

GROOVED PEGBOARD TEST USER INSTRUCTIONS

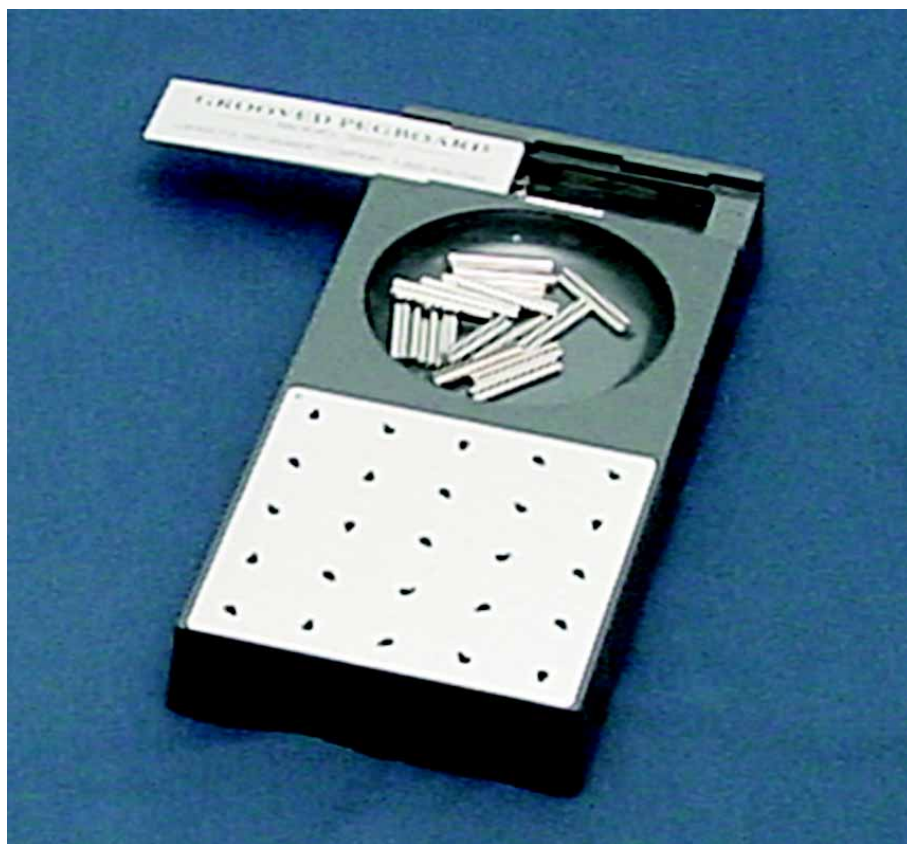


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Description:

The following administrative instructions and age curve data are taken from the Neuropsychological Test Manual developed by Dr. Ronald Trites, Royal Ottawa Hospital, Ottawa, Ontario, Canada.

Three batteries of tests have been defined for the normative data obtained by Trites.

Adult:	Age 15 years 0 months and above
Adolescent:	Age 9 years 0 months to 14 years 12 months
Kiddie:	Age 5 years 0 months to 8 years 12 months

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.

Instructions to the Test:

The pegboard is placed in mid-line with the subject so that the board is at the edge of the table and peg tray immediately above the board. The examiner explains the test:

“This is a pegboard and these are the pegs. (Examiner points out each and then picks up one of the pegs and continues.)

All the pegs are the same. They have a groove, that is, a round side and a square side and so do the holes in the boards. What you must do is match the groove of the peg with the groove of the board and put these pegs into the holes like this. (The examiner demonstrates by filling the top row. Remove the pegs, putting them back into the tray.)

When I say go, begin here and put the pegs into the boards as fast as you can, using only your (dominant) hand. Fill the top row completely from this side to this side. Do not skip any; fill each row the same way you filled the top row. Any questions? Ready, as fast as you can, go.”

Supplementary Instructions (Adult, Adolescent):

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 non-dominant hand trial.

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. Frequently, it will be necessary to point out the first hole of a new row, particularly during the non-dominant 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. Occasionally, a subject will attempt to use his or her other hand to help turn the peg around. It may be necessary to tell the subject to keep the hand on his or her lap, or for the examiner to hold it. 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.

If a peg is dropped to the floor, the examiner should not make an attempt to pick it up during the trial; rather, one of the pegs correctly placed should be taken out and used again. (Usually, the first or second peg.)

Supplementary Instructions (Kiddie):

The description, materials needed, instructions and scoring for the Kiddie version are identical in all aspects to the Adult version, with the following exception. Only the first two rows of the Pegboard are to be filled, thus totaling 10 pegs. Particular care is necessary in pointing out the correct direction, as well as the correct sequential order. If a child uses the wrong order (puts 10 pegs in randomly because he is unable to put them in the correct order), the test should be given a "D" flag for a non-standard administration.

