


MEASURES REGISTRY

RESOURCES FOR MEASURING DIET AND PHYSICAL ACTIVITY



A photograph of two children, a boy and a girl, sitting in an orange kayak on a body of water. The boy is in the front, wearing a blue cap and a life vest, holding a yellow paddle. The girl is behind him, also wearing a life vest and holding a yellow paddle. They are both smiling. The water is green and there are some splashes.

Measurement is a fundamental component of all forms of research and it is certainly true for research on childhood obesity. A top priority for the National Collaborative on Childhood Obesity Research (NCCOR) is to encourage consistent use of high-quality, comparable measures and research methods across childhood obesity prevention and research.

NCCOR: WORKING TOGETHER TO REVERSE CHILDHOOD OBESITY

NCCOR is a partnership of the four leading funders of childhood obesity research: the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), the Robert Wood Johnson Foundation (RWJF), and the U.S. Department of Agriculture (USDA). These four leaders joined forces in 2008 to continually assess the needs in childhood obesity research, develop joint projects to address gaps and make strategic advancements, and work together to generate fresh and synergetic ideas to reduce childhood obesity. For more information about NCCOR, visit www.nccor.org.

NCCOR TOOLS FOR MEASUREMENT

- ▶ MEASURES REGISTRY
- ▶ MEASURES REGISTRY USER GUIDES & RESOURCES
- ▶ COMING SOON: E-LEARNING MODULES!

GOALS OF THE TOOLS

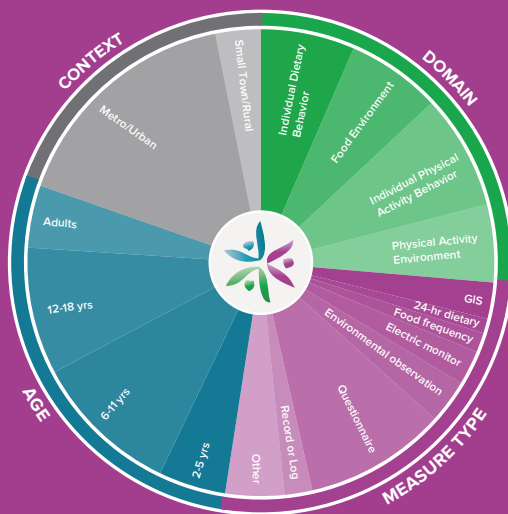
- To standardize use of common measures and research methods across childhood obesity research at the individual, community, and population levels
- To help users select appropriate diet and physical activity measures for their work in childhood obesity
- To direct users to additional resources and sources of useful information

Measures Registry

The Measures Registry is a searchable database of nearly 1400 diet and physical activity measures relevant to childhood obesity research. Its purpose is to standardize use of common measures and research methods across childhood obesity research at the individual, community, and population levels.

Measures are categorized into four domains, each of which is discussed in its own Measures Registry User Guide:

- ▶ INDIVIDUAL DIETARY BEHAVIOR
- ▶ FOOD ENVIRONMENT
- ▶ INDIVIDUAL PHYSICAL ACTIVITY BEHAVIOR
- ▶ PHYSICAL ACTIVITY ENVIRONMENT



The Measures Registry facilitates access to available measures, helps identify gaps in measures, and spurs development and validation of new measures. It also houses measures in development, links to other measures registries and related resources, and solicits new measures for consideration.



Child Nutrition Questionnaire

At A Glance

[Study Design](#)[How to Use](#)[Validity](#)[Reliability](#)

DOMAIN(S)

Food Environment
Individual Dietary Behavior

MEASURE TYPE

Questionnaire

MEASURE AVAILABILITY

Free
Download measure from [biomedcentral.com](https://www.biomedcentral.com)

NUMBER OF ITEMS

14 Reported

STUDY LOCATION

Metro/Urban, Small Town/Rural
Southern, Australia

LANGUAGE(S)

