

## Cognitive Task Overview: TestMyBrain Simple Reaction Time

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TMB Test Name: TestMyBrain Simple Reaction Time

Test Demo: [standard version](#)

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## The Many Brains Project

[The Many Brains Project](#), is a 501(c)(3) non-profit that supports TestMyBrain (TMB) in collaboration with the [Laboratory for Brain and Cognitive Health Technology at McLean Hospital](#) and Harvard Medical School. 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 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](http://TestMyBrain.org), data have been collected from over 3.7 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 2,000 sites worldwide engaged in digital neuropsychological assessment.

### 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](http://www.manybrains.net)

# Test Overview

## Background:

TMB Simple Reaction Time (Germine et al., 2022; Rutter et al., 2020; Singh et al., 2021) is a simple reaction time test (Donders, 1969) designed for remote, web-based administration.

## Task Parameters:

On each trial, participants first view a red rectangle with the word “WAIT” printed inside of it. After a delay ranging from 700 ms to 1500 ms (exponentially distributed to avoid response preparation effects), the red rectangle is replaced with a green rectangle containing the text “GO!”. Participants must respond as quickly as possible following the presentation of the green rectangle. A delay of 700 ms occurred between each trial. Participants completed three practice trials and 30 test trials.

## Primary Outcome:

The suggested primary outcome of the test is median reaction time (medianRT), a measure of processing speed.

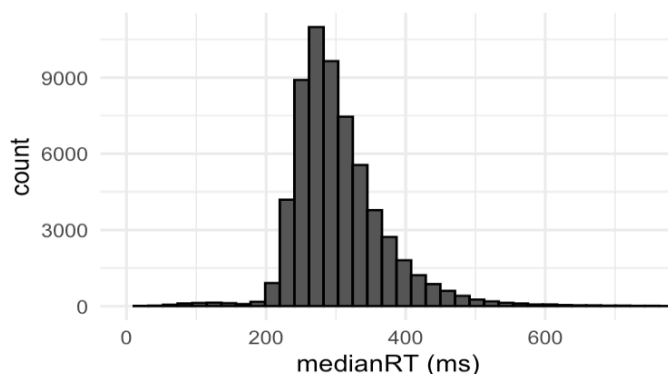
## User Input:

Participants using a keyboard are instructed to use the spacebar to make responses, but input from any key will be accepted as a response. If the participant’s device has touch capability, at the beginning of the test the participant will be given the option to respond using touch input or keyboard input. Otherwise, the participant must use keyboard input.

**Alternate Task Versions:** Alternate forms of the test are available for repeated administration. Additionally, an ultra-brief, EMA-compatible version is available.

## Psychometrics:

- **Reliability:** In single-session testing, variation in performance between participants has a split-half reliability of .97.
- **Score distribution:**



## References:

- Donders, F. C. (1969). On the speed of mental processes. *Acta Psychologica*, 30, 412-431.
- Germine, L. T., Joormann, J., Passell, E., Rutter, L. A., Scheuer, L., Martini, P., ... & Kessler, R. C. (2022). Neurocognition after motor vehicle collision and adverse post-traumatic neuropsychiatric sequelae within 8 weeks: Initial findings from the AURORA study. *Journal of Affective Disorders*, 298, 57-67.
- Rutter, L. A., Vahia, I. V., Forester, B. P., Ressler, K. J., & Germine, L. (2020). Heterogeneous Indicators of Cognitive Performance and Performance Variability Across the Lifespan. *Frontiers in Aging Neuroscience*, 12, 62.
- Singh, S., Strong, R., Xu, I., Fonseca, L. M., Hawks, Z., Grinspoon, E., Jung, L., Li, F., Weinstock, R. S., Sliwinski, M., Chaytor, N., & Germine, L. T. (2023). Ecological Momentary Assessment of Cognition in Clinical and Community Samples: Reliability and Validity Study. *Journal of Medical Internet Research*, 25, e45028.