

**NINDS CDE Notice of Copyright
Mental Rotation**

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| Availability: | The instrument is freely available here: http://hdresearch.ucl.ac.uk/completed-studies/track-hd/ |
| Classification: | Exploratory. |
| Short Description of Instrument: | <p>Summary/ Overview of Instrument: The mental rotation task is a measure of one’s ability to mentally rotate visual stimuli. Participants make judgments about pictures of 3-D objects made of cubes. Two objects are presented at a time. For each pair, the objects are either identical or mirror image reversals of each other. The participant's job is to determine as rapidly as possible whether the objects are the same (i.e., a copy that differs only in rotation angle) or different (i.e., mirror image objects). Whether mirrored or same, the two objects are displaced at various angles ranging from 5 degrees to 305 degrees in 60 degrees steps. Some pairs will be the same image rotated, and others will be mirrored.</p> <p>Construct measured: Visuospatial ability and mental manipulation.</p> <p>Generic vs. disease specific: Generic.</p> <p>Intended use of instrument/ purpose of tool (cross-sectional, longitudinal, diagnostic, etc): Assessment of cognitive function in HD cross-sectional and longitudinal studies.</p> <p>Means of administration (paper and pencil, computerized): Computer (based on a paper/pencil version of the task).</p> <p>Location of administration (clinic, home, telephone, etc): Clinic</p> <p>Intended respondent (patient, caregiver, etc.): Patient.</p> <p># of items: 48 trials of varying rotational displacement.</p> <p># of subscales and names of sub-scales: N/A.</p> <p>Strengths: N/A.</p> <p>Weaknesses: Subjects tend to dislike this task because it seems difficult.</p> <p>Special Requirements for administration: A tablet computer; computer mouse; a holder for the mouse that makes the mouse easier to handle while using the left or right thumbs to respond with the respective mouse buttons; and labels of “Same” and “Different” affixed to the mouse holder that indicate which button corresponds to each response.</p> <p>Administration Time: 8 minutes.</p> <p>Translations available (e.g. Spanish, French, Other languages): Dutch, French, and English.</p> |

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| Psychometric Properties: | <p>Reliability:</p> <p>Test-retest or intra-interview (within rater) reliability (as applicable): N/A.</p> <p>Inter-interview (between-rater) reliability (as applicable): N/A.</p> <p>Internal consistency: N/A.</p> <p>Statistical methods used to assess reliability: N/A.</p> <p>Validity:</p> <p>Content validity: N/A.</p> <p>Construct validity: N/A.</p> <p>Sensitivity to Change/ Ability to Detect Change (over time or in response to an intervention): In TRACK-HD, cross-sectional differences from controls were detected in accuracy for late pre-manifest HD and early HD. Longitudinal data is not currently available.</p> <p>Known Relationships to Other Variables (e.g. gender, education, age, etc): In TRACK-HD, performance was related to age and gender but not education; change in performance relationships to age, gender or education are unknown.</p> <p>Diagnostic Sensitivity and Specificity, if applicable (in general population, HD population- pre-manifest/ manifest, other disease groups): N/A.</p> |
| Scoring: | Scores are the number of trials responded to correctly. |
| References: | <p>Key Reference:</p> <p>Shepard, R.N. & Metzler, J. (1971). Mental rotation of three-dimensional objects. <i>Science</i>, 171, 701-703.</p> <p>Metzler, J. & Shepard, R.N. (1974). Transformational studies of the internal representation of three-dimensional objects. In R L. Solso (Ed.), <i>Theories of cognitive psychology: The Loyola symposium</i> (pp.147-202). Potomac, MD: Lawrence Erlbaum.</p> |