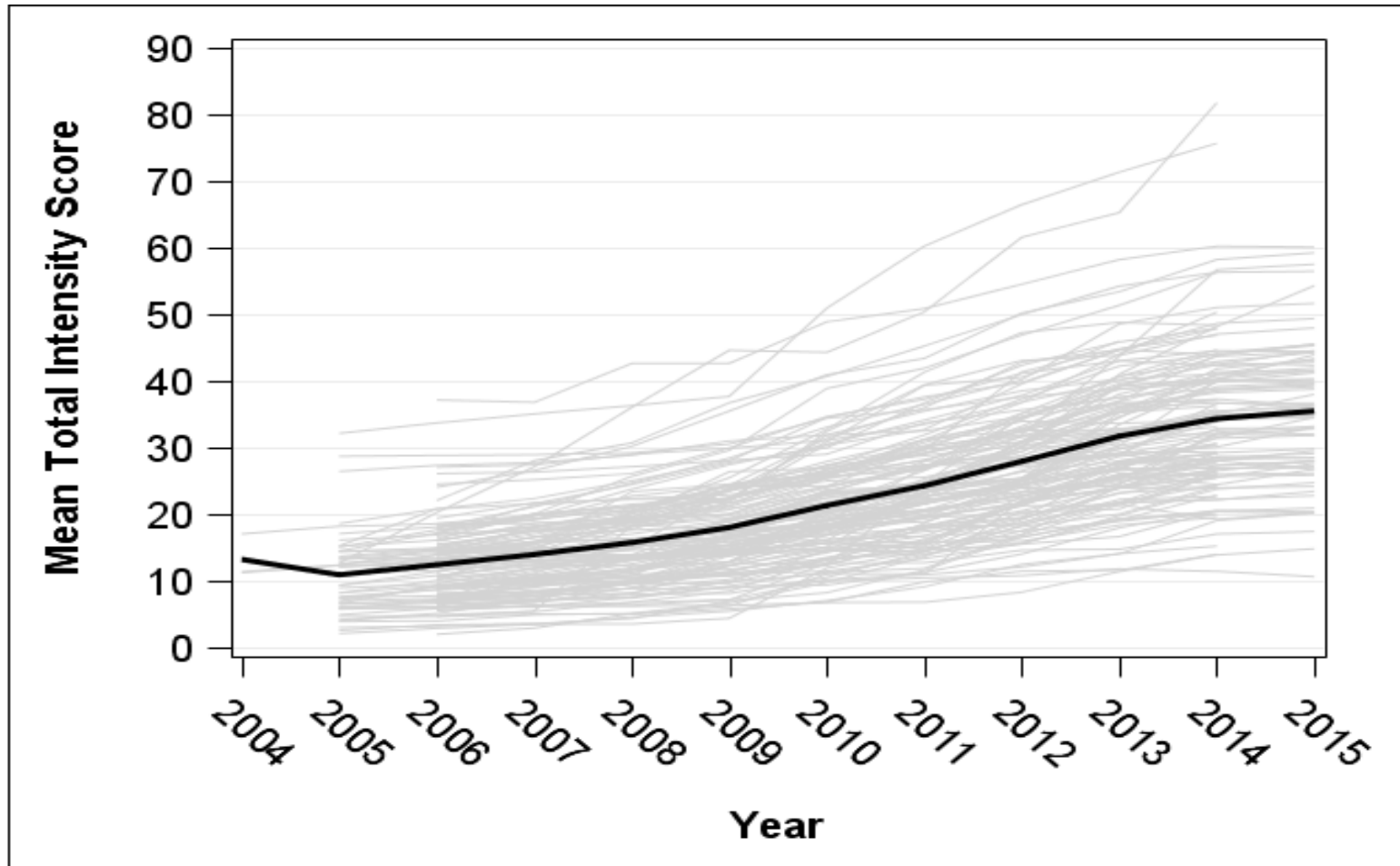
Illustrative Community/ Program Policy (Goal Addressed)	Attributes Used in Intensity Scoring			
	Duration	Reach	Behavioral Intervention Strategy Used	Intensity Score
Created walking path/ greenway to connect neighborhoods and schools (Physical activity)	Ongoing (1.0)	High (1.0)	Modifying access, barriers, and opportunities (1.0)	1.0
Provided an educational seminar to parents attending elementary school Parent Teacher Association meeting about how to promote healthy eating among children (Healthy eating)	One-time event (0.1)	Low (0.1)	Providing information and enhancing skills (0.1)	0.10

Dose/Amount: Distribution of CPPs (N=9,681) for the 130 Communities Over Time



Source: (Collie-Akers, Schultz, Fawcett, et al., 2018a, *Pediatric Obesity*).

Dose/Intensity: Distribution of Total Intensity Scores for the 130 Communities Over Time

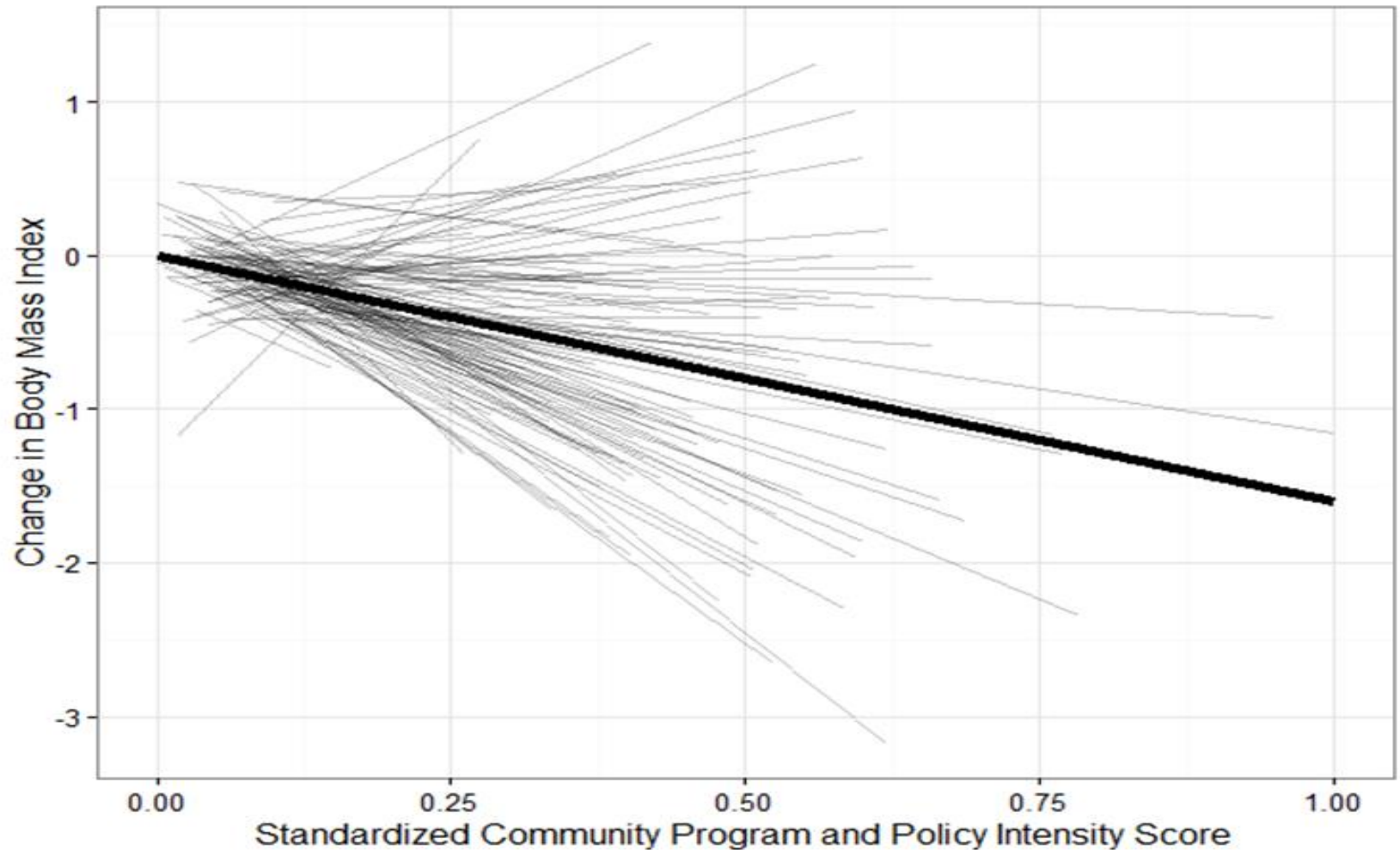


Source: Collie-Akers, Schultz, Fawcett, et al., 2018b, *Pediatric Obesity*.

