

**Development of the Database for
the National Collaborative on
Childhood Obesity Research
Measures Registry**

Final Report

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INTRODUCTION

The National Collaborative on Childhood Obesity Research (NCCOR) is a partnership that brings together four of the country's leading funders for 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). NCCOR's mission is to improve the efficiency, effectiveness and application of childhood obesity research and to halt—and reverse—the current childhood obesity trend through enhanced coordination and collaboration. NCCOR hopes to accelerate progress in addressing childhood obesity by maximizing outcomes from research; building the capacity for research and surveillance; creating and supporting the mechanisms and infrastructure needed for research translation and dissemination; and supporting evaluations.¹

A key priority for NCCOR is promoting the use of common measures and methods across childhood obesity prevention and research. Standard measures are needed to evaluate interventions to prevent childhood obesity, particularly interventions that address policies and environments. Toward this end, NCCOR established a Measures Registry Workgroup comprised of experts from its partner organizations, and this group is overseeing the development of a web-based registry of measures related to childhood obesity prevention. The goal of the registry is to create a comprehensive source of measures that a variety of end-users (including researchers and practitioners) can consult when studying or evaluating interventions that address childhood obesity.

NCCOR contracted with Mathematica Policy Research to build a database to support the initial version of the registry. Separate NCCOR partners are developing other aspects of the registry, such as programming to support search functions and the user interface. Mathematica completed its work

¹ See NCCOR website, available at <http://www.nccor.org>.

in partnership with the University of California-Berkeley's Center for Healthy Weight (UCB-CWH) and expert consultants from Cornell University, the University of Washington, and the University of Massachusetts-Amherst. The Mathematica contract was administered by the Academy for Educational Development (AED), which provided organizational supports for NCCOR's work.

Ultimately, the registry will include information about measures that address independent, dependent, and key moderating variables at all levels of the socio-ecological model. However, the initial version of the registry, scheduled to be launched in early 2011, focused on measures used in four domains that cover an important core of completed and ongoing research:

- Physical activity environment and policies
- Food environment and policies
- Individual dietary behaviors
- Individual physical activity behaviors (including sedentary behaviors)

For measures in each of these domains, the registry database includes information about psychometric characteristics (validity and reliability), the populations in which the measure was used, and information about administration or use of the measure. The registry focuses on measures used in published, peer-reviewed literature. However, to promote timely identification of relevant measures for future updates of the registry, the NCCOR Measures Registry Workgroup planned to supplement the search of peer-reviewed literature with a scan for emerging measures—essentially reaching out to known researchers to gather information about relevant measures that were being developed or tested.

This report describes the processes used to: (1) identify measures to be included in the registry, (2) abstract relevant information about those measures to build the registry database, including quality control review, and (3) conduct the scan for emerging measures.

IDENTIFYING RELEVANT RESEARCH

The original plan for identifying relevant research (literature that would provide information about relevant measures) was to conduct a comprehensive computerized search of the peer-reviewed literature for the 10 year period leading up to the initiation of the contract (1999–2009). Preliminary searches of the literature yielded several comprehensive and well-done literature reviews in each of the four domains. Rather than repeat the work of these extensive reviews, a decision was made to use an alternative set of strategies to identify relevant research, building on these existing resources. This alternative approach included the following strategies:

- *Identify a set of “foundation references” that serve as the basis for the list of measures included in the registry database.* Table 1 presents the foundation references that were used for each of the four domains.
- *Supplement the foundation references by searching the major medical and social science databases during the time period not covered by the foundation references.* All of the foundation references consisted of reviews that ended before 2009, so it was necessary to supplement these review articles with additional strategies. Computerized literature searches were conducted separately for each domain for the time period not covered by the foundation references—2007 to 2009 for the two environment domains and 2004 to 2009 for the two individual domains. Information about how the searches were implemented is provided below.
- *Capitalize on existing resources assembled under another NCCOR contract as well as referrals from NCCOR’s expert consultants.* In addition to the foundation references and literature searches, articles for the registry were identified by reviewing instruments and background materials assembled by Transtria, LLC, under a separate contract with RWJF. Members of NCCOR’s external advisory panel and expert consultants on the Mathematica team also identified key references.

Methods for Supplementary Literature Searches

The foundation references were used to build a preliminary list of articles for each domain.² To supplement the foundation references, a comprehensive computerized search of bibliographic data-

² Specifically, these lists included articles that addressed relevant measures and did not include review papers or other articles that provided only background information. In many cases, the relevant articles were summarized or displayed in one or more tables (for example, in the review by McKinnon et al., a foundation reference for the Food Environment domain, all of the articles shown in Table 2, entitled “Summary of Food Environment Articles by Type of Measure,” were included).

Table 1. Foundations References for NCCOR Measures Registry Database

Domain	Foundation References
Food Environment	<ul style="list-style-type: none"> • McKinnon RA, Reedy J, Handy SL, Rodgers AB. Measuring the food and physical activity environments: Shaping the research agenda. <i>American Journal of Preventive Medicine</i>. 2009, 36, 4 Suppl, S81-5. • Richter K, Harris KJ, Paine-Andrews A, Fawcett SB, Schmid T, Lankenau B, Johnston J. Measuring the health environment for physical activity and nutrition among youth: A review of the literature and applications for community initiatives. <i>Preventive Medicine</i>, 3 Suppl, S98-S111 • Ohri-Vachaspati P, Leviton L. Measuring Food Environments: A Guide to Available Instruments. Forthcoming in <i>American Journal of Health Promotion</i>. • National Cancer Institute, Measures of Food Environment website. Available at: https://riskfactor.cancer.gov/mfe/instruments
Physical Activity Environment	<ul style="list-style-type: none"> • Brownson RC, Hoehner CM, Day K, Forsyth A, Sallis JF. Measuring the built environment for physical activity: State of the science. <i>American Journal of Preventive Medicine</i>. 2009, 36, 4 Suppl, S99-123. • Richter K, Harris KJ, Paine-Andrews A, Fawcett SB, Schmid T, Lankenau B, Johnston J. Measuring the health environment for physical activity and nutrition among youth: A review of the literature and applications for community initiatives. <i>Preventive Medicine</i>, 3 Suppl, S98-S111 • RWJF's Active Living Research website, Tools and Measures. Available at: http://www.activelivingresearch
Individual Dietary Behavior	<ul style="list-style-type: none"> • National Children's Study Dietary Assessment Literature Review. National Institutes of Health, Applied Research Program and Westat (Rockville, MD). 2007. Available at: http://riskfactor.cancer.gov/tools/children/review/pdf.
Individual Physical Activity	<ul style="list-style-type: none"> • Physical Activity Resource Center for Public Health website, Physical Activity Assessment Tools. Available at: http://www.parcph.org/assess.aspx. • Corder K, Ekelund U, Steele RM, Wareham NJ, Brage S. Assessment of physical activity in youth. <i>Journal of Applied Physiology</i>. 2008, 105, 977-987. • Oliver, M. Schofield GM, Kolt GS. Physical Activity in Preschoolers, Understanding Prevalence and Measurement Issues. <i>Sports Medicine</i>, 2007, 37 12, 1045-1070. • Sirard, JR., Pate, RR. Physical activity assessment in children and adolescents. <i>Sports Medicine</i>, 2001, 31, 439-454.

bases was conducted for the time periods not covered in the foundation references. The goal of the search methodology was to ensure the inclusion of all potentially relevant articles in search results. This approach is likely to produce a large number of irrelevant citations in an initial search, but is unlikely to exclude potentially relevant articles. As a result, the search protocol was highly inclusive and permitted a wide variety of possible keyword combinations. The selection of searchable databases and keywords were both carefully considered, as discussed below. The actual database search was implemented by a professional research librarian with prior experience supporting comprehensive literature reviews and social science research.

Selecting Searchable Databases

The literature searches were conducted in the major health and social science databases that address disciplines relevant to obesity, health, and the built environment. Specifically, searches were conducted in the MEDLINE database using OVID MEDLINE as well as in several databases that contain journal titles from relevant disciplines not indexed in MEDLINE, including SocINDEX, HealthStar, PsycINFO, Academic Search Premier, TRIS, and Business Source Corporate. Finally, a separate search of the *International Journal of Behavioral Nutrition and Physical Activity* was conducted. This journal is not included in MEDLINE, and it was thought to be an important source of potentially relevant articles, based on the fact that the foundation references included several articles that were published in this journal.

Defining Search Parameters

Mathematica staff worked with the research librarian and the study team (subcontractor and expert consultants) to develop keyword search terms for each of the four domains (food environment, physical activity environment, individual dietary behavior, and individual physical activity). In developing the list, the team consulted the foundation references and other resources in which search terms had been developed (e.g. RWJF Active Living Research website, Transtria, LLC). The preliminary list of search terms was reviewed by the NCCOR Measures Registry Workgroup and by an external advisory panel appointed by the workgroup. A summary of the final search terms is presented in Appendix A, including how the terms were linked using the Boolean operators “OR and AND” and the specific fields in which the terms were required. The search was limited to papers that were published in English and involved humans. In addition, for the two individual-level domains, searches were limited to research involving children or adolescents 2–18 years of age.

Identifying Relevant References

All of the references captured by the search protocol were compiled into domain-specific lists using RefWorks (version 6.0, RefWorks-COS, Bethesda, MD). These lists provided title, author, and (when provided) an abstract. An electronic matching protocol identified and removed exact citation duplicates returned from separate databases as well as articles that appeared in more than one domain.

