



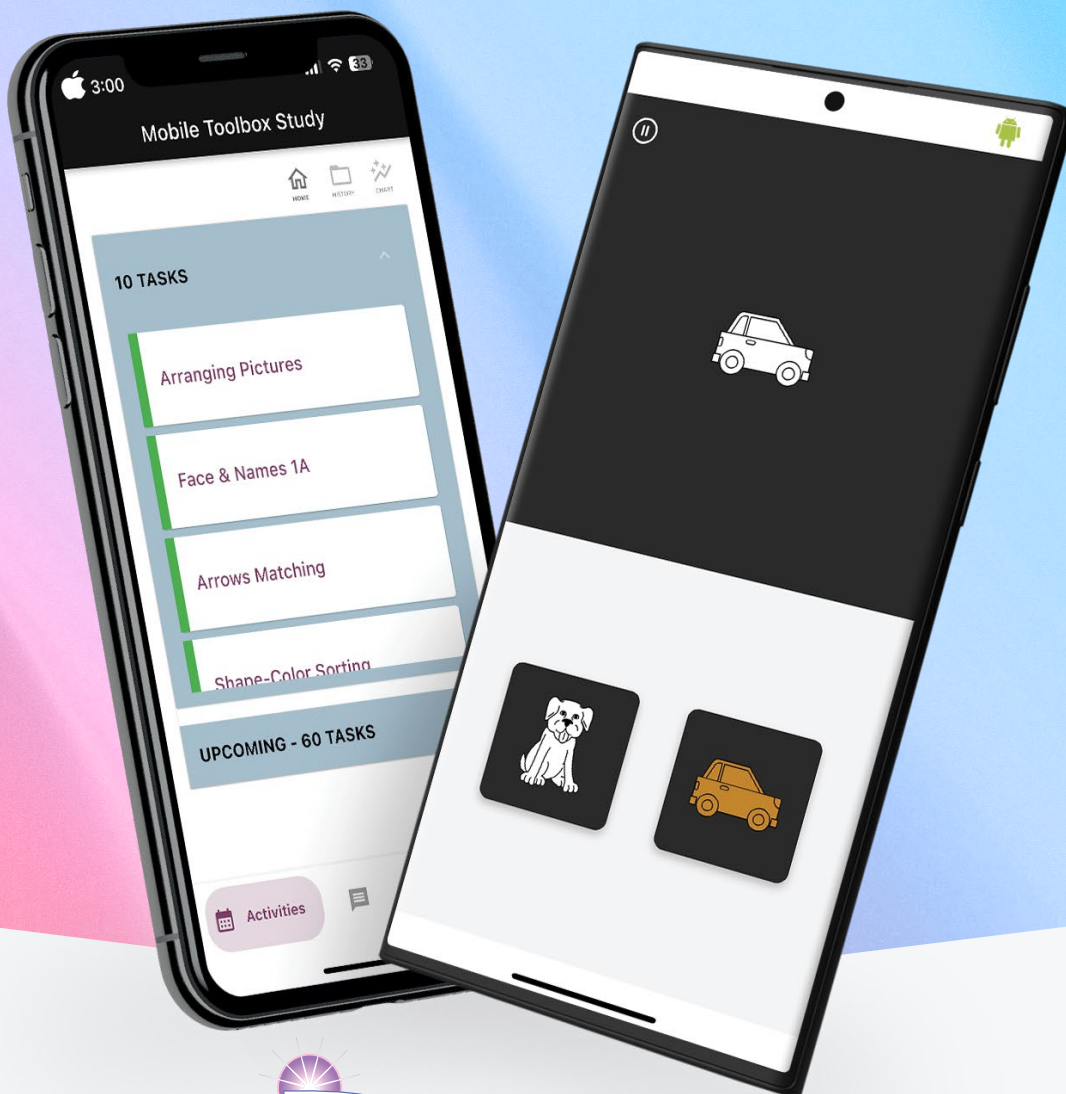
MOBILE TOOLBOX

Measuring Cognitive and Functional Change with Remote Self-Administered Assessments

For ages 18+

Cognition

Emotion



mobiletoolbox.org



The Mobile Toolbox leverages large-scale accessibility of smartphones by offering clinical and non-clinical researchers a library of well-validated, easy-to-use, standardized smartphone measures and remote assessment software. Our partnership with REDCap and their companion MyCap App makes the assessment library widely accessible and provides a study management and administration system familiar to researchers.

