

NIH Toolbox



Technical Manual

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NIH Toolbox Technical Manual

Domain:

EMOTION

Subdomain:

STRESS AND SELF-EFFICACY

Subdomain Component:

SELF-EFFICACY

Measure:

NIH Toolbox Self-Efficacy Survey

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This Technical Manual contains the following informational sections:

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Section 1: Introduction to NIH Toolbox

NIH Toolbox is a multidimensional set of brief measures assessing cognitive, emotional, motor, and sensory function from ages 3-85. This suite of on-line and royalty-free measures can be administered to study participants 3 to 85 years of age in two hours or less, across diverse study designs and settings.

What is the NIH Toolbox?

The NIH Toolbox provides a standard set of royalty-free, brief, and comprehensive assessment tools that can be used by researchers and clinicians in a variety of settings, with a particular emphasis on measuring outcomes in longitudinal epidemiologic studies and prevention or intervention trials across the lifespan (ages 3-85). The battery ensures that assessment methods and results can be used for comparisons across existing and future studies and provides a “common currency” for the study of neurological research that promotes economies of scale and enhanced efficiency in measurement. The NIH Toolbox can be used to monitor neurological and behavioral function over time and measure key constructs across developmental stages. This facilitates the study of functional changes across the lifespan, including evaluating intervention and treatment effectiveness.

The NIH Toolbox Batteries

The basic NIH Toolbox can be administered within two hours and divides tests into four domain batteries: Cognition, Emotion, Motor, and Sensation. In addition, within some domains, there are supplemental measures that are available to be administered.

Selection of the NIH Toolbox Domains and Subdomains

Four domains were selected for the NIH Toolbox: Cognition, Emotion, Motor, and Sensation. Subdomain selection was based upon literature reviews, expert interviews, and multiple formal Requests for Information (RFI) of NIH-funded researchers. Initial literature and database reviews and an RFI identified the subdomains for inclusion in the NIH Toolbox, existing measures relevant to the project goals, and criteria for instrument selection. NIH Project Team members, external content experts, and contract scientists met at a follow-up consensus meeting to discuss potential subdomains along with the criteria affecting instrument selection, creation, and norming. Additional expert interviews were undertaken to gather more detailed information from clinical and scientific experts to help further refine the list of possible subdomains. A second consensus group meeting was held and results directed the decision for the final NIH Toolbox to assess four core domain areas (cognitive, emotional, motor, and sensory health and function).

Selection of Measures for the NIH Toolbox

More than 1,400 existing measures were identified and evaluated for potential inclusion in the NIH Toolbox. The selection criteria included a measure's applicability across the life span,

psychometric soundness, brevity, ease of use, applicability in diverse settings and with different groups, and lack of intellectual property constraints. There was also a preference for instruments that were already validated and normed for use with individuals between 3 and 85 years old. Results of the instrument selection process yielded draft development plans established for the NIH Toolbox measures.

Early Childhood Use

NIH Toolbox measure development focused special attention on assessing young children, to ensure that all tests given are developmentally appropriate for ages 3-7. A special team of early childhood assessment consultants was engaged to provide testing guidelines for the very young, to offer input on measure development, and to review all NIH Toolbox measures to ensure they fit the needs of young children. Advanced statistical methods were used to emphasize continuity of measurement, allowing Toolbox users to confidently conduct longitudinal measurement from age 3 through the life span while assessing the same domain constructs.

Section 2: Validation

Validation studies were conducted for all NIH Toolbox Emotion domain measures, to assure that these important tools for research met rigorous psychometric standards. Studies were

conducted across the entire age range and were statistically compared against “gold standard” measures wherever available.

For specifics regarding Emotion domain measure validation, see Salsman et al., *Emotion Assessment using the NIH Toolbox, Neurology*, in press. This manuscript describes measure development studies undertaken (e.g., expert panels for content development and validation; cognitive interviews; small and large-scale pilot testing) and psychometric characteristics (e.g., internal consistency and test-retest reliability; convergent and divergent validity).

Section 3: Norming

NIH Toolbox conducted a large national standardization study in both English and Spanish languages to allow for normative comparisons on each assessment. A sample of 4,859 participants, ages 3-85 – representative of the U.S. population based on gender, ethnicity, race, and socioeconomic status – was administered all of the NIH Toolbox measures at sites around the country (n = 2,917 English-speaking children, ages 3-17; n = 496 Spanish-speaking children, ages 3-7; n = 1,038 English-speaking adults, ages 18-85; n = 408 Spanish-speaking adults, ages 18-85). NIH Toolbox normative scores are now available for each year of age from 3 through 17, as well as for age ranges 18-29, 30-39, 40-49, 50-59, 60-69, and 70-85, allowing for targeted and accurate comparisons to the U.S. population.