The study team manually reviewed the collected article titles and abstracts and identified all citations that were potentially relevant to the registry database. Because the initial search protocol was designed to be very inclusive, the search results returned a large number of irrelevant citations that were eventually excluded. In reviewing citations and abstracts, the study team targeted two types of articles related to childhood obesity: (1) articles that described the development and/or testing of a measure and (2) articles that describe a study in which a relevant measure (a measure that fell into one of the four target domains) was used. Citations that were excluded tended to fall into one of the following categories:

- Editorials or opinion pieces
- General descriptions of obesity prevention programs or interventions
- Review articles
- Research that did not include measures in any of the four targeted domains
- Qualitative research studies
- Research that included measures of dietary behavior or physical activity that were developed for and tested with adults (rather than children).

The full texts of articles were obtained from Transtria, online downloads, Mathematica's in-house library, university libraries, and inter-library loan services. All full-text articles were reviewed by the study team, who used the screening criteria described above to finalize the list of articles to be abstracted for the registry. This process yielded a total of 539 articles across the four domains. The

list of articles is provided in Appendix B. Copies of the articles were stored on a SharePoint site and accessed by the individual assigned to complete the data abstraction (the coder).

DATA ABSTRACTION

Mathematica and its partners developed a protocol for systematically reviewing the articles that had been identified and abstracting relevant information. The protocol included a tracking database for assigning articles to coders, monitoring progress of the reviews, and flagging articles that required a second review; a data abstraction form and guidelines for using the form; an interactive web-page (essentially an electronic version of the data abstraction form) for entering the abstracted data and building the registry database; and a quality control process. Each of these features is described in greater detail below.

Assigning Articles and Tracking Progress

Responsibility for data abstraction was assigned, by domain, to each member of the team. The UCB-CWH team was responsible for articles that included measures of the food environment; academic researchers at Cornell University and the University of Washington with expertise in measuring the built environment took on responsibility for articles that included measures of the physical activity environment; an academic researcher at the University of Massachusetts-Amherst led abstraction of articles that included measures of individual physical activity; and Mathematica led abstraction of articles that included measures of individual dietary behavior. Articles that covered more than one domain were assigned based on coder capacity. These domain-specific assignments held for the majority of articles that were reviewed. However, articles were sometimes assigned or re-assigned to staff working with other domains when individual coders were overburdened or behind schedule.

Assignments were made in three waves. The first wave included articles identified from the foundation references; the second wave included articles that were identified through the literature

searches; and the third wave included a small number of remaining articles that had not been completed during the first two waves. Initially, Excel spreadsheets stored on the project's SharePoint site were used to communicate assignments and track progress. When the interactive entry software (described below) was functional, assignments and tracking were done within that system. At both points in time, coders were encouraged to flag articles they found difficult to abstract or had questions about so that another team member could review the situation and provide feedback or consultation.

Data Abstraction Form

To facilitate the systematic collection of information from each article, the study team developed a data abstraction form to capture information about:

- Study characteristics: including research design, geographic location, characteristics of the sample
- Conceptual content: the specific concepts/topic areas assessed by the measure
- Operational characteristics: including information on administration methods and time requirements and the need for training
- Psychometric properties: reported results for any tests done to assess reliability and/or validity.

This form was adapted from a similar form that was used by UCB-CWH staff on a previous project to review nutrition-related research studies. Development of the form went through multiple versions and the study team received multiple rounds of feedback from the NCCOR Measures Registry Workgroup as well as feedback from their external advisory panel.

In mid-January 2010, Mathematica led a conference call in which all members of the team were trained on the overall process for conducting the abstractions and on using the abstraction form coding guidelines. Following the training, each coder piloted the form with five articles and provided feedback on the form and the coding guidelines. This feedback was incorporated into the final version of both documents, copies of which are provided in Appendix C. The coding guidelines were also updated during the quality control review process (described below).

Data Entry System

Mathematica staff developed an interactive web-based data entry system that enabled coders to enter the data into an electronic version of the abstraction form. The interactive form was divided into multiple screens that corresponded to pages in the hard copy abstraction form. Entered data was saved as coders passed from one screen to the next. (Coders could return to a completed abstraction form to modify information after it had been saved.) To access the database remotely, coders were assigned passwords and usernames that allowed them to access the list of articles in the domain in which they were reviewing articles.

The data entry system was under development during the first two months that articles were being reviewed. During this period, coders typed data into an electronic version (Word document) of the abstraction form and uploaded the completed documents to the study's SharePoint site. After the data entry system was launched in March 2010, these hard copies were entered into the electronic database by a Mathematica research assistant.

Quality Control Review

Senior staff at Mathematica reviewed the abstracted data for a subsample of approximately 20 percent of the articles included in the database. Quality control (QC) reviewers reviewed the article and the data that had been entered by the coder. In cases where the QC reviewer disagreed with what had been entered, he or she would correct the item and then communicate this point to the coder as a means of avoiding similar coding decisions in the future.

When all of the abstractions were complete, Mathematica conducted a series of edit checks on the entered data to identify missing data or problematic/inconsistent coding. A draft version of the database was provided to the NCCOR workgroup who did some of their own QC review. During this process, it became apparent that additional quality control of the entered data was necessary and Mathematica and NCCOR agreed to an additional round of QC review. This final review process was constrained by the schedule for final programming and development of the web interface.

Mathematica was able to review entries for 62 percent of the articles in the database, giving priority to articles that reported data on reliability and validity. The final version of the database provided to NCCOR included a flag that identified articles that received this additional QC review.

As part of this final QC review, Mathematica agreed to re-enter articles that included more than one measure so that every entry in the database applies to only one measure (as opposed to one *article*). For example, an article that included a measure of the built environment as well as a measure of individual physical activity behavior was entered twice, with one entry for each measure.³ This restructuring of the database entries was necessary for the database to work with the web interface which users will use when searching for measures. To identify database entries that needed to be adjusted, Mathematica and its partners scanned PDFs of all of the articles included in the database to assess the need for multiple entries. This was done because some articles that were coded as having only included one *type* of instrument (in Item 14 on the abstraction form (Appendix C)) may have included several versions of the instrument, for example, a questionnaire that was completed by parents and a questionnaire that was completed by students.

A total of 144 articles were identified. Because of schedule constraints and the simultaneous QC review process, Mathematica was not able to complete multiple entries for all of these articles. The multiple entry process was completed for 93 articles, resulting in 146 new entries in the database. The number of entries per article ranged from two to eight.⁴ NCCOR was provided with a list of the remaining 51 articles. It is possible that some of these articles did not actually need multiple entries because, when reviewing PDFs to assess the need for multiple entries (which was done on a very tight timeline), staff were instructed to be conservative and to flag any article that might need

³ Criterion measures used in validation studies were not counted as separate measures. In addition, when GIS data were used to identify or sample a geographic area rather than to measure aspects of the physical activity environment and/or the food environment, the GIS data were not counted as separate measures.

⁴ A new ID variable was added to the database to permit easy identification of multiple entries for a single article.

multiple entries. Upon review, some of the flagged articles did not require multiple entries. The most common reasons for this were that “additional” measures/instruments identified during the review were not relevant to the database because they: (1) involved GIS data that were used to identify/sample a study area rather than measure aspects of the physical activity environment and/or the food environment (see footnote 3 on the preceding page), (2) measured individual behaviors of adults (rather than children), or (3) measured a domain that was not included in the initial database (for example, knowledge, attitudes, beliefs, or self-efficacy).

The Electronic Database

After the QC and re-entry processes were terminated (because of schedule constraints), Mathematica provided NCCOR with an Access database. Each entry in the database includes all of the variables that have variable names in the annotated abstraction form (Appendix C). Some of the variables on the form (those without variable names in red) are not included in the database. These are mainly comment fields that were entirely or largely blank.

SURVEY OF EMERGING MEASURES

As noted previously, the NCCOR Measures Registry Workgroup was interested in identifying a method to reach out to researchers who may have relevant measures under development or testing. Building on the experience and recommendation of a member of the Workgroup, Mathematica developed a brief survey to ask about ongoing research. The survey, which was reviewed and approved by the Workgroup, was distributed in a web-based format to a list of researchers (compiled by Mathematica staff) who have done work in childhood obesity and/or in developing measures included in one or more of the domains of interest.

The survey was administered by staff from AED, using Qualtrics software. The survey remained “open” for approximately five weeks and researchers received one reminder e-mail after the initial invitation. Thirty two researchers responded to the survey (30 via the web survey and two

via e-mail). Responses provided by respondents identified three articles that were added to the registry. They also provided a “pipeline” of potentially relevant measures that can be followed up when the registry is updated. These include two articles that were in press at the time the survey was implemented (April 2010); seven manuscripts that have been submitted; seven manuscripts that are in preparations; and five measures that are still being developed/tested. Appendix D includes a copy of the e-mail invitation that was sent to researchers and the questions that were included in the survey. A summary of survey responses was provided to NCCOR on October 1, 2010.

POTENTIAL NEXT STEPS FOR THE REGISTRY DATABASE

During the next phase of development of the NCCOR Measures Registry, the highest priority will be to identify new peer-reviewed literature that has been published since the time period covered in the initial database (through 2009). In addition, NCCOR may want to think about implementing the following strategies in order to address lessons learned during this initial phase of development.

- ***Assess data elements reported in the current abstraction form.*** Based on a review of entered data and, potentially, information about how users are using the available data, NCCOR may want to consider eliminating (from the database and/or from use in the web interface or registry search functions) or modifying selected data elements. Preliminary thoughts about several data elements were discussed with NCCOR staff during the QC review process.
- ***Utilize two independent coders to abstract information on each instrument.*** At the outset, it was expected that the data to be abstracted for the registry would be limited to a small set of relatively straightforward characteristics that could be coded easily after a coder received training and coding instructions. However, the QC process revealed that the length and complexity of the abstraction form, coupled with the fact that some items are open to interpretation, demands a more intensive QC process. A potential strategy for addressing this issue is to have two individuals review and abstract each article. The two independent abstractions can then be compared (in hard copy or, after entry into a database, electronically) and the two coders can discuss and reconcile any discrepancies. This approach, which is used by Mathematica to conduct abstractions for the US Department of Education’s What Works Clearinghouse is useful in identifying and correcting data abstraction and data entry errors. It also promotes early identification of the need for additional or modified coding guidelines and consistency across data abstraction staff. Although more expensive than a more traditional subsample QC approach, it provides a higher degree of confidence in the data.