Available Cognitive Tests in English and Spanish:

Language



Spelling ⌚ 4 min

spell |

This task assesses the ability to spell words administered in a computer-adaptive test format. Respondents listen to audio clips and, using the keyboard, enter the corresponding letters to spell the word, completing a maximum of 30 items.

Associative Memory



Faces and Names ⌚ 6 min

This is a two-part test that targets associative memory function. Respondents are first presented with an encoding task and then prompted to recall a series of face-name associations after a 5- to 20-minute delay.

Language



Word Meaning ⌚ 2 min

This is a computer adaptive test that measures general vocabulary knowledge. Respondents select the word that most closely matches the meaning of a target word, completing a maximum of 25 items.

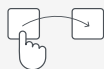
Attention, Executive Function



Arrow Matching ⌚ 3 min

This measure targets inhibitory control and attention. This measure requires respondents to indicate the left-right orientation of a centrally presented stimulus while inhibiting attention to potentially incongruent stimuli that surround it.

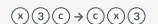
Episodic Memory



Arranging Pictures ⌚ 5 min

This measure examines episodic memory. A series of images is presented in a specific order on the screen. Following this presentation, the images are scrambled, and the respondent is asked to recall the original order and place the images accordingly.

Working Memory



Sequences ⌚ 5 min

This is a measure of working memory. It requires a participant to remember a string of letters and numbers and manipulate them to put them in alphabetical and numeric order.

Executive Function



Shape-Color Sorting ⌚ 3 min

This measure targets cognitive flexibility. Images are presented that vary along two dimensions (color and shape) and respondents are asked to sort images based on one of the dimensions.

Processing Speed



Number-Symbol Match ⌚ 2 min

This measure assesses processing speed. Respondents are asked to match numbers with specific symbols using a digit/symbol key. They are given 90 seconds to correctly match as many number-symbol pairs as they can.

The Mobile Toolbox will soon include measures from the following assessment systems.



Patient Reported Outcomes Measurement Information System (PROMIS®)

A set of self-reported measures of global, physical, mental, and social health for adults in the general population and those living with a chronic condition.



NIH Toolbox® Emotion

A set of self-reported measures assessing critical domains of emotional health including psychological well-being, stress and self-efficacy, social relationships and negative affect for use with adults.



Quality of Life in Neurological Disorders (Neuro-QoL™)

A self-report measurement system that evaluates and monitors the physical, mental, and social effects experienced by those living with neurological conditions.

International Cognitive Ability Resource (ICAR)

Additional measures to be released in 2026

Mental Rotation



Block Rotation

This task assesses the ability to mentally rotate a spatial representation of a 3D object.

🕒 15 min 📄 Validation in progress

Fluid Reasoning



Puzzle Completion

This task assesses the ability to identify patterns and solve novel problems.

🕒 15 min 📄 Validation in progress

Fluid Reasoning

2, 4, 6, 8, ?

Letters and Numbers

This task assesses pattern recognition and quantitative reasoning.

🕒 7 min 📄 Validation in progress

General Knowledge and Verbal Reasoning

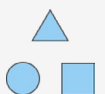


Word Problems

This task assesses verbal reasoning and acquired knowledge.

🕒 10 min 📄 Validation in progress

Overall Cognitive Ability



Variety Test

Also known as the ICAR16 Sample Test, this task assesses a range of cognitive abilities including verbal and nonverbal reasoning, mental rotation, and acquired knowledge.

🕒 15 min 📄 Validation in progress



MOBILE TOOLBOX

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The Mobile Toolbox team includes measurement scientists, clinicians, cognition researchers, and technical experts with a proven history of success in multiple large-scale validation and development projects.

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Sponsors

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