Specifics regarding NIH Toolbox norming sampling methods (e.g., stratification by age, gender, and language preference; sampling a minimum of 25-100 individuals per targeted demographic and language subgroup) and norming analytic methods (e.g., post-stratification adjustment using iterative proportional fitting, i.e., “raking”) can be found in the following publication: Beaumont et al., Norming Plans for the NIH Toolbox, *Neurology*, in press.

Section 4: NIH Toolbox and the National Children’s Study (NCS)

In collaboration with NIH Toolbox scientists, NCS investigators selected measures from PROMIS and NIH Toolbox for a Maternal Health Profile, the Maternal Self-Reported Health Battery. This profile assesses Physical Health (Physical function, Fatigue, Sleep disturbance, Sleep-related impairment), Mental Health (Anger, Anxiety, Depression, Positive affect, Perceived stress, Self-efficacy), and Social Health (Social support and companionship, Social isolation). The Maternal Self-Reported Health Battery was field tested in fall 2011, using an online sample of 1000 women (200 pre-conception, 150 pregnant women (50 per trimester), and 650 mothers with a child between 0-36 months of age). In addition, NIH Toolbox norming was jointly sponsored by the NCS and included: 3,413 children in single-year age bands (from 3-17 years); 1,446 adults in seven age bands, including the mothers of children also being tested; and 105 pregnant women. The NIH Toolbox sampling plan matched distributions of race/ethnicity and level of education for each age band.

Section 5: Domain Definition

Domain: EMOTION

Emotion refers to any strong feelings, as of joy, sorrow, or fear. Emotion is an affective state of consciousness in which joy, sorrow, fear, hate, or the like, is experienced, as distinguished from cognitive and volitional states of consciousness. Emotions can be negative and distressing, or positive emotions can be reflections of well-being in our lives, and positive social relationships can buffer stress and enhance health. The NIH Toolbox Emotion domain includes four major subdomains: Psychological Well-Being, Negative Affect, Stress and Self-Efficacy, and Social Relationships. Measures include both self-report and, for certain ages, parent-report versions.

PSYCHOLOGICAL WELL-BEING

POSITIVE AFFECT

Measured by:

NIH Toolbox Positive Affect Survey

LIFE SATISFACTION

Measured by:

NIH Toolbox General Life Satisfaction Survey

NIH Toolbox Domain-Specific Life Satisfaction Survey (Supplemental Measure)

MEANING AND PURPOSE

Measured by:

NIH Toolbox Meaning and Purpose Survey

NEGATIVE AFFECT

ANGER

Measured by:

NIH Toolbox Anger-Affect Survey

NIH Toolbox Anger-Hostility Survey

NIH Toolbox Anger-Physical Aggression Survey

NIH Toolbox Anger Survey

FEAR

Measured by:

NIH Toolbox Fear-Affect Survey

NIH Toolbox Fear-Somatic Arousal Survey

NIH Toolbox Fear-Over Anxious Survey

NIH Toolbox Fear Survey

NIH Toolbox Fear-Separation Anxiety Survey

SADNESS

Measured by:

NIH Toolbox Sadness Survey

NIH Toolbox Apathy Survey (Supplemental Measure)

STRESS AND SELF-EFFICACY

PERCEIVED STRESS

Measured by:

NIH Toolbox Perceived Stress Survey

SELF-EFFICACY

Measured by:

NIH Toolbox Self-Efficacy Survey

COPING STRATEGIES

Measured by:

NIH Toolbox Emotion Control Survey (Supplemental Measure)

SOCIAL RELATIONSHIPS

PERCEIVED SOCIAL SUPPORT

Measured by:

NIH Toolbox Emotional Support Survey

NIH Toolbox Instrumental Support Survey

NIH Toolbox Maternal Relationship Survey (Supplemental Measure)

NIH Toolbox Paternal Relationship Survey (Supplemental Measure)

NIH Toolbox Positive Parental Relationship Survey (Supplemental Measure)

NIH Toolbox Negative Parental Relationship Survey (Supplemental Measure)