- ***Expand the domains to include instruments that assess determinants of individual behavior.*** A goal of the NCCOR Measures Registry is to identify mediating and moderating variables in childhood obesity research. The initial database focused on measures of individual behavior (diet and physical activity) and did not include measures that assess knowledge, attitudes, beliefs, and other psycho-social factors that influence diet and activity. Given that many obesity interventions focus on these short-term outcomes, this seems to be an area in which researchers and practitioners would want to better understand the available tools and measures.
- ***Follow up with researchers who responded to the emerging measures survey.*** The emerging measures survey identified researchers who had relevant articles that were in press, had been submitted, or were in preparation at the time of the survey, as well as researchers who were still developing or testing potentially relevant measures. During the next phase of the registry, it would be useful to cross-check data from the emerging measures survey with the list of articles identified (presumably through a literature review) for inclusion in the updated database. If articles that match the emerging measures survey data are not included, it would be worthwhile to follow-up with the researchers to check on the status of their work.

APPENDIX A

SEARCH TERMS USED IN SUPPLEMENTAL LITERATURE SEARCHES

Table A.1. NCCOR Measure Registry Search Terms (FINAL 12.22.09)

Outcome	Level	Measure Term	Population Limit	
Food Environment				
Diet* (m)	Access* (a)	Assessment* (a)	Human	
Eating (m)	Advertis* (a)	Checklist* (a)		
Environment	Afford* (a)	GIS (a)		
Design*(m)	Availab* (a)	Instrument* (a)		
Food habit*(m)	Basket (a)	Inventor* (a)		
Food environment (ti)	Communit* (a)	Measure* (a)		
Nutrition* (m)	Convenien* Environment* (a)	Methodolog* (a)		
	Fast food* (a)	Observ* (a)		
	Fruit* and vegetable*(a)	Psychometric* (a)		
	Grocer* (a)	Questionnaire* (a)		
	Healthy communit*(a)	Reliab* (a)		
	Healthy food* (a)	Survey* (a)		
	Label* (a)	Tool* (a)		
	Market* (a)	Valid* (a)		
	Menu*(a)			
	Neighborhood* (a)			
	Neighbourhood* (a)			
	Point of purchase (a)			
	Polic* (a)			
	Pric* (a)			
	Product Placement (a)			
	Restaurant* (a)			
	School* (a)			
	Supermarket (a)			
	Tax (a)			
	Vend(a)			
	Wellness (a)			
Physical Activity Environment				
Active transport*(a)	Access*	Audit		Human
Built environment(a)	Activity*	Checklist (a)		
Built environment(ti)	Advertis*	GIS (a)		
Calor*	Availab*	Instrument (a)		
Commut* (a)	Benches	Inventory (a)		
Energy expenditure (a)	Bicycl* (a)	Measure* (a)		
Environment	Bike*(a)	Methodology (a)		
Design*(m)	Biking (a)			
Exercise (m)Fitness*	Built environment (a)			
Inactiv* (a)	Communit*			
Media use (a)	Connectivity			
Motor activity (a)	Convenien*			
Non motorized (a)	Crime* (a)			
	Cycling (a)			
	Density (a)			
	Distance* (a)			
	Gym*			
	Land use (a)			
	Neighborhood (a)			
	Neighbourhood (a)			

Table A.1 (continued)

Outcome	Level	Measure Term	Population Limit
Physical Activity Environment			
Physical activit* (ti)	Observed environment (a)	Observ* (a)	
Physical activit* (a)	Park* (a)	Psychometric (a)	
Physical fitness* (m)	Path* (a)	Questionnaire (a)	
Physically active (a)	Pedestrian* (a)	Reliability (a)	
Screen time (a)	Perceived environment (a)	Survey (a)	
Sitting (a)	Playground* (a)	Validity (a)	
Sleep (a)	Polic*Population density (a)		
Sedentary (a)	Public space*		
Television (a)	Recreation centers (a)		
TV (a)	Rural (a)		
Walk (a)	Scenery (a)		
	School (a)		
	Sidewalks (a)		
	Street* (a)		
	Traffic (a)		
	Trail* (a)		
	University		
	Urban* (a)		
	Walk*(a)		
	Wellness (a)		
Individual Dietary Behavior			
Body mass*(m)	Breakfast (a)	Assessment (a)	Ages 0 to 18
Calor* (a)	Dairy (a)	Checklist (a)	Child* OR
Diet* (m)	Dietary Intake (a)	Food Frequency (a)	Adolescen* (m)
Eating (m)	Dietary Quality	Food record (a)	
Energy intake (m)	Energy intake (a)	Questionnaire (a)	
Food habit*(m)	Fat (a)	Instrument (a)	
Inactiv* (a)	Food intake (a)	Interview (a)	
Nutrient (a)	Food insecurity (a)	Measure (a)	
Nutrition* (m)	Food groups (a)	Methodology (a)	
Obes*(m)	Food guide pyramid (a)	Psychometric (a)	
	Food Portion*(a)	Recall (a)	
	Meal source (a)	Record (a)	
	Meal patterns (a)	Reliab* (a)	
	MVPA (a)	Screeener (a)	
	Nutrient Intake (a)	Self-report (a)	
	Portion Size (a)	Survey (a)	
	Snacks (a)	Validity (a)	
	Sugar (a)		
	Sugar-sweetened beverages (a)		

Table A.1 (continued)

Outcome	Level	Measure Term	Population Limit
Individual Physical Activity			
Body Mass (m)	Active transport* (a)	Accelerometer* (a)	Ages 0 to 18
Exercise (m)	Active video game	Cardiorespiratory	Child* OR
Motor Activity	Ambulatory movement (a)	Doubly Labeled Water	Adolescen* (m)
Obes*(m)	Bicycl* (a)	Field Test* (a)	
Physical exertion (m)	Biking (a)	Fitness (a)	
Physical fitness (m)	Calor*Commut* (a)	Heart rate monitor* (a)	
	Cycl* (a)	Instrument (a)	
	Energy expenditure (a)	Multi-sensor (a)	
	Inactiv* (a)	Device* (a)	
	Media use (a)	Log (a)	
	Non motorized (a)	Observation (a)	
	Physical activit* (a)	Pacer (a)	
	Physically active (a)	Pedometer* (a)	
	Playtime (a)	Proxy (a)	
	Recess (a)	Psychometric* (a)	
	Screen time (a)	Questionnaire*(a)	
	Sedentary (a)	Recall (a)	
	Sitting (a)	Self report (a)	
	Sleep (a)	Step counters (a)	
	Steps (a)		
	Television (a)		
	TV (a)		
	Walk (a)		

Note: To be included in search result, reference had to have one term in each column in specified location [(a) = abstract; (m) = MeSH (medical subject heading); and (ti) = title].

APPENDIX B

LIST OF ARTICLES ABSTRACTED FOR THE REGISTRY DATABASE

ID	Citation
136	Abarca, J., & Ramachandran, S. (2005). Using community indicators to assess nutrition in arizona-mexico border communities. <i>Preventing Chronic Disease</i> , 2(1), A06.
137	Agron, P., Takada, E., & Purcell, A. (2002). California project LEAN's food on the run program: An evaluation of a high school-based student advocacy nutrition and physical activity program. <i>Journal of the American Dietetic Association</i> , 102, S103-S105.
2	Alexander, A., Bergman, P., Hagstromer, M., & Sjostrom, M. (2006). IPAQ environmental module; reliability testing. <i>Journal of Public Health</i> , 14(2), 76-80.
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APPENDIX C

ABSTRACTION FORM AND GUIDELINES

Note: Form entries that do not include a box with a variable name are not included in the final database

NCCOR MEASURES REGISTRY PROJECT

MEASURE ABSTRACTION FORM

ID Unique identifier for each article

1. REVIEWER NAME: _____

2. FULL ARTICLE CITATION: **Citation** _____

3. DATE: _____

Full QA Review:

Complete (radio)

Old ID

Link between articles with multiple entries

- Yes
- No

4. INSTRUMENT/METHODOLOGY NAME: **Method** _____

REVIEWER COMMENTS: _____

5. BRIEF DESCRIPTION OF INSTRUMENT/METHODOLOGY: _____

6. STUDY DESIGN:

- Validation/Reliability **Design1 – Design6**
- Descriptive
- Correlational/Observational
- Impact/Effectiveness
- Instrument/Method Development Without Validation/Reliability
- Other (Specify) **DesignOth**

REVIEWER COMMENTS: _____

7. STUDY LOCATION: Metro/Urban Small Town/Rural **Loc1-Loc4**
 Other (Specify) **LocOth** Not Reported

City/Metro	State	Region	Country
City	State	Region	Country USA

IF UNIT IS SMALLER THAN CITY/METRO, PLEASE SPECIFY HERE: **AreaOth** _____

REVIEWER COMMENTS: _____

8. STUDY POPULATION OR POPULATION SERVED BY THE INSTITUTION/ENVIRONMENT BEING MEASURED:

A. SAMPLE SIZE (NUMBER OF INDIVIDUALS):

Sample

- Not applicable

SampleNA

REVIEWER COMMENTS:

Comment8a

B. AGE

- 2 - 5 Years
 6 - 11 Years
 12 - 18 Years
 Not reported
 Not applicable
 Adults

Age1-Age6

REVIEWER COMMENTS:

C. GENDER

- Female
 Male
 Not reported
 Not applicable

Sex1-Sex4

REVIEWER COMMENTS:

