

Grooved Hole Pegboard

instructions for use

- Measures hand dexterity and fine motor control through timed peg placement
- Features 25 grooved holes for peg insertion
- Users must rotate the grooved pegs to match the hole position to insert each peg
- Use to assess visual-motor coordination and hand speed
- Pegboard conveniently stores pegs when not in use
- Includes pegboard, 25 grooved pegs, and manual



Product Overview

The Baseline® Grooved Hole Pegboard Test is a standardized assessment instrument designed to evaluate complex visual-motor coordination, fine motor control, and manipulative dexterity. This device features a board with 25 holes arranged in a 5x5 configuration, each containing a grooved hole oriented at different angles. The accompanying metal pegs have a corresponding groove along one edge that must be aligned with the hole's groove for successful insertion.

This test requires more sophisticated visual-motor integration than round hole pegboard tasks, as subjects must rotate each peg to match the specific orientation of each hole before insertion. The grooved pegboard provides a sensitive measure of fine motor speed and precision, making it valuable for detecting subtle motor impairments and tracking functional changes over time in clinical populations.

Intended Use

This device is intended for use by qualified healthcare professionals, including occupational therapists, physical therapists, and neuropsychologists, to assess eye-hand coordination and motor speed in clinical, rehabilitation, and research settings. The test results may be used to:

- Evaluate complex motor coordination and manipulative dexterity
- Detect subtle neuromotor impairments
- Monitor motor function during rehabilitation programs
- Assess treatment efficacy in neurological conditions
- Compare individual performance against established normative data

Test Administration Protocol

Equipment Setup and Positioning

Position the pegboard at the edge of a stable table surface, aligned with the subject's midline. The pegboard should be positioned so the peg tray is placed directly above the pegboard. Ensure appropriate lighting conditions and a comfortable, supportive seating arrangement that allows unrestricted arm movement during testing.

pegboard
cavity stores
pegs when
not in use



Standardized Verbal Instructions

The examiner should provide clear, standardized instructions to the subject:

“This is a pegboard and these are the pegs. Each peg has a groove along one side, and each hole in the board also has a groove.”

While demonstrating, pick up one peg and continue:

“All the pegs are identical. To insert a peg, you must match the groove on the peg with the groove in the hole, like this.”

Demonstrate by filling the top row, then remove the pegs and return them to the tray. Provide the final instruction:

“When I say ‘begin,’ insert the pegs as quickly as possible using only your [dominant/non-dominant] hand. Fill the top row completely from this side to this side, moving left to right. Do not skip any holes. Fill each subsequent row the same way. Are you ready? Begin.”

Testing Protocol

Administer separate trials for each hand. For right-hand trials, subjects work from left to right. For left-hand trials, subjects work from right to left. Always assess the dominant hand first, followed by the non-dominant hand. Begin timing when the subject picks up the first peg and stop timing when the final peg is successfully placed.

Critical Administration Guidelines

Adherence to the following protocols ensures standardized administration and valid results:

- Encourage rapid performance while maintaining accuracy in peg orientation
- Pegs must be inserted sequentially in the prescribed order without skipping holes
- Only one peg may be handled at a time
- Only the designated hand may be used during each trial
- The non-tested hand should remain in the subject's lap or be held by the examiner if needed
- Provide orientation cues for the first hole of each new row as needed, particularly during non-dominant hand trials
- Correct the subject immediately if multiple pegs are grasped simultaneously
- The examiner may stabilize the board for subjects with significant motor impairment
- If a peg falls during testing, do not retrieve it during the trial; instead, remove a correctly placed peg (typically the first or second) and continue
- A trial may be discontinued after five minutes. Record incomplete trials with appropriate notation
- Document all factors that may influence performance, including pain, joint limitations, tremor, visual deficits, or other physical impairments

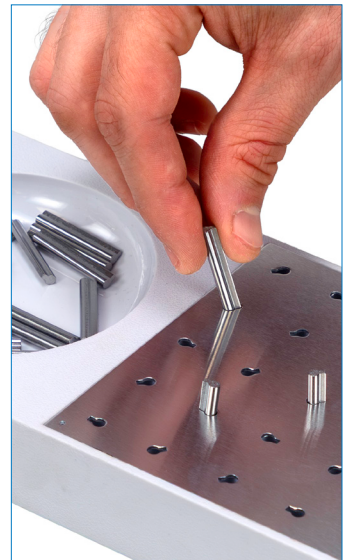
Scoring Methodology

Record completion time in seconds for each hand separately, measuring from when the subject grasps the first peg until the final peg is successfully inserted. This time score serves as the primary performance metric.

Additional scoring elements may be documented for comprehensive assessment:

- Number of pegs dropped during each trial
- Number of pegs not placed if trial was discontinued
- Qualitative observations regarding strategy, difficulty with rotation, or compensatory movements

These error scores are rarely observed in neurologically intact individuals and may provide clinically significant information when present.



Norms (Age Curve Reference Points) - Male

The below scores were obtained by adding: time (in seconds) required to fill pegboard, number of “drops” and number of pegs placed in the board.

