Measures Registry & Catalogue of Surveillance Systems

Institute of Medicine Committee to Accelerate Progress in Obesity Prevention Measurement Workshop

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National Cancer Institute, National Institutes of Health
About NCCOR
The National Collaborative on Childhood Obesity Research brings together four of the nation’s leading research funders to address the problem of childhood obesity in America.
Collaborative Partners

Centers for Disease Control and Prevention
- Division of Adolescent and School Health
- Division of Adult and Community Health
- Division of Nutrition, Physical Activity and Obesity
- National Center for Environmental Health
- National Center for Health Statistics

National Institutes of Health
- Division of Nutrition Research Coordination
- National Cancer Institute
- National Heart, Lung, and Blood Institute
  - Eunice Kennedy Shriver National Institute of Child Health and Human Development
- National Institute of Diabetes and Digestive and Kidney Diseases
- Office of Behavioral and Social Sciences Research

Robert Wood Johnson Foundation

United States Department of Agriculture
- Food, Nutrition and Consumer Services
  - Center for Nutrition Policy and Promotion
  - Food and Nutrition Service
- Research, Education and Economics
  - Agricultural Research Service
  - Economic Research Service
  - National Institute of Food and Agriculture
Mission

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.
Goal 3: Increase ability of childhood obesity researchers and program evaluators to conduct research and program evaluation.

Goal 4: Provide national leadership to accelerate implementation of evidence-informed practice and policy.

Goal 5: Foster research to improve integration of childhood obesity prevention and synergistic initiatives that provide co-benefits for obesity (e.g., agricultural research, environmental sustainability, disabilities).
Issues Facing Researchers…

What data resources exist?

What are the costs?

What measures have been validated?

How do I access the data?

How has a specific measure been validated?

Where can I find a specific measure?

Where can I find more details?

What variables can I link across systems?
Measures Registry
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 describe and evaluate interventions to prevent childhood obesity, particularly those projects that address policies and environments.

A measures registry will facilitate identification of existing measures, identify gaps, and fuel new measurement development.
Measures Registry Overview

- Searchable registry with almost 750 measures

- Measures are categorized into four domains:
  - Individual dietary behavior
  - Individual physical activity behavior
  - Food environment
  - Physical activity environment

- **Details about each measure include:**
  - Domain(s) measured
  - Validity and reliability
  - Protocols on use
  - Settings, geographic areas, and populations for which the measure has been used

- Website to launch in **April 2011**
What are Measures?

• Measures are defined broadly as tools and methodologies to assess individual diet, physical activity, and the environments in which these behaviors occur.

• Example of measures in the registry include questionnaires, instruments, diaries, logs, electronic devices, direct observations of people or environments, protocols, and analytic techniques.
Diet and Physical Activity Behavior: Individual-level & Environmental-level Measures
Measures Registry Development

- Conducted comprehensive literature searches for each domain, including articles published between 2004 and 2010
- Examined an extensive best-practice review completed by Transtria
- Contacted subject matter experts to supplement lists of measures
- Collected data for each measure entry using a tailored abstraction tool
Features of the Measures Registry

• Allows Users to:
  • Search or browse for measures
  • Access specific details for each measure
  • Link to other measures registries and related resources
  • Find measures in development (i.e., not yet published measures)
  • Submit new measures for inclusion in the registry
MEASURES REGISTRY

A product of the National Collaborative on Childhood Obesity Research

The NCCOR Measures Registry is a searchable database of diet and physical activity measures relevant to childhood obesity research.

The purpose of this registry is to promote the consistent use of common measures and research methods across childhood obesity prevention and research at the individual, community, and population levels.

Obesity and public health researchers need standard measures to describe, monitor, and evaluate interventions, particularly policy and environmental interventions, and factors and outcomes at all levels of the socio-ecological model. NCCOR hopes that this registry will facilitate access to available measures, help identify gaps in measures, and encourages the development of new measures.

On this website, you can:

- search or browse the registry for measures
- find measures in development
- link to other measures registries and related resources
- submit a new measure for inclusion in the registry

This website is best viewed using IE8, Firefox, or Google Chrome.
### Filter options

**Domain**
- Food Environment (74)
- Physical Activity Environment (25)
- Individual Dietary Behavior (47)
- Individual Physical Activity Behavior (52)