Take Away Messages—Dose of Efforts Being Delivered for Healthier Weight

- How intensive are the efforts?
 - Some communities invest more, others little
 - Wide range in number and intensity of CPPs, with increasing trend over time
- Potential explanations of increasing trend:
 - Recommendations by agenda-setting organizations (e.g., National Academies of Sciences, Centers for Disease Control and Prevention)
 - Subsequent investments by national/local grant makers

Dose-Response—BMI/CPP Relationship

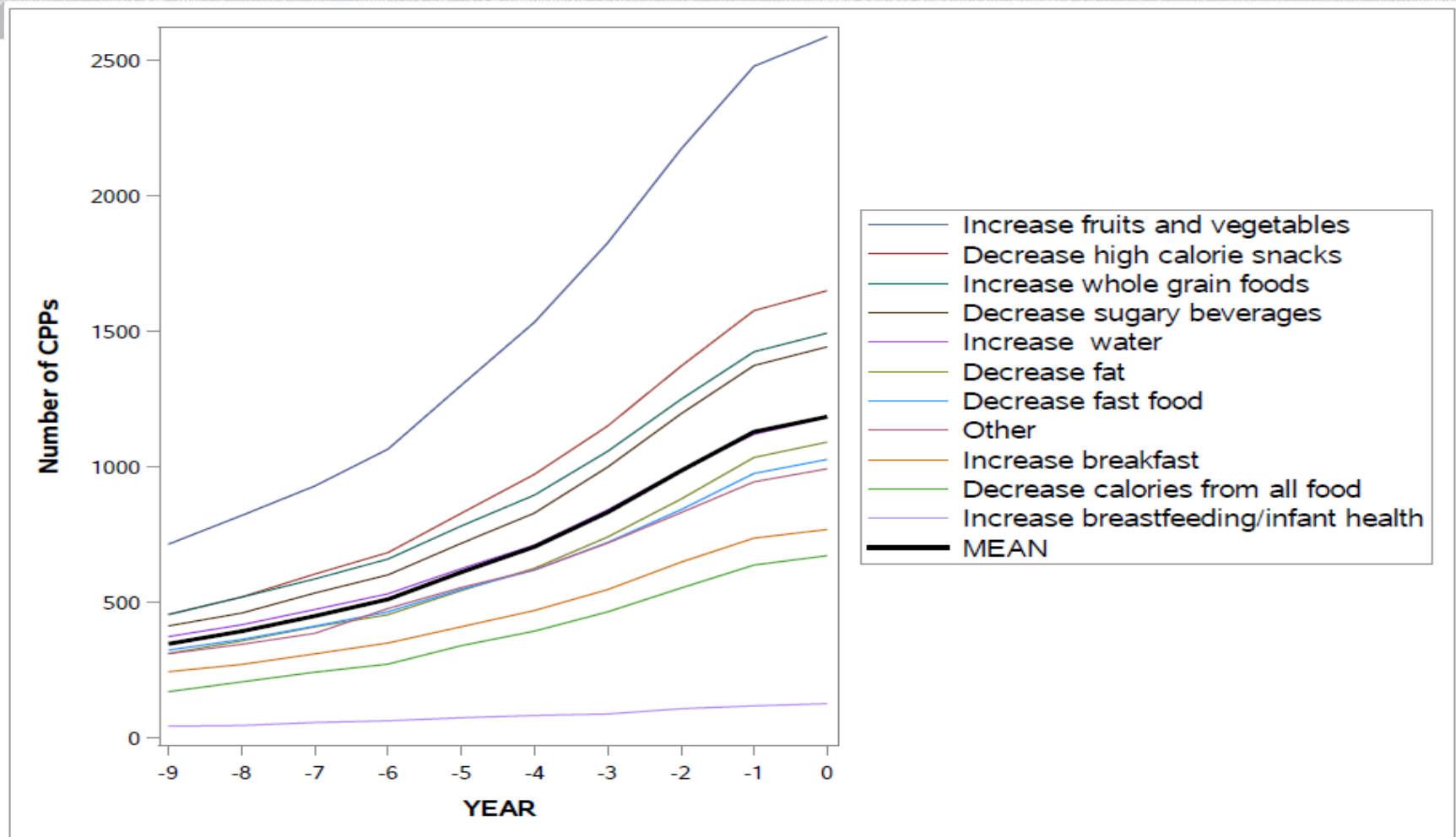


Source: Strauss, et al., 2018, *Pediatric Obesity*.

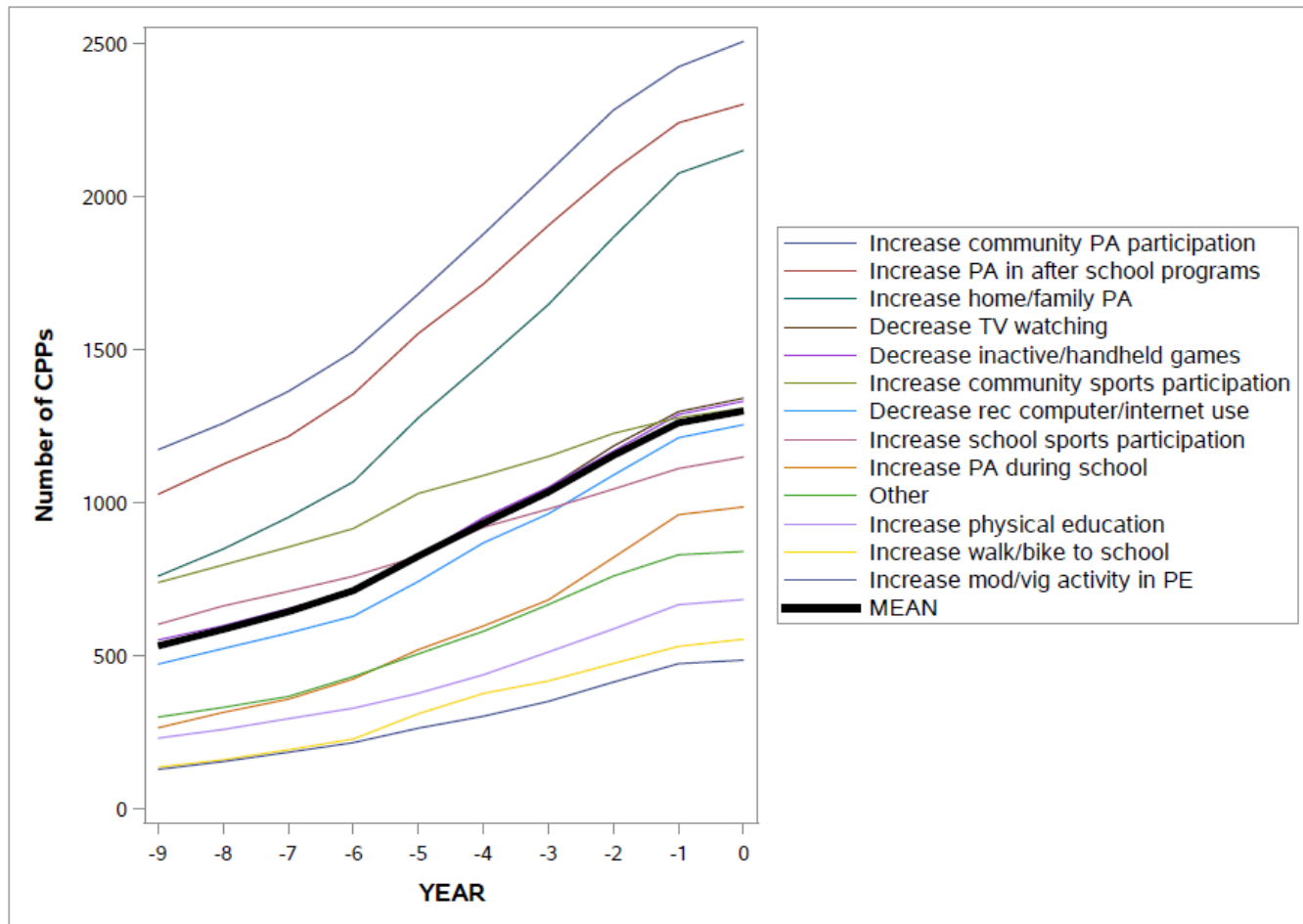
Take Away Messages—Dose-response Relationship