D. RACE/ETHNICITY

- Hispanic
 White
 Black/African American
 Asian
 American Indian/Alaska Native
 Hawaiian/Other Pacific Islander
 Multiethnic/racial population (no further detail)
 Non-white
 Not reported

Race1-Race9

REVIEWER COMMENTS:

Comment8d

E. DATA REPORTED ON RACE/ETHNICITY

- Quantitative data on study sample
 Quantitative data for community or area
 Qualitative description
 Not applicable

Racedat1-Racedat4

REVIEWER COMMENTS:

F. AUTHORS DESCRIBE POPULATION OR GEOGRAPHIC LOCATION AS BEING PREDOMINANTLY LOW-INCOME/LOW SOCIOECONOMIC STATUS

- Yes
 No
 Not reported
 Not applicable

(Radio button)

LOWSES

G. DATA REPORTED ON SOCIOECONOMIC STATUS

- Quantitative data on study sample
 Quantitative data for community or area
 Qualitative description
 Not applicable

SESdat1-SESdat4

H. SES-RELATED VARIABLES FOR WHICH QUANTITATIVE DATA ARE REPORTED

- Income
 Education
 Employment/Unemployment
 Program Participation (e.g., WIC, Free/Reduced School Meals)
 Other (Specify)

SESvar1-SESvar7

SESVarOth

- Not applicable
 Home ownership/values

REVIEWER COMMENTS:

Comment8h

9. DOMAIN(S) INCLUDED IN ARTICLE:

- Food Environment
 Physical Activity Environment
 Individual Dietary Behavior
 Individual Physical Activity Behavior

Domain1-Doman4

REVIEWER COMMENTS:

10. IF DOMAIN IS FOOD ENVIRONMENT:

A. Type of Environment/Institution:

- 1 Total Environments/Locations (n =)
- 2 Afterschool/Out-of-School Youth Programs (n =)
- 3 Child Care (Daycare, Pre-school)..... (n =)
- 4 Community Garden (n =)
- 5 Convenience/Corner Store (n =)
- 6 Farmer's Market/Stand (n =)
- 7 Food Banks/Food Pantries (n =)
- 8 Full Service Restaurant (n =)
- 9 Grocery Store (n =)
- 10 Health Care Facility (n =)
- 11 Home (n =)
- 12 Limited Service/Fast Food Restaurant (n =)
- 13 Neighborhood (n =)
- 14 Park (n =)
- 15 Produce Market (n =)
- 16 Recreational Facility (n =)
- 17 Religious Facilities (n =)
- 18 School (K-12)..... (n =)
- 19 Supermarket (n =)
- 20 Other (Specify)..... (n =)
- 21 Worksites (n =)

Ftype1-Ftype21 and FtypeN1-FtypeN21

Domain=1

FtypeOth

REVIEWER COMMENTS:

Comment10a

B. Measure:

Objective Perceived

- 1 Affordability/Pricing
- 2 Availability/Access.....
- 3 Facility Adequacy/Appeal.....
- 4 Food Quality
- 5 Labeling/Point of Purchase Info
- 6 Marketing/Advertising/Promotion
- 7 Policy/Practice.....
- 8 Product Placement/Shelf Space
- 9 Other (Specify).....

Fobj1percOth

REVIEWER COMMENTS:

C. Food Group/Type of Food:

- 1 Fruits and vegetables.....
- 2 Low-fat dairy.....
- 3 Whole grains
- 4 Foods of minimal nutritional value.....
- 5 Sweetened beverages.....
- 6 Other (Specify).....
- 7 Meat/fish/poultry/eggs
- 8 Low-fat foods other than dairy.....
- 9 Market basket.....

Farp1-Farp8

FarpOth

11. IF DOMAIN IS physical ACTIVITY ENVIRONMENT:

A. Type of Environment/Location:

- 1 Total Environments/Locations (n =)
- 2 Afterschool/Out-of-School Youth Programs (n =)
- 3 Child Care..... (n =)
- 4 Community/Neighborhood as a Whole (n =)
- 5 Gyms/Fitness Centers (n =)
- 6 Health Care Facility (n =)
- 7 Parks/Playgrounds..... (n =)
- 8 Recreational Facility/Area..... (n =)
- 9 Religious Facilities (n =)
- 10 School..... (n =)
- 11 Transportation Infrastructure (n =)
- 12 Youth Programs (n =)
- 13 Other (Specify)..... (n =)
- 14 Worksites (n =)

Ptype1-Ptype14 and PtypeN1-PtypeN14

Domain=2

PtypeOth

B. Scale

- 1 Block (n =)
- 2 Building (n =)
- 3 Community..... (n =)
- 4 Equipment..... (n =)
- 5 Large park/park system (n =)
- 6 Metro..... (n =)
- 7 Neighborhood (n =)
- 8 Segment (n =)
- 9 Small park pocket/neighborhood park. (n =)
- 10 Trail/path/corridor..... (n =)
- 11 Other (Specify)..... (n =)

Pscale1-Pscale11 and PscaleN1-PscaleN11

PscaleOth

REVIEWER COMMENTS:

C. Measure:

Objective Perceived

- 1 Policy.....
- 2 Affordability/Pricing
- 3 Marketing/Advertising/Promotion
- 4 Street Connectivity
- 5 Crime/Safety.....
- 6 Pedestrian/Traffic Safety
- 7 Cycling Infrastructure
- 8 Facility Adequacy/Appeal or Quality .
- 9 Facility Access/Availability/Proximity.
- 10 Aesthetics/Beautification
- 11 Land Use
- 12 Population/Housing Density
- 13 Pedestrian Infrastructure
- 14 Other (Specify).....
- 15 Social Environment
- 16 Open Space/Greenness.....

Pobj1percOth

Pobj1-Pobj15

Pperc1-Pperc15

REVIEWER COMMENTS:

Comment11c

12. IF DOMAIN IS INDIVIDUAL DIETARY BEHAVIOR:

A. Intake:

Intake1-Intake15

Domain=3

- 1 Total Energy/Energy Density
- 2 Food Groups
- 3 Macronutrients, including Saturated Fat
- 4 Minerals/Vitamins
- 5 Sweetened Beverages
- 6 100% Juice
- 7 Fruits/Vegetables
- 8 Low-fat Dairy
- 9 Whole Grains/Fiber
- 10 Foods of Minimal Nutritional Value
- 11 Restaurant-Prepared Food, including Fast Food
- 12 Dietary Quality
- 13 Dietary Patterns
- 14 Dietary Variety
- 15 Other (Specify) IntakeOth
- 16 Meat/fish/poultry/eggs
- 17 Low-fat foods other than dairy

REVIEWER COMMENTS:

B. Behavior:

- 1 Timing of Eating
- 2 Meal/Snack Patterns
- 3 Eating/Snacking Frequency Ibehave1-Ibehave16
- 4 Portion/Size
- 5 Meal Source
- 6 Eating Location
- 7 Family Meal-Time
- 8 Child-Feeding Practices
- 9 Purchasing Habits
- 10 Label Reading
- 11 Restraint/Disinhibition
- 12 Dieting
- 13 Disordered Eating
- 14 Emergency Food Use
- 15 Other (Specify) PbehavOth
- 16 Food Preparation

REVIEWER COMMENTS:

13. IF DOMAIN IS INDIVIDUAL PHYSICAL ACTIVITY BEHAVIOR:

A. Expenditure:

Domain=4

- 1 Total Energy
- 2 Moderate Physical Activity
- 3 Vigorous Physical Activity Pexp1-Pexp10
- 4 Travel Walking
- 5 Leisure Walking
- 6 Total Walking
- 7 Sedentary Activity
- 8 Other (Specify) PexpOth
- 9 Total Physical Activity/
Physical Activity Level
- 10 Step/Activity Counts

REVIEWER COMMENTS:

B. Behavior:

- 1 Sports/Recreation
- 2 Physical Education Pbehave1-Pbehave8
- 3 Active Video Game
- 4 Recess/Playtime/PA Breaks
- 5 Commute to Work/School
- 6 Screen Time
- 7 Sleep
- 8 Other (Specify) PbehavOth

REVIEWER COMMENTS:

14. TYPE OF INSTRUMENT

- 1 Record or log Itype1-Itype15
- 2 Questionnaire
- 3 24-hour dietary recall
- 4 Food frequency
- 5 Construction of measure from existing data
(e.g., GIS, sales, menu, nutrient data)
- 6 Interview guide
- 7 Focus group guide
- 8 Electronic monitor
(e.g., accelerometer, pedometer, heart rate)
- 9 Behavioral observation
- 10 Environmental observation
- 11 Combined behavioral/environmental observation
- 12 GIS protocol/detailed description
- 13 GIS script/program
- 14 Other (Specify) ItypeOth

15 Not applicable

REVIEWER COMMENTS:

Comment14

15. DATA COLLECTION**A. Administration**

- 1 Self-administered Dadmin1-Dadmin8
- 2 Researcher-administered
- 3 Third-party administered (e.g., parent/staff)
- 4 Existing data (e.g., GIS, licensing)
- 5 Interpreted data (e.g., interpretation of aerial photos)
- 6 Other (Specify) DadminOth

7 Not reported

8 Not applicable

B. Mode

- 1 Phone Dmode1-Dmode9
- 2 In-person
- 3 Web-based
- 4 Email/postal mail
- 5 Direct observation, hard-copy form
- 6 Direct observation, PC/PDA/GPS unit
- 7 Other (Specify) DmodeOth

8 Not reported

9 Not applicable

REVIEWER COMMENTS:

Comment15

16. TRAINING REQUIRED TO ADMINISTER/COMPLETE (CHECK ONE)

- 1 Yes, time reported: Time Train (radio)
- 2 Yes, time not reported
- 3 Not reported Training
- 4 Not applicable

REVIEWER COMMENTS:

Comment16

17. TIME REQUIRED TO ADMINISTER/COMPLETE (CHECK ONE)

- 1 Time reported: Time Admin (radio)
- 3 Not reported Tadmin
- 4 Not applicable

REVIEWER COMMENTS:

Comment17

18. NUMBER OF ITEMS (CHECK ONE)

- 1 Number of items reported: Nitems
- 3 Not reported NitemsNA (radio)
- 4 Not applicable

REVIEWER COMMENTS:

Comment18

19. LANGUAGE(S)

- 1 English Lang1-Lang4
- 2 Spanish
- 3 Other (Specify) LangOth
- 4 Not applicable

REVIEWER COMMENTS:

Comment19

20. OTHER RELEVANT INFORMATION ABOUT DATA COLLECTION/PROTOCOL: (TEXT ENTRY)

- 1 Nothing to add NA20 Memo20

21. OTHER RELEVANT INFORMATION ABOUT DEVELOPMENT OF INSTRUMENT/METHODOLOGY: (TEXT ENTRY)

- 1 Nothing to add NA21 Memo21

22. INFORMATION ABOUT DATA COLLECTION OR ANALYSIS COSTS: (TEXT ENTRY)

- 1 Nothing to add NA22 Memo22

23. RELIABILITY: *The following tests have been conducted on all or a portion of this instrument/methodology*

Not reported NA23

Note: The entry program allows for entry of up to 10 rows of data; variable names 5-10 are not shown.