English

INFORMATION ABOUT DEVELOPMENT OF MEASURE

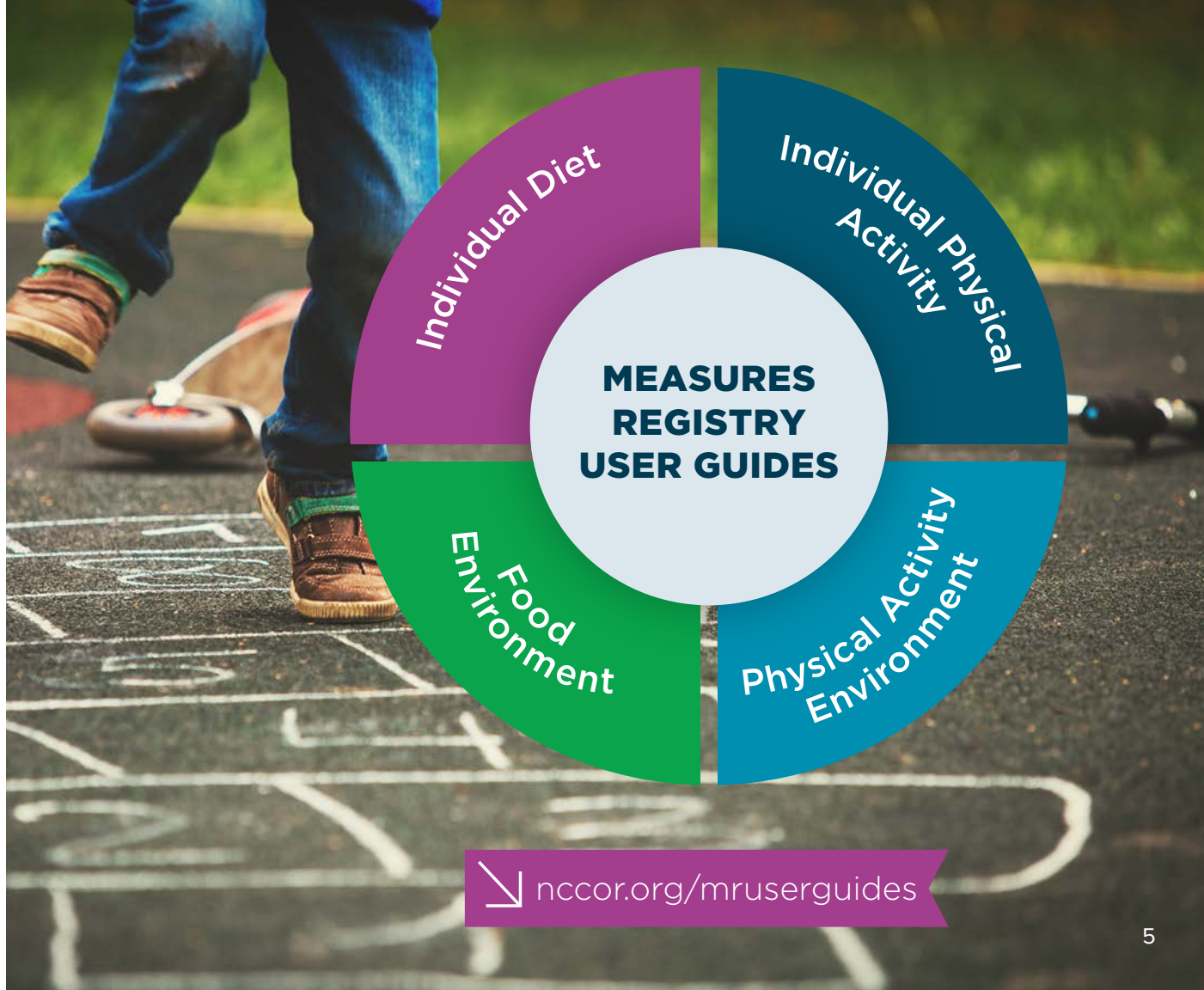
The questionnaire was piloted in a convenience sample of 7 students from grades 5-7. These students attended primary schools not involved in the community based project.

 nccor.org/measures

User Guide Overview & Resources

Organized by the same four domains as the Measures Registry, the User Guides are designed to provide an overview of measurement, describe general principles of measurement selection, present case studies that walk users through the process of using the Measures Registry to select appropriate measures, and direct researchers and practitioners to additional resources and sources of useful information. The User Guides will help move the field forward by fostering more consistent use of measures, which will allow for standardization, meta-analyses, and synthesis.

Additional complementary resources found on the NCCOR website include case studies, fact sheets, teaching slides, and webinars.



 nccor.org/mruserguides

Individual Diet

What information is included in the Individual Diet User Guide?

- An overview of dietary behavior, which is primarily defined as dietary intake and related dietary behaviors (e.g., frequency of snacking, perceptions, and attitudes)
- An outline of the literature identifying links between diet and childhood obesity
- Concepts relevant to studying diet, including unique considerations regarding the quality of data collected in studies of children
- Methods and tools used to assess dietary intake and related dietary behaviors, including objective and self-report methods
- Principles related to psychometric properties of measures, along with random and systematic measurement error
- Guidance on selecting measures, case studies, future direction, additional resources and more



CASE STUDY:

Examining Implications of Modifications to Foods Offered for Sale in Vending Machines within an Institution

Background

A project team wishes to assess intake of sugar-sweetened beverages and alternatives before and after changes to vending machine policies. The policy requires that the institution replaces sodas and energy drinks with water.