- Intensity of community programs/policies is significantly associated with lower BMI in children
- For a community that goes from the minimum observed score to the maximum, its children would see a reduction of -1.4 BMI units
- Community investment—the intensity of its CPPs—matters in assuring conditions for healthier weight among children

Targeting—Distribution of CPPs by Behavioral Objective for Nutrition

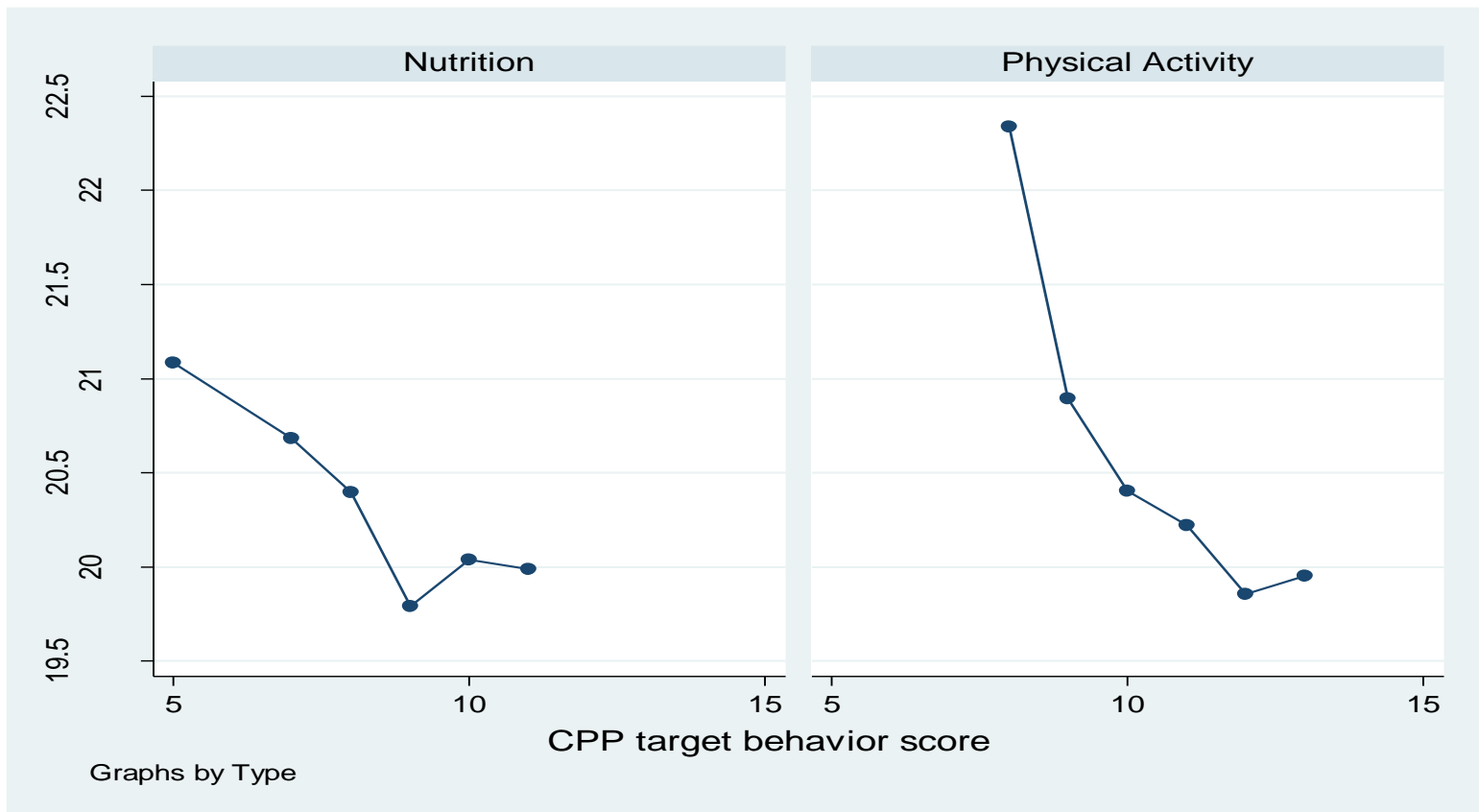


Targeting—Distribution of CPPs by Behavioral Objective for Physical Activity



Source: Collie-Akers, Schultz, Fawcett, et al., 2018, *Pediatric Obesity*.

Targeting—Relationship Between Comprehensive Targeting & Child BMI



Source: Frongillo, et al., 2017, *American Journal of Preventive Medicine*.

Take Away Messages—Targeting Community Efforts for Healthier Weight

- How comprehensive is the targeting of behaviors, and does that matter?
 - Communities showed variation in the number and types of behavior change objectives
 - More comprehensive CPPs—those targeting a greater number of distinct behaviors—were associated with lower child BMI
- Target multiple behaviors related to the behavioral goal to achieve intended results

Take Away Messages—Sustained Efforts for Promoting Healthier Weight

- Does sustainability of efforts matter?
 - Longer (6 year history of) exposure to CPPs associated with children's moderate-to-vigorous physical activity
 - Longer (multiple years) of exposure is better for nutrition outcomes than shorter (1 year)
- Community initiatives more successful when CPPs they implement are in place longer

Source: Ritchie et al., 2018, Pediatric Obesity; Webb et al., 2018, Pediatric Obesity; Russ Pate and HCS Physical Activity Team.