COMPANIONSHIP

Measured by:

NIH Toolbox Friendship Survey

NIH Toolbox Loneliness Survey

NIH Toolbox Social Withdrawal Survey

NIH Toolbox Positive Peer Interaction Survey

SOCIAL DISTRESS

Measured by:

NIH Toolbox Perceived Rejection Survey

NIH Toolbox Perceived Hostility Survey

NIH Toolbox Peer Rejection Survey

NIH Toolbox Sibling Rejection Survey (Supplemental Measure)

POSITIVE SOCIAL DEVELOPMENT

Measured by:

NIH Toolbox Empathic Behaviors Survey

EMOTION Batteries

There are two NIH Toolbox Emotion Batteries – a self-report battery and a parent-report battery. The self-report battery is available for ages 8-85 and includes all age-specified measures in the Psychological Well-Being, Negative Affect, Stress and Self-Efficacy, and Social Relationships domains, as indicated. The parent-report battery is available for ages 3-12 and includes all age-specified measures in the Psychological Well-Being, Negative Affect, Stress and Self-Efficacy, and Social Relationships domains, as indicated. There are individual scores provided for each individual battery measure, as described, but no composite scores.

Section 6: Subdomain and Subdomain Component Definitions

Subdomain: STRESS AND SELF-EFFICACY

Stress and Self-Efficacy focus on individual perceptions about the nature of events and their relationship to the perceived coping resources of an individual. In general, psychological stress is said to occur when an individual perceives that environmental or internal demands that are

personally meaningful exceed his/her adaptive capacity. NIH Toolbox assesses three areas related to stress and adaptive capacity: Perceived Stress, Self-Efficacy, and Emotion Control.

Subdomain Component: SELF-EFFICACY

Self-Efficacy can be described as a person's belief in his/her capacity to manage functioning and have control over meaningful events. In NIH Toolbox, Self-Efficacy is measured by:

NIH Toolbox Self-Efficacy Survey

Section 7: Measure Description

EMOTION Core Measure

The NIH Toolbox Self-Efficacy Survey is a self-report measure administered to ages 8-85, as well as a parent-report measure for ages 8-12. Both versions are administered as computer-adaptive tests. It assesses respondents' sense of global self-efficacy.

Section 8: Post-Validation/Post-Norming Changes to the Measure

In addition to those changes previously reported on during the measure's development and validation phases (Salsman et al., Emotion Assessment Using the NIH Toolbox, *Neurology*, in press), the following changes have been made to this measure:

Response option changes (18-85 Self Report, 13-17 Self Report, 8-12 Self Report, 8-12 Parent Report):

New response options: Ordinal response set; items have a 5-point response scale, with options ranging from "never" to "very often".

Rationale for change: To be consistent with the Perceived Stress Survey response option set.

Item-level changes (18-85 Self Report, 13-17 Self Report, 8-12 Self Report, 8-12 Parent Report):

Item wording changed from: Please *rate* (8th grade level) the sentences below for how true each was of you in general.

Item wording changed to: Please read the sentences below and decide (4th grade level) how true each was of you in general.

Rationale for change: Improved readability.

Item-level changes (18-85 Self Report, 13-17 Self Report):

Item wording changed from: I can remain calm when facing difficulties because I can rely on my *coping* (10th grade level) abilities.

Item wording changed to: I can remain calm when facing difficulties because I can *handle* (6th grade level) them (This is also the current wording for the parallel item in the 8-12 Self-Report version.)

Rationale for change: Improved readability; consistency across versions.

Item-level changes (18-85 Self Report):

Item wording changed from: Thanks to my resourcefulness (13th grade level), I know how to handle unforeseen (8th grade level) situations.

Item wording changed to: Thanks to my talents and skills, I know how to handle unexpected (4th grade level) situations. (This is also the current wording for the parallel item in the 8-12 Self-Report version.)

Item wording changed from: When I am confronted (10th grade level) with a problem, I can usually find several solutions.

Item wording changed to: When I have a problem, I can usually find several ways to solve it (4th grade level). (This is also the current wording for the parallel item in the 13-17 Self-Report and 8-12 Self-Report versions.)

Item wording changed from: I can solve most problems if I *invest* (12th grade level) the necessary effort.

Item wording changed to: I can solve most problems if I try hard enough (4th grade level). (This is also the current wording for the parallel item in the 8-12 Self-Report version.)