Considerations & Measure Selection

If the team chooses a narrower focus on snacks and beverages, they may consider using a screener to reduce team and respondent burden.

If the team chooses a broader focus on overall diet, they may consider a 24-hour recall or FFQ to examine different dietary components.

If the respondents are old enough to reliably report their diets, the team may also choose a self-report measure.

Find detailed case studies in the Individual Diet User Guide.

CASE STUDY:

Improving Healthy Eating Behaviors in Independent Neighborhood Restaurants

Background

A large city health department is working with the local restaurant association to improve city residents' healthy eating behaviors. To identify change in availability, pricing, and menu sales over time, the study team will collect baseline data and repeated collection of food availability, price data, and menu revision support for restaurant owners.

Considerations & Measure Selection

The study team must select an available, easy to use tool that restaurant staff can use to collect data.

The study team is looking for measures that are publicly available and have known validity and reliability.

The study team chooses NEMS-R which offers a free online training, has established reliability, and can collect data on restaurant menus, factors influencing consumer choices, and sample sale records. To account for lack of established validity, the team structures the study to test for validity evidence.

Find more detailed case studies in the Food Environment User Guide.



Food Environment

What information is included in the Food Environment User Guide?

- A rationale for assessing food environments
- Definitions for key food environment venues
- Concepts in food environment assessment
- Methods of food environment measurement across settings
- Principles related to psychometric properties of measures, along with distinctions between single and multi-item measures, response scales, and sensitivity to change
- Guidance on selecting measures, collecting and reporting data, case studies, future direction, and additional resources

Individual Physical Activity

What information is included in the Individual Physical Activity User Guide?

- A framework to understand the unique needs of different types of studies and an introduction to the various categories of physical activity assessment options
- A description of the complexities of quantifying physical activity
- The challenges involved in assessing a multi-dimensional and dynamic behavior
- Specific considerations for measuring physical activity in children
- An overview of measurement issues and principles related to psychometric properties of measures
- Guidance on selecting measures and strengths and limitations of different measurement tools
- Considerations related to calibrating activity monitors, interpreting differences in active versus sedentary behaviors, and using new monitoring and data collection technologies and more



CASE STUDY:

Determining Compliance with Physical Activity Recommendations Across Different Grade Levels

Background

National recommendations indicate that youth should accumulate at least 30 minutes/day of Moderate to Vigorous Physical Activity (MVPA) in the school-setting. A research team plans to measure compliance across elementary to high school grade levels by determining what percentage of youth meet the MVPA goal per day at school.

Considerations & Measure Selection

The research team needs a measure appropriate for elementary through high school students.

The measures should capture frequency, duration, and intensity of physical activity occurring at school, and provide immediate feedback.

The research team selects a web-based self-report measure to be administered by physical education teachers that can collect easily shareable data on contexts of in-school.

Find more detailed case studies in the Individual Physical Activity User Guide.

CASE STUDY:

Improving Healthy Eating Behaviors in Independent Neighborhood Restaurants

Background

A local bicycle and pedestrian advocacy organization is working with the city planning department to improve environments around schools to support active living. The organization plans to apply for grant funding to support specific environmental improvements and would like the improvement targets to be identified through a community needs assessment. Their goal is to identify specific locations and types of improvements.

Considerations & Measure Selection

The organization is interested in having community members identify environmental attributes in a neighborhood or park environment that could feasibly be modified during the two-year grant.

With their focus on specific environmental features, they eliminate GIS and self-report measures which have a macro-level focus.

The team decides on two audit tools that are brief, require little training, and contain simple metrics: 1) the Active Neighborhood Checklist for the streetscape audit, and 2) a subset of the Community Park Audit Tool (CPAT) for the park audit.

[Find more detailed case studies in the Physical Activity Environment User Guide.](#)



Physical Activity Environment

What information is included in the Physical Activity Environment User Guide?