Type of Reliability						Construct/subscale assessed (<i>Specify</i>)	Test/statistic used	Result
I-R	I-I	T-R	P-F	I-C	O			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			



I-R = Inter-rater; I-I = Inter-instrument; T-R = Test-retest; P-F = Parallel Forms;
I-C = Internal Consistency; O = Other (*Specify in Reviewer Comments section*)

IR1-IR4
II1-II4

PF1-PF4
TR1-TR4
O1-O4

REVIEWER COMMENTS:

Comment23

24. VALIDITY: *The following tests have been conducted on all or a portion of this instrument/methodology*

Not reported NA24

Note: The entry program allows for entry of up to 10 rows of data; variable names 5-10 are not shown.

Type of Validity							Construct/ subscale assessed (<i>Specify</i>)	[If applicable] Criterion measure used (<i>Specify</i>)	Test/statistic used	Result
F	Cont	Constr	Crit	Pr	Conc	O				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				



F = Face; Cont = Content; Constr = Construct; Crit = Criterion; Pr = Predictive;
Conc = Concurrent; O = Other (*Specify in Reviewer Comments section*)

F1-F4
Cont1-Cont4
Constr1-Constr4
Crit1-Crit4
Pr1-Pr4
Conc1-Conc4
VO1-VO4

REVIEWER COMMENTS:

Comment24

25. INSTRUMENT AVAILABLE? (CHECK ONE)

Instrument (radio)

Yes, shown in article

Yes, but cost associated

Access at: or Contact at:

Yes, and free

Access at: or Contact at:

Not reported

Not applicable

26. INSTRUCTIONS ON INSTRUMENT USE AVAILABLE? (CHECK ONE)

Instructions (radio)

Yes, Access at: or Contact at:

Not reported

Instructions on instrument use included in article

REVIEWER COMMENTS:

27. INSTRUCTIONS ON DATA ANALYSIS AVAILABLE (e.g., scoring rubric, rating scale)?

Ianalysis (radio)

Yes, Access at:

Not reported

Not applicable

Instructions on analysis included in article

28. WHICH HEALTH/DISEASE OUTCOMES WERE ASSESSED IN THIS STUDY?

None

Obesity

Outcome1-Outcome9

Dietary intake/behavior

Physical activity/inactivity

Glycemic control or diabetes risk factors

Hypertension or related risk factors

Cardiovascular disease

Cancer

Other (Specify)

29. IF "OBESITY" WAS AN OUTCOME IN THE STUDY, WHAT MEASURE OF OBESITY WAS USED?

- 1 BMI-for-age
- 2 Mean
- 3 Median
- 4 Proportion with BMI-for-age at or above 85th percentile
- 5 Proportion with BMI-for-age at or above 95th percentile
- 6 Other (Specify) _____ **BMI0th**
- 7 BMI Z-score
- 8 Percent above Median BMI
- 9 Percent body fat
- 10 Densitometry
- 11 Bioelectrical impedance analysis
- 12 Dual-energy X-ray absorptiometry
- 13 Under-water weighing
- 14 Deuterium
- 15 Waist circumference
- 16 Waist-to-hip ratio
- 17 Skinfold thickness
- 18 Biceps
- 19 Triceps
- 20 Subscapular
- 21 Suprailiac
- 22 Other (Specify) _____ **Skin0th**
- 23 BMI/% above BMI cut-offs (adult)
- 96 Other (Specify) _____ **Obese0th**
- 98 Not reported
- 99 Not applicable

30. IF BMI WAS USED, WERE DATA MEASURED OR SELF-REPORTED:

- 1 Measured height
- 2 Measured weight
- 3 Self-reported height **htwgt1-hgtwgt6**
- 4 Self-reported weight
- 5 Not reported
- 6 Not applicable

31. WHAT OTHER TYPES OF VARIABLES WERE INCLUDED AS COVARIATES IN THIS STUDY?

- 1 Knowledge
- 2 Psychological factors (e.g., self-efficacy, beliefs, preferences)
- 3 Other health-related behaviors (e.g., tobacco use, substance use)
- 4 Physical health status
- 5 Psychological health status
- 6 Academic achievement (i.e. grades, standardized tests; not socioeconomic status) **Covar1-Covar99**
- 7 Social influence (e.g., parent modeling)
- 8 Pricing or cost variables
- 9 Food security/insecurity
- 10 Sociodemographic characteristics (socioeconomic status, race)
- 11 Environments or policies (if individual domain)
- 13 None of the above
- 99 Not applicable

REVIEWER COMMENTS:

Guidelines for Completing the Measure Abstraction Form

General Guidelines

- With very few exceptions (all noted in this document), you will provide a response for every item (so we don't have questions about whether blank items were inadvertently skipped). “Not reported” and “not applicable” options have been incorporated to allow for this.
- Multiple responses (“check all that apply”) are always permitted, unless otherwise specified on the form (“check one”) or in these instructions.
- The database is structured to provide information about measures or instruments. Every entry in the database (every completed abstraction form) needs to describe one measure or instrument. The first thing you should do when reviewing an article is determine if it includes more than one measure/tool. If it does, you will need to use a special entry screen that will allow you to enter information for multiple instruments from one article.
- When entering text in “Other, Specify” fields or other open-text fields, capitalize the first word, unless otherwise noted. Do not be shy about using these fields. For future updates of the registry it is important to know whether the precoded response options are doing an adequate job of capturing the important data.
- We expect “not reported” options to be used rarely. Be sure that you carefully review the entire article before using this code. Remember that research articles may be organized and structured differently and information may not necessarily be reported in the sections where you'd expect to find it.
- Measures/instruments abstracted for the Individual Dietary Behavior and Individual Physical Activity domains should be focused on children 2-18 years. Some articles may also include measures/instruments of individual behaviors of adults. These measures should NOT be entered, although other measures in the article may be entered. If you encounter an article that includes instruments/measures of individual behaviors of adults, enter all of the other information and flag the article for review by senior staff.
- Use the Reviewer Comments fields sparingly—only when you believe important information is not captured in the coded fields.
- If you are uncertain about how to code any items, flag the article for review by senior staff.

Item-Specific Guidelines

Page	Item No.	Guidelines
1	1. Reviewer Name	Reviewer name will be entered automatically when abstraction page is opened. This field cannot be edited.
	2. Full Article Citation	The full citation will be entered automatically when the article is selected and the abstraction page is opened. This field cannot be edited.
	3. Date	The date will be entered automatically. This field cannot be edited.
	4. Instrument/ Methodology Name	<p>If the instrument/methodology has a formal name, enter the full name and, if applicable, the abbreviation.</p> <p style="text-align: center;">Examples: <i>Youth Risk Behavior Surveillance System (YRBSS)</i> <i>Neighborhood Environment Walkability Survey (NEWS)</i></p> <p>For instruments/methodologies that do not have formal names, please enter the following: Lead author's last name, year, domain, and a generic name for the type of instrument/methodology.</p> <p>Capitalize the first letter of every word. If the instrument/methodology was used in a large, named study include the name of the study and the abbreviation (if applicable) before the generic name of the instrument/methodology.</p> <p style="text-align: center;">Examples: <i>Nelson, 2006, Individual Physical Activity, Add Health Study, 7-day Recall of Physical Activity and Sedentary Behaviors</i> <i>Perry, 2004, Individual Diet, Lunch Observation to Measure Fruit and Vegetable Consumption</i></p>
	5. Brief Description of Instrument/Methodology	Skip this field; it is no longer in use.
	6. Study Design	<p>Use the following definitions to classify the type of study. Some studies may have several components, so please check all that apply.</p> <p><i>Validation/Reliability.</i> A study that demonstrates the validity and/or reliability of an assessment tool or measurement approach (for example, the comparison of a brief questionnaire about fruit and vegetable intake to the “gold standard” measure of dietary intake, multiple 24-hour recalls).</p> <p><i>Descriptive:</i> A study that reports on characteristics or outcomes without comparing groups (for example, the mean fruit and vegetable intake of U.S. children or the percentage of schools that offered specific types of food.)</p> <p><i>Correlational/Observational:</i> A study in which outcomes are compared between two or more groups that have or are exposed/not exposed to a characteristic of interest (for example, a study that compares fruit and</p>

