The National Collaborative on Childhood Obesity Research (NCCOR) Catalogue of Surveillance Systems and Measures Registry: **Celebrating 10 years of progress and looking toward the future**

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Background

 A decade ago, much less was known about the macro-level determinants of childhood obesity; there was limited knowledge of available data and measures for research.

The Catalogue of Surveillance Systems: Then and Now

- A catalogue of publicly available datasets
- Updated regularly since 2011 launch: increased from 79
- **TABLE 1.**Key Characteristics for the Catalogue of Surveillance Systems

- NCCOR is a public-private partnership of the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), the Robert Wood Johnson Foundation, and the US Department of Agriculture (USDA).
- NCCOR created two landmark tools to improve measurement and data access the Catalogue of Surveillance Systems and the Measures Registry—that have grown with the field and are used worldwide.

- systems to 114 systems today.
- Provides access to resources maintained by federal, state, academic, and private sector institutions that provide data related to health behaviors, outcomes, and determinants of obesity.
- Search and filter by key variables, age groups, racial/ethnic groups, and study design.
- Expanded over the last decade (Table 1), including:
 - 83% more school-level data resources and 73% more community-level data sources.
 - Large increases in sources of data on various racial/ ethnic groups.
 - Following the Catalogue's release in 2011, usage climbed to



with **4,000–10,000 page visits** yearly in subsequent years

LEVEL	# OF SYSTEMS 2011	# OF SYSTEMS 2021	% INCREASE	
Individual	41	59	44	
Household	14	20	43	
School	6	11	83	
Community	11	19	73	
Macro/policy	9	14	56	
SCOPE				
Local	27	39	44	
State	36	43	19	
National	70	101	44	
KEY VARIABLES	# OF SYSTEMS 2011 # OF SYSTEMS 2021 % INCREASE 41 59 44 14 20 43 6 11 83 11 19 73 9 14 56 27 39 44 36 43 19 70 101 44 36 43 19 70 101 44 58 86 48 39 53 36 33 43 30 69 85 23 444 51 16 41 50 22 52 65 25 61 71 16 60 78 30 21 30 43 40 51 28 40 51 28 41 18 64 45 58 29 15			
Diet	58	86	48	
Physical Activity	39	53	36	
Weight	33	43	30	
Geocode	69	85	23	
AGE GROUPS				
Infants	44	51	16	
Preschool children	41	50	22	
School age children	52	65	25	
Teenagers/adolescents	61	71	16	
Adults	60	78	30	
Level # OF SYSTEMS 201 # OF SYSTEMS 2021 % INCREASE Individual 41 59 44 Household 14 20 43 School 6 11 83 Community 11 19 73 Macro/policy 9 14 56 SCOPE U U 56 Local 27 39 44 State 36 43 19 National 70 101 44 KEY VARIABLES Diet 58 86 48 Physical Activity 39 53 36 Weight 33 43 30 Geocode 69 85 23 AGE GROUPS Infants 44 51 16 Preschool children 52 65 25 School age children 52 65 25 Teenagers/adolescents 61 71 16 Adults				
Asian/Pacific Islander	21	30	43	
Black	40	51	28	
Hispanic	40	51	28	
Native American/	11	10	C A	
Alaskan Native	L	18	04	
White	45	58	29	
DESIGN				
Panel/longitudinal	15	23	53	
Cross-sectional	47	70	49	

The Measures Registry: Then and Now

The Measures Registry Resource Suite Expands

- A database of diet and physical activity measures.
- ~1,000 new articles added since 2011 launch: increased from 733 to 1,637 articles today, describing more than 100 discrete measures.
- Each Registry entry is a published validation study including information on validity and reliability; protocols on the use of the measure; and settings, geographic areas, and populations for which the measure has been used.
- Users can search and filter by domain, measure type, age, and context.
- Expanded over the last decade (Table 2), including:
- Increases in measures for small town/rural populations (up 122%)
- Increases in Spanish-language measures
- Addition of measures for children 0–2 years

The Measures Registry has seen **steady usage over the last decade**, ranging from



TABLE 2.

Key Characteristics for the Measures Registry

MEASURES REGISTRY					
DOMAIN	# OF ARTICLES 2011	# OF ARTICLES 2021	% INCREASE		
Individual Dietary Behavior	171	544	218		
Food Environment	226	389	72		
Individual Physical Activity Behavior	212	575	171		
Physical Activity Environment	200	320	60		
MEASURE TYPE		1	1		
Geographic Information Systems	104	135	30		
24-hour dietary recall or food frequency	64	162	153		
Physical activity electronic monitor	59	172	192		
Environmental observation	125	202	62		
Questionnaire	274	718	163		
Record or log	57	105	84		
Other	113	302	167		
AGE (YEARS)	·	·	·		
2-5	104	363	249		
6-11	263	741	182		
12-18	213	635	198		
Adults	146	250	71		
CONTEXT		·	·		
Metro/urban	463	1132	144		
Small town/rural	89	198	122		

Since 2017, NCCOR has created three new resources to help users with measurement.

- Measures Registry User Guides: provides an overview of measurement, describe general principles of measurement selection, and presents case studies.
- Measures Registry Learning Modules: walks users newer to research and evaluation in diet and physical activity through measurement selection in 5–15 minute modules and includes quizzes to enhance learning.
- Measures for children at high risk for obesity: Choosing
 whether to apply, adapt, or develop a measure: includes a decision
 tree that walks users through a series of questions regarding whether
 to develop, adapt, or apply an instrument for obesity measures in
 high-risk populations.

In 2020, all of the Measures Registry Resource Suite tools were moved to a landing page which had 240,000 page views in 2020, 179,000 page views in 2021, and



COMING SOON!

- The **Catalogue of Surveillance Systems** will be adding sleep!
- Research suggests the importance of studying sleep and its relationship with childhood obesity.
- NCCOR is adding sleep as a key variable in the Catalogue to provide researchers with a data resource including intersecting variables on sleep, diet, and physical activity.
- New sleep variables include sleep duration and quantity, physical and social sleep environments, and more.





Future Directions

- Increasing US childhood obesity rates among some groups reinforce the need for renewed attention to address this public health challenge.
- NCCOR's website highlights how these tools are used by professors, students, and researchers.
- Further work is needed to optimize the use of appropriate measures and increase access to data for surveillance, evaluation, and public health action.
- Moving forward, efforts need to address:
- The dearth of measures for different racial/ethnic populations; children with increased risk for obesity, such as those with special health care needs; and factors such as language, country of origin, and acculturation.
- A balance between tailored measures for diverse populations and standard measures.
- The interplay of measurement and equity, social determinants of health, and community engagement.
- Concrete efforts to engage communities in measure development and data collection (e.g., reimbursement for time, inclusion of key informants and community leaders).