Scoring:

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 tray until it is placed correctly in the hole. If more than one peg is picked up from the tray and the subject intentionally discards all but one of the pegs, it is not considered a drop. If a peg is intentionally laid down on the side of the tray or table, in order to purposefully manipulate the peg, it is not considered a drop. If one peg is turned with the hand not being

Scoring (continued):

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. The task is performed once with the dominant and then once with the non-dominant hand. 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.

Interpretation:

When a test such as the Grooved Pegboard test is to be used for personnel selection, the ideal procedure is to establish its validity locally, by testing all newly hired employees and correlating scores with their subsequent performance (supervisor ratings or time they remain employed). This approach to validation requires that test scores should not be used to select employees until evidence has accumulated of its validity, and that test scores be inaccessible to supervisors or others who affect the worker's ratings or job longevity. An alternative validation procedure is to administer the test to all present employees and correlate scores with ratings or with subsequent performance (Anastasi, 1982, pp. 65-101). The Grooved Pegboard test should correlate most highly with those jobs, which require speed, finger dexterity, and manual dexterity. It should be of relevance to performance on assembly and machine operating jobs. We at Lafayette Instrument Company are always interested in validation data, which you may collect in various industrial settings or academic studies.

Of course, scores on such a test are of diagnostic utility in Neuropsychological practice only within the context of an extensive sampling of medical, cognitive, motor, sensory and personality factors. Keeping this provision in mind, it should be noted that Matthews, Cleeland & Hopper (1970) found that patients with multiple sclerosis (MS) were significantly slower than “control” patients with other central nervous system impairments. MS patients ($N = 30$) had a mean of 323.40 seconds ($S.D. = 176.98$) while controls ($N = 30$) had a mean of 171.77 seconds ($S.D. = 48.20$). The difference was significant ($t = 5.13$, $p. = .01$, $r = .690$). Out of 24 tests in the study, those “of considerable utility in inter-group discrimination p. 6) were Grooved Pegboard Test, the Static Steadiness Test (equivalent to Lafayette #32011), the Maze Coordination Test (similar to Lafayette #20015) and measure of Finger Tapping speed.

Norms by Age and Sex Kiddie-Adolescent
(Total test time in seconds)

	<i>Male</i>				<i>Female</i>			
	<u>Dominant</u>		<u>Non-Dominant</u>		<u>Dominant</u>		<u>Non-Dominant</u>	
<u>Age</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
5	70	33.9	75	38.1	66	32.3	73	36.8
6	58	26.1	64	33.9	63	31.2	65	30.1
7	48	24.6	51	22.0	53	24.8	58	19.9
8	38	9.02	41	14.6	38	10.4	47	26.8
9	84	19.5	92	23.8	90	54.0	96	50.6
10	83	36.5	90	28.9	84	18.1	92	24.4
11	76	18.1	86	31.0	79	17.0	92	24.8
12	78	24.4	85	32.2	80	19.5	87	21.6
13	78	40.5	81	23.8	81	52.6	84	42.4
14	79	25.2	86	44.5	77	54.3	78	17.6

Grooved Pegboard *Age Curve Reference Points (Trites)*

	<i>Male</i>				<i>Female</i>			
	<u>Dominant</u>		<u>Non-Dominant</u>		<u>Dominant</u>		<u>Non-Dominant</u>	
<u>Age</u>	<u>M</u>	<u>Low/High</u>	<u>M</u>	<u>Low/High</u>	<u>M</u>	<u>Low/High</u>	<u>M</u>	<u>Low/High</u>
15	80	36/103	82	49/119	82	28/117	82	59/97
16	81	35/105	82	48/120	83	27/122	82	57/98
17	82	35/107	82	47/122	84	26/127	82	55/102
18	82	36/110	82	47/123	84	26/131	82	53/105
19	83	37/113	83	46/124	84	25/134	83	52/109
20	83	38/117	85	45/127	85	25/137	83	50/113
21	84	39/121	86	45/129	85	25/141	84	49/118
22	84	40/125	87	45/131	85	26/143	85	48/121
23	85	41/128	87	44/134	85	27/144	86	47/124
24	85	41/131	89	44/135	85	28/143	87	47/127
25	86	42/133	90	45/137	84	30/142	88	47/129
26	87	42/134	92	45/139	84	32/140	89	45/131
27	87	43/135	93	46/141	84	34/139	90	46/133
28	87	44/136	94	46/143	84	36/137	102	45/135
29	88	44/136	95	47/145	84	37/135	92	45/137
30	88	45/137	96	48/146	83	39/132	93	45/138
31	89	45/137	98	48/148	83	40/130	93	45/139
32	90	46/137	99	49/150	83	41/127	94	45/142
33	90	46/137	100	49/152	83	43/126	95	45/143
34	91	46/137	101	50/153	83	44/123	95	45/144
35	91	46/137	102	50/155	83	45/121	96	45/147
36	91	46/137	103	50/157	83	46/120	97	46/148
37	92	46/138	105	51/159	83	46/120	98	46/149
38	92	46/138	105	52/160	83	47/119	99	47/151
39	93	46/138	106	52/161	85	48/121	101	47/152
40	94	46/139	108	52/162	86	48/123	102	47/154
41	95	46/138	108	51/163	89	48/125	103	47/156
42	95	46/138	108	51/163	90	48/129	105	48/158
43	95	46/140	109	51/165	92	47/134	106	48/160
44	96	47/140	109	51/165	94	46/140	107	49/162
45	97	47/141	109	52/166	98	45/145	109	49/164
46	97	47/142	109	52/166	101	44/151	111	50/166
47	97	47/143	110	52/167	106	43/158	113	50/169
48	98	47/144	110	52/169	108	43/164	114	50/172
49	98	49/156	110	52/170	111	42/166	117	50/174
50	99	50/158	110	52/170	113	41/170	119	51/180

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

Reference Data (Misc.)