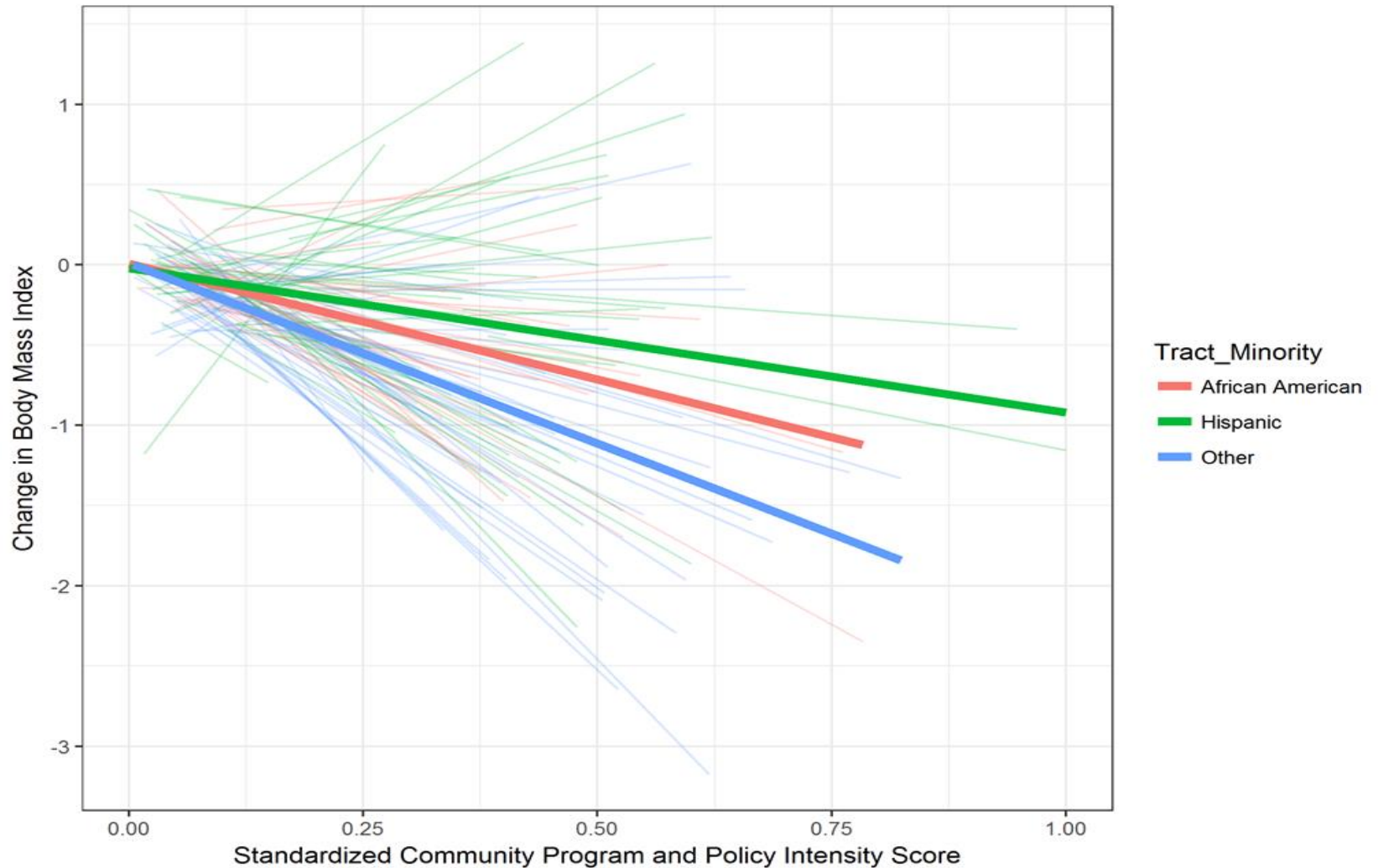
Take Away Messages—Engaging Multiple Sectors in Promoting Healthier Weight

- How multi-sectoral is the effort, and does it matter?
 - Most communities implemented CPPs through schools, and an average of 7 different settings; but with variation
 - This combination—higher intensity community programs implemented across multiple sectors—is associated with lower BMI in communities
- Engage multiple sectors and settings to enhance exposure to, and effectiveness of, the intervention

Take Away Messages—Equity Lens on Community Efforts for Healthier Weight

- Child and family level factors modify influence of CPPs on lower BMI in children
- Those children benefitting more:
 - Whites, Non-Hispanic
 - In particular grades
 - Higher family income
 - More parent education
- Assuring conditions for healthier weight among all children may require more intensive and targeted community investment

Equity Lens—BMI/CPP Relationship by Race/Ethnicity of Community



Take Away Messages—Equity Lens on Community Efforts for Healthier Weight

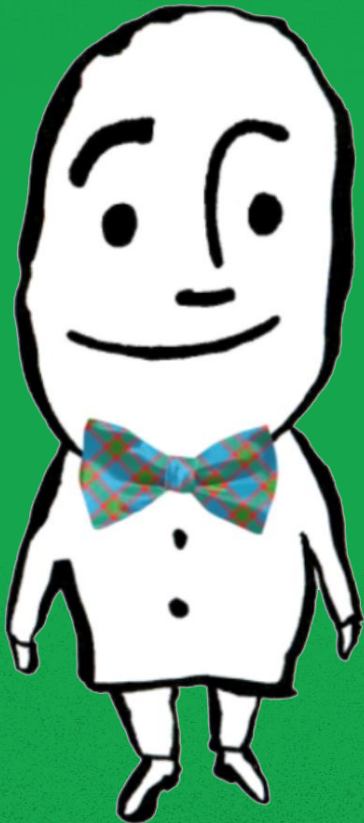
- Community factors modify the influence of community programs/policies on lower BMI in children
- Those communities benefitting more are predominately White, Non-Hispanic
- Place (and race/ethnicity) matters in assuring conditions for healthier weight among all children

Overall Take Away Messages

- Efforts would benefit from systematic measures of the intended (actual) “dose” of interventions
- What matters in sufficient “dose” for BMI:
 - Total intensity (amount/kind) of CPPs
 - Targeting of multiple behavioral objectives
 - Penetration through multiple sectors
 - Sustained effort—multiple years of exposure
- Equity and justice require more intense and targeted dose with populations and places experiencing health inequities

QUESTIONS?

Please type your question(s) in the chat box located on the right.



Community Programs and Policies: Associations with Children's Physical Activity

Russell R. Pate, PhD

Director

Children's Physical Activity Research Group

Arnold School of Public Health

University of South Carolina

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Measurement of Physical Activity

- Household Interview
 - Self-administered, laptop, supervised
 - Children ages 9+ – primary respondent
 - Children ages 4-8 – parent primary respondent with child input

