

Cognitive Task Overview: TestMyBrain Digit Symbol Matching

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TMB Test Name: TestMyBrain Digit Symbol Matching

Test Demo: [standard version](#)

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The Many Brains Project

[The Many Brains Project](#) is a US-based 501(c)3 non-profit focused on the development of digital cognitive testing tools. We currently support many different types of research studies through our infrastructure for cognitive assessment - these range in size from small lab-based pilot studies to large longitudinal, multisite clinical research studies with tens of thousands of participants. As [TestMyBrain.org](#) has been continuously in operation since 2008, we provide a stable and secure platform for hosting and delivering mobile and web-based cognitive assessment protocols. Through TestMyBrain.org, data have been collected from over 2.5 million participants in a *citizen science* framework that includes structured return of research results toward the development, validation, and normative characterization of cognitive measures. We currently support research and education at over 400 sites worldwide as well as support for over 1200 clinicians or clinical sites engaged in remote digital neuropsychological assessment. For more information contact info@manybrains.net.

CITATION

Please credit The Many Brains Project and TestMyBrain in any papers, posters, or publications related to the TMB tests or data collected by TMB tests.

- Example:
 - All tasks were selected from and hosted on The Many Brains Project's web-based cognitive testing platform, TestMyBrain (Germine et al., 2012; The Many Brains Project).
 - Germine, L., Nakayama, K., Duchaine, B. C., Chabris, C. F., Chatterjee, G., & Wilmer, J. B. (2012). Is the Web as good as the lab? Comparable performance from Web and lab in cognitive/perceptual experiments. *Psychonomic Bulletin & Review*, 19(5), 847-857.
 - The Many Brains Project. *TestMyBrain Cognitive Tests*. URL: www.manybrains.net

Test Overview

Background:

TMB Digit Symbol Matching (Chaytor et al., 2021; D'Ardenne et al., 2020; Hartshorne & Germine, 2015; Hawks et al., 2023; Pozo et al., 2022; Singh et al., 2021; Singh et al., 2023) is a processing speed test adapted from the WAIS-III (Wechsler, 1997) for remote, digital administration.

Task Parameters:

Participants are presented with six symbols, each of which is paired with a single digit between 1-3 (i.e., two symbols are paired with each digit). These digit-symbol pairings remain visible throughout the duration of the test. Individual probe symbols are sequentially presented above the digit-symbol pairings, to which participants respond by selecting the corresponding digit as quickly as possible for 90 seconds; each probe symbol remains visible until participants make a response, or until 90 seconds have elapsed from the beginning of the test trials. Participants complete three practice probes before beginning the 90 seconds of test probes.

Primary Outcome:

The suggested primary outcome of the test is median reaction time of correct responses to test probes (medianRTc), a measure of processing speed. Researchers may also consider incorporating response accuracy (proportion of probes correctly matched).

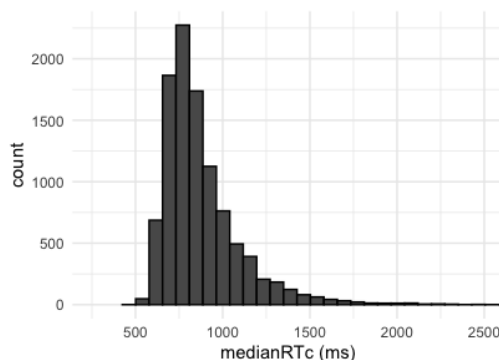
User Input:

Participants respond either by touching the digit that corresponds with each symbol probe (touch compatible devices), or by pressing the corresponding digit on their keyboard.

Alternate Task Versions: Alternate forms of the test are available for repeated administration. Additionally, an ultra-brief, EMA-compatible version is available (Hawks et al., 2023; Singh et al., 2023), which has 30 seconds of test probes instead of 90 seconds.

Psychometrics:

- **Reliability:** In single-session testing, variation in performance (medianRTc) between participants has a split-half reliability of .98. See Hawks et al., 2023 and Singh et al., 2023 for psychometric details of multiple-session EMA administration.
- **Score distribution:**



References:

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