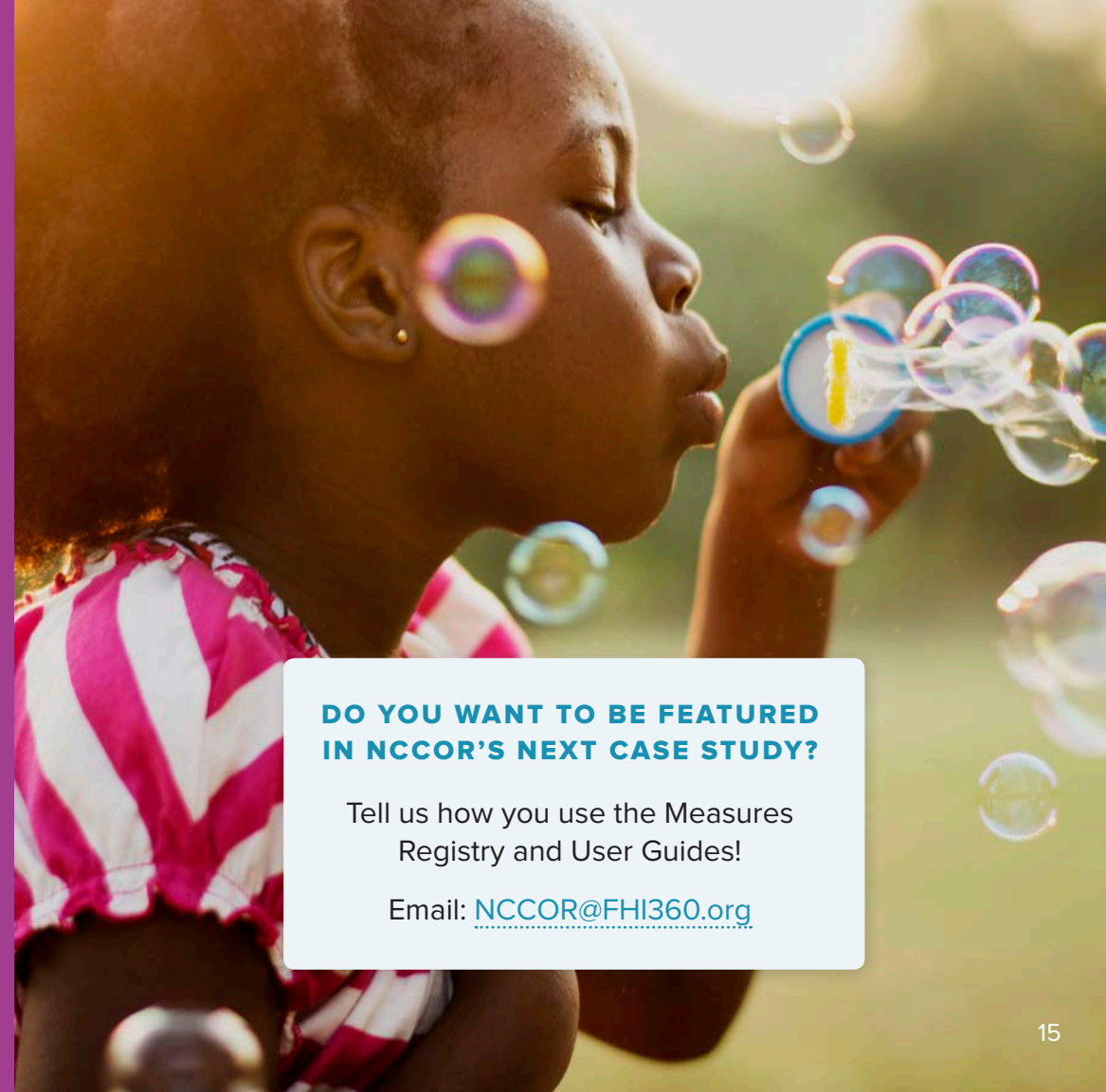
- A rationale for assessing physical activity environments and defining the key physical activity environment settings
- Description of various methods for measuring the physical activity environment
- Methods of physical activity environment measurement across settings
- Principles related to psychometric properties of measures, along with distinctions between single and multi-item measures, response scales, and sensitivity to change
- Guidance on selecting measures, collecting and reporting data, case studies, future direction, and additional resources

Coming soon!

► MEASURES REGISTRY USER GUIDE E-LEARNING MODULES

- 17 interactive modules based on the 4 Measures Registry domains that feature measurement methods, considerations for children, and case studies
- 5–10 minutes in length
- Assessments to check understanding

► REPORT ON MEASUREMENT NEEDS RELATED TO CHILDHOOD OBESITY FOR HIGH-RISK POPULATIONS



DO YOU WANT TO BE FEATURED IN NCCOR'S NEXT CASE STUDY?

Tell us how you use the Measures
Registry and User Guides!

Email: NCCOR@FHI360.org

FOR MORE INFORMATION ON NCCOR:

✉ nccor@fhi360.org

🌐 www.nccor.org

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www.nccor.org



The National Collaborative on Childhood Obesity Research (NCCOR) brings together four of the nation's leading research funders:

Centers for Disease Control and Prevention (CDC)

National Institutes of Health (NIH)

Robert Wood Johnson Foundation (RWJF)

U.S. Department of Agriculture (USDA)

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