**Measure Type**
- Questionnaire (66)
- Record or log (23)
- 24-hour dietary recall (7)
- Environmental observation (26)

**Location**
- Metro/Urban (105)
- Small Town/Rural (22)

**Contains**
- schools

### Results

Showing 1-25 of 173 matching measures

<table>
<thead>
<tr>
<th>Measure Registries</th>
<th>First Author</th>
<th>Year Published</th>
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<tbody>
<tr>
<td>24-Hour Dietary Recall</td>
<td>Kubik MY</td>
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<td>24-Hour Dietary Recall with Multiple-Phase Protocol</td>
<td>Baxter JD</td>
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<td>Accelerometer</td>
<td>Rodriguez G</td>
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<td>Accelerometers, Importance of Food Length</td>
<td>Vele S</td>
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<td>Activity Diary</td>
<td>Rodriguez G</td>
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<td>Activitygram</td>
<td>Wall GJ</td>
<td>2004</td>
</tr>
<tr>
<td>Activity Recorder</td>
<td>Halverson CF Jr</td>
<td>1973</td>
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<tr>
<td>A La Carte and Student Store Sales Log</td>
<td>Zive MN</td>
<td>2002</td>
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<td>A la Carte Foods</td>
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<td>A La Carte Program</td>
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<td>A La Carte Sales Data</td>
<td>French SA</td>
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<td>Availability of a Low-Fat Entree in Schools</td>
<td>Whitaker RC</td>
<td>1993</td>
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<td>Neuhouser ML</td>
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<td>Sturm R</td>
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<td>Built Environment Data Around the School and Home</td>
<td>Ewing R</td>
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<td>Caltrac Accelerometer</td>
<td>Allor KM</td>
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<td>Child and Adolescent Trial of Cardiovascular Health (CATCH) Food Checklist</td>
<td>DeVault N</td>
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<td>Child Dietary Fat Questionnaire (CDFQ)</td>
<td>Dennison BA</td>
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<td>Child Nutrition Questionnaire</td>
<td>Wilson AM</td>
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<td>Class Food Practices, Teachers' Eating Behavior, and Beliefs About School Food Environment Survey</td>
<td>Kubik MY</td>
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<td>Coding System for Measuring Quality of School Wellness Programs</td>
<td>Schwartz NB</td>
<td>2009</td>
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<td>Computerized PA Recall</td>
<td>McMurtry RG</td>
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<td>Daily Food Production Records for the National School Lunch Program Meals and Points of Sale Data for Snack Bar Items</td>
<td>Cullen KW</td>
<td>2009</td>
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</table>
Bag Lunches
Sallis JF, American journal of preventive medicine, 2003

Domain(s)
Individual Dietary Behavior

Measure Type
Behavioral observation

Number of Items
Not applicable

Study location
Metro/Urban
San Diego County, CA, USA

Languages
English

Availability
Yes, shown in article
Access at: www.drjemsallis.alsu.edu

Information about Development of Measure
Nothing to add

Variables
Individual Dietary Behavior

Intake
- Other: Fat and Saturated Dietary Fat

Measure last modified: 02/10/2011 2:18 PM
Measures Registry Development Team

- **NCCOR Working Group**
  - David Berrigan, NIH
  - Eileen Hanlon, AED
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Catalogue of Surveillance Systems
Background

- Interest in childhood obesity determinants has grown from the individual-level to social, environmental and policy.
- Childhood obesity research has traditionally focused on individual-level factors.
- Less is known about organizational, community and macro-level determinants of childhood obesity.
- Awareness of surveillance system resources is limited and therefore few have taken full advantage of available systems.
- Relatively little research has incorporated data linkages across the ecological spectrum.
Previous Solutions...

- Using familiar systems
- Asking colleagues’ advice
- Internet search engines
Catalogue Overview

- First-ever online directory of obesity-related data resources
- One-stop access to data related to environmental and policy factors, as well as health behaviors, outcomes and determinants of obesity
- Includes over 75 systems
- Provides information on national, state and local data resources
- Encourages data-linkage across multiple levels
- Launched February, 2011
Catalogue Details
Inclusion Criteria and Development

• **Inclusion Criteria**
  • Relevant to childhood obesity research
  • Data collected within the last 10 years
  • Publically available, raw data
  • Gathered in the United States

• **Development**
  • Subject matter experts reviewed each system for inclusion
  • Multiple stages of review for each system profile, including by surveillance system contact
Catalogue Breadth of Resources

Examples

School and Community
- Price Data on Groceries, Transportation
- Community Crime Statistics
- Household Travel
- Traffic Fatalities
- State Snack and Soda Tax Policies
- School Wellness Policies

Household
- Diet
- Physical Activity

Individual
- Online Activities, Behavior
- School Nutrition, Activity
- Federal Nutrition Assistance Program Participation

Macro/Policy
- Medical Expenditure
- School and Community Crime Statistics
- Agricultural production

- Price Data on Groceries, Transportation
- Community Crime Statistics
- Household Travel
- Traffic Fatalities
- State Snack and Soda Tax Policies
- School Wellness Policies
Catalogue Features

• Allows Users to:
  • Identify and locate surveillance systems of interest
  • Search by topic, e.g., physical education, disability
  • Compare attributes across systems
  • Access profile information for systems of interest
  • Access other resources of interest, e.g., summary statistics, legislative databases
CATALOGUE OF SURVEILLANCE SYSTEMS

A Product of the National Collaborative on Childhood Obesity Research

This web tool provides a catalogue of existing surveillance systems that contain data relevant to childhood obesity research. It includes local, state, and national systems that provide data at multiple levels.