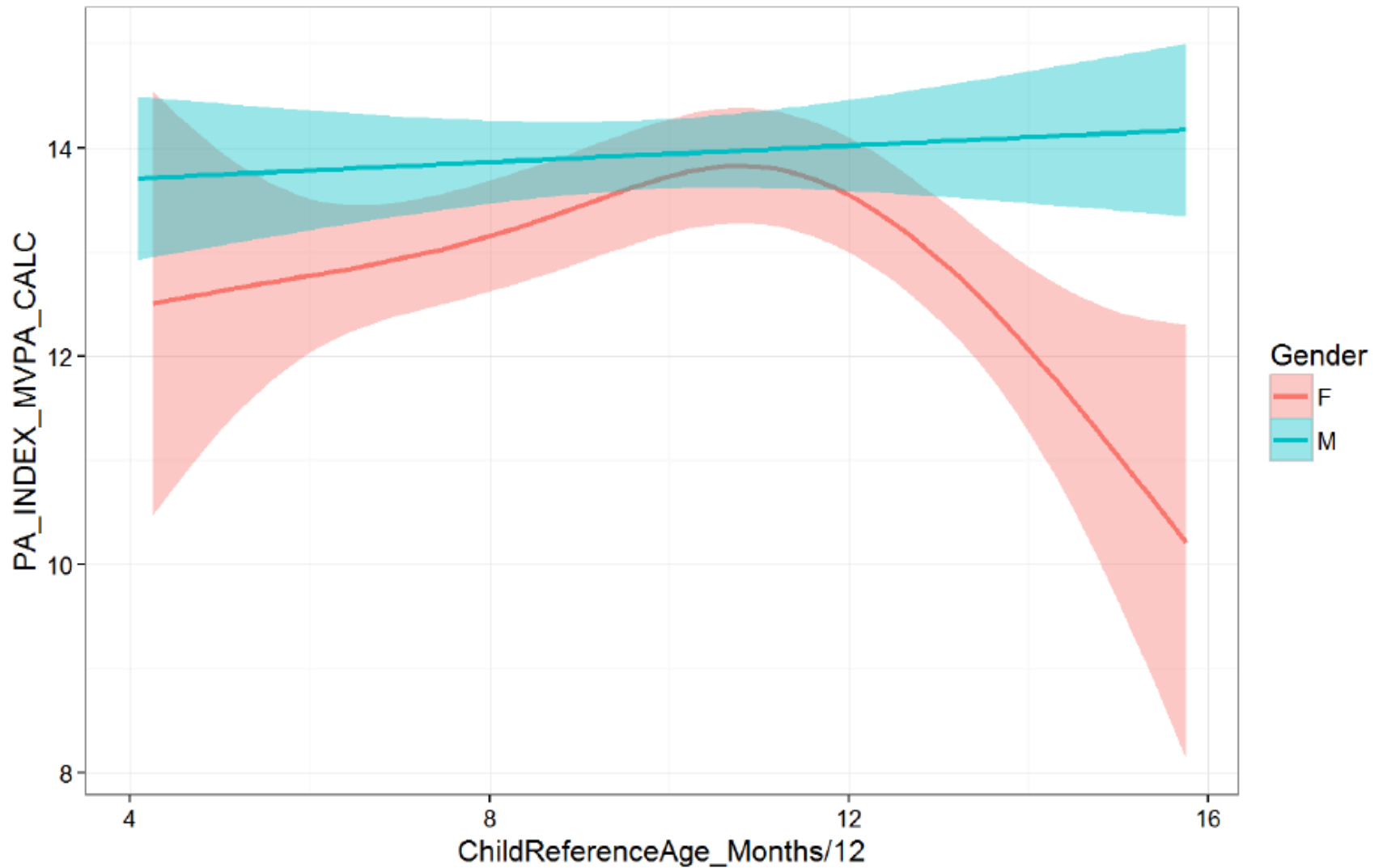
Measurement of Physical Activity

- 7-Day Physical Activity Recall
 - 19 physical activities and sedentary behaviors that were likely targets for CPPs
 - Participation (yes/no), which of the past 7 days, and intensity rating: light, moderate, hard, very hard

Measurement of Physical Activity

- Total Physical Activity (TPA)
 - Sum of number of days reported for 15 physical activities
 - Score of 0-85
- Moderate-to-Vigorous Physical Activity (MVPA)
 - Sum of number of days reported for 11 pre-defined activities
 - Score of 0-69

MVPA vs. Child Age



Study 1

To describe associations between composite indicators of CPPs to promote physical activity in children and children's physical activity



Two CPPs Indices

- Comprehensive Index – Behavior Change Strategy, Duration, and Reach
- Behavior Change Strategy Index – 1-5 Strategies/Year

Behavior Change Strategies

- Providing information and enhancing skills
- Enhancing services and support
- Modifying access, opportunities, and barriers
- Changing consequences
- Modifying policy and systems

CPPs Indices for 130 Communities and Association between CPP-Int, CPP-Strat, and Children's MVPA index

				MVPA			
				Base Model		Covariate Model	
	Score (SE)	Range	Standardized Score (SE; Range 0-1)	Slope (std. error)	p-value	Slope (std. error)	p-value
6-year indices							
CPP-Int	119.83 (3.74)	41.88-261.97	0.35 (0.02)	0.55 (1.34)	0.10	-0.24 (1.14)	0.41
CPP-Strat	27.27 (0.29)	18-30	0.66 (0.02)	2.54 (1.09)	0.02	0.99 (0.97)	0.31

Results

- An index reflecting the six-year history of the number of behavior change strategies used in community programs and policies was positively associated with children's moderate-to-vigorous physical activity
- This association was attenuated with adjustment for demographic factors
- Moderation analyses found that the association was positive among non-Hispanic, but not Hispanic, children

Conclusions

Community initiatives to promote physical activity in children may be more successful if they are sustained for several years and employ multiple behavior change strategies



Study 2

Relationship
between quality of
street environment
and neighborhood
and street-based
physical activity in
children



Neighborhood Attribute Inventory (Windshield Survey)

- Street Segment, Child's Home
- Attributes (+,-)
 - Burned, boarded up, or abandoned residential units
 - Litter
 - Quality and condition of residential units
 - Busy thoroughfare
 - Side street/cul-de-sac/dead end/one-way
 - Sidewalks

Association of Neighborhood Quality Attributes with Neighborhood PA

Neighborhood Quality Attribute	Neighborhood PA Index (n=4415)	
	B	p
Burned, boarded up, abandoned units (absent)	-0.13	0.68
Litter (none)	-0.51	0.04
Condition of residential units (excellent/good)	-0.20	0.42
Street type (side street/cul-de-sac/dead-end/one-way)	0.60	0.03
Sidewalks (present and in good condition)	0.04	0.89
Total street quality score	-0.05	0.65

Results

- Youth with no litter on their street reported significantly lower neighborhood-based PA
- Youth living on a side street, cul-de-sac, dead-end, or one-way street reported greater neighborhood-based PA

Conclusions

Specific street quality attributes are associated with physical activity in youth

