


NIH Toolbox
Assessment of Neurological and Behavioral Function

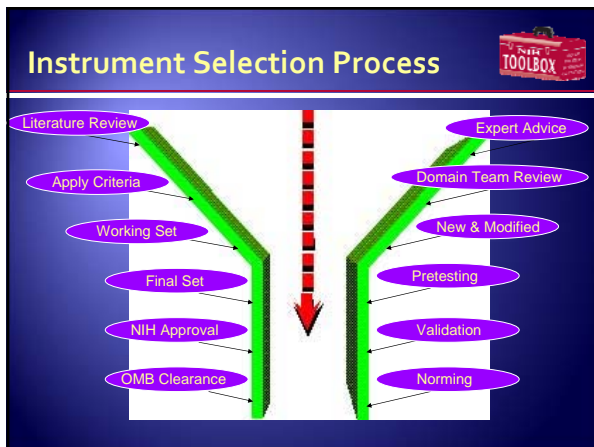
“Instrument Selection”

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For more information, please visit www.nihtoolbox.org
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Selection Criteria



- Applicable across the age span
- No intellectual property concerns
- Psychometrically sound
- Brief, easy to use
- Applicable in variety of settings and with different subgroups
- Preference for instruments already validated and normed for ages 3 - 85

Test Selection Process



- Candidate measures (Toolbox Library = 1,391) generated from literature review and expert input (requests for information, interviews, team meetings)
- Measures systematically reviewed

Initial Exclusions (Cog)



- Self-Report, Proxy (for adults), Clinician-Rated
- Commercial instruments (IP Rights/purchase required)
- Screening/global measures (e.g., "Brief" measures, anything that assesses impairment vs. non-impairment)
- Disease-or Population-Specific (e.g., Alzheimer's, Aged/Elderly, etc.)

Results of these Activities



- Instrument recommendations for constructs
- Draft development plans established for about 50 different measures

The Process Continues. . .



- Instrument development
- Pre-testing and piloting of new items and instruments
- Concurrent validation of new instruments with industry "Gold Standards"
- Selection of final instruments for norming

Selection Challenges



- Most compatible for use in non-standard locations (Home)
- Dynamic/adaptable over time
- Stand-alone use by those selecting only some instruments
- Robust with ethnic and racial minorities

Additional Review



- Translatability (Spanish)
- Accessibility Issues (508)
- Pediatric Approach (Ages 3-6)
- Geriatric Needs (Ages 80-85)
- NIH Project Team Review (Contract)


Toolbox Criteria

Cognition Instruments

Executive Function	Episodic Memory	Language
<ul style="list-style-type: none"> • Flanker Task • Self-Ordered Point • Card Sorting 	<ul style="list-style-type: none"> • Imitation-Based Assessment of Memory 	<ul style="list-style-type: none"> • Vocabulary-Comprehension • Reading-Decoding
Processing Speed	Attention	Working Memory
<ul style="list-style-type: none"> • Pattern Comp Task 	<ul style="list-style-type: none"> • Flanker Task 	<ul style="list-style-type: none"> • Complex Span Task

Emotion Instruments

Positive Affect	Negative Affect	Stress and Coping	Social Relationships
<ul style="list-style-type: none"> • Happiness • Life Satisfaction • Well-Being 	<ul style="list-style-type: none"> • Sadness • Fear • Anger • General Distress • Apathy 	<ul style="list-style-type: none"> • Perceived Stress • Coping Strategy • Coping Self-efficacy 	<ul style="list-style-type: none"> • Social Support • Social Network • Integration • Loneliness




Motor

Instruments

<p>Endurance</p> <ul style="list-style-type: none"> • 2 & 3 Minute Walk Test 	<p>Locomotion</p> <ul style="list-style-type: none"> • 8 & 10 Foot Walks 	<p>Strength</p> <ul style="list-style-type: none"> • Grip Strength • Electronic Muscle Strength-Lower Extremity 	<p>Dexterity</p> <ul style="list-style-type: none"> • 9-Hole Peg Test 	<p>Balance <i>(Non-vestibular)</i></p> <ul style="list-style-type: none"> • Single Leg Stance
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Sensation

Instruments

<p>Olfaction</p> <ul style="list-style-type: none"> • San Diego/Brief Odor Identification • Alcohol Sniff Test 	<p>Taste</p> <ul style="list-style-type: none"> • Sucrose Preference • Beaver Dam Taste • Quinine Perception • PROP Sensitivity 	<p>Vestibular Balance</p> <ul style="list-style-type: none"> • Dynamic Visual Acuity • Sensory Integration for Balance • Vestibular Ocular Reflex Suppression
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Sensation

Instruments

<p>Audition</p> <ul style="list-style-type: none"> • Pure-Tone Audiometry • Word in Noise • Hearing Inventory • Tympanometry 	<p>Somatosensation</p> <ul style="list-style-type: none"> • Body Part -Pain • Wrist Position • Heat Perception • Texture Discrimination • Sensory Feedback 	<p>Vision</p> <ul style="list-style-type: none"> • Visual Acuity Test • Vision-specific HRQL • Motion Detection Perimetry
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Conclusions



- A wide net was cast to identify potential instruments.
- Application of criteria & expert opinion narrowed the field.
- Many new or modified instruments became necessary.
- Pre-testing and piloting are refining these instruments.
- Extensive validation will result in final instruments.



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