Surveillance systems for this Catalogue were identified by reviewing existing reports of available systems and soliciting expert review and suggestions. The systems were chosen because they provide access to publicly available raw data gathered in the United States.

Some systems have been in operation for many years; others are relatively new. All, however, contain data pertaining to the past 10 years.

The Catalogue provides one-stop access to a large number of systems, which provide a unique window on obesity-related policies and environmental factors as well as trends in relevant health behaviors, outcomes, and determinants.

Using this site, users can:

- identify and compare surveillance systems to meet research needs
- link to other resources of interest
- provide feedback on the Catalogue

NCCOR is a collaboration among the Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH), Robert Wood Johnson Foundation (RWJF), and United States Department of Agriculture (USDA) to accelerate progress on reversing the epidemic of childhood obesity in the United States.
Locate Surveillance Systems of Interest
## Compare Systems

### NCCOR Catalogue of Surveillance Systems

#### Comparing Surveillance Systems

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View System Profiles

NCCOR Catalogue of Surveillance Systems

Panel Study of Income Dynamics Child Development Supplement (PSID/CDS)

Website
http://psidonline.isr.umich.edu/CDS/

Purpose
To collect longitudinal data on food expenditures, food security, nutritional knowledge, and other content for families in the United States (US) with children ages 0 to 12 years. To collect data on weight status and dietary and exercise practices for children in these families.

Target Population
US children (ages 0 to 12 years) and their caregivers.

Conducted

Sponsor
The study is funded by the National Science Foundation, the National Institute on Aging, the National Institute of Child Health and Human Development, the Office of the Assistant Secretary for Planning and Evaluation of the United States Department of Health and Human Services, the Economic Research Service of the United States Department of Agriculture, the United States Department of Housing and Urban Development, the United States Department of Labor, and the Center on Philanthropy at the Indiana University Purdue University.

Noteworthy Characteristics
- Features a genealogical panel with links to parental and grandparental data obtained in the PSID. It also has data on substantial numbers of sibling pairs in each wave of the CDS.
- Three-wave longitudinal survey embedded in more than four decades of linkable data collected in the Panel Study of Income Dynamics.
- Provides geospatial data at the zip code, census tract, and block level.
- Provides physical activity measures that distinguish activity outside of school.
- Provides measured height and weight data.

Special Note(s)
The Child Development Supplement (CDS) is one research component of the Panel Study of Income Dynamics (PSID), which was begun in 1968. The PSID is a longitudinal study of a representative sample of US individuals and their families. The PSID has collected data on family composition changes, housing and food expenditures, marriage and fertility histories, employment, income, time spent in household, health, etc.
Access Other Surveillance Resources

OTHER SURVEILLANCE RESOURCES

This page provides links to additional resources that may be of interest to childhood obesity researchers, such as summary statistics, nutrition program information, and obesity-related legislation.

General
- Child Trends Database
  - Child Trends
    - Comprehensive summaries of key indicators of child and youth health from major child health surveillance systems.
- ChildStats.gov Key National Indicators of Well-Being
  - Federal Interagency Forum on Child and Family Statistics
    - Annual report on key national indicators of well-being related to children and families collected by agencies within the federal government.
- Community Health Status Indicators
  - U.S. Department of Health and Human Services
    - Database of county-level health status indicators with report and spatial mapping tools, based on data from major health surveillance systems.
- FedStats
  - Federal Interagency Council on Statistical Policy
    - Compilation of statistical data collected by agencies within the federal government as part of major surveillance systems.
- Food Commodity Intake Database
  - U.S. Department of Agriculture Agricultural Marketing Service
    - A companion database to the Continuing Survey of Food Intakes by Individuals in which food intake is presented in terms of commodities (raw agricultural products) rather than foods consumed.
Catalogue Development Team

- **Project Director:** Susan Krebs-Smith, National Institutes of Health (NIH)
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  - Bran Handley, IMS
Sustainability / Evaluation

Sustainability
• Updates planned for Registry and Catalogue
  • Direct feedback via websites also welcome

Evaluation
• Dissemination
• Usage
  • Web analytics
• Content
Initial Findings

- Wide range of measures and surveillance systems relevant to obesity research
- Extent of validation of measures varies substantially
- Relatively few surveillance systems measure height and weight
- Objective measurement of physical activity in surveillance systems is very rare
- Nutrient and food group databases are available that link to individual-level surveys, but not to surveys on grocery stores or markets
- Relative lack of policy-level surveillance
Intended Outcomes of the Registry & Catalogue

- Awareness and use of resources
- Productivity
- Identify gaps
- Effectiveness of research

- Standardization of measures
- Redundancy
- Innovation in research

And ultimately…
Reduce rates of childhood obesity