Rationale for changes: Improved readability; consistency with parallel items in other versions of the measure.

Item-level changes (13-17 Self Report, 8-12 Self Report, 8-12 Parent Report):

Item context changed from: Please read the sentence and decide how true it was of you in the past 3 months.

Item context changed to: In the past month.

Rationale for change: Harmonizes item contexts within the subdomain; is consistent with the Perceived Stress Survey's item context.

Section 9: The Measure's Scoring Model

Measurement theory applied for scoring:

Rasch/Item Response Theory (IRT)

Rasch/IRT model employed:

Graded Response Model

Measure length:

Variable (computer-adaptive test, 8-85 Self Report)

Variable (computer-adaptive test, 8-12 Parent Report)

Response data:

Ordinal (items have a 5-point response scale; options range from “never” to “very often”)

Scores computed/available*:

Rasch/IRT Theta Score

Age-Adjusted Scale Score (mean=50, standard deviation=10)

Fully Adjusted Scale Score (mean=50, standard deviation=10)

Unadjusted Scale Score (mean=50, standard deviation=10)

National Percentile Rank (corresponds to the Age-Adjusted Scale Score)

*Details on these scores and their interpretations are available in the NIH Toolbox Scoring and Interpretation Guide.

Section 10: Measure Norms-18-85 Self Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (18-29, 30-39, 40-49, 50-59, 60-69, 70-85, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (18-29, 30-39, 40-49, 50-59, 60-69, 70-85, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (18-29, 30-39, 40-49, 50-59, 60-69, 70-85)

Table 1. NIH Toolbox Self Efficacy 18-85 by Age Group	Self-Efficacy (theta)			Self Efficacy 18-85 Unadjusted Scale Score			Self Efficacy 18-85 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	0			0			0		
9	0			0			0		
10	0			0			0		
11	0			0			0		
12	0			0			0		
13	0			0			0		
14	0			0			0		
15	0			0			0		
16	0			0			0		
17	0			0			0		
18 - 29	262	0.19	1.88	262	52.29	18.71	257	49.78	18.20
30 - 39	304	-0.02	1.40	304	50.30	13.68	292	49.93	14.30
40 - 49	248	-0.04	1.58	248	50.10	15.59	235	50.08	15.83
50 - 59	189	0.07	1.81	189	51.18	17.34	174	49.75	17.98
60 - 69	163	0.01	1.71	163	50.43	16.62	152	49.81	17.44
70 - 85	237	-0.18	1.19	237	48.79	11.82	214	50.06	12.50
All	1403	0.03	1.60	1403	50.74	15.72	1324	49.89	15.99

Table 2. NIH Toolbox Self-Efficacy (theta) – NCS Sample of Mothers		English	Spanish	All
	N	81	34	115
	Mean	0.03	-0.08	-0.00
	Standard Deviation	1.00	1.04	1.01
	Minimum Observed	-2.00	-1.57	-2.00
	25th Percentile	-0.62	-0.98	-0.78
	50th Percentile (Median)	-0.09	-0.14	-0.09
	75th Percentile	0.67	0.63	0.64
	Maximum Observed	1.84	1.84	1.84

Table 2. NIH Toolbox Self-Efficacy (theta) – NCS Sample of Pregnant Women		English	Spanish	All
	N	82	43	125
	Mean	-0.07	-0.02	-0.05
	Standard Deviation	0.81	1.02	0.88
	Minimum Observed	-2.60	-1.70	-2.60
	25th Percentile	-0.64	-0.86	-0.71
	50th Percentile (Median)	-0.19	-0.20	-0.20
	75th Percentile	0.52	0.66	0.56
	Maximum Observed	1.84	1.84	1.84

Figure 1
Least Squares Means



Section 11: Measure Norms-13-17 Self Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (13, 14, 15, 16, 17, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (13, 14, 15, 16, 17, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (13, 14, 15, 16, 17)

Table 1. NIH Toolbox Self Efficacy 13-17 by Age Group	Self-Efficacy (theta)			Self Efficacy 13-17 Unadjusted Scale Score			Self Efficacy 13-17 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	0			0			0		
9	0			0			0		
10	0			0			0		
11	0			0			0		
12	0			0			0		
13	218	0.10	0.55	218	50.97	5.50	210	49.90	5.53
14	234	-0.04	0.47	234	49.67	4.80	226	49.94	4.74
15	222	-0.03	0.56	222	49.69	5.64	216	50.00	5.72
16	214	0.04	0.57	214	50.46	5.77	204	49.88	5.59
17	224	0.16	0.55	224	51.62	5.54	216	49.89	5.74
18 - 29	0			0			0		
30 - 39	0			0			0		
40 - 49	0			0			0		
50 - 59	0			0			0		
60 - 69	0			0			0		
70 - 85	0			0			0		
All	1112	0.04	0.54	1112	50.49	5.46	1072	49.92	5.46