Page	Item No.	Guidelines
1 (con't)	6. Study Design (con't)	<p>vegetable intake of children living in neighborhoods with a high density of supermarkets with fresh fruits and vegetables to those living in neighborhoods with a low density of such markets).</p> <p><i>Impact/Effectiveness:</i> An experimental or quasi-experimental study in which subjects are prospectively assigned to two or more groups (control/intervention) for the purpose of studying the impact of a program, intervention, or other exposure (for example the evaluation of a classroom-based healthy eating curriculum).</p> <p><i>Instrument/Method Development Without Validation/Reliability.</i> Check this response if an article describes the development of an instrument or methodology, but does not assess reliability or validity.</p>
	7. Study Location	<p>In reporting the study location, check the category that reflects the terminology used by the authors in describing the study location or your own knowledge of the location (for example, “San Diego County” and “Boston and surrounding area” are both metro/urban areas). Note that articles may include both Metro/Urban and Small Town/Rural locations.</p> <p>If the authors do not describe the study location in these terms and you are not familiar with the area, use population count data if these are reported (these data are more likely to be reported in articles that measure physical activity or food environments). Sites with populations greater than 100,000 should be classified as metro/urban and sites with populations less than 20,000 should be classified as small town/rural.</p> <p>If the article does not use specific terminology, does not report population counts, and you are not familiar with the area, check “Other” and record the description provided in the article. This option may also be used for articles that used national samples or samples that were spread across several states if no additional information about location is provided.</p> <p>If the article provides no information about where the study was conducted or from where the study’s respondents were drawn, check “Not Reported.” We expect this to occur rarely.</p> <p>Grid for recoding specifics of study location:</p> <p>In the section that asks for text entry (City, State, Region, Country), provide whatever specifics are reported in the article. For studies completed in the U.S., region does not need to be recorded if the city and state are identified.</p> <p>For articles that involve multiple sites, record the information in the “AreaOth” field:</p> <p style="padding-left: 40px;">Examples: <i>3 cities in the Boston metro area, USA</i> <i>Austin TX, Minneapolis MN, and Raleigh, NC, USA</i> <i>Census tracts in Forsyth County (NC), Baltimore County (MD), and Northern Manhattan and Bronx (NY), USA</i></p>

Page	Item No.	Guidelines																		
2	8A. Sample Size of Individuals	<p>Enter the number of individuals included in the study. Always report the size of the <u>analytic</u> sample here (final sample after attrition and exclusion of cases for incomplete or implausible data). If the analysis sample varies for different analyses, report the maximum sample here and include information about the variation in the Reviewer Comments section.</p> <p>For articles that focused exclusively on environmental measures and did not collect information from individuals, check “Not applicable.” Information about the number of locations/environments included in the study is captured on the next page.</p>																		
	8B. Age	<p>Check all that apply, choosing the categories that best describe the subjects of the study. Choose multiple categories if the ages of study subjects include more than one category. For example, for a study that included children 10-14 years, check both “6-11 years” and “12-18” years.</p> <p>Some studies may provide information about children’s grade level(s) rather than age. Use the following rules to select the appropriate age group(s).</p> <table border="1" data-bbox="570 863 1479 1077"> <tbody> <tr> <td>Kindergarten 5 years</td> <td>1st grade 6 years</td> <td>2nd grade 7 years</td> </tr> <tr> <td>3rd grade 8 years</td> <td>4th grade 9 years</td> <td>5th grade 10 years</td> </tr> <tr> <td>6th grade 11 years</td> <td>7th grade 12 years</td> <td>8th grade 13 years</td> </tr> <tr> <td>9th grade 14 years</td> <td>10th grade 15 years</td> <td>11th grade 16 years</td> </tr> <tr> <td>12th grade 17 years</td> <td>Preschool 2-5 years</td> <td>Elementary 6-11 years</td> </tr> <tr> <td>Middle 12-18 years</td> <td>High 12-18 years</td> <td></td> </tr> </tbody> </table> <p>“Adults” should never be checked for studies of Individual Dietary Behavior or Individual Physical Activity. Parents or other adults will be respondents in many of these studies—providing information about their children’s diets and/or physical activity. However, these adults are not the subjects of the study; the children are.</p> <p>For studies of environmental measures that did not collect any information at the individual level, check “Not applicable.”</p>	Kindergarten 5 years	1 st grade 6 years	2 nd grade 7 years	3 rd grade 8 years	4 th grade 9 years	5 th grade 10 years	6 th grade 11 years	7 th grade 12 years	8 th grade 13 years	9 th grade 14 years	10 th grade 15 years	11 th grade 16 years	12 th grade 17 years	Preschool 2-5 years	Elementary 6-11 years	Middle 12-18 years	High 12-18 years	
Kindergarten 5 years	1 st grade 6 years	2 nd grade 7 years																		
3 rd grade 8 years	4 th grade 9 years	5 th grade 10 years																		
6 th grade 11 years	7 th grade 12 years	8 th grade 13 years																		
9 th grade 14 years	10 th grade 15 years	11 th grade 16 years																		
12 th grade 17 years	Preschool 2-5 years	Elementary 6-11 years																		
Middle 12-18 years	High 12-18 years																			
	8C. Gender	<p>Articles may report the percentage for only one gender (for example, “The study sample was 70% female”). In these cases, code male as well as female because we know males were also included and the percentage can be computed.</p>																		
	8D. Race/Ethnicity	<p>Check all of the racial/ethnic groups that are specifically mentioned in the article or shown in a table. For example, if the only information provided about race/ethnicity is “Sample was 97% Hispanic,” check only Hispanic; if the only information provided is “Sample was predominantly African-American,” check only Black/African American.</p>																		

Page	Item No.	Guidelines
2 (con't)	8D. Race/Ethnicity (con't)	<p>If the article does not report specific racial/ethnic groups but characterizes the study sample as having a high percentage of individuals who are a racial/ethnic minority, then check “Multiethnic/racial population (no further detail).”</p> <p>If the article reports only the percentage of the population that was White, check Non-White as well, since the percentage non-white can be computed.</p> <p>Do not check “non-white” or the mutli-ethnic” option in an attempt to code sample members who may be reported as “other race/ethnicity.”</p> <p>We do not expect race/ethnicity to be “not reported” very often. Be sure you scan the article carefully for mention of race/ethnicity before using this code.</p> <p><i>If the study was done in a country other than the U.S. where we can make reasonable assumptions about race/ethnicity (for example, Japan or rural Wales), code the assumed race and include a comment in the Reviewer Comments field that says: “Race/ethnicity coded based on reported location and assumed major population group.”</i></p>
	8E. Data Reported on Race/Ethnicity	<p>Characterize the data reported on race/ethnicity.</p> <p>Quantitative data includes specific counts or percentages (25 or 73%) or descriptions that can be used to determine specific counts or percentages (for example, “all”, “half”, or “equal numbers”).</p> <p>Quantitative data will often be reported in a table, but may also be reported in the text. Quantitative data can be <u>provided for the study sample</u> (“Study participants were 65% Black/African American, 20% Hispanic/Latino, and 15% White”) or <u>for the community from which the sample was drawn</u> (“During the 2008 school year, students enrolled in the school were 52% African American, 32% Hispanic, 10% white, and 6% other”).</p> <p>Qualitative descriptions may also be used to describe the racial/ethnic makeup of a study sample or community. Qualitative descriptions do not include specific numbers, counts, or percentages (for example, “Subjects were recruited through a pediatric practice that serves a predominantly Hispanic, low-income neighborhood in northern Manhattan, New York City”).</p> <p>If race was assumed in 8D, based on study location, check “Qualitative description” for this item (and be sure the required comment is entered in the Reviewer Comments section for item 8D).</p> <p>If “not reported” is checked in 8D, check “not applicable” for this item.</p>

Page	Item No.	Guidelines
2 (con't)	8F. Study Population Described as Being Predominantly Low-Income/Low-SES	<p>Use the following rules to choose the appropriate response for this item.</p> <p>Choose “Yes” if the article explicitly states that the study population was exclusively or predominantly low-income, disadvantaged, or deprived, either using these or similar terms to describe the population or referencing specific measures of socioeconomic status (SES) (which can include the variables listed in item 8H as well as other variables).</p> <p>Examples: <i>Low-income, African-American girls were recruited from public housing developments in Atlanta ,Georgia.</i></p> <p><i>Subjects were recruited from two areas of Liverpool representative of social and health deprivation (based on the receipt of Income Support).</i></p> <p>Choose “No” if the article reports or discusses information related to SES (this includes any of the variables listed in item 8H as well as other variables related to SES), but does not characterize the population as being predominantly low-income/low-SES.</p> <p>Choose “Not reported” if the article does not report or discuss information related to any of the variables listed in item 8H or other variables related to SES.</p> <p><i>Never code “Not applicable” for this item.</i></p>
	8G. Data Reported on SES	<p>Quantitative data includes specific counts or percentages (25 or 73%) or descriptions that can be used to determine specific counts or percentages (for example, “all”, “half”, or “equal numbers”).</p> <p>Quantitative data will often be reported in a table, but may also be reported in the text. Quantitative data can be provided for the study sample (“Sixty percent of children were approved for free and reduced-price meals”) or for the community from which the sample was drawn (“During the year data were collected, 21% of the meals served in the school were served free or at a reduced-price”).</p> <p>Qualitative descriptions may also be used to describe the SES of the study sample or community. Qualitative descriptions do not include specific numbers, counts, or percentages. (For example, “Subjects were recruited through a pediatric practice that serves a predominantly Hispanic, densely populated low-income neighborhood in northern Manhattan, New York City”).</p> <p><i>If “not reported” is checked in 8F, check “Not applicable” for this item.</i></p>
	8H. Quantitative Data Reported on SES	<p>If quantitative data are reported in the article, check off the boxes to indicate the type of data reported.</p> <p>Be sure to fill in the “Other, Specify” field if variables other than those listed</p>