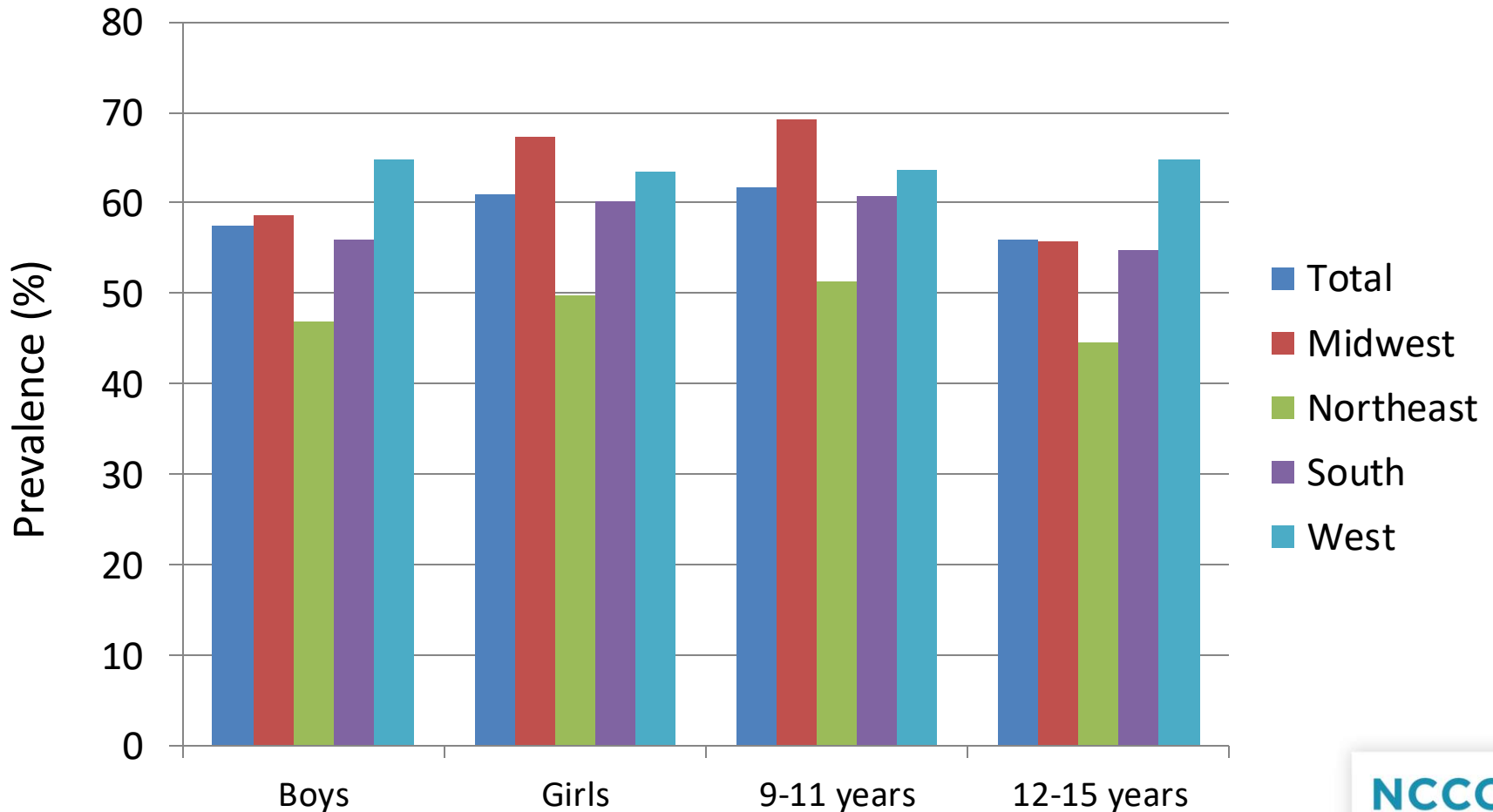


Study 3

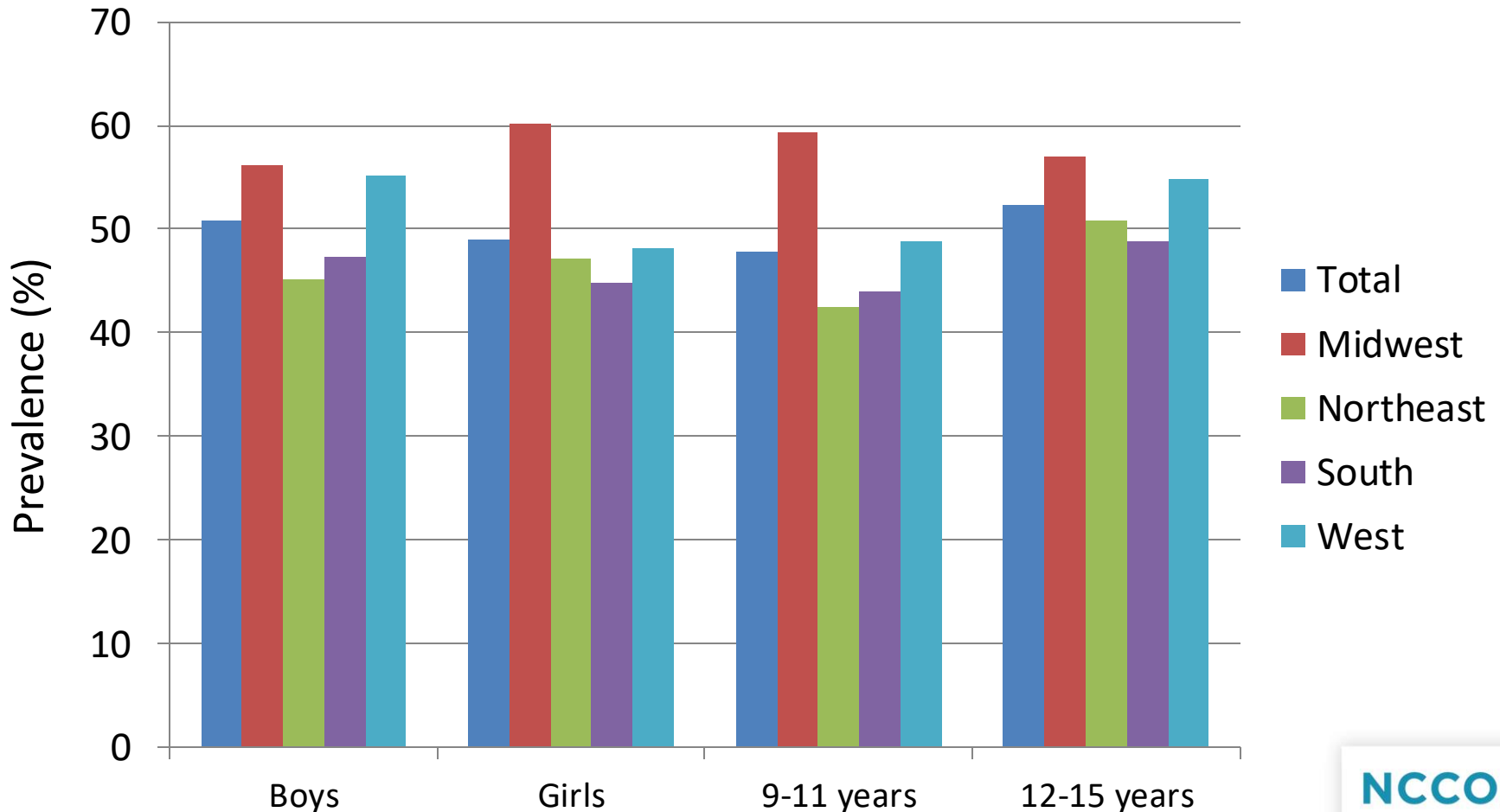
Regional
comparison of
walking/bicycling for
transport and
fun/exercise in a
large, diverse
sample of children