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 13		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	115	103	218	0	0	0	115	103	218
	Mean	0.20	-0.09	0.10				0.20	-0.09	0.10
	Standard Deviation	0.61	0.46	0.55				0.61	0.46	0.55
	Minimum Observed	-3.11	-2.02	-3.11				-3.11	-2.02	-3.11
	25th Percentile	-0.58	-0.70	-0.67				-0.58	-0.70	-0.67
	50th Percentile (Median)	0.12	-0.23	0.02				0.12	-0.23	0.02
	75th Percentile	0.83	0.49	0.75				0.83	0.49	0.75
	Maximum Observed	2.11	2.11	2.11				2.11	2.11	2.11

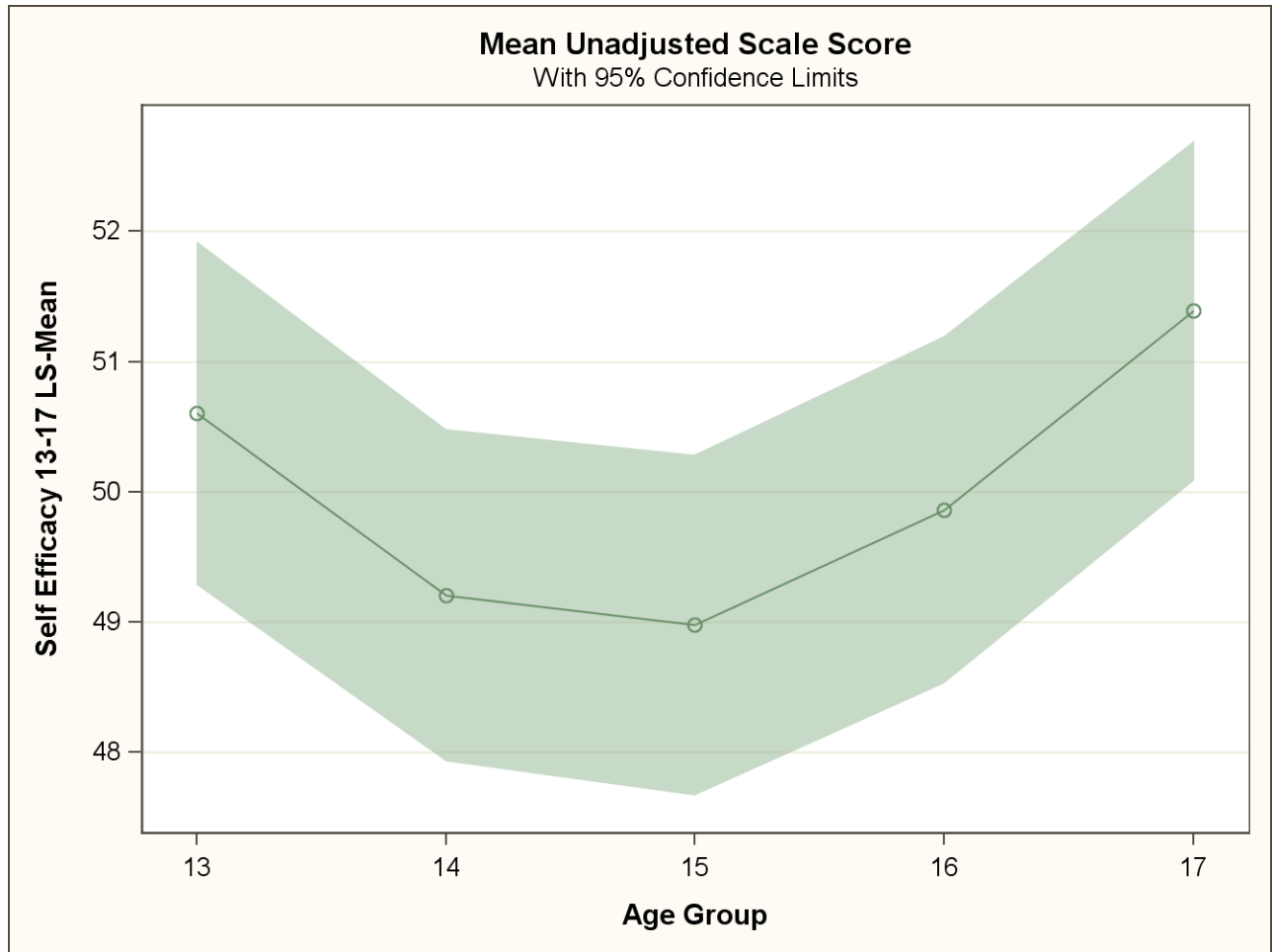
Table 2. NIH Toolbox Self-Efficacy (theta) – Age 14		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	113	121	234	0	0	0	113	121	234
	Mean	-0.03	-0.04	-0.04				-0.03	-0.04	-0.04
	Standard Deviation	0.49	0.45	0.47				0.49	0.45	0.47
	Minimum Observed	-2.31	-2.87	-2.87				-2.31	-2.87	-2.87
	25th Percentile	-0.54	-0.68	-0.61				-0.54	-0.68	-0.61
	50th Percentile (Median)	-0.09	-0.11	-0.11				-0.09	-0.11	-0.11
	75th Percentile	0.46	0.54	0.47				0.46	0.54	0.47
	Maximum Observed	2.11	2.11	2.11				2.11	2.11	2.11