Page	Item No.	Guidelines
		<p>are reported.</p> <p>Check “Not applicable” if 8F is checked as “not reported” or 8G is checked as “Qualitative data.”</p>
3	10A. Type of Environment/Institution	<p>You will see this item only if you are entering data for a measure of the food environment (and checked “Food Environment” in Item 9).</p> <p>Check the box for each of the types of institutions in which the measure was used and enter the number of each type of institution in which the “(n=)” field. (In most cases you will be checking off only one type of institution. Measures designed to assess retail environments and restaurants may be exceptions).</p> <p>In reporting on the environment addressed by the tool, use the same language as the article even if it does not adhere to your definition of each environment (for example, if the author describes what most of us might call a grocery store as a supermarket, check only supermarket.)</p> <p>If the article reports on the total sample of institutions but not the number observed by type, check the “total environments” option (first option available) and record the total “n” in the space provided.</p> <p>If sample sizes are reported by type but no overall total is reported, please sum the subtypes and enter the total sample in the appropriate space.</p> <p>If neighborhood is checked, please add clarifying information in the Reviewer Comments section about whether the number entered in the (n=) section actually represents “n” different neighborhoods or the neighborhoods of “n” respondents (which may not all be unique). This situation is not expected to occur for the other types of institutions. However, if it does, be sure to enter clarifying information in the comments section.</p>
	10 B and C. Measure and Food Groups	<p>You will see these items only if you checked “Food Environment” in Item 9.</p> <p>Check the box(es) that best describe the constructs the instrument/ methodology is designed to measure. You do not need to check something in both 10B and 10C. Sometimes a measure will focus on one of the areas but not the other. (Note that this is one of the exceptions to the general “provide a response for every item” rule.)</p> <p><u>Use this definition to code objective vs. subjective measures:</u> <i>Objective measures are based on quantitative data that are collected, observed, or analyzed by the researcher, including archival data.</i></p> <p><i>Subjective measures are based on self-reports of study subjects, including proxy respondents for young children</i></p>

Page	Item No.	Guidelines
3 (con't)	11A. Type of Environment/Location	<p>You will see this item only if you are entering data for a measure of the physical activity environment (and checked “Physical Activity Environment” in Item 9).</p> <p>Check the box for each of the types of environment/location in which the measure was used and enter the number of each type of institution in which the “(n=)” field.</p> <p>In reporting on the environment addressed by the tool, use the same language as the article even if it does not adhere to your definition of each environment.</p> <p>If the article reports on the total sample of environments but not the number observed by type, check the “total environments” option (first option available) and record the total “n” in the space provided.</p> <p>If sample sizes are reported by type but no overall total is reported, please sum the subtypes and enter the total sample in the appropriate space.</p> <p>If neighborhood is checked, please add clarifying information in the Reviewer Comments section about whether the number entered in the (n=) section actually represents “n” different neighborhoods or the neighborhoods of “n” respondents (which may not all be unique).</p> <p>Enter comparable clarifying information if this situation occurs for other types of environments.</p>
	11 B and C. Scale and Measure	<p>You will see these items only if you checked “Physical Activity Environment” in Item 9.</p> <p>For Item 11B, check the box(es) that best describe the scale of the environment considered in the measure.</p> <p>For Item 11C, check the box(es) that best describe the constructs the instrument/methodology is designed to measure.</p> <p><u>Use this definition to code objective vs. subjective measures:</u> <i>Objective measures are based on quantitative data that are collected, observed, or analyzed by the researcher, including archival data.</i></p> <p><i>Subjective measures are based on self-reports of study subjects, including proxy respondents for young children</i></p>
4	12 A and B. Measures of Individual Diet	<p>You will see these items only if you are entering data for a measure of the food environment (and checked “Individual Dietary Behavior” in Item 9).</p> <p>Check the box(es) that best describe what the instrument or methodology is designed to measure. You do not need to check something in both 12A and 12B. Most measures will focus on dietary intake (12A) <u>or</u> one or more specific diet-related behavior (12B).</p>

Page	Item No.	Guidelines
4 (con't)	12 A and B (con't)	<p>(Note that this is one of the exceptions to the general “provide a response for every item” rule.)</p> <p>In 12A, Code “Food Groups” only when the analysis looked at all food groups in the MyPyramid food guidance system or a comprehensive listing of other food groups.</p> <p>Otherwise, code the one or more specific food groups (e.g., low-fat dairy, fruits/vegetables, whole grains) assessed using the measure.</p> <p>Macronutrients include fat, protein, carbohydrate, and saturated fat.</p> <p>Be sure to fill in the “Other, Specify” option if the article reports on variables that are not included in the list. Sodium and Cholesterol should be coded here.</p> <p>Note that articles may report collecting information about portion size, food preparation, eating location as part of the data collection protocol. These variables should only be coded if they are actually reported on in the article; for example, the article reports mean portion sizes for two groups or the proportion of foods or total calories consumed away from home. In most other cases, these data will be used to estimate intakes of energy, nutrients, or food groups.</p>
	13 A and B. Measures of Individual Physical Activity	<p>You will see these items only if you are entering data for a measure of the food environment (and checked “Individual Physical Activity” in Item 9).</p> <p>Check the box(es) that best describe what the instrument or methodology is designed to measure. You do not need to check something in both 13A and 13B. Most measures will focus on estimating energy expenditure (13A) <u>or</u> on the prevalence or frequency of specific behavior(s) related to physical activity/inactivity (13B). (Note that this is one of the exceptions to the general “provide a response for every item” rule.)</p>
5	14. Type of Instrument	<p>Remember that <u>only one</u> instrument should be coded per database entry.</p> <p>For validation studies, only record information for the tool/measure that is being validated and <u>not</u> the criterion measure that is used.</p> <p><i>Record or Log.</i> Form maintained by subjects for some period of time to report dietary intake, physical activity, or both.</p> <p><i>Questionnaire</i> Structured set of questions asked of all subjects. May be self-administered or researcher-administered. Excludes questionnaires that are specifically identified as food frequency questionnaires; these have their own response category.</p> <p><i>Interview Guide.</i> Unstructured set of questions/topics that are used by researcher to guide discussion with one or more respondents.</p>

Page	Item No.	Guidelines
5 (con't)	14 (con't)	<p><i>Behavioral Observation.</i> Observation protocol/tool that focuses on documenting dietary and/or physical activity behaviors of individuals or groups.</p> <p><i>Environmental Observation.</i> Observation protocol/tool that focuses on documenting characteristics of food and/or physical activity environments.</p> <p><i>Combined Behavioral/Environmental Observation.</i> Observation protocol/tool that focuses on documenting dietary and/or physical activity behaviors of individuals or groups as well as relevant characteristics of the environments in which these individuals/groups live, play, go to school, etc.</p> <p><i>GIS protocol/detailed description:</i> Description of the steps to be undertaken in a GIS based analysis to define the measures for the analysis and details on the spatial data sources to be incorporated.</p> <p><i>GIS script/program:</i> Specific details on the sequence of steps to conduct spatial data analysis and data linking, generally using steps and procedures made available by the analysis software.</p>
	15A. Administration	<p>Code “self-administered” for questionnaires, food frequencies, or other instruments that children completed themselves without researcher assistance.</p> <p>Code “researcher-administered” if researchers conducted interviews or observations to collect data.</p> <p>Code “third-party administered” if a parent completed a questionnaire, food frequency, or other instrument to provide information about their child, without researcher assistance.</p> <p>Code “existing data” or “interpreted photos” of methodology used extant data sources to construct measures.</p> <p>In some cases, more than one code may be checked. For example, for a situation where researchers read questions aloud while students fill in their own forms—this would be both “self” and “researcher” administered.</p>
	15B. Mode	<p>Most of these codes should be self-explanatory.</p> <p>Note that web-based refers <u>only</u> to surveys or other tools that are available on a remote website that respondents access with links and passwords provided by researchers.</p> <p>Measures that use computer technology that is not managed by the researcher (response option 6), such as computer-based software that is used by children or their parents should be entered under “Other Specify” and well described.</p>

Page	Item No.	Guidelines
5 (con't)	16. Training Required to Administer/Complete (con't)	<p>Code “not applicable” for self-administered instruments unless the article indicates that respondents were trained to complete the instrument. Use the comment field to provide clarity as needed.</p> <p>Scan articles carefully for references to training data collection staff. Many articles will be coded as “Yes (training is required), but time not reported.”</p> <p>Code “not reported” only if the instrument is <u>not</u> self-administered <u>and</u> the article makes no mention of training data collectors or third-party respondents.</p>
	17. Time Required to Administer/Complete	Code “not reported” if the article provides no information about how long it takes researchers to administer an instrument or respondents to complete it.
	18. Number of Items	Code “not applicable” for 24-hour recalls, food records/logs, and other truly open-ended instruments. For questionnaires, food frequencies, and observations, record the number of items if it is mentioned in the article or can be determined (for example, from a table that lists all the questions).
	19. Language(s)	<p>If the study was done in the U.S. or an English-speaking country, assume the language is English if the article does not report otherwise.</p> <p>If the study was done in a non-English speaking country and the article does not say anything about language, code the assumed language in “Other Specify” and enter as follows: <i>Most likely [language], although it was never explicitly stated.</i></p>
	20-22. Other Relevant Information	<p>These fields may be rarely used. However, but if the article has information that is not captured in the other coded fields, please enter it in the appropriate item.</p> <p>An example of additional information about the data collection protocol might be that the protocol was developed for and used in a large national study.</p> <p>An example of additional information about the development of the instrument/methodology might be that the instrument was adapted from one developed by another researcher (include the full name of the instrument and the citation) or that reliability of the instrument was established in a previously study or article (include the full citation).</p>
6	23-24. Reliability/Validity	Generally, if reliability/validity data are reported, the article will report the type of reliability/validity assessed. If in doubt, the definitions below may help you identify the specific type of validity. Record all the information provided in the article, if possible. If the article reports an extensive number of results, try to identify ways to distill the results, for example, by reporting averages or ranges.