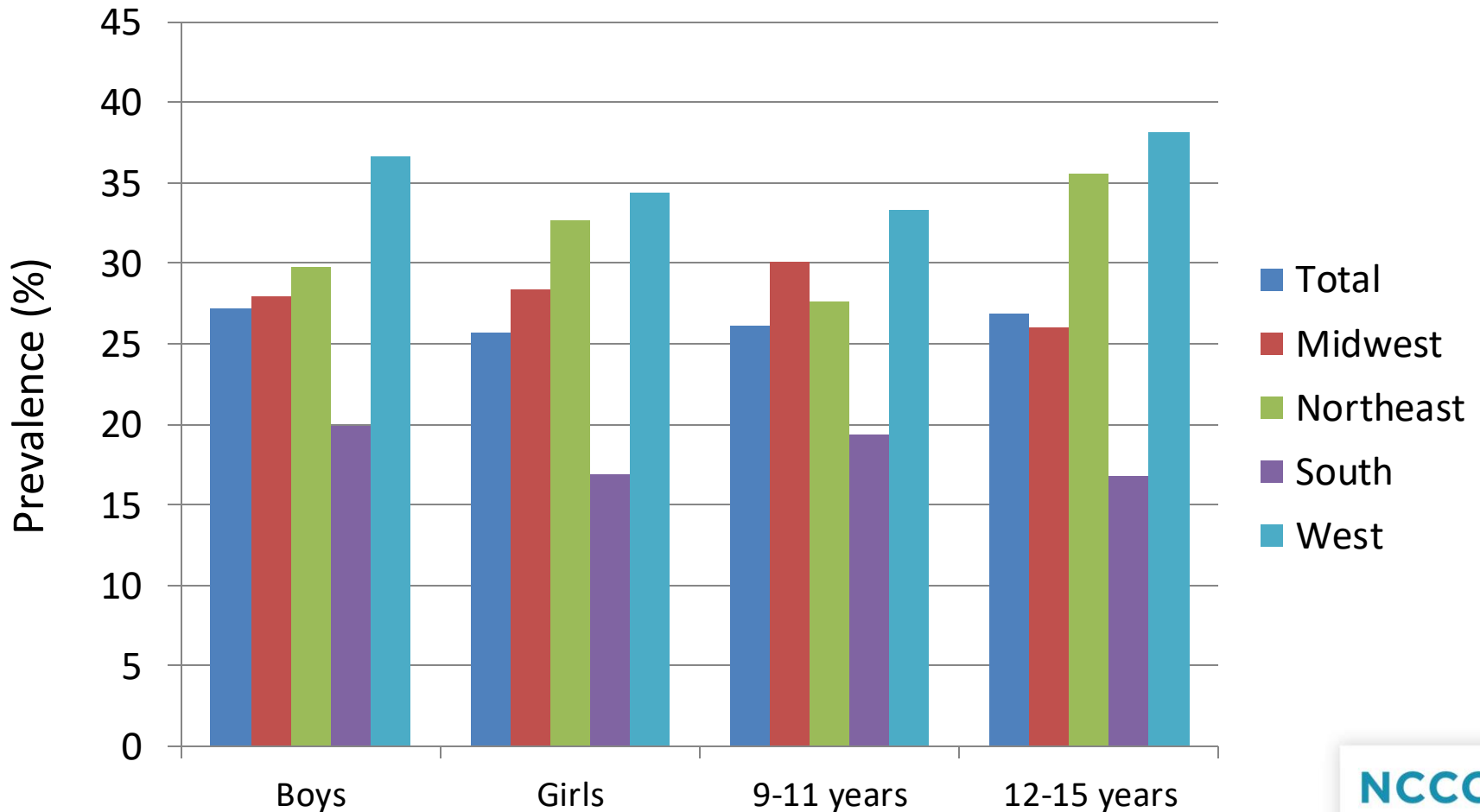
Regional Comparisons of Walking or Bicycling for Fun/Exercise in the Past Seven Days



Regional Comparisons of Walking or Bicycling to Non-school Destinations in the Past Seven Days



Regional Comparisons of Walking or Bicycling to School Destination in the Past Seven Days



Results

- Walking/bicycling for fun/exercise was higher in the Midwest, South, and West compared to the Northeast
- Walking/bicycling to non-school destinations was higher in the Midwest compared to the South and Northeast
- Walking/bicycling to school was higher in the Midwest, Northeast, and West compared to the South

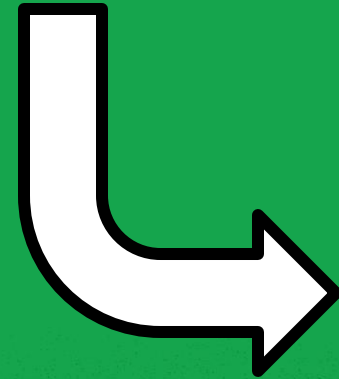
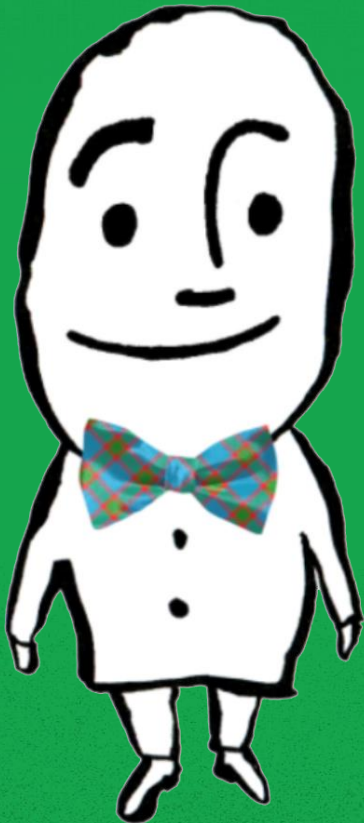
Conclusions

Program/policy initiatives aimed at increasing walking and bicycling in youth should consider contextual, age, and gender influences



QUESTIONS?

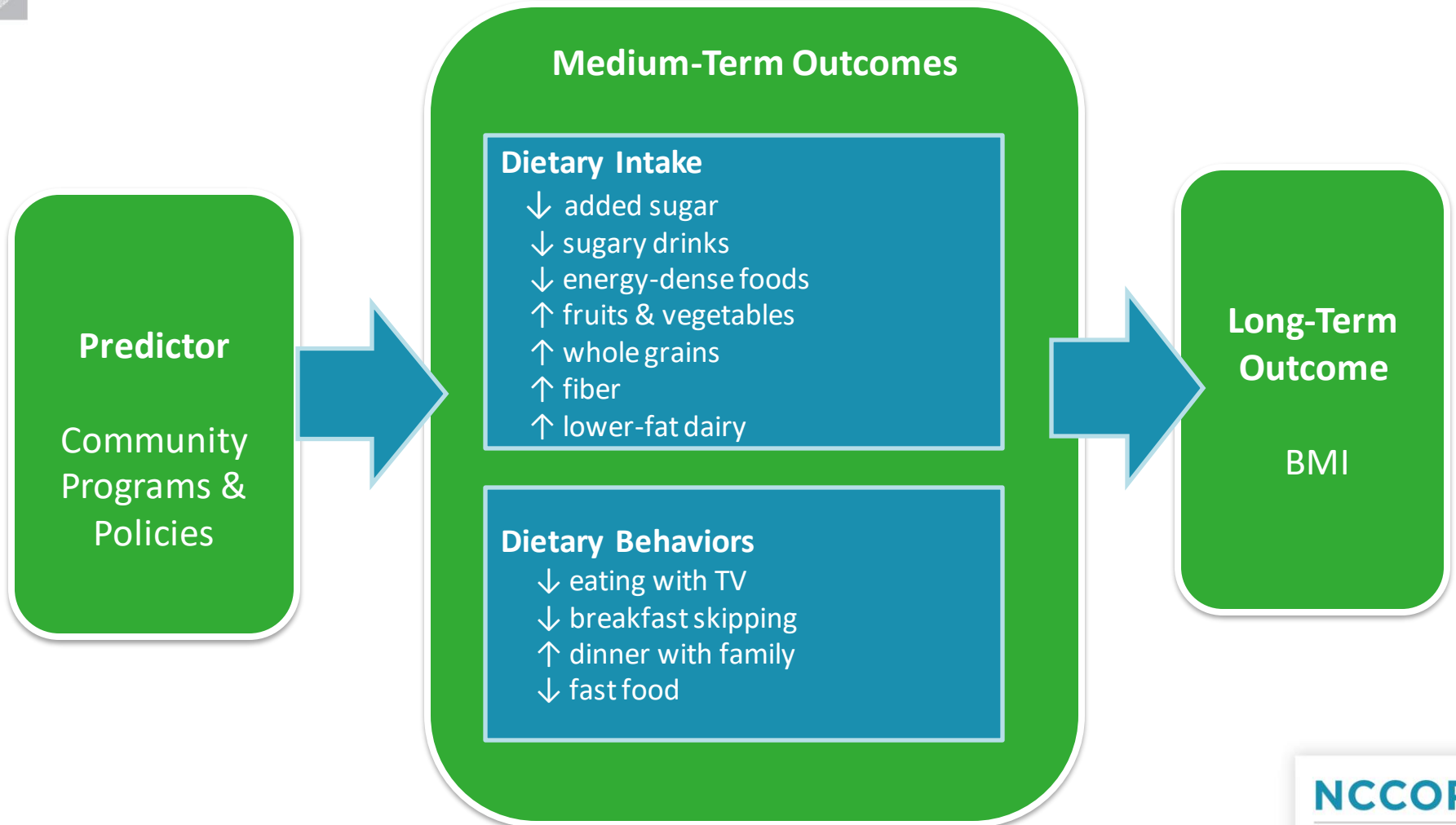
Please type your question(s) in the chat box located on the right.