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 15		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	111	111	222	0	0	0	111	111	222
	Mean	0.17	-0.32	-0.03				0.17	-0.32	-0.03
	Standard Deviation	0.52	0.57	0.56				0.52	0.57	0.56
	Minimum Observed	-2.00	-3.74	-3.74				-2.00	-3.74	-3.74
	25th Percentile	-0.36	-1.04	-0.69				-0.36	-1.04	-0.69
	50th Percentile (Median)	0.22	-0.27	0.04				0.22	-0.27	0.04
	75th Percentile	0.76	0.28	0.71				0.76	0.28	0.71
	Maximum Observed	2.11	2.11	2.11				2.11	2.11	2.11

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 16		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	107	107	214	0	0	0	107	107	214
	Mean	0.19	-0.19	0.04				0.19	-0.19	0.04
	Standard Deviation	0.60	0.52	0.57				0.60	0.52	0.57
	Minimum Observed	-2.26	-2.54	-2.54				-2.26	-2.54	-2.54
	25th Percentile	-0.43	-0.68	-0.49				-0.43	-0.68	-0.49
	50th Percentile (Median)	0.11	-0.29	0.01				0.11	-0.29	0.01
	75th Percentile	0.76	0.34	0.61				0.76	0.34	0.61
	Maximum Observed	2.11	2.11	2.11				2.11	2.11	2.11

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 17		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	111	113	224	0	0	0	111	113	224
	Mean	0.15	0.17	0.16				0.15	0.17	0.16
	Standard Deviation	0.63	0.47	0.55				0.63	0.47	0.55
	Minimum Observed	-3.12	-1.66	-3.12				-3.12	-1.66	-3.12
	25th Percentile	-0.34	-0.60	-0.39				-0.34	-0.60	-0.39
	50th Percentile (Median)	0.03	0.03	0.03				0.03	0.03	0.03
	75th Percentile	0.75	0.80	0.75				0.75	0.80	0.75
	Maximum Observed	2.11	2.11	2.11				2.11	2.11	2.11

Figure 1
Least Squares Means



Section 12: Measure Norms-8-12 Self Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (8, 9, 10, 11, 12, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (8, 9, 10, 11, 12, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (8, 9, 10, 11, 12)

Table 1. NIH Toolbox Self Efficacy 8-12 by Age Group	Self-Efficacy (theta)			Self Efficacy 8-12 Unadjusted Scale Score			Self Efficacy 8-12 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	178	-0.11	0.63	178	48.82	6.32	170	50.09	6.50
9	199	-0.01	0.58	199	49.84	5.89	188	49.94	5.80
10	226	-0.05	0.50	226	49.57	5.08	209	50.23	5.19
11	213	0.18	0.49	213	52.00	4.93	201	50.05	5.04
12	216	0.11	0.43	216	51.23	4.42	206	50.21	4.57
13	0			0			0		
14	0			0			0		
15	0			0			0		
16	0			0			0		
17	0			0			0		
18 - 29	0			0			0		
30 - 39	0			0			0		
40 - 49	0			0			0		
50 - 59	0			0			0		
60 - 69	0			0			0		
70 - 85	0			0			0		
All	1032	0.03	0.53	1032	50.34	5.35	974	50.11	5.40