Page	Item No.	Guidelines
6 (con't)	23-24. Reliability/Validity (con't)	<p>Fill in all the requested information. Choose <u>one</u> type of reliability/validity (see below for more guidance).</p> <p>In the “Construct” space, describe the variable that is being compared in the reliability/validity assessment (for example, mean calories per day; mean % of calories from saturated fat; % of children meeting recommendations for physical activity, or mean minutes of vigorous physical activity).</p> <p>In the “Test/Statistic” space, indicate the test used in the reliability/validity assessment. Use the terminology used in the article. Some articles will report “correlation coefficients” and some will identify specific types of correlation coefficients (Pearson, Spearman). Articles reporting on reliability will sometimes report Cronbach’s alpha or the “Alpha coefficient.”</p> <p>In the “Results” space, record the statistics reported in the paper, including p values if reported.</p> <p>In the “Criterion Measure” space in the Validity Table, record the “gold standard” or established measure against which the measure being validated is compared.</p>
	23. Reliability	<p>Reliability is the extent to which a measuring procedure yields the same result on repeated trials used under the same condition with the same subjects.</p> <p><i>Inter-rater and Inter-instrument reliability</i> assesses the consistency of the implementation of a rating system by assessing the extent to which two or more individuals (raters) or instruments agree.</p> <p><i>Test-retest reliability</i> (sometimes called stability reliability) is the agreement of measuring instruments over time. A measure or test is repeated on the same subjects at two separate times. Results of the “re-test” are compared and correlated with the initial test to give a measure of stability. The idea is that if you have a stable (reliable) measure, you should get the same score on test 1 as you do on test 2.</p> <p><i>Parallel-forms reliability</i> is gauged by comparing results from two different questionnaires that were created using the same content. This is accomplished by creating a large pool of items that measure the same construct and then randomly dividing the items into two separate forms. The two questionnaires (forms) are then administered to the same subjects at the same time and results are compared.</p> <p><i>Internal consistency reliability</i> is used to assess the extent to which different items that propose to measure the same characteristic produce similar scores. The most common statistic used to assess internal consistency is Cronbach’s alpha.</p>

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6 (con't)	24. Validity	<p>Validity is the degree to which a measuring procedure accurately reflects or assesses the specific concept that it is intended to measure. A method can be reliable, consistently measuring the same thing, but not valid.</p> <p><i>Face validity</i> is concerned with how a measure or procedure appears. Does it seem like a reasonable way to gain the information the researchers are attempting to obtain? Does it seem well designed? Does it seem as though it will work reliably? Face validity does not involve statistical tests and is generally assessed via expert review.</p> <p><i>Content validity</i> is the extent to which an instrument measures the appropriate content and represents the variety of attributes that make up the measured construct. This determination can be made through the development of formal models, expert review of specified domains and/or indicators, and/or community input.</p> <p><i>Construct validity</i> is the degree to which a measure “behaves” in a way that is consistent with underlying theoretical hypotheses and is predictive of some external attribute, for example, physical activity behavior.</p> <p><i>Criterion-related validity</i> is used to demonstrate the accuracy (validity) of a measure of procedure by comparing it to another procedure with established validity, for example, comparing results of a brief dietary screener with results from repeat 24-hour recalls or multiple-day food records.</p> <p>Two types of criterion-related validity that are sometimes specifically mentioned include <i>predictive validity</i>, which assesses a measure’s ability to predict something it should theoretically be able to predict and <i>concurrent validity</i> which assesses a measure’s ability to distinguish between groups that it should theoretically be able to distinguish between.</p> <p>Comment Field for Validity Table: Include a summary of how the instrument was validated (this can often come verbatim from the article). For example, “To assess validity, the total score on the modified Qualitative Dietary Fat Index Questionnaire (QFI) was compared with mean values of total fat, % energy from fat, and total energy from three 24-hour recalls.”</p>
7	25. Instrument Available	<p>If the instrument has a name and no information is provided in the article about how to obtain a copy of the instrument, do a quick Google search to see if you can locate information about where the instrument can be obtained.</p>
	26/27. Instructions on Instrument Use/Analysis	<p>In coding these items ask yourself whether, after reading the article (or accessing the website, as applicable), you would know most of what you needed to know to use this measure in your own study and to know what to do with the data you collect for purposes of analysis.</p> <p>Most often, you will code “Instructions on instrument use included in the article.” Code “not reported” only if the article provides limited or</p>

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		ambiguous information about how the instrument was used to collect data and how the data resulting from the instrument were analyzed.
	28. Health/Disease Outcomes	This item should be coded as “None” for all studies that were not impact/effectiveness studies or correlational/observational studies. All impact/effectiveness studies should have one or more items coded, but some correlational/observational studies will not include health outcomes.
8	29 and 30. BMI and Height and Weight	These items should be coded only if “Obesity” is coded in item 28. For all other articles, “not applicable” should be coded for both of these items.
	31. Other Covariates	<p>This item captures information about covariates, predictors, stratifiers, or another type of variable that is included in the analysis and examined in association to an outcome of interest. If a variable is reported in the study’s descriptive results but is not analyzed in association to an outcome of interest (this frequently occurs with sociodemographic variables), it should not be marked in this field. If no such variables were included in the analysis, check “none of the above.”</p> <p><i>Academic Achievement.</i> These are variables that capture students’ academic performance through grades, standardized tests, or other relevant measures. This does <u>not</u> include highest educational attainment as a measure of socioeconomic status. This is captured in subsequent category entitled “sociodemographic characteristics.”</p> <p><i>Sociodemographic Characteristics.</i> This includes characteristics that capture the socioeconomic status (i.e. income, educational attainment, or wealth), race/ethnicity, age, and gender. This may include individual or aggregate measures.</p>

APPENDIX D
SURVEY OF EMERGING MEASURES

NCCOR MEASURE REGISTRY EMERGING MEASURES SURVEY INTRODUCTORY E-MAIL

Dear Colleague,

We are writing on behalf of the National Collaborative on Childhood Obesity Research (NCCOR), a partnership between the National Institutes of Health (NIH), the Centers for Disease Prevention and Control (CDC), and the Robert Wood Johnson Foundation (RWJF).

One key goal of NCCOR is to promote the consistent use of common measures and methods in childhood obesity research and prevention. Toward this goal, NCCOR is developing a Web-based registry that will contain information about measures used in the following four domains:

1. Individual dietary behaviors (ages 2-18 years)
2. Individual physical activity and sedentary behaviors (ages 2-18 years)
3. Food environment and policies (all ages)
4. Physical activity environment and policies (all ages)

In addition to playing a vital role in advancing childhood obesity prevention research, the registry **will provide an opportunity for researchers to disseminate their work.**

Currently, our contractor, Mathematica Policy Research, is conducting a systematic review of the peer-reviewed literature through August 2009. To supplement this work, we are contacting researchers to identify relevant **work that has not yet been published in the peer reviewed literature.**

If you have developed and tested an instrument or methodology that addresses one of the above domains, and your work has not yet published, we would like to find out more about your work for inclusion in the registry. We hope that you will take a moment to complete a brief survey by April 13, using the link below:

[insert link]

You can learn more about NCCOR at our Web site: www.nccor.org. If you have any questions about NCCOR or the registry, feel free to contact one of us at the numbers listed below.

Thank you in advance for supporting the work of the NCCOR Measures Registry.

On behalf of the NCCOR Measures Registry Core Working Group,

Mary Kay Fox, Mathematica Policy Research (617-301-8993)

David Berrigan (NCI), Latetia Moore (CDC), Shalini Parekh (CDC), Jill Reedy (NCI), and Punam Ohri Vachaspati (RWJF)

ITEMS INCLUDED IN WEB SURVEY

1. Have you worked on recent research (not yet published) that involved development and testing of an instrument or methodology to measure outcomes in one of the following four domains:

- Individual dietary behaviors (ages 2-18 years)
- Individual physical activity and sedentary behaviors (ages 2-18 years)
- Food environment and policies
- Physical activity environment and policies

2 No, I have not completed recent work in these areas [No “no” responses received]

1 Yes, I have completed recent work in these areas

2. Which of the following domains does this recent work cover? (Check all that apply)

[For each variable, 1= yes and blank = no]

1. Individual dietary behaviors (ages 2-18 years)
2. Individual physical activity and sedentary behaviors (ages 2-18 years)
3. Food environment and policies
4. Physical activity environment and policies

3. Did you assess the reliability and/or validity of the instrument or methodology?

2 No

1 Yes [ask 3a]

- 3a. Which of the following did you assess? (Check all that apply)

[For each variable, 1= yes and blank = no]

- 1 Inter-rater reliability
- 2 Inter-instrument reliability
- 3 Test-retest reliability
- 4 Parallel forms reliability
- 5 Internal consistency reliability
- 6 Face validity
- 7 Content validity
- 8 Construct validity
- 9 Criterion validity
- 10 Predictive validity
- 11 Concurrent validity
- 12 Other (specify)

4. What is the status of your research?
 1. Not yet published, development work/analysis still ongoing
 2. Not yet published, manuscript in preparation
 3. Not yet published, manuscript submitted
 4. Other, specify
 5. In press, submitted and accepted
5. Please briefly describe your instrument or methodology:
6. If necessary, may we followup with you to obtain additional information about your work?
 - 0 No, thank you [skip to closing]
 - 1 Yes, you are welcome to contact me [ask 6a]
 - 6a. Please provide a daytime phone number:

CLOSING: Thank you for completing this survey. Please check the NCCOR website (<http://www.nccor.org>) for additional information about NCCOR activities and opportunities, and the launch of the NCCOR Measure Registry.

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