

**NINDS CDE Notice of Copyright  
Grooved Pegboard Test**

<b>Availability:</b>	<b>Available for purchase from Lafayette Instrument:</b> <a href="#">Please click here for the Grooved Pegboard Test</a>
<b>Classification:</b>	Supplemental
<b>Short Description of Instrument:</b>	<p><b>Construct measured:</b> Finger and manual dexterity</p> <p><b>Generic vs. disease specific:</b> Generic</p> <p><b>Intended respondent:</b> Patients 20-85 years old</p> <p><b># of items:</b> 25 pegs</p> <p><b># of subscales and names of sub-scales:</b> N/A</p> <p><b># of items per sub-scale:</b> N/A</p>
<b>Comments/Special instructions:</b>	<p><b>Scoring:</b> For the right hand trial, the examiner demonstrates that the pegs are placed from subject’s left to right, and from right to left for the left hand trial. The dominant hand trial is administered first, followed by the nondominant hand trial. Only one peg is to be picked up at a time and the subject should immediately be told if more than one is picked up. Also, only one hand is to be used. If necessary, the board should be held steady for the patient. In the case of severe motor impairment, the subject should attempt the task just to see if any of the pegs can be put in. Any factor that may effect the subject’s performance should be noted, e.g. sore finger, bandage, etc.</p> <p>Record, in seconds, the length of time required to perform each trial beginning when the subject starts the task until the last peg is put in, or the test is discontinued. A trial may be discontinued after five minutes. In such cases, the difficulty is described and the scores are given “A” flags indicating an incomplete test. The second score is the number of “drops” made during each trial. A “drop” is any unintentional drop of a peg from the time the subject attempts to pick up the peg from the try until it is placed correctly in the hole. If one peg is turned with the hand not being tested, this is noted. If, however, this occurs more than once, the score is given a “D” flag for a nonstandard assessment. The third score is the number of pegs correctly placed in the holes for each trial. For each hand, the three scores are summed (the total time, total number of drops and the total number of pegs correctly placed in the board) to get complete score.</p> <p>The examiner encourages the subject to perform the task as quickly as possible, telling him or her to speed up if necessary. The pegs must be put in the board in the exact order and in the correct direction. The task is performed once with the dominant and then once with the non-dominant hand.</p> <p><b>Background:</b> The Grooved Pegboard is a manipulative dexterity test. This unit consists of 25 holes with randomly positioned slots. Pegs, which have a key along one side, must be rotated to match the hole before the can be inserted. This test requires more complex visual-motor coordination than most pegboards.</p>

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<p><b>Rationale/ Justification:</b></p>	<p><b>Strengths/Weaknesses:</b> The Grooved Pegboard required longer administration time and was challenging for the youngest children and oldest adults.</p> <p><b>Psychometric Properties:</b> The Grooved Pegboard had good test-retest reliability (0.91 and 0.85 for right and left hands, respectively). The Grooved Pegboard correlated with BOT at -0.50 to -0.63 and with Purdue Pegboard at -0.73 to -0.78.</p> <p><b>Administration:</b> Each trial takes seconds; a trial may be discontinued if it takes more than 5 minutes.</p> <p><b>TBI Rationale:</b></p> <p>The GPT is a widely used test of fine motor skill that has proven sensitive to the effects of TBI</p> <p><b>Epilepsy Rationale:</b></p> <p><i>Motor Speed</i></p> <p>Motor speed may be assessed by a variety of procedures including measures of reaction time (Thompson &amp; Trimble, 1983) or more conventional measures of motor speed used in clinical neuropsychological evaluations (Grooved Pegboard, Finger Tapping). While reaction time measures are perhaps extremely pure motor speed measures and have been used in epilepsy research (Thompson &amp; Trimble, 1983), they are not widely used clinically and have limited normative data. More conventional clinical measures have the advantage of familiarity and strong normative databases and are brief and direct in administration time and directions.</p> <p><i>Grooved Pegboard</i> was selected due to its widespread use and its purported greater sensitivity to lateralized brain impairment than other motor speed measures such as finger tapping. Importantly, one of the reasons that finger tapping was not selected is that it has historically been given with various sets of instructions and the timing of each 10 second trial introduces significant measurement error. Grooved pegboard has been effectively used to characterize fine motor speed in multiple epilepsy studies.</p>
<p><b>Reference:</b></p>	<p>Heaton, R.K., Miller, S.W., Taylor, M.J., Grant, I. (2004) Revised Comprehensive Norms for an Expanded Halstead-Reitan Battery: Demographically Adjusted Neuropsychological Norms for African American and Caucasian Adults Profession Manual. Lutz, FL: Psychological Assessment Resources</p> <p>Wang YC, Magasi SR, Bohannon RW, Reuben DB, McCreath HE, Bubela DJ, Gershon RC, Rymer WZ. Assessing dexterity function: a comparison of two alternatives for the NIH toolbox. J Hand Ther 2011 Jul 27 epub.</p>