Community Programs and Policies: Associations with Dietary Outcomes

Lorrene Ritchie, PhD, RD
Director
Nutrition Policy Institute
University of California Division of
Agriculture and Natural Resources

Dietary Outcomes



Source: Ritchie et al. Am J Prev Med 2015;49:647-52.

Characterizing CPPs Over Past Six Years

DOSE

More Intense

Different Community Efforts Associated with Different Dietary Outcomes

More Intense

↑ lower-fat milk

More Strategies & Restricting Availability of Less Healthy

↓ added sugar

↓ sugary drinks

↓ energy-dense foods

More Behaviors & Targeting Less Healthy

↑ fruit & vegetables

↑ fiber

Types of Behaviors and Environmental Strategies

Behaviors

What About Community Context?

WHAT (behavior)

More Healthy Diet

- South
- Rural

Less Healthy Diet

- West

HOW (strategy)

More Healthy Diet

- Northeast
- West
- Higher-income
- High Hispanic

Less Healthy Diet

- South
- Low-income
- High African American

Takeaways: “What Works” for Nutrition

- No ‘single’ or ‘simple’ solution; complex dynamics with dietary targeting, possible indirect and halo effects
- Consider intensity of efforts: reach, duration, strategy
- Combine programs with policies
- Simultaneously target multiple behaviors
- Don’t focus only on the positive

Takeaways: “What Works” for Nutrition

- Use strategies to change the food environment: restricting the availability of unhealthy foods, and reducing portion sizes show promise
- Different considerations may be needed for childhood obesity prevention efforts:
 - Particularly in southern United States and rural communities
 - To a lesser extent, depending on community income and race/ethnicity
- Sustained efforts over time are needed

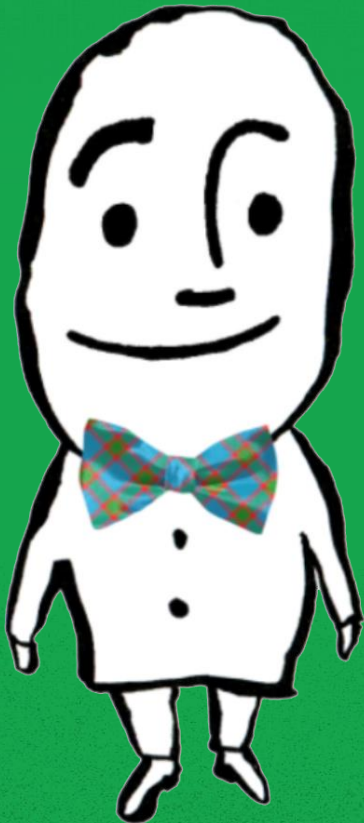
HCS: Strengths and Limitations

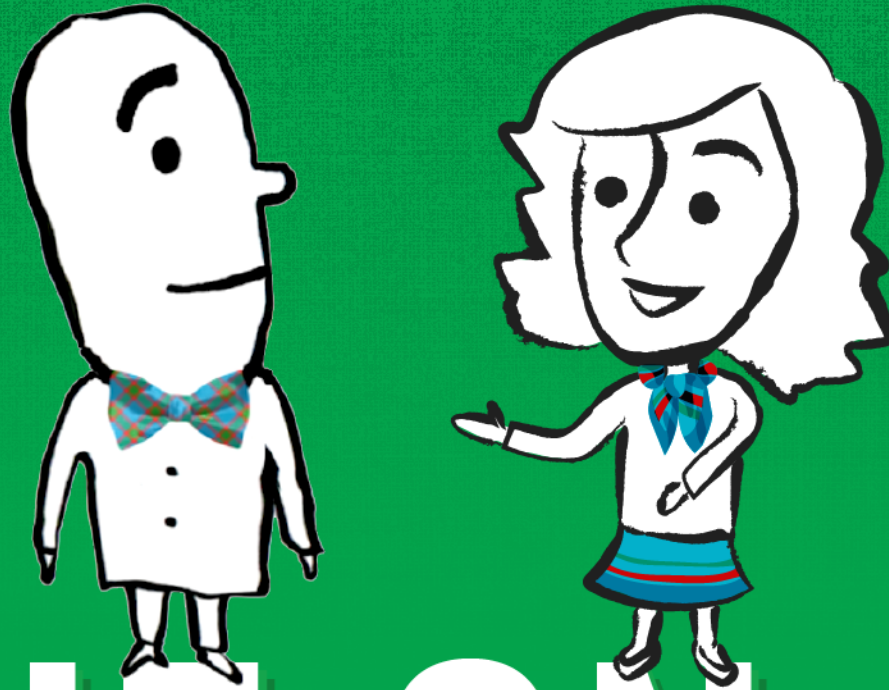
Overall HCS Summary Points

- Largest study of its kind
- Observed number and intensity of CPPs increased in more recent years
- **What seems to matter:**
 - Total intensity (amount/kind) of CPPs
 - Targeting multiple behaviors
 - Penetration through multiple sectors
 - Sustained effort—multiple years of exposure
- Programs and policies may not be targeting those most at risk
- Improved understanding of how to measure and deliver sufficient doses of CPPs can help assure the conditions for healthy weight for all our children

QUESTIONS?

Please type your question(s) in the chat box located on the right.





ONE ON ONE

UPCOMING EVENT



Connect & Explore Webinar

- **Innovations in Behavioral Design to Enhance Active Living and Healthy Eating**
 - The next Connect & Explore will highlight design guidelines that enhance active living and healthy eating in schools as well as advancements in the field of behavioral design
 - October 23 at 4 p.m. ET
 - Speakers:
 - Jeri Brittin, PhD, *HDR*
 - Joel Kimmons, PhD, *Centers for Disease Control and Prevention*
 - Kim Rollings, PhD, *University of Notre Dame*

FURTHER QUESTIONS?

Other questions about NCCOR
or upcoming activities?

Email the NCCOR Coordinating Center
nccor@fhi360.org

WHAT'S HAPPENING IN **NCCOR NEWS**

NCCOR publishes chapter: Behavioral Design as an Emerging Theory for Dietary Behavior Change

NCCOR is highlighting multidisciplinary partnerships to celebrate National Childhood Obesity Awareness Month 2018!

Utility of the Youth Compendium of Physical Activities

NCCOR to present at the Society for Prevention Research and the American College of Sports Medicine 2018 Annual Meetings

NCCOR updates the Catalogue of Surveillance Systems and seeks recommendations for new systems

Connect & Explore



Upcoming Webinars

Mark your calendar for these upcoming Connect & Explore webinars!

THANK YOU!



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