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 8		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	90	88	178	0	0	0	90	88	178
	Mean	-0.15	-0.06	-0.11				-0.15	-0.06	-0.11
	Standard Deviation	0.70	0.54	0.63				0.70	0.54	0.63
	Minimum Observed	-2.86	-2.48	-2.86				-2.86	-2.48	-2.86
	25th Percentile	-0.87	-0.74	-0.82				-0.87	-0.74	-0.82
	50th Percentile (Median)	-0.25	-0.14	-0.24				-0.25	-0.14	-0.24
	75th Percentile	0.74	0.58	0.58				0.74	0.58	0.58
	Maximum Observed	2.21	2.21	2.21				2.21	2.21	2.21

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 9		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	100	99	199	0	0	0	100	99	199
	Mean	0.07	-0.13	-0.01				0.07	-0.13	-0.01
	Standard Deviation	0.64	0.50	0.58				0.64	0.50	0.58
	Minimum Observed	-2.19	-3.24	-3.24				-2.19	-3.24	-3.24
	25th Percentile	-0.61	-0.78	-0.77				-0.61	-0.78	-0.77
	50th Percentile (Median)	0.03	-0.13	-0.05				0.03	-0.13	-0.05
	75th Percentile	0.84	0.57	0.80				0.84	0.57	0.80
	Maximum Observed	2.21	2.21	2.21				2.21	2.21	2.21

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 10		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	116	110	226	0	0	0	116	110	226
	Mean	-0.14	0.10	-0.05				-0.14	0.10	-0.05
	Standard Deviation	0.49	0.51	0.50				0.49	0.51	0.50
	Minimum Observed	-2.75	-2.76	-2.76				-2.75	-2.76	-2.76
	25th Percentile	-0.60	-0.61	-0.60				-0.60	-0.61	-0.60
	50th Percentile (Median)	-0.21	0.04	-0.16				-0.21	0.04	-0.16
	75th Percentile	0.34	0.69	0.46				0.34	0.69	0.46
	Maximum Observed	2.21	2.21	2.21				2.21	2.21	2.21

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 11		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	105	108	213	0	0	0	105	108	213
	Mean	0.24	0.10	0.18				0.24	0.10	0.18
	Standard Deviation	0.51	0.46	0.49				0.51	0.46	0.49
	Minimum Observed	-1.52	-2.30	-2.30				-1.52	-2.30	-2.30
	25th Percentile	-0.42	-0.60	-0.43				-0.42	-0.60	-0.43
	50th Percentile (Median)	0.11	0.13	0.12				0.11	0.13	0.12
	75th Percentile	0.67	0.60	0.64				0.67	0.60	0.64
	Maximum Observed	2.21	2.21	2.21				2.21	2.21	2.21

Table 2. NIH Toolbox Self-Efficacy (theta) – Age 12		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	101	115	216	0	0	0	101	115	216
	Mean	0.20	-0.01	0.11				0.20	-0.01	0.11
	Standard Deviation	0.50	0.36	0.43				0.50	0.36	0.43
	Minimum Observed	-2.48	-1.65	-2.48				-2.48	-1.65	-2.48
	25th Percentile	-0.48	-0.55	-0.49				-0.48	-0.55	-0.49
	50th Percentile (Median)	0.18	-0.10	0.04				0.18	-0.10	0.04
	75th Percentile	0.62	0.48	0.60				0.62	0.48	0.60
	Maximum Observed	2.21	2.21	2.21				2.21	2.21	2.21

Figure 1
Least Squares Means



Section 13: Measure Norms-8-12 Parent Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (8, 9, 10, 11, 12, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (8, 9, 10, 11, 12, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (8, 9, 10, 11, 12)