	<u>Dominant</u>		<u>Non-Dominant</u>		
<u>Age</u>	<u>Mean</u>	<u>SD</u>	<u>Mean</u>	<u>SD</u>	<u>N</u>
9	74.39	15.47	80.77	15.91	56
10	71.88	9.39	76.65	11.75	66
11	68.07	8.64	71.50	10.00	56
12	65.07	8.55	68.94	9.44	53
13	60.96	6.54	65.61	9.38	41
14	65.88	11.88	70.66	8.31	300
15 – 19	66.05	10.40	70.50	11.10	172
20 – 29	63.40	7.90	69.10	18.70	--
30 – 39	62.95	8.40	67.15	12.20	319
40 – 49	63.50	7.20	69.05	9.80	319
50 – 59	68.10	9.42	74.70	10.51	134
60 +	82.70	18.70	87.95	26.20	100
10 - 59	65.13	9.19	69.99	10.31	1460

Above scores derived *without* adding number of pegs dropped and number of pegs correctly placed in board to the subject's time.

References:

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- Knights, R.M. & Moule, P.D., "Normative data on the motor steadiness battery for children," Perceptual and Motor Skills, 26, 1968, 643-650.
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- Trites, Ronald L. *Neuropsychological Test Manual*. Ottawa, Ontario, Canada: Royal Ottawa Hospital, 1977.

Lafayette Instrument Grooved Pegboard Test

Model 32025 User's Manual

Ordering Information:

All phone orders must be accompanied by a hard copy of your order. All must include the following information:

- 1) Complete billing and shipping addresses
- 2) Name and department of end user
- 3) Model number and description of desired item(s)
- 4) Quantity of each item desired
- 5) Purchase order number or method of payment
- 6) Telephone number

DOMESTIC TERMS

There is a \$50 minimum order. Open accounts can be extended to most recognized educational institutions, hospitals and government agencies. Net amount due 30 days from the date of shipment. Enclose payment with the order; charge with VISA, MasterCard, American Express; or pay COD. We must have a hard copy of your order by mail or fax. Students, individuals and private companies may call for a credit application.

INTERNATIONAL PAYMENT INFORMATION

There is a \$50 minimum order. Payment must be made in advance by: draft drawn on a major US bank; wire transfer to our account; charge with VISA, MasterCard, American Express; or confirmed irrevocable letter of credit. Proforma invoices will be provided upon request.

RETURNS

Equipment may not be returned without first receiving a Return Goods Authorization Number (RGA).

When returning equipment for service, please call Lafayette Instrument to receive a RGA number. Your RGA number will be good for 30 days. Address the shipment to: Lafayette Instrument Company, 3700 Sagamore Parkway North, Lafayette, IN 47904, U.S.A. Shipments cannot be received at the PO Box. The items should be packed well, insured for full

value, and returned along with a cover letter explaining the malfunction. Please also state the name of the Lafayette Instrument representative authorizing the return. An estimate of repair will be given prior to completion **ONLY** if requested in your enclosed cover letter. We must have a hard copy of your purchase order by mail or fax, or repair work cannot commence.

WARRANTY

Lafayette Instrument guarantees its equipment against all defects in materials and workmanship to the **ORIGINAL PURCHASER** for a period of one (1) year from the date of shipment, unless otherwise stated. During this period, Lafayette Instrument will repair or replace, at its option, any equipment found to be defective in materials or workmanship. If a problem arises, please contact our office for prior authorization before returning the item. This warranty does not extend to damaged equipment resulting from alteration, misuse, negligence or abuse, normal wear or accident. In no event shall Lafayette Instrument be liable for incidental or consequential damages. There are no implied warranties or merchantability of fitness for a particular use, or of any other nature. Warranty period for repairs or used equipment purchased from Lafayette Instrument is 90 days.

DAMAGED GOODS

Damaged equipment should not be returned to Lafayette Instrument prior to thorough inspection.

When a shipment arrives damaged, note damage on delivery bill and have the driver sign it to acknowledge the damage. Contact the delivery service, and they will file an insurance claim. When damage is not detected at the time of delivery, contact the carrier and request an inspection within 10 days of the original delivery. Please call the Lafayette Instrument Customer Service Department for a return authorization for repair or replacement of the damaged merchandise.