Age	Dominant Hand		Non-Dominant Hand	
	M	Low/High	M	Low/High
15	80	36/103	82	49/119
16	81	35/105	82	48/120
17	82	35/107	82	47/122
18	82	36/110	82	47/123
19	83	37/113	83	46/124
20	83	38/117	85	45/127
21	84	39/121	86	45/129
22	84	40/125	87	45/131
23	85	41/128	87	44/134
24	85	41/131	89	44/135
25	86	42/133	90	45/137
26	87	42/134	92	45/139
27	87	43/135	93	46/141
28	87	44/136	94	46/143
29	88	44/136	95	47/145
30	88	45/137	96	48/146
31	89	45/137	98	48/148
32	90	46/137	99	49/150
33	90	46/137	100	49/152
34	91	46/137	101	50/153
35	91	46/137	102	50/155
36	91	46/137	103	50/157
37	92	46/138	105	51/159
38	92	46/138	105	52/160
39	93	46/138	106	52/161
40	94	46/139	108	52/162
41	95	46/138	108	51/163
42	95	46/138	108	51/163
43	95	46/140	109	51/165
44	96	47/140	109	51/165
45	97	47/141	109	52/166
46	97	47/142	109	52/166
47	97	47/143	110	52/167
48	98	47/144	110	52/169
49	98	49/156	110	52/170
50	99	50/158	110	52/170

Norms (Age Curve Reference Points) - Female

The below scores were obtained by adding: time (in seconds) required to fill pegboard,
number of “drops” and number of pegs placed in the board.

Age	Dominant Hand		Non-Dominant Hand	
	M	Low/High	M	Low/High
15	82	28/117	82	59/97
16	83	27/122	82	57/98
17	84	26/127	82	55/102
18	84	26/131	82	53/105
19	84	25/134	83	52/109
20	85	25/137	83	50/113
21	85	25/141	84	49/118
22	85	26/143	85	48/121
23	85	27/144	86	47/124
24	85	28/143	87	47/127
25	84	30/142	88	47/129
26	84	32/140	89	45/131
27	84	34/139	90	46/133
28	84	36/137	102	45/135
29	84	37/135	92	45/137
30	83	39/132	93	45/138
31	83	40/130	93	45/139
32	83	41/127	94	45/142
33	83	43/126	95	45/143
34	83	44/123	95	45/144
35	83	45/121	96	45/147
36	83	46/120	97	46/148
37	83	46/120	98	46/149
38	83	47/119	99	47/151
39	85	48/121	101	47/152
40	86	48/123	102	47/154
41	89	48/125	103	47/156
42	90	48/129	105	48/158
43	92	47/134	106	48/160
44	94	46/140	107	49/162
45	98	45/145	109	49/164
46	101	44/151	111	50/166
47	106	43/158	113	50/169
48	108	43/164	114	50/172
49	111	42/166	117	50/174
50	113	41/170	119	51/180

Clinical Interpretation

Test results should be interpreted within the comprehensive context of the subject's clinical presentation, medical history, and functional status. Performance scores may be analyzed through multiple approaches:

- Comparison with age-appropriate normative data
- Longitudinal tracking to monitor progress or decline
- Comparison between dominant and non-dominant hand performance
- Integration with other assessment measures in a comprehensive evaluation



When using this assessment for employment screening or personnel selection, validity should be established within the specific organizational context. For pre-employment applications, test validity must be demonstrated by correlating scores from newly hired employees with subsequent job performance measures, such as supervisor ratings or employment duration. This validation process ensures that test scores remain confidential from supervisors and others who may influence employment decisions or worker evaluations.

An alternative validation approach involves administering the test to current employees and examining correlations between test performance and established performance metrics. The grooved pegboard demonstrates strongest predictive validity for positions requiring precise hand-eye coordination, rapid fine motor movements, and manual dexterity, particularly in assembly operations, machine operation, and precision manufacturing roles.

Performance on this test may be influenced by factors beyond neurological function, including visual acuity, tactile sensation at the fingertips, medication effects, pain, depression, and fatigue. These factors should be considered when interpreting results and making clinical decisions.

References

Anastasi, A. (1982). *Psychological Testing* (5th ed.). Macmillan.

Trites, R. L. (1977). *Neuropsychological Test Manual*. Royal Ottawa Hospital.

 Fabrication Enterprises Inc
250 Clearbrook Road, Suite 240
Elmsford, NY 10523 (USA)
tel: +1-914-345-9300 • 800-431-2830
fax: +1-914-345-9800 • 800-634-5370
FabEnt.com



EC REP

AJW Technology Consulting GmbH,
Breite Strasse 3
40213 Düsseldorf Germany



MedEnvoy
NL-IM-000000248
Prinses Margrietplantsoen 33,
Suite 123, 2595 AM,
The Hague (NL)

CH REP

AJW Technology Consulting GmbH,
Düsseldorf, Zweigniederlassung Zürich
Kreuzplatz 2, 8032 Zurich, Switzerland



MedEnvoy Switzerland
Gothardstrasse 28
6302 Zug
Switzerland



AJW Technology Consulting LTD,
4/4a Bloomsbury Square,
London WC1A 2RP, United Kingdom

MedEnvoy UK Limited
85, Great Portland Street, First Floor
London, W1W 7LT
United Kingdom