Table 1. NIH Toolbox Self Efficacy Parent 8-12 by Age Group	Self-Efficacy Parent Report (theta)			Self Efficacy Parent 8-12 Unadjusted Scale Score			Self Efficacy Parent 8-12 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	207	-0.07	0.55	207	49.30	5.57	199	50.05	5.55
9	211	0.02	0.54	211	50.21	5.51	200	49.99	5.56
10	234	-0.16	0.52	234	48.46	5.27	216	50.13	5.46
11	214	0.07	0.51	214	50.72	5.17	204	50.12	5.17
12	216	0.19	0.56	216	51.91	5.63	206	49.97	5.62
13	0			0			0		
14	0			0			0		
15	0			0			0		
16	0			0			0		
17	0			0			0		
18 - 29	0			0			0		
30 - 39	0			0			0		
40 - 49	0			0			0		
50 - 59	0			0			0		
60 - 69	0			0			0		
70 - 85	0			0			0		
All	1082	0.01	0.54	1082	50.12	5.46	1025	50.05	5.46

Table 2. NIH Toolbox Self-Efficacy Parent Report (theta) – Age 8		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	105	102	207	0	0	0	105	102	207
	Mean	-0.17	0.07	-0.07				-0.17	0.07	-0.07
	Standard Deviation	0.60	0.49	0.55				0.60	0.49	0.55
	Minimum Observed	-2.95	-2.67	-2.95				-2.95	-2.67	-2.95
	25th Percentile	-0.81	-0.52	-0.69				-0.81	-0.52	-0.69
	50th Percentile (Median)	-0.16	0.15	-0.02				-0.16	0.15	-0.02
	75th Percentile	0.48	0.69	0.55				0.48	0.69	0.55
	Maximum Observed	1.98	1.98	1.98				1.98	1.98	1.98

Table 2. NIH Toolbox Self-Efficacy Parent Report (theta) – Age 9		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	106	105	211	0	0	0	106	105	211
	Mean	-0.07	0.17	0.02				-0.07	0.17	0.02
	Standard Deviation	0.65	0.39	0.54				0.65	0.39	0.54
	Minimum Observed	-2.27	-1.80	-2.27				-2.27	-1.80	-2.27
	25th Percentile	-0.88	-0.32	-0.56				-0.88	-0.32	-0.56
	50th Percentile (Median)	-0.12	0.14	-0.05				-0.12	0.14	-0.05
	75th Percentile	0.75	0.70	0.72				0.75	0.70	0.72
	Maximum Observed	1.98	1.98	1.98				1.98	1.98	1.98

Table 2. NIH Toolbox Self-Efficacy Parent Report (theta) – Age 10		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	118	116	234	0	0	0	118	116	234
	Mean	-0.23	-0.04	-0.16				-0.23	-0.04	-0.16
	Standard Deviation	0.60	0.42	0.52				0.60	0.42	0.52
	Minimum Observed	-2.95	-2.55	-2.95				-2.95	-2.55	-2.95
	25th Percentile	-1.02	-0.68	-0.83				-1.02	-0.68	-0.83
	50th Percentile (Median)	-0.26	-0.05	-0.14				-0.26	-0.05	-0.14
	75th Percentile	0.36	0.55	0.41				0.36	0.55	0.41
	Maximum Observed	1.98	1.98	1.98				1.98	1.98	1.98

Table 2. NIH Toolbox Self-Efficacy Parent Report (theta) – Age 11		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	107	107	214	0	0	0	107	107	214
	Mean	0.05	0.10	0.07				0.05	0.10	0.07
	Standard Deviation	0.51	0.51	0.51				0.51	0.51	0.51
	Minimum Observed	-2.24	-2.28	-2.28				-2.24	-2.28	-2.28
	25th Percentile	-0.48	-0.55	-0.48				-0.48	-0.55	-0.48
	50th Percentile (Median)	0.03	0.11	0.11				0.03	0.11	0.11
	75th Percentile	0.60	0.82	0.67				0.60	0.82	0.67
	Maximum Observed	1.98	1.98	1.98				1.98	1.98	1.98

Table 2. NIH Toolbox Self-Efficacy Parent Report (theta) – Age 12		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	100	116	216	0	0	0	100	116	216
	Mean	0.16	0.23	0.19				0.16	0.23	0.19
	Standard Deviation	0.67	0.44	0.56				0.67	0.44	0.56
	Minimum Observed	-2.82	-1.68	-2.82				-2.82	-1.68	-2.82
	25th Percentile	-0.73	-0.21	-0.52				-0.73	-0.21	-0.52
	50th Percentile (Median)	0.11	0.25	0.20				0.11	0.25	0.20
	75th Percentile	1.16	0.83	0.94				1.16	0.83	0.94
	Maximum Observed	1.98	1.98	1.98				1.98	1.98	1.98

Figure 1